The Academic College of Tel Aviv-Yafo
School of Computer Science

Uncovering Excessive Medication Ingestion as a Method of Self-Harm in Bipolar Disorder through Data Analysis and Machine Learning

This thesis is submitted as part of the requirements for the Master of Science (M.Sc.) degree in Computer Science.

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I. Abstract

Bipolar disorder (BD) is a chronic psychiatric condition characterized by recurring episodes of mania, hypomania, and depression, affecting approximately 2% of the global population and significantly impairing quality of life and social functioning. Diagnosing BD is challenging due to symptom overlap with other psychiatric disorders, particularly depressive disorder. This research adopts an exploratory, hypothesis-free approach, leveraging machine learning (ML) techniques to analyze the UK Biobank dataset, allowing the data itself to reveal connections between BD diagnosis and various mental, physical, and environmental factors. Specifically, this study focuses on the underexplored behavior of self-harm by medication overdose ingestion (MOI), a method of self-harm that involves ingesting an excess dosage of medications, and its relationship with BD.

Using machine learning models, including logistic regression and Extreme Gradient Boosting (XGBoost), I developed predictive models for BD diagnosis and MOI. The BD diagnosis model achieved an F1 score of 0.51 and an average precision score of 0.49, significantly outperforming the baseline of 0.02, which reflects the class imbalance in the dataset. The MOI prediction model attained an F1 score of 0.84 and a precision score of 0.79, far surpassing the baseline F1 score of 0.0085. Feature importance analysis revealed that BD diagnosis is strongly associated with MOI, and the data suggests that MOI may frequently occur without suicidal intent. Additionally, MOI may be more prevalent in individuals with undiagnosed BD who are misclassified as having depression. Episodic depression symptoms in BD patients were also strongly correlated with MOI, highlighting the need for early identification and intervention.

This research opens new avenues for understanding the behavioral aspects of BD and introduces MOI as a clinically relevant feature in BD diagnosis. Furthermore, it demonstrates the value of hypothesis-free, data-driven research in identifying under-researched factors and improving diagnostic accuracy. Limitations related to the generalizability of the model in real-world settings, where patient data may be less comprehensive than the UK Biobank, are acknowledged. Future work should

focus on validating these models in clinical environments and investigating the nature of MOI behavior in different psychiatric populations.

Keywords: Bipolar Disorder, Machine Learning, Self-Harm, Self-Poisoning, UK Biobank, Predictive Modeling, Psychiatric Diagnosis

תקציר

הפרעה דו־קוטבית (בי-פולאריות) הינה מצב פסיכיאטרי כרוני המאופיין באפיזודות של מאניה, היפומאניה ודיכאון. היא מופיעה בכ-2% מהאוכלוסייה הגלובלית ופוגעת משמעותית באיכות החיים ובתפקוד החברתי של הסובלים ממנה. האבחון של בי-פולאריות הוא מאתגר בשל חפיפה של הסימפטומים שלה עם הפרעות פסיכיאטריות אחרות, ובאופן ספציפי עם הפרעת דיכאון. מחקר זה מאמץ גישת מחקר "גישוש" נטול-היפותיזה, אשר ממנף טכניקות למידת מכונה לניתוח של מאגר הנתונים UK Biobank, ומאפשר לנתונים עצמם לחשוף קשרים בין אבחון בי-פולאריות לבין מגוון גורמים נפשיים, פיזיולוגים וסביבתיים. באופן יותר ספציפי, מחקר זה מתמקד בהתנהגות של פגיעה-עצמית על ידי צריכה של תרופות במינון יתר (לשם הנוחות נקרא לה צריכת יתר של תרופות) - דרך שפחות נחקרה עד כה - והקשר בינה ובין בי-פולאריות.

בעזרת שימוש במודלים של למידת מכונה, כולל Logistic Regression ו-XGBoost, פיתחתי מודלים החוזים אבחון בי-פולאריות וצריכת יתר של תרופות. המודל המנבא אבחון בי-פולאריות הגיע לציון F1 של 0.51 ודיוק (Precision) ממוצע של 0.49, תוצאות גבוהות משמעותית מהבסיס של 0.02, המשקף את חוסר האיזון (Class Imbalance) בין אחוז הסובלים מבי-פולאריות לבין שאר האוכלוסייה, שמתקבל במקרה של מודל ניחוש רנדומלי בסיכוי של 0.5 (כמו הטלת מטבע כדי לנחש אם אדם סובל מבי-פולאריות או לא). המודל המנבא צריכת יתר של תרופות הגיע לציון F1 של 0.84 ודיוק של 0.79, תוצאות הגבוהות בהרבה מציון הבסיס שבמקרה זה הוא 0.0085 (מכיוון ש-0.85% מתוך האוכלוסייה שחקרתי מבצעים צריכת יתר). ניתוח הגורמים המשפיעים (Feature Importance) במודלים חשף את הקשר בין אבחון של בי-פולאריות לבין צריכת מינון יתר. הנתונים גם רומזים על כך שצריכת מינון יתר ברוב המקרים לא נעשית כניסיון התאבדות. בנוסף, התופעה של צריכת מינון יתר אצל נבדקים עם דיכאון, ללא אבחון של בי-פולאריות, מעלה את הסיכוי שמדובר באבחון שגוי של דיכאון במקום בי-פולאריות. סימפטומים של דכאון אפיזודי בסובלים מבי-פולאריות הראו קשר חזק לצריכת מינון יתר, דבר שמדגיש את הצורך בזיהוי והתערבות מוקדמת.

מחקר זה פותח דלתות חדשות להבנת ההיבטים ההתנהגותיים של בי-פולאריות ומציג צריכת מינון יתר כתופעה קלינית רלוונטית כאשר מאבחנים בי-פולאריות. מעבר לכך, הוא מדגים את הערך של מחקר מונחה נתונים, נטול-היפותזה התחלתית, בגילוי גורמים שנחקרו פחות לפני כן ובשיפור הדיוק האבחנתי. המחקר מכיר במגבלות הקשורות ביישום המודל מהמחקר בתנאי העולם-האמיתי, בו הנתונים על מטופלים עלולים להיות פחות מקיפים מאשר ב-UK Biobank. מומלץ למחקרי המשך לבדוק את המודלים שבניתי בתנאים קליניים ולחקור עוד את הטבע של ההתנהגות של צריכת מינון יתר באוכלוסיות פסיכיאטריות שונות.

מילות מפתח: בי-פולאריות, למידת מכונה, פגיעה-עצמית, הרעלה-עצמית, UK Biobank, מודלי-חיזוי, אבחון פסיכיאטרי

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1. Introduction

1.1 Bipolar Disorder Research

1.1.1 Understanding Bipolar Disorder

Bipolar Disorder (BD) is characterized by recurring cycles of manic, hypomanic, depressive, or mixed episodes, with fluctuating symptom intensity over time. These episodes are chronic and may result in residual symptoms and mood fluctuations between episodes[19]. The disorder affects approximately 2% of the global population[7] and significantly impairs patients' quality of life and overall functioning[1].

1.1.2 Diagnosis

According to the International Statistical Classification of Diseases and Related Health Problems 10th Revision[22] (ICD-10) the diagnosis of bipolar disorder (Code F31) is clinically defined as a disorder marked by at least two episodes where the patient's mood and activity levels are significantly disrupted. This disruption may manifest as periods of elevated mood and heightened energy and activity (hypomania or mania) or as episodes of reduced mood and lowered energy and activity (depression). If the episodes consist solely of hypomania or mania, the condition is also classified as bipolar disorder.

The diagnosis of bipolar disorder remains challenging, particularly in the early stages of the disorder. Fernando S. Goes et al.[6] notes that the diagnosis of bipolar disorder is often delayed due to the lack of specific biomarkers and the overlap of symptoms with other psychiatric disorders. A considerable proportion of individuals with bipolar disorder (BD) are initially misdiagnosed with depressive disorder and are prescribed antidepressants, which have controversial potential side effects[20]. The relationship between depressive disorder and BD remains unclear—whether depression is a

separate comorbidity or an early stage of BD is still debated. This uncertainty, along with the lack of agreed-upon predictors for conversion from depression to BD, hinders the prompt identification and treatment of BD.

Numerous studies have investigated additional characteristics of individuals with BD, aiming to enhance diagnosis and treatment. BG, O'Connell and Coombes[7] reviewed the current status of genetic contributions to the study of bipolar disorder. They discussed recent advancements, such as enhanced genome-wide association studies, the development of polygenic risk scores, and the exploration of gene-environment interactions and their result. For example, they mention a family study[36] that discovered that the likelihood of developing BD was 7.9 times higher for first-degree relatives and 3.3 times higher for second-degree relatives of individuals diagnosed with BD, compared to families without a BD case. Another large genome study have found thirty-three genetic loci for BD, some of them were located in a region containing the major histocompatibility complex, which is also strongly linked to schizophrenia. The paper that mentioned those studies[7] suggests that there are potential implications of these advances for personalized medicine and the development of new treatments for bipolar disorder.

1.1.2 Behaviors associated with Bipolar Disorder

Behaviors associated with BD can aid both in its diagnosis and in the development of treatment strategies. Identifying these behaviors could improve diagnostic accuracy by serving as contributing factors in BD evaluation, or help identify harmful tendencies that should be targeted in the treatment of BD. Sparding T. et al.[21] researched the personality traits in bipolar disorder and found that Individuals with Bipolar Disorder exhibited significantly elevated levels of Neuroticism, Aggressiveness, and Disinhibition compared to healthy individuals. Remarkably, one-third of the patients exhibited neuroticism scores at least one standard deviation above the general population’s normative mean on the global neuroticism scale. While these characteristics can aid in diagnosis, it remains a significant challenge because many of the described traits overlap with other psychiatric disorders.

1.1.3 Self-harm behaviors in Bipolar Disorder

Self-injury is prevalent among individuals with BD and represents a significant symptom of the disorder. This behavior involves the deliberate and direct harm to one's body tissue, such as through cutting, burning, or hitting[26]. When such actions occur without suicidal intent, they are classified as non-suicidal self-injury (NSSI). As indicated in a study by Chamberlain SR et al.[40], in addition to physical harm, non-suicidal self-harm can encompass interpersonal harm, such as engaging in emotionally or sexually abusive relationships, and reckless self-harm, such as deliberately losing one's job, driving recklessly, or abusing alcohol and medications.

As per suicide attempts, the prevalence in BD was found to be as high as 33.9% in a systematic literature search conducted by Dong M et al.[24]. It’s lower than the prevalence in schizophrenia[38] (40.8%), but higher than in major depression[39] (31%), In the general population the prevalence much lower (7%). Numerous studies indicate that treatment with lithium significantly reduces suicide attempts and deaths by suicide in individuals with BD. Research has shown that long-term lithium treatment decreases suicide attempts by approximately 10%[25].

This study specifically examines one of the forms of self-harm that is underexplored in the literature—medication overdose through ingestion—and its association with bipolar disorder (BD).

1.2 Medical Data Analysis and Machine Learning Research

1.2.1 Machine Learning in Medical Data

Over the past 15 years, there has been a marked increase in the application of machine learning (ML) in healthcare, providing new perspectives for research. Machine learning is a subfield of artificial intelligence (AI). It focuses on enabling

machines to autonomously learn patterns from data. According to an article by Badillo, S. et al.[3] ,the subfield has become an important part of today's world, with applications spanning diverse fields such as medicine, finance, and transportation. Rajkomar et al.[4] stated that ML can analyze large volumes of multidimensional data, identify patterns, and make predictions, thereby assisting healthcare professionals in making evidence-based decisions. Bajwa J et al.[41] have reviewed the current and future use cases of AI in healthcare and found that the application of AI in healthcare is advancing at a rapid pace, with emerging use cases spanning both physical and mental health. These include drug discovery, virtual clinical consultations, disease diagnosis, prognosis, medication management, and continuous health monitoring.

While ML as an academic field has been around since the mid-20th century, advancements in computing power, the availability of large datasets, novel algorithms, and a diverse pool of technical expertise have significantly accelerated its integration into the healthcare sector.[27]. A range of machine learning (ML) techniques can handle large and diverse datasets, uncover latent and intricate patterns, and predict complex outcomes. Consequently, ML offers significant benefits throughout an entire clinical trial process, from preclinical drug discovery and pre-trial planning to study execution, data management and analysis.

1.2.2 Exploratory Machine Learning in Psychiatry

When it comes to psychiatry, Chekroud, A. M. et al.[8] claim that ML has the potential to improve treatment decision-making, reduce the complexity and side effects of treatment, and enhance treatment efficiency. The authors discussed different types of ML models that can predict treatment response. These models have to be able to analyze a range of clinical and demographic variables, including medical history, age, and socioeconomic status for example, to identify patients who are more likely to benefit from a specific treatment. An ability to find non-linear patterns is a big advantage in this task as well. The authors indicated that, according to recent studies predicting treatment outcomes in psychiatry, strong performance can be achieved with models like boosted trees, regularized regression, support vector

machines, and artificial neural networks. However, no single model have consistently provided the best results in every scenario.

1.2.3 Exploratory Machine Learning on Bipolar Disorder

Recent advances in machine learning approaches have enabled the development of models that can predict bipolar disorder based on a combination of patient characteristics (features). Research by Passos IC et al.[9] on machine learning and big data analytics in bipolar disorder (BD) suggests that big data analytics can be used to develop risk calculators that assist in treatment decisions and forecast clinical outcomes, such as suicidality risk, for individual patients. Additionally, this method can enhance diagnosis by identifying relevant data-driven phenotypes and predicting the onset of the disorder in high-risk individuals who are currently unaffected.

For instance, Tomasik et al.[10] developed a machine learning model that achieved over 80% accuracy in distinguishing between bipolar disorder and depressive disorder, addressing the common challenge of misdiagnosing these conditions. It is estimated that more than 19% of patients experiencing a serious depressive episode have BD.

1.3 Gaps in Literature

1.3.1 Studies on the Associations Between Bipolar Disorder and MOI

A systematic search of the most up-to-date literature was conducted on the PubMed database (https://pubmed.ncbi.nlm.nih.gov/) using the query "*medication overdose through ingestion AND bipolar disorder*". The search yielded 24 results, which I thoroughly reviewed. However, no quantitative studies specifically addressing the prevalence or correlations of MOI in BD were identified. Most relevant studies were case reports involving one or two individuals. The studies deemed relevant to this

research showed some interesting insights that are relevant, but quite different, from this research's goals.

Rihmer A et al.[42] researched the prevalence of DSM-IV Axis I psychiatric diagnoses among 100 nonviolent suicide attempters in Budapest, Hungary. DSM-IV Axis I includes clinical mental health conditions such as mood disorders (including bipolar disorder), anxiety disorders, and substance-use disorders. Their study found that 92% of the individuals had at least one current DSM-IV Axis I diagnosis, with 59% diagnosed with unipolar major depression, 26% with bipolar disorder, and 2% with dysthymic disorder. In another study by Arici C et al.[28] the findings indicated that BD patients with a background of multiple suicide attempts had a much higher prevalence of substance ingestion as a suicide attempt method (79%) than BD patients who attempted suicide just once (47%). Substance ingestion was also the most common method of suicide attempt in both groups.

Ciszowski K at al.[30] assessed the incidence and severity of clinical symptoms in patients experiencing acute olanzapine intoxication due to overdose. The relevance of that study to this research lies in the fact that olanzapine is a second-generation antipsychotic commonly used to treat psychiatric conditions, including bipolar disorder. Another substance's, Lurasidone, overdose cases that were reported to poison centers worldwide from 2011 to 2018 were reviewed by Weiss SJ et al.[6]. Lurasidone is an atypical antipsychotic commonly prescribed for the treatment of schizophrenia and bipolar depression. The results stated that 65.2% of the cases were either discharged or admitted to psychiatric facilities. A finding that suggests the presence of underlying psychiatric diagnoses, possibly related to bipolar disorder or other mental health conditions treated with lurasidone.

Fortino M et al.[23] reviewed the role of significant comorbidities in predicting the prevalence of substance use disorder, focusing on medical, psychiatric, and psychosocial factors that can be assessed in dental practice. The review provided a list of recommendations for dentists, including the need to improve recognition of comorbid diagnoses involving BD and other psychiatric conditions.

Except for the aforementioned studies, I found some extra researches in related areas. For example, a paper by Öhlund L et al.[31] researched patients' self-injurious behaviors, both suicidal and non-suicidal, in individuals diagnosed with BD or schizoaffective disorder, and found that central stimulant treatment may reduce the risk of these behaviors in patients with a dual diagnosis of two of the three mentioned disorders.

Another study by Clements C et al.[32] included individuals with BD who have previously engaged in self-harm. They defined self-harm as any form of self-poisoning or self-injury, regardless of motivation or suicidal intent, but did not differentiate between the two methods. In this context, I categorize the ingestion of excess medication dosages as self-poisoning. Their study found that individuals with suicidal tendencies in BD should receive swift responses from mental health services, and that open communication and the involvement of family members in the care process could help closely monitor symptom changes that signal increased risk.

Self-harm in individuals with Depressive and Bipolar Disorders was also researched by Weintraub MJ et al.[34] . They defined self-harm by deliberate damage to one's body tissue without the intent to commit suicide, which excludes the self-poisoning category (or ingesting medications). The results indicated that the participants with a history of self-harm were younger and had a higher proportion of females compared to the non-self-harm group.

Medication adherence in BD has also been studied. In a study by Clatworthy J et al.[33] that included sixteen individuals with BD that were prescribed prophylactic treatment, it was shown that 81% of those individuals indicated some level of either intentional or unintentional medication nonadherence, that is associated with higher risk of relapse, hospital admission and suicide. Nonadherence was exhibited through behaviors such as not taking the prescribed medication or taking excessive doses in an attempt to stabilize symptoms.

1.2.3 The Gaps

Although existing studies have investigated self-harm behaviors in BD, several significant gaps persist in understanding MOI. Current literature often conflates MOI with suicide attempts, missing the opportunity to explore it as a behavior that may not always involve suicidal intent. Additionally, there is a lack of research specifically focused on MOI prevalence and associated symptoms within BD populations.

- **Limited Focus on MOI in BD:** While studies such as Arici C et al.[28] and Rihmer A et al.[42] examine suicide attempts involving substance ingestion, they do not specifically address MOI in the context of BD. These studies emphasize suicide methods but do not investigate MOI as an independent behavior that may occur without suicidal intent.

- **Unexplored Symptomatology of MOI in BD:** Research like Ciszowski K et al.[30] offers insights into the physiological effects of overdose, but these findings are not specifically connected to MOI in BD populations. There remains a lack of research examining the symptoms and clinical presentation of MOI in individuals with BD.

- **No Current Research Differentiating Suicidal and Non-Suicidal MOI:** While MOI is typically treated as a suicide-related behavior, there is little research exploring the differences between suicidal and non-suicidal intent in this context. Many times, studies only review the extreme cases that ended in hospital treatment, most of them likely done with a suicidal intention in mind. Existing studies, such as Clements C et al.[32], do not make this distinction.

- **Broad Categorization of Medication Misuse:** Studies like Clatworthy J et al.[33] address medication nonadherence broadly, including behaviors like taking excessive doses, but do not treat MOI as a distinct form of self-harm. This generalization prevents a clearer understanding of the specific patterns of MOI within the BD population.

- **Lack of Quantitative Data on MOI Prevalence:** Although research such as Weiss SJ et al.[5] provides demographic data on medication overdoses, there is no quantitative study specifically examining MOI prevalence among BD patients. This leaves a significant gap in understanding the extent of MOI and its correlation with BD-related symptoms.

This study seeks to address these gaps by investigating the prevalence and symptomatology of MOI in BD populations. In addition, while no current research distinguishes suicidal from non-suicidal MOI in the general population, preliminary findings from this study will later show that the majority of MOI users indicated that they have never attempted suicide, suggesting that non-suicidal MOI is more prevalent than currently recognized, offering a new perspective on this behavior.

1.4 Research Problem

1.4.1 Aim and Objectives

The general goal of this research is identifying characteristics that are correlated with BD diagnosis in the UK Biobank population. I plan to find those characteristics by building a machine learning model that predicts BD diagnosis, and then review the factors that contribute to the prediction result. A contributing factor in a machine learning model not only indicates correlation with the diagnosis but also suggests that the characteristic may not be highly correlated with other variables in the model, thereby enhancing its contribution value for improving BD prediction. Another advantage of finding connections using an ML approach is the ability to identify non-linear correlations and correlations that involve a combination of different variables, for example, an Exclusive Or (XOR) relationship of two features with the target prediction. Complex correlations are likely to exist in our dataset, since many of the medical features are highly dependent on each other, e.g. “insomnia” and “anxiety”.

1.4.2 Research Structure and Evolution Overview

The general concept of the research method is to start with a large variety of categories and fields from the UK Biobank database in order not to limit the possibilities to a specific area in advanced, and let the algorithmic results lead the way. The first stage was extracting the data from the biobank, and identifying the patients diagnosed with BD from that data. Then sampling a suitable number of records without a BD diagnosis to reflect the real prevalence in the population.

I applied data preprocessing techniques, both automatic and manual, then tested several ML models for predicting the BD diagnosis. Once a model's performance met my desired criteria, I extracted the contributing features weights, which represent the level of influence on the final prediction.

From those factors, I excluded well-researched factors and ones I considered to have limited scientific value (for example, the question if the patient saw a doctor for a psychiatric disorder in the last year). The full list of features is in the “Methodology” section of this paper.

Eventually, the unexpected factor I chose to investigate further was the self-harm method of ingesting excess dosages of medication. I chose it since it’s a contributing factor to the prediction of BD diagnosis, and more importantly, it’s innovative and under-researched. Then more research was done on the correlation and potential of this factor on the diagnosis of BD.

1.4.3 Significance

The connection between BD and various patient characteristics has been researched for a few decades, most of those studies begin with a hypothesis formed after reviewing existing research material. A broad data approach, such as the one I adopted for this research, is equally important and less common. It allows for the exploration of uncharted territories, not limiting the research to a specific area from the start. Utilizing computer science techniques such as large datasets statistical

analysis and machine learning models is ideal for this task, since they analyze large amounts of varied data, and fast. With a large population sample, I increased the likelihood of identifying characteristics that occur in small proportions within the BD-diagnosed population, but still differ a lot from the undiagnosed, healthy, population (control group).
These findings indicate that patients diagnosed with BD are approximately nine times more likely to use excess medication ingestion as a method of self-harm compared to the undiagnosed population. This information is important for providing appropriate treatment to BD-diagnosed individuals.

Additionally, I developed a secondary ML model to predict which individuals (both BD-diagnosed and undiagnosed) engage in this method of self-harm. This information can assist in identifying these patients and providing treatment that may reduce or prevent this harmful behavior.

I also checked what are the specific BD characteristics that those people had, in comparison to BD diagnosed patients that don’t use the mentioned method of self harm. I found out that the more “serious”, depressive and anxious patients with BD were most likely to ingests those large dosages of medications. I either identified potential risk factors for this harmful behavior, or a behavior that may exacerbate the symptoms of bipolar disorder.

2. Methodology

2.1 Language and Libraries - The Coding Tools

For the research I chose to use Python scripting language, which is one of the most advanced coding languages and is suitable specifically for optimized common operations on large tabular data analysis, and machine learning data pre-process.

For the data analysis and graph displays I used the libraries Numpy, Pandas and Matplotlib, and the libraries cuPY and cuDF for data analysis on the GPU for faster calculations. I used the components pandas.DataFrame, pandas.Series, cudf.DataFrame, cudf.Series for analysis and matplotlib.pyplot for display. Those are only the tools, the specific analysis methods will be explained later in the methodology section.

For data preprocessing and different ML models like logistic regression and random forest I used the libraries Scikit-Learn and cuML (GPU). Specifically for the Xgboost model I used the XGBoost dedicated library. I used the components LogisticRegression, RandomForestClassifier, IsolationForest, SimpleImputer, StandardScaler, StratifiedKFold, GridSearchCV, ConfusionMatrixDisplay, PrecisionRecallDisplay from Scikit-Learn Library, RandomForestClassifier from Cuml and XGBClassifier from XGBoost. For oversampling I used the components SMOTE and ADASYN, and for undersampling I used RandomUnderSampler, all from the library Imbalanced-Learn.

I used pickle and json libraries to save models and other data for reuse, and datetime for conversion from datetime strings to timestamps.

2.2 The Data

2.2.1 Data Source

This research utilizes the UK Biobank as the primary dataset. The UK Biobank website[2] states that it is a large-volume biomedical database containing extensive genetic and health information from half a million UK participants. It has facilitated numerous scientific discoveries that have contributed to advancements in human health[43].

As one of the largest and most diverse biomedical databases globally, the UK Biobank contains extensive and varied data, enabling the discovery of numerous potential patterns relevant to this research. The dataset includes several key types of information, such as:

- Interview data, including early-life factors such as breastfeeding, employment history, medications, and lifestyle habits such as smoking and drinking, as well as occurrences of depression or anxiety.
- Physical measures, such as blood pressure, hearing tests, and eye measurements.
- Biological sample results, including blood counts, blood biochemistry, and infectious diseases.
- Genomics data, including genotype, exome sequences, and genome sequences.
- Primary and secondary pathological diagnoses.

While several studies have examined bipolar disorder using UK Biobank data, to the best of my knowledge, none have utilized machine learning (ML) models in this context. This research aims to analyze the relationships between bipolar disorder diagnoses and a broad selection of factors from the UK Biobank, with the goal of identifying novel or under-researched correlations. The UK Biobank's extensive and varied data is particularly valuable for mental health research, as it includes many factors whose connections to bipolar disorder (BD) have not yet been thoroughly explored. Additionally, it allows for the discovery of complex patterns involving the interaction of multiple factors.

2.2.2 Initial Broad Data Selection

As discussed in the introduction, bipolar disorder is a multifactorial condition involving genetic, neurobiological, and environmental factors[1]. Therefore, using a broad selection of data allows us to approach this study with an open mind, enhancing the potential for discovering new associations.

I selected categories that were most relevant to the study based on current literature and their potential contribution to understanding bipolar disorder. A larger number of features requires more examples for adequate model training, and given the limited number of BD-diagnosed patients in the dataset, it was essential to evaluate each category carefully. The following is a summary of the categories selected for this research, along with brief explanations of why each was included:

- **Diagnoses and Main Diagnoses - IDC10 (41270 & 41202)**: Those categories include a variety of present and past diagnoses, including Bipolar Affective Disorder (F31). They cover 446,814 and 446,809 participants, respectively.
- **Lifestyle and Environment (100050)**: This category encompasses several subcategories such as physical activity, electronic device use, sleep, smoking, diet, alcohol consumption, sun exposure, and sexual factors. For example, Zangani et al.[11] demonstrated that sleep disturbances are common in individuals with BD, while Vermeulen et al.[12] found a positive correlation between smoking and BD diagnosis. This category covers ~550,000 participants.
- **Early Life Factors (100033)**: Robinson et al.[13] identified a link between perinatal jaundice and increased risk of BD, as well as a higher risk associated with being born in November-December. This category covers ~640,000 participants.
- **Family History (100034)**: McIntyre RS et al.[14] found that BD has approximately 70% heritability, making this category relevant for identifying potential genetic predispositions. This category covers ~500,000 participants.

- **Psychosocial Factors (100059)**: This category contains information directly related to bipolar disorder status, making it essential for inclusion in this research. This category covers ~500,000 participants.
- **Blood Pressure (100011)**: A study by McGowan NM et al.[15] suggested a correlation between blood pressure and BD, as patients with BD exhibit wider resting pulse pressure. This category covers ~501,000 participants.
- **Blood Assays (100080)**: Memic-Serdarevic A et al.[16] found that BD patients tend to have lower blood counts and hemoglobin concentrations, highlighting the importance of including this category. This category covers ~480,000 participants.
- **Mental Well-being (1500)**: This category includes subcategories related to mood changes, which are core symptoms of BD. This category covers ~175,000 participants.
- **Health and Well-being (160)**: Includes fields such as "Currently suffering from problems relating to mood, anxiety, and emotions," all of which are closely linked to BD. This category covers ~195,000 participants.
- **Cognitive Function (116)**: This category also includes mood-related data, making it relevant for the BD analysis. This category covers ~213,000 participants.
- **Mental Health (136)**: This category contains data on mania and depression, which are central to the BD diagnosis. This category covers ~157,000 participants.
- **Work Environment (123)**: Marion-Paris E. et al.[18] report that over 60% of individuals diagnosed with BD lack stable occupational activity, making this an important factor to consider in this research. This category covers ~120,000 participants.
- **First Occurrences (1712)**: This includes data on the first occurrence of BD (field no. 130892) as well as other mood disorders, offering valuable temporal insights. It covers the participants of categories 41270 & 41202 mentioned above.

By selecting these categories, each including a large number of participants and sub-fields, I aimed to explore a wide range of factors that may influence or be

influenced by bipolar disorder, offering potential insights into new or under-researched correlations.

2.2.3 Data Extraction and Structure for the Research

The categories for this research were selected according to the UK Biobank showcase website. The UK Biobank provided a ‘bucket’ of data based on the data requested by my institution, but this bucket constrained which categories were available for my use. From the categories I selected, I extracted the available ones from the provided dataset bucket. Some of the desired fields, particularly those related to online follow-up data and specific blood assays, were missing. Nevertheless, a significant portion of data from the patients’ initial reporting retained, which I believe is sufficient to identify new associations between BD diagnoses and other factors, and contains about 90% of the data I selected, including the diagnoses categories, which are the most important ones.

* For full details, refer to Annex A1 for a table of the fields included in this research and Annex A2 for a table of the fields that were missing from the dataset.
* Participants were not limited by the bucket, only some of the categories.

Additionally, technical fields, such as internal serial numbers of devices used by the UK Biobank or parts of online tests, were excluded due to their lack of scientific significance.

2.2.4 Exclusion of Fields and Patients That Might Create Incorrect Bias

In addition, I removed specific fields that provided direct information about BD experiences in patients, except for the official diagnosis itself which is the target prediction (e.g. field 20492: Longest period of mania or irritability). Those fields were removed because the target variable in this research is exclusively the official BD diagnosis (ICD10). It was necessary to exclude other fields that directly indicate the presence of BD in patients.

Additionally, for those fields, if a patient's answer indicated that they were suffering from BD, but their official diagnosis did not include BD, the patient itself was removed from the data. This step was taken in order to avoid cases where a patient knew they had BD or manic episodes but had not received an official BD diagnosis yet, as this could lead to false negatives later. There were less than 100 patients that were removed for this reason, so it doesn't affect the size of the data significantly.

Additionally, I excluded fields that directly indicated a patient had BD, except for the official diagnosis, as I aimed to avoid trivial positive results for patients who had already been diagnosed with BD, as this information will most likely not be available when predicting BD diagnosis in future data (e.g. field 20122: Bipolar disorder status).

* For the full list of the excluded categories, please refer to **Appendix F**.

2.2.5 Data Sampling to Reflect Bipolar Disorder Prevalence

From the total dataset of approximately 500,000 records, I first extracted the 1,944 records with an F31 BD diagnosis, either in the diagnosis or main diagnosis fields. These records represent the positive class. As noted in the introduction, the prevalence of BD in the general population is approximately 2%.

To simulate real-world conditions, I completed the sample by randomly selecting from the remaining negative records, bringing the total sample to 100,000 records. This allows the sample to reflect the 2% prevalence of BD in the general population.

2.3 Data Preparation

2.3.1 From Raw Data to Numeric Features Vector

To apply statistical analysis and ML models, I first converted each record into a floating-point numeric vector. The data types were divided into six categories according to the UK Biobank showcase: categorical, numeric, integer, continuous, date/time, and text. Additionally, each field contained data collected over multiple time points (1-255 columns per field).

Special values like "Prefer not to answer" or "Don’t know" were consistently treated as missing values across all feature types.

This is how I preprocessed each type of data:

2.3.1.1 Categorical fields with hundreds of different values

E.g. diagnosis codes, job codes (SOC2000).

For each of those fields the preprocessing was as follows:

a. Reduction of the number of values by mapping each category (value) to its parent category, according to the UK Biobank showcase or official SOC coding categories for SOC2000.
b. Creation of a new binary column for each of the possible values, initiated to False in all cells.
c. In the binary column, change the cell value to True for records where the relevant value appeared in at least one of the field’s columns.

   For example, if a patient’s record showed an F32.3 diagnosis in one of the ICD10 field cells. It was first mapped to the parent field, F32 (Depressive episode. Then the new binary column ICD10_F32 (representing field ICD10, diagnosis F32) was set to True for that patient, while it remained False for patients without the F32.1-F32.9 diagnosis value.

2.3.1.2 Categorical fields with up to tens of different values

Each value was manually reviewed to decide how it should be mapped in the processed data. The mapping options were binary columns or integer

columns. These decisions were made using common sense and logic, as the model can identify patterns but lacks the contextual understanding of the field names and category meanings.

For example, answers like “bus,” “car,” and “bicycle” for the question “ways of transportation” were mapped to separate binary columns since there is no inherent ordering. In contrast, answers like “Never,” “Once a month,” “Once a week,” and “Every day” were mapped to a single integer column, with values assigned as follows: Never=0, Once a month=1, Once a week=2, Every day=3. This mapping decision is crucial because the model cannot use common sense to infer category relationships on its own.

For a list of the categorical field IDs and the mapping decisions made for each, refer to Appendix C.

2.3.1.2 Integer and Continuous Numeric Values

For each numeric field, three columns were added: Average, Minimum, and Maximum of the values measured over time for each patient. Duplicates were removed if any of these columns had identical values across all records.

Other special values, such as "more than 1000", were converted into the appropriate numeric value.

2.3.1.3 Date and Time

I retained the same number of columns as the original data and converted each value to an integer timestamp representing the time and/or date.

2.3.1.4 Textual Values

Textual values were mapped into categories based on keywords found in the text. For example, the phrase "I was not working" was mapped to an "Unemployed" category, and similar categories were created. These were treated as categorical features.

2.3.2 The High Dimensionality Challenge in Medical Data

A significant challenge in using machine learning to identify patterns such as correlations and dependencies in medical databases is the high dimensionality of the data. Medical datasets often include a large number of variables (features), many of which are essential for accurate analysis. In this case, with more than 5,000 features, the prediction of BD diagnosis is likely influenced by hundreds of factors. Additionally, the positive class in this research (1,944 samples) is relatively small, which is typical in medical research due to the difficulty in collecting large amounts of data on patients with specific conditions or undergoing particular treatments.

For a machine learning model to effectively learn patterns more samples than features are preferred; otherwise, the model risks overfitting, learning patterns specific to the dataset rather than generalizable trends. The fact that my overall dataset samples count is 100,000 helps the model learn, but I needed to be careful not to overfit on the positive data train set.

2.3.3 Dimensionality Reduction: Feature Selection

One way to tackle this issue is through feature selection, a process where irrelevant or less important features are removed based on their significance to the outcome, as determined by algorithms designed to evaluate feature importance.

The first step in the feature selection process was applying a variance threshold filter. This filter removed any features with a variance of 0, meaning features that did not vary across the records were excluded, as they provide no predictive power. After applying the filter, I proceeded with further feature selection techniques to reduce dimensionality and improve model performance.

For the next step, I chose to use High-Dimensional Least Absolute Shrinkage and Selection Operator (**LASSO**), which is one of the prominent feature-selection techniques. Jo J. et al.[29] evaluated the performance of LASSO, demonstrating its exceptional effectiveness for feature selection through parametric statistical tests and comprehensive simulation studies. Their findings suggest that High-Dimensional

LASSO is a promising tool for feature selection and has practical applications in real-world data analysis.

Each feature in the data was assigned a coefficient by the LASSO model. A higher coefficient indicated a greater influence of that feature on predicting BD.

Then, I initially experimented with the K-Best algorithm, which selects a predefined number of top features based on their scores. However, I found that K-Best was limited because the number of selected features had to be defined upfront. This approach lacked flexibility, as the algorithm automatically adjusted the threshold to match the predefined feature count, which could lead to the exclusion of important features with slightly lower scores. In contrast, LASSO allowed us to determine the feature selection dynamically based on the coefficient threshold, making it a more suitable approach for the high-dimensional dataset. Trying the LASSO was also recommended by my instructor.

I experimented with different thresholds for the LASSO coefficients to see how the model's performance varied based on the number of selected features. Thresholds ranged from 0.2, which resulted in the selection of 186 features, to 0, which resulted in the selection of 2,158 features. A higher threshold selected fewer features with stronger coefficients, whereas a lower threshold included more features, some of which had weaker or near-zero coefficients. I evaluated the model's performance across these thresholds.

Ultimately, all features with non-zero coefficients were selected, as determined by the LASSO model, as they were deemed predictive for BD diagnosis. The model's performance improved as the number of selected features increased, with the best results achieved using the highest number of non-zero coefficient features. In the end, 2,158 features were selected out of the initial 5,582 available after data preprocessing, providing the best balance between dimensionality reduction and predictive power.

2.3.4 Sanity Check of the Preprocessing

When preprocessing data for ML models, it is important to watch out for mistakes that might lead to bad data, which could result in either random prediction outcomes or overly optimistic results (e.g., an F1 score of 0.98 when the baseline random F1 score is 0.02 due to class imbalance). To avoid such issues, a "sanity check" on 500 "best" selected features was performed, with the number of features arbitrarily chosen and the features selected using the K-Best algorithm.

The check involved counting the parent categories of both the 500 selected features and the initial full list of 5,582 features. I then calculated the percentage of features in each list that were related to mental health by counting the unique field IDs and categorizing them based on their parent categories. I expected that a higher proportion of mental health-related features would be correlated with BD diagnosis.

The results of the check confirmed this assumption: 48% of the selected features were mental health-related, compared to only 22% in the full features list. This indicated that the preprocessing steps preserved the essential structure of the data and kept the relevant features for the BD diagnosis.

However, I later encountered overly optimistic results due to an error in the preprocessing of the SOC job codes that was not previously caught. Upon discovering this, I revisited the preprocessing stage to fix the bug and corrected the resulting issues in the data.

2.3.5 Stratified Data Splitting for Train, Validation, and Test Sets

The filtered data was then divided into train, validation, and test sets using the traditional ratio of 60% for training, 20% for validation, and 20% for testing. The validation set allows us to tune the model’s parameters without using the test data, which remains neutral for final evaluation. I used stratified sampling to maintain the positive-negative class ratio (about 1:50) in each set, as maintaining this ratio is crucial for measuring model performance on imbalanced data, particularly for recall and precision metrics.

Additionally, I shuffled the data in each set to avoid any potential biases from the original data order, ensuring that the model does not learn patterns based on the sequence of the data.

2.3.6 Division of Data into Features (X) and Target (y)

Each set was divided into an X table, containing all features used for prediction, and a y vector, representing the target variable, which was created from the ICD10_F31 column (True=1, False=0).

2.3.7 Handling Missing data

I chose to fill missing data using the mean of each feature. I first calculated the means based only on the training data to prevent data leakage, then filled the missing values using the mean values in all three sets. I chose to use the mean rather than a "special value" because missing values do not hold scientific meaning in this case, and I wanted the model to avoid assigning undue significance to them. Starting with the common mean method provided sufficient results when the planned analysis was applied to the data.

2.3.8 Removing Outliers

To avoid rare values or value combinations that might force the model to pivot its pattern significantly based on just one sample, outliers were removed entirely. I chose to use the Isolation Forest algorithm for this task due to its ability to handle high-dimensional data like ours[35]. The algorithm defines outliers as samples that can be isolated by a small number of splits using decision trees, indicating they are significantly different from other samples.

2.3.9 Data Normalization

I initially used the Logistic Regression ML model because it is the simplest classification algorithm with the fastest performance, making it a good starting point for general results. Since Logistic Regression requires data normalization before training, it was applied accordingly.

I used a Standard Scaler to normalize each feature's distribution to a Gaussian unit distribution, meaning each feature had a mean of 0 and a standard deviation of 1. The values were normalized using the formula: (value - mean) / standard deviation.

For other models used later, such as tree-based ensembles, normalization was not necessary because they use split points on each feature separately, so the proportion between features does not affect the calculations.

2.3.10 Data Imbalance Handling

Since the data we use is highly imbalanced (1:50 ratio), I explored several ways to address the imbalance. This is important because accuracy may appear high even when the model performs poorly on the positive class. This can occur because the model optimizes predictions by minimizing the overall penalty for incorrect predictions. With many negative samples, the model might simply predict the negative class for all cases, achieving a high accuracy but failing entirely on the positive class.

To handle this, I explored two options: using suitable penalty weights for incorrect predictions on negative and positive samples, or changing the class ratio of the train data to a different ratio by applying either oversampling or undersampling before training the model. I tested oversampling to 50:50 ratio using the SMOTE algorithm, which is a common method, and the ADASYN algorithm, which can perform better with high-dimensional data. ADASYN performed just slightly better than SMOTE. Additionally, random undersampling of 50:50 ratio was tested, which reduces the number of negative samples to match the number of positive samples.

Ultimately, I found that the results were similar across all four data imbalance handling methods (SMOTE, ADASYN, random undersampling, and sample

weighting) when testing on the validation set. I chose to maintain the original class ratio and control the sample weights in the model because this approach provided greater flexibility. By adjusting the weights for the positive and negative classes, I gained more control over the model's tolerance for false positives or negatives, which is easier than re-balancing the classes in the train data to different ratios to achieve the same control.

2.4 BD Prediction Machine Learning Application

2.4.1 Model Evaluation Metrics: Precision, Recall, and Result Measurement

The performance of the different machine learning models was evaluated using precision, recall, and the F1 score, as these metrics are more informative than accuracy in imbalanced datasets[44]. Accuracy can be misleading in such cases. With far more negative samples, a model could achieve high accuracy by predicting mostly negative outcomes randomly, but it would miss most of the positive class.

- **Precision** is the percentage of correctly predicted positive samples out of all samples predicted as positive. It is important in imbalanced datasets because it measures how many of the positive predictions are actually correct, helping avoid false positives that might skew the interpretation.
- **Recall** is the percentage of true positives out of all actual positive samples. It measures the model's ability to capture the positive class, helping assess how many relevant cases the model can identify.

The **F1 score** is the harmonic mean of precision and recall, balancing both metrics to evaluate model performance when there is a trade-off between them. Since the default threshold for binary prediction models is typically 0.5, I experimented with different thresholds to find the one that gives the best F1 score for each of the models.

The model was also evaluated using the **average precision** (AP) metric, which measures the overall performance across different thresholds. This metric was particularly suited for my research because it had no specific requirement for either precision or recall.

It's important to note that the **baseline** for both the F1 score and AP in my imbalanced dataset, where the class ratio is 1:50 (2:100), is approximately 0.02, providing a point of comparison for model performance. This is because a random prediction model would assign positive predictions to 50% of the samples, while the actual positive class comprises only 2% of the total samples. As a result, the precision of this baseline model is 0.02, since if I run it many times, then on average, only 1% of the 50% positive predictions are true positives ($\frac{1}{50} = \ 0.02$).

2.4.2 ML Prediction Models

2.4.2.1 Logistic Regression Model

The Logistic Regression model, which is computationally efficient and commonly used for binary classification, was initially applied. Logistic Regression assigns weights to each feature, assuming feature independence, with larger weights indicating greater influence on the predicted outcome[45]. After tuning the model's parameters using the validation set, the best F1 score achieved was 0.36, with an average precision of 0.28. While these results may seem low, it is crucial to compare them to the baseline for both metrics (0.02), given the highly imbalanced nature of the dataset.

Although Logistic Regression performed better than random, I sought further improvement to enhance my understanding of the factors contributing to BD diagnosis.

2.4.2.2 Decision Tree-Based Models: Random Forest and XGBoost

To explore more advanced models, I implemented Random Forest and XGBoost. Both models are decision tree ensemble-based and are capable of identifying patterns in dependent features while providing insight into feature importance. This choice was mainly due to the capability to manage missing data, identify non-linear patterns, remain resilient to correlated features, and return a feature importance array that allows the interpretability of the model, which is very important in the medical field and to the purpose or the research. This allows the model to provide insights into which features influenced the decision and to what extent, enhancing transparency and trust in the clinical applications.

- **Random Forest**[46] constructs trees independently and aggregates predictions through majority voting.
- **XGBoost**[47], a Gradient Boosting algorithm, builds trees sequentially, with each tree correcting the errors of the previous one. While gradient boosting algorithms are slower to train, they often achieves superior performance by refining predictions at each iteration.

XGBoost (extreme gradient boosting), one of the Gradient Boosting models, was chosen over other similar models because it is highly optimized for both speed and performance. XGBoost uses advanced regularization techniques, such as L1 (Lasso) and L2 (Ridge) penalties, to prevent overfitting. Additionally, it implements techniques like parallelized tree construction and hardware optimization (e.g., GPU support) that make it faster and more scalable for large datasets compared to other gradient boosting models. These factors made XGBoost a strong candidate for this dataset, which involves high-dimensional data and requires efficient training times.

2.4.2.3 Other Models

Neural Networks[47], being an advanced model structure, were also taken into account when choosing a model. A large difference between the field of neural networks to the other model types mentioned above is that neural networks are harder to interpret, it means that understanding the decision process of the model and the strength of different features that lead to a

prediction may not be easy. There's currently no built-in mechanism that outputs the feature importance list from the model. Innovative tools like SHAP[49] run different inputs on a model in order to understand it better, but it's not as straight forward as in the tree ensemble models, and might be less accurate. So if the Boosting Trees models are performing well enough for the research's purpose, then I prefer to use them.

2.4.3 Model Tuning and Performance Comparison

Grid search was used to explore many possible parameter combinations and **cross-validation** to evaluate the model's performance across different subsets of the data, helping to prevent overfitting. These techniques enabled us to optimize the model's parameters. By utilizing GPU-based libraries, I accelerated the computational process and conducted multiple runs efficiently.

The **XGBoost model** delivered the best results, achieving an F1 score of 0.51 and an average precision (AP) of 0.49, both significantly higher than the random predictions baseline of 0.02, and better than the results of the logistic regression model as well. This demonstrated the model's ability to effectively capture patterns in this imbalanced dataset (precision was 0.49 and the recall was 0.53).

2.4.4 Feature Importance Exploration

To further investigate less obvious contributing factors, the two strongest features were chosen to be removed, which included data on when the individual lastly saw a doctor or a psychiatrist and created a similar, alternative, model. This allowed the new model to focus on more subtle features, which may not be as dominant but still play a significant role in BD prediction. By shifting focus away from the most

dominant features, I aimed to uncover hidden patterns that might otherwise go unnoticed.

2.4.5 Increasing Regularization

For the training of the alternative model, I also increased the model's regularization to distribute the predictive influence more evenly across a wider range of features. Regularization penalizes large feature weights, reducing overfitting and allowing subtler features to gain more influence in the prediction. While the modified model's performance slightly decreased, achieving an F1 score of 0.42 and an average precision score of 0.39, it still significantly outperformed the baseline and the Logistic Regression performance. But more importantly, this model provided insights into less dominant features that contribute to BD prediction, aligning with my goal of identifying innovative and underappreciated factors.

2.5 Pivot to Self-Harm Behavior Feature Research

2.5.1 Extracting and Analyzing Feature Importances

From the final created model created, I extracted the feature importances, which include weights given to all features. Each feature gets a weight according to its level of influence on the model's predictions. I went through the list of features from the highest to lowest weight, checking the literature about each one of them.

2.5.2 Focus on Self-Harm Behavior by Medication Overdose Ingestion

I continued down the list of features until I found one that had not been specifically researched in connection with BD. This feature was Self-Harm Behavior by **"Medication Overdose Ingestion**" (MOI). Due to the lack of research showing a

correlation between this specific behavior and BD, I chose this feature as the main focus of my study. The full reasoning behind this decision and information about relevant studies appear in the Introduction section, paragraph 1.3.

2.5.3 Statistical Tests For MOI In Different Mental Diagnoses

To get a perspective about the prevalence of MOI in BD, and given the broad health and diagnostic information available for each individual, I also examined the prevalence of MOI in individuals across different psychiatric conditions by applying statistical tests. I chose to focus on three diagnostic categories: Depressive episode (ICD-10 F32), bipolar disorder (ICD-10 F31), and anxiety disorders (ICD-10 F41). A binary diagnosis variable was created for each category based on whether individuals had at least one confirmed diagnosis under the respective ICD-10 codes. The outcome variable for this analysis was MOI, identified using a binary indicator.

Prevalence rates of MOI were calculated separately for individuals with a diagnosis of each disorder and those without a diagnosis, allowing for a comparison of MOI prevalence among individuals with BD, depression, and anxiety. The analysis aimed to determine whether MOI is more prevalent in individuals with BD compared to those with other psychiatric conditions. Differences in MOI prevalence between diagnosed and undiagnosed groups were tested for statistical significance using **Pearson chi-square test**, which is suitable for categorical values. A significance level of **p-value < 0.05** was applied, and all observed p-values were below this threshold, confirming that the differences in prevalence are unlikely to be attributable to random variation.

Table 3 - Prevalence of MOI in Bipolar Disorder Diagnosis Chi-Test Table

Bipolar Disorder Diagnosis	**MOI = 0 (No)**	**MOI = 1 (Yes)**	**Total**
Not Diagnosed	99,129	785	99,914

Diagnosed	1,845	99	1,944

Table 2 - Prevalence of MOI in Depressive Episode Diagnosis Chi-Test Table

Bipolar Disorder Diagnosis	**MOI = 0 (No)**	**MOI = 1 (Yes)**	**Total**
Not Diagnosed	93,931	662	94,593
Diagnosed	7,043	222	7,265

Table 3 - Prevalence of MOI in Anxiety Diagnosis Chi-Test Table

Bipolar Disorder Diagnosis	**MOI = 0 (No)**	**MOI = 1 (Yes)**	**Total**
Not Diagnosed	95,684	766	96,450
Diagnosed	5,290	118	5,408

2.5.4 Influences of Comorbid Diagnoses

An additional analysis was conducted in order to ensure that the results were not influenced by comorbid diagnoses. Patients with only one psychiatric diagnosis (either depressive episode, schizophrenia, anxiety, or BD) or no psychiatric diagnoses (control group) were extracted from the dataset and the prevalence of MOI was measured in each population. The results indicated that BD is the diagnosis most significantly associated with the usage of MOI.

2.5.5 Separating Depression Symptoms and Bipolar Symptoms

To further assess the relationship between MOI and BD, I filtered out major depression-specific symptoms and focused on BD-related factors and symptoms such as recurring episodic depression. The population was divided into two BD-diagnosed and non-BD-diagnosed groups, calculating the correlations between MOI and relevant symptoms for each group. This enabled the evaluation whether the prevalence of MOI is specifically linked to BD diagnosis symptoms rather than other factors, across both populations.

2.5.5 BD Diagnosis Correlation with Other Factors (Features)

Next, to identify additional differences in BD-diagnosed and undiagnosed individuals that use MOI, I further divided the population into the following four groups to do comparisons analysis:

- Group 1: BD-diagnosed & using MOI: 99 records
- Group 2: BD-diagnosed & not using MOI: 1,845 records
- Group 3: Not BD-diagnosed & using MOI: 785 records
- Group 4: Not BD-diagnosed & not using MOI (control group): 99,129 records

For each feature, the descriptive statistics were calculated, including the number of non-null records, mean, and standard deviation, within each group.

Given the significant imbalance in population sizes, particularly the much larger size of Group 4 (control), I applied **Welch's ANOVA**[17] instead of the standard ANOVA to test the correlation with MOI mean differences between the groups. While both are suitable for one categorical variable and one continuous variable, Welch's ANOVA was selected because it adjusts for both unequal variances and group sizes, which are common in imbalanced datasets. **Standard ANOVA** assumes homogeneity of variances across groups and tends to give undue weight to larger groups, leading to potential biases. Welch’s ANOVA, by contrast, calculates a weighted average of the group variances, making it more robust when these assumptions are violated.

For example, when comparing the feature *"Trouble Sleeping Frequency"* across the four groups, standard ANOVA yielded a highly significant F-statistic of 118.99 and a p-value of 1.24×10^{-76}. However, due to the imbalanced group sizes, this result may be skewed. Welch's ANOVA provided a more accurate F-statistic of 2.77 and a p-value of 0.0064, indicating significant differences between groups, but with a more reliable and conservative test statistic. The visualization of the feature's distribution across the groups further highlights the necessity of adjusting for imbalances (see Figure 4 in Results Section). In this case, both p-values are below the 0.05 threshold.

2.5.4 Deep Dive Into The Trouble Sleeping Feature

To understand the differences in the means better, I explored the relationship between bipolar disorder (BD), MOI, and sleep disturbances feature in each of the four groups. Specifically, responses to the question: "Over the last 2 weeks, how often have you been bothered by trouble falling or staying asleep, or sleeping too much?" was analyzed.

I normalized the population sizes of each group separately to allow comparison of the pattern. The analysis was carried out using histograms to represent the frequency distribution of sleep disturbance responses, followed by line plots connecting the top points of the histograms plotted in one graph combined to observe overall patterns.

2.5.5 Focused Model Training on Self-Harm (Logistic Regression)

In addition to the statistical analysis, I decided to developed a machine learning model to predict MOI behavior. To get a general view of the ability to predict MOI behavior, I chose Logistic Regression, a straightforward classification model, with the target class defined as binary: 0 for individuals not using MOI and 1 for individuals using MOI.

A subset of features related to mental health factors expected to correlate with MOI prevalence was selected. The data was divided into train, test, and validation sets, similar to previous models predicting BD diagnosis. Given the imbalance in the dataset (with a ratio of about 1:120), I used the default balanced class weights parameter of the logistic regression model to adjust for class imbalance. The baseline F1 score and average precision were calculated to be 0.0085. The metrics results were surprisingly high.

To ensure these results were not due to a bug, I used the same code and data subset to create an additional model to predict BD diagnosis, achieving an F1 best score of 0.34, similar to previous models.

3. Results

3.1 Results From The Creation of the BD Diagnosis Prediction Models:

The XGBoost model that delivered the best results, achieving an F1 score of 0.51 and an average precision (AP) of 0.49, both significantly higher than the random predictions baseline of 0.02 demonstrated the model's ability to effectively capture patterns related to BD diagnosis. Precision was 0.49 and the recall was 0.53, which is rather balanced.

While the modified, more restricted, model's performance were slightly lower, achieving an F1 score of 0.42 and an average precision score of 0.39, it still significantly outperformed the baseline performance. But more importantly, this model provided insights into less dominant features that contribute to BD prediction. Below is figure 1 presenting the precision-recall curve of the latter model.

Figure 1 - Recall-Precision Curve of the BD Prediction Model Used

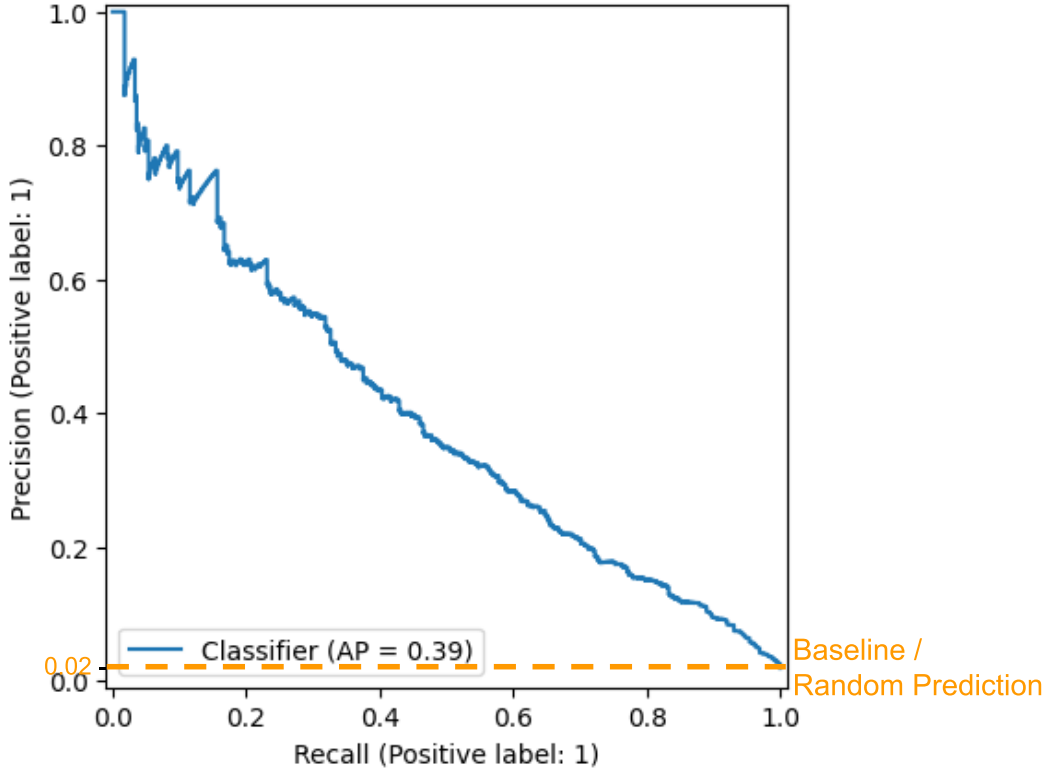


Figure 2 - Confusion Matrix of the BD Prediction Model Used

Normalized Table

Prediction			
F	T		
0.9%	1.0%	T	Class
96.8%	1.3%	F	

Absolute Table

Prediction			
F	T		
914	1,030	T	Class
96,448	1,304	F	

The top contributing factors of this model by order of importance are showed in list 1.

List 1 - The top contributing factors of the BD prediction model by order of importance

1. ICD10 Diagnosis of Depressive Episode F32
2. Source of report of F32 (depressive episode)
3. Date F32 first reported (depressive episode)
4. ICD10 Diagnosis of Unknown and unspecified causes of morbidity R69
5. ICD10 Diagnosis of Personal history of risk-factors, not elsewhere classified Z91
6. Ever sought or received professional help for mental distress
7. ICD10 Diagnosis of recurrent depressive disorder F33
8. Suffer from 'nerves'
9. ICD10 Diagnosis of Other anxiety disorders F41
10. Ever suffered mental distress preventing usual activities
11. Number of times believed in unreal communications or signs
12. ICD10 Diagnosis of Speech disturbances, not elsewhere classified F47
13. Ever unenthusiastic/disinterested for a whole week
14. ICD10 Diagnosis of Senility R54
15. ICD10 Diagnosis of Fracture of lumbar spine and pelvis S32
16. ICD10 Diagnosis of Sleep disorders G47

17. ICD10 Diagnosis of Carcinoma in situ of skins D04
18. Number of correct matches in round (internal UK Biobank test)
19. ICD10 Diagnosis of Other functional intestinal disorders K59
20. ICD10 Diagnosis of Schizophrenia F20
21. Prescribed Medication taken for anxiety

* Self-Harm Behavior by medication overdose ingestion was ranked 88th in this list.

See the full features importance weights table in Appendix D.

3.2 Hypothesis Tests: BD is particularly associated with MOI

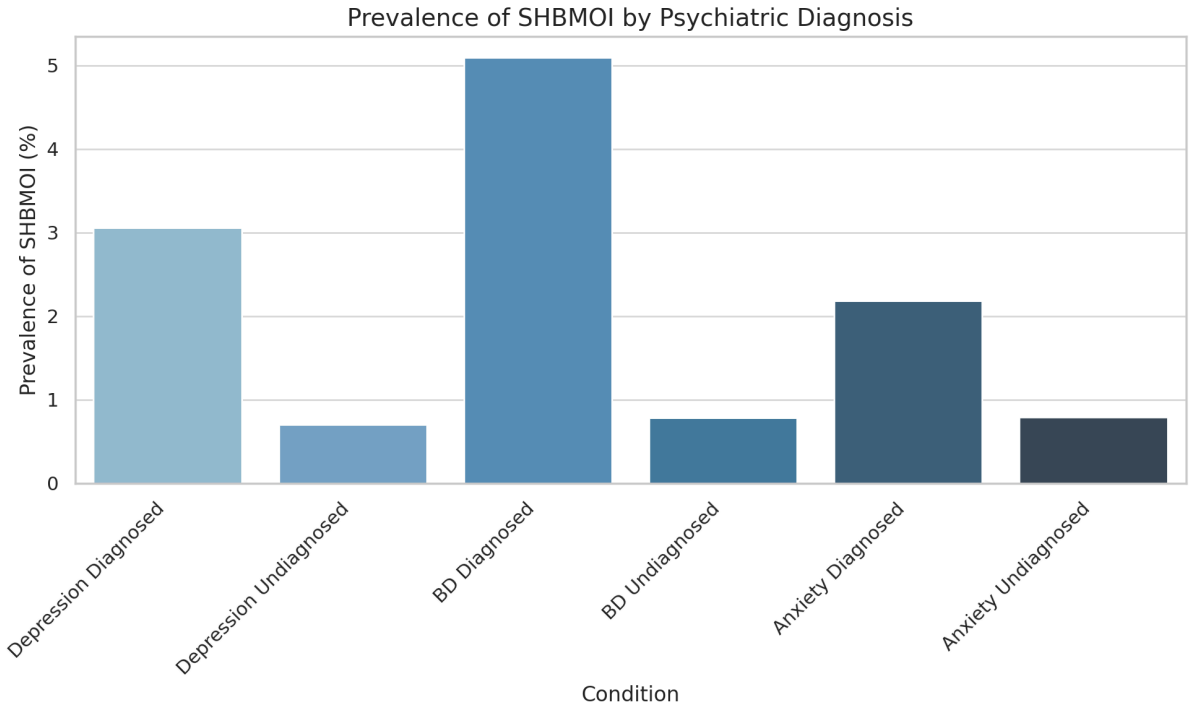
3.2.1 Results from comparing the prevalence of MOI across different psychiatric diagnoses independently

The analysis comparing the prevalence of MOI across different psychiatric diagnoses revealed statistically significant differences between bipolar disorder (ICD-10 F31), depressive episode (ICD-10 F32), and anxiety disorders (ICD-10 F41). The results of the chi-square test ($p < 0.0001$) confirmed that these differences were highly significant. Specifically:

- **Bipolar Disorder (ICD-10 F31)**: MOI was observed in 5.1% of individuals diagnosed with bipolar disorder, compared to 0.8% of undiagnosed individuals, $\chi^2=406.15$, with a p-value of 2.53×10^{-90}. This suggests a significant association between BD and MOI.
- **Depressive Episode (ICD-10 F32)**: Among those diagnosed with depressive episode, 3.1% reported MOI, while only 0.7% of individuals without a depression diagnosis reported this behavior, $\chi^2=432.52$, with a p-value of 4.59×10^{-96}. This indicates that MOI is a lot more prevalent in individuals with depression than in the general population.
- **Anxiety Disorders (ICD-10 F41)**: In individuals diagnosed with anxiety disorders, the prevalence of MOI was 2.2%, compared to 0.8% in

undiagnosed individuals, χ^2=113.02, with a p-value of 2.13×10^{-26}. While MOI is more common in those diagnosed with anxiety than those who aren't, the results remain lower than for both bipolar disorder and depressive episode.

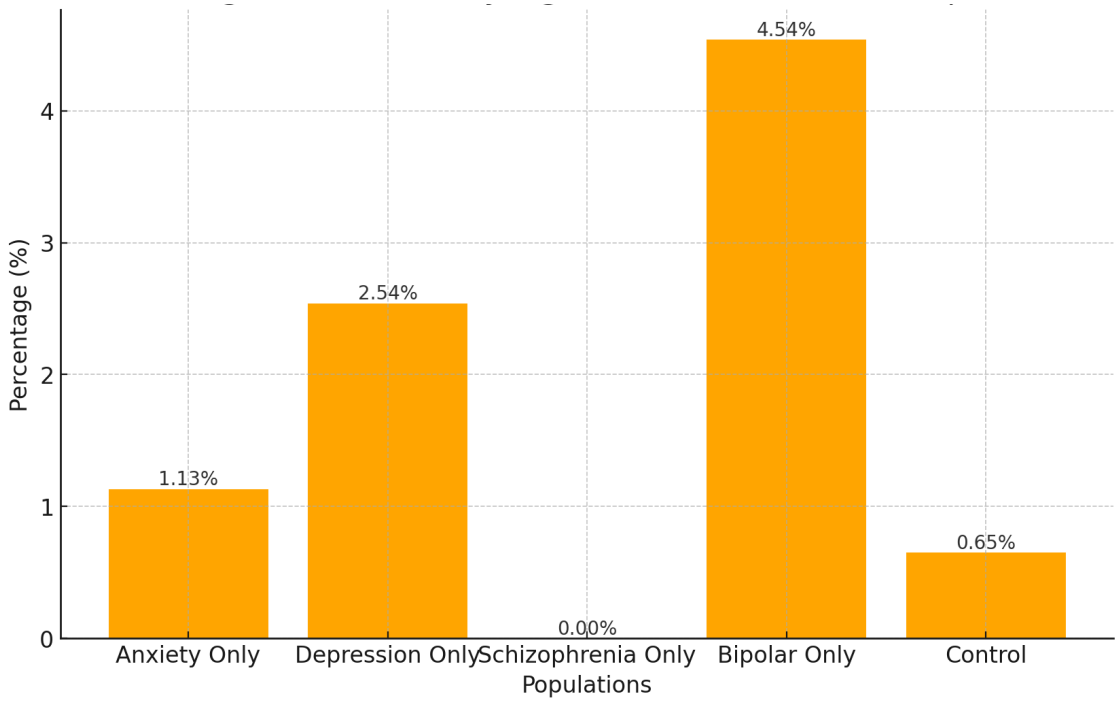
Figure 3 - Prevalence of MOI by Psychiatric diagnosis



3.2.2 Results from comparing the prevalence of MOI in people with a single psychiatric diagnoses

The results of the prevalence analysis I conducted only on patients with zero to one psychiatric diagnoses (either depressive episode, schizophrenia, anxiety, or BD) were as shown in figure 4.

Figure 4 - Prevalence of MOI in populations with a single psychiatric diagnoses



3.2.3 Results from episodic depression symptoms in BD analysis

In the episodic depression symptoms analysis, the correlation analysis revealed key differences between the BD-diagnosed and non-BD-diagnosed populations regarding MOI and episodic depression symptoms.

BD-Diagnosed Population:

- Fraction of day affected during worst episode of depression: r=0.175
- Frequency of depressed days during worst episode: r=0.124
- Number of depression episodes: r=0.083−0.088

Non-BD-Diagnosed Population:

- Fraction of day affected during worst episode of depression: r=0.113
- Frequency of depressed days during worst episode: r=0.093
- Number of depression episodes: r=0.023−0.025

Key Observations:

The BD-diagnosed population exhibited significantly stronger correlations between MOI and episodic depression symptoms, particularly regarding the **fraction of day affected** (r=0.175) and the **frequency of depressed days** (r=0.124). The correlations were notably weaker in the non-BD-diagnosed population, especially for the **number of depression episodes** (r=0.023−0.025).

3.2.4 Results Comparing Features Prevalence Between the four groups

After performing Welch's ANOVA in the comparison analysis we've done by dividing the data into four groups, several features exhibited statistically significant differences (p-value < 0.05). The analysis focused on differences between Group 1 (BD diagnosed & MOI), Group 2 (BD diagnosed & no MOI), and Group 3 (Not BD diagnosed & MOI), with Group 4 serving as a control.

1. **Trouble Sleeping**: Group 1 (BD diagnosed & MOI) had the highest mean value for trouble sleeping, at 1.46, followed by Group 3 (Not BD diagnosed & MOI), with a mean of 1.22. Group 2 (BD diagnosed & no MOI) reported a slightly lower mean of 1.06. This indicates that MOI is a significant contributor to trouble sleeping, even in non-BD populations. Group 4 (control) had a mean of 0.70, providing a baseline for comparison.
2. **Feelings of Low Energy**: Group 1 also reported the highest levels of low energy, with a mean of 1.43, followed by Group 3, which reported a mean of 1.15. Group 2 had a lower mean of 1.03, suggesting that the presence of MOI increases the likelihood of feeling tired, regardless of BD diagnosis. Group 4 (control) had the lowest mean of 0.66, highlighting the heightened symptoms in Groups 1 and 3.
3. **Trouble Concentrating**: Group 1 exhibited the highest trouble concentrating, with a mean of 1.08, followed by Group 3 at 0.62. Group 2 had a similar mean of 0.62. This suggests that MOI, rather than BD, is the dominant factor in causing concentration difficulties. In contrast, Group 4 (control) had the lowest mean of 0.22.

4. **Feelings of Foreboding**: Group 1 also reported significantly higher levels of foreboding, with a mean of 0.82, compared to Group 3, which had a mean of 0.54 (std: 0.88), and Group 2, which had a mean of 0.44. Group 4 (control) reported the lowest mean of 0.21, indicating that MOI, particularly in BD patients, contributes to increased anxiety symptoms.

These results demonstrate that Group 1 (BD diagnosed & MOI) consistently exhibited the highest symptom severity, followed closely by Group 3 (Not BD diagnosed & MOI). Group 2 (BD diagnosed & no MOI) generally showed milder symptoms, emphasizing that MOI plays a significant role in worsening the psychosocial and depressive symptoms, even in non-BD populations. Group 4, as the control, consistently reported the lowest symptom levels across all features. This pattern highlights the importance of considering MOI behaviors in clinical assessments and interventions for both BD and non-BD individuals. I did not mention standard deviations since the feature is categorical with only four possible values, which creates a non-normal distribution.

3.2.5 Results From A Deep Analysis of The “Trouble Sleeping” Feature in the Groups

The deep dive into the “Trouble Sleeping” feature demonstrated distinct patterns in sleep disturbance across the four groups. A normalized histogram was created for each group, showing the percentage distribution of responses to the sleep disturbance question. The line plots of the normalized distributions clearly illustrate the differences between groups. Key Findings:

- Group 1 (BD diagnosed & MOI) exhibited a higher percentage of individuals reporting frequent trouble with sleep, particularly "Nearly every day."
- Group 2 (BD diagnosed & no MOI) showed similar trends but with fewer individuals reporting the most frequent sleep disturbances.
- Group 3 (no BD & MOI) displayed intermediate results, with fewer individuals reporting high sleep disturbance compared to the BD groups.

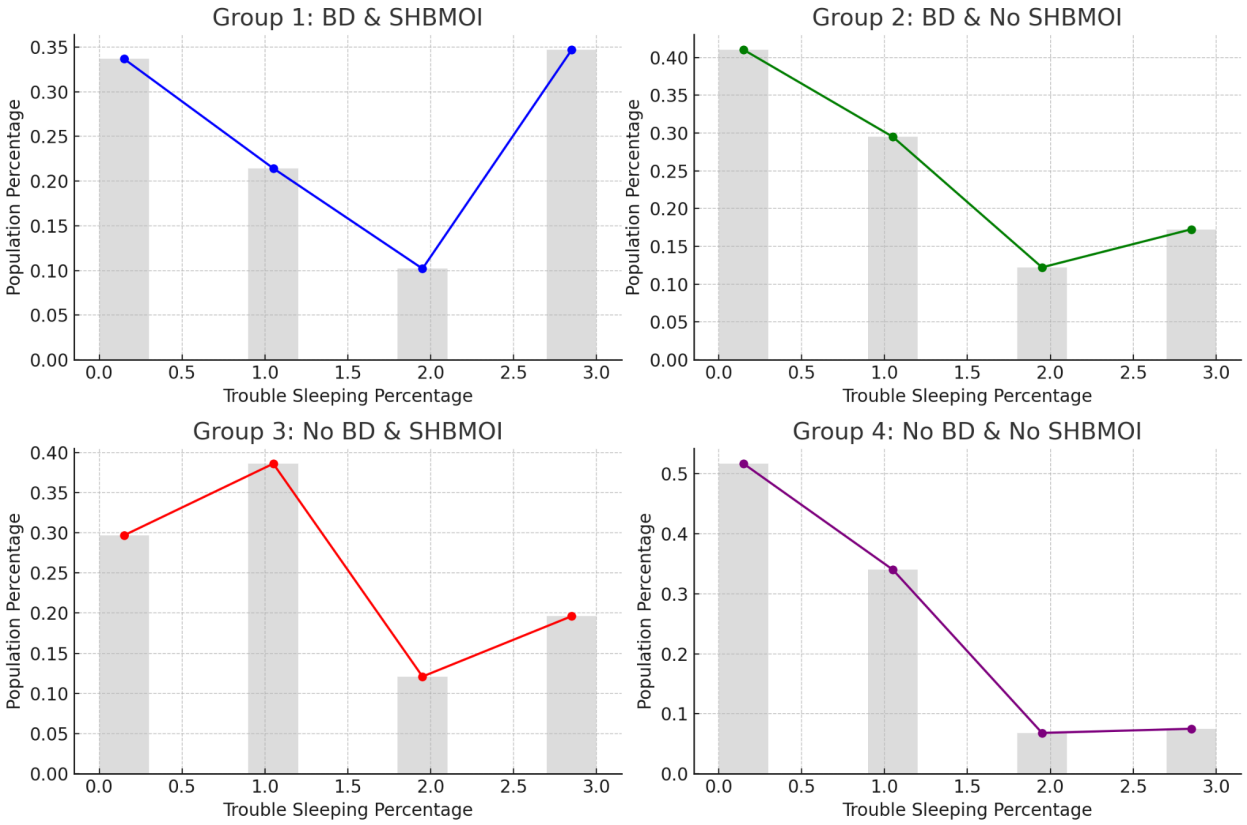
- Group 4 (no BD & no MOI) served as a control and showed the lowest frequency of sleep disturbances, with the majority reporting "Not at all" or "Several days."

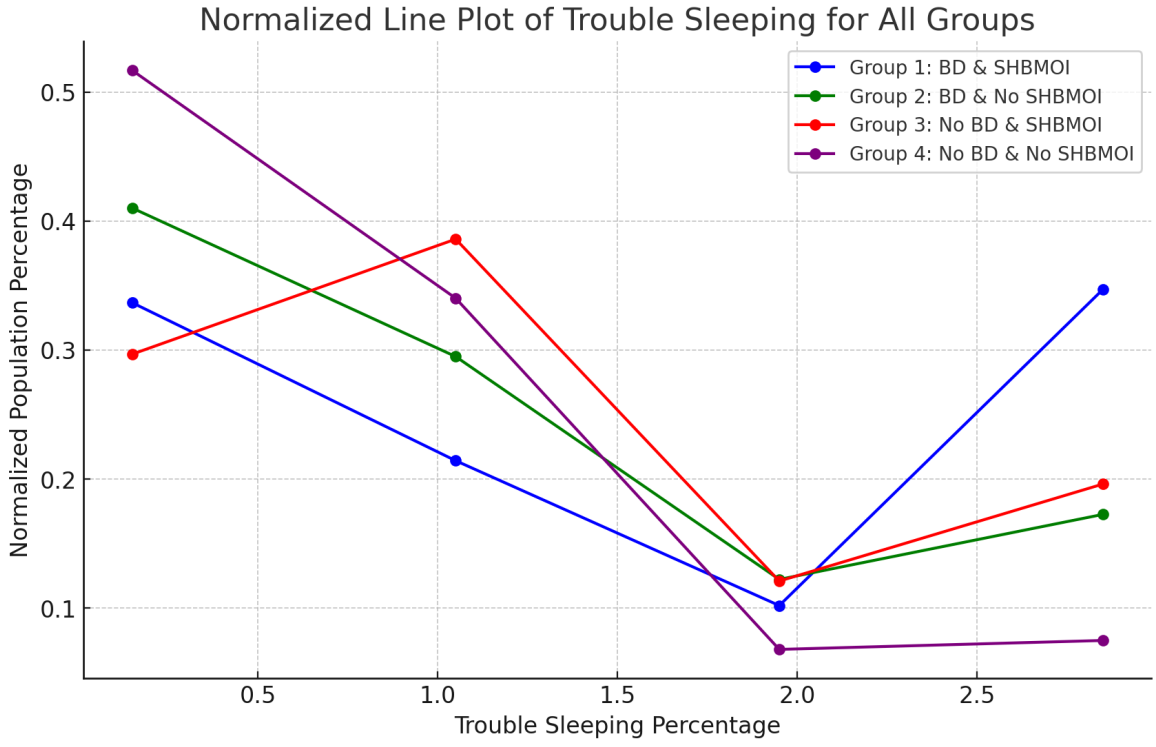
The histogram plots, and the combined line plot (Figure 5) illustrate the distribution of sleep disturbance frequencies across the four groups. The x-axis represents the response Specifically, responses to the question: "Over the last 2 weeks, how often have you been bothered by trouble falling or staying asleep, or sleeping too much?" were analyzed.

The possible responses were:
0: Not at all
1: Several days
2: More than half the days
3: Nearly every day

The y-axis represents the normalized population percentage for each group. The lines clearly show that the BD groups, report higher levels of sleep disturbances compared to the control group, and specifically group 1 showed the most frequent sleep disturbance in average.

Figure 5 - Histogram of sleep disturbance frequencies across four groups



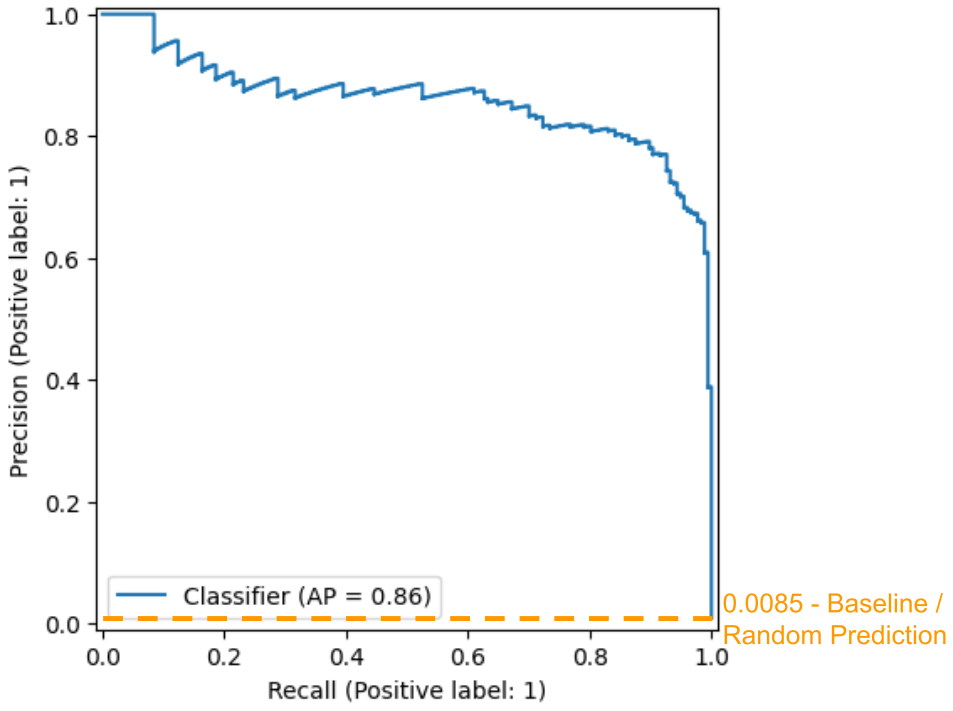


3.2.6 Results From the MOI Prediction Model

The MOI prediction logistic regression classification model achieved an F1 score of 0.84 at the best threshold, with a precision of 0.79 and a recall of 0.9 at the same threshold. This means that, out of 1,000 individuals, the model correctly identifies almost all people who use MOI, along with about 3 additional false positives who do not use MOI. I believe that this model could contribute to medical practice by helping identify individuals at risk of using MOI, allowing for timely intervention and appropriate treatment.

The machine learning model developed to predict MOI (self-harm by excess medication ingestion) behavior achieved an F1 score of 0.84 at the optimal threshold, with a precision of 0.79 and a recall of 0.9. These results significantly outperform the baseline F1 score of 0.0085 from a random prediction model in this highly imbalanced dataset. The precision-recall curve is presented in figure 6.

Figure 6 - MOI Prediction Model Precision-Recall Curve



The top contributing features, ranked by importance out of the 153 used by the model are presented in list 2.

List 2 - Top contributing factors of the MOI prediction model, ranked by importance

1. History of self-harm
2. Recent feelings of depression
3. Frequency of tenseness/restlessness in the past two weeks
4. Tendency to take risks
5. Past thoughts of life not being worth living
6. Feelings of guilt
7. Prolonged worry after embarrassment
8. Experience of physical violence from a partner or ex-partner in adulthood
9. Satisfaction with financial situation
10. Frequency of unenthusiasm/disinterest in the past two weeks
11. Medications prescribed for depression
12. Satisfaction with health
13. Diagnosis of a life-threatening illness
14. Sensitivity/hurt feelings
15. **Bipolar Disorder Diagnosis (ICD-10: F31)**

Bipolar disorder diagnosis ranks among the top 15 contributing factors, and **"Ever attempted suicide" ranked only 28th**.

4. Discussion

4.1 Interpretation of BD Diagnosis Prediction Model Results

Consider a hypothetical population of N=1,000 individuals, where the positive class (BD) represents 2% (P=20) of the population, and the negative class represents 98% (N−P=980). A random prediction model, assigning a 50% probability of belonging to the positive class for each individual, would classify approximately half the population (0.5N=500) as positive. From these 500 predicted positives, the expected true positives are:

$$True\ Positives = 0.5 \times P = 0.5 \times 20 = 10$$

while the false positives, arising from misclassifications of the negative class, are:

$$False\ Positives = 0.5 \times (N - P) = 0.5 \times 980 = 490$$

This demonstrates that out of the 500 predicted positives, only $\frac{True\ Positives}{Predicted\ Positives} = \frac{10}{500} = 2\%$ are correct, reflecting the underlying prevalence of the positive class in the population.

In contrast, the best model I built, which achieved both precision and recall close to 0.5 (precision=0.49 and recall=0.53) would predict that only 20 individuals suffer from BD:

While the equation $True\ Positives = 0.5 \times P = 0.5 \times 20 = 10$ stays the same.

The second equation $False\ Positives = 0.5 \times (N - P) = 0.5 \times 20 = 10$ changes,

thus $\frac{True\ Positives}{Predicted\ Positives} = \frac{10}{20} = 50\%$ which a more practical outcome, facilitating further clinical evaluation for the 20 individuals predicted as the positive class.

4.2 Elevated Prevalence of MOI in Individuals Diagnosed with BD

The prevalence analysis, conducted to ensure the results were not influenced by comorbid diagnoses, focused on patients with zero to one psychiatric diagnosis (either depressive episode, schizophrenia, anxiety, or BD). It indicated that BD is the diagnosis most significantly associated with the use of MOI, with a prevalence of 5.1%, nearly twice as high as the next highest diagnosis, depressive episodes, which had a prevalence of 3.1%.

The real-world implications of these results may suggest an even greater distinction between the prevalence of MOI in individuals with BD and those with depression. Previous research estimates that up to 60% of individuals misdiagnosed with depressive disorder, instead of BD, remain undiagnosed with BD for as long as 10 years. This indicates that a significant portion of the 3.1% of individuals diagnosed with depressive episodes who engage in MOI may actually have undiagnosed BD, and should have been included in the BD group. In comparison, individuals diagnosed with depression who do not engage in MOI may statistically have a relatively smaller portion of misdiagnosed cases. As a result, the distinction in MOI prevalence between BD and depression could be even more pronounced.

However, it is crucial to consider that many parameters used to draw these conclusions rely on self-reported data rather than medically verified records. Self-reported data is inherently subjective and may be influenced by individual perceptions and memory recall. For example, a patient may report never engaging in self-harm but fail to recognize certain behaviors as self-harm because they perceive them as too “minor” to be categorized as such. Additionally, a patient may not recall past events, particularly if they were traumatic, leading to potential underreporting. These limitations highlight the need for cautious interpretation of findings and consideration of the reliability of self-reported data in a medical context.

4.2 Distinct Characteristics of MOI in Bipolar Disorder Compared to Non-BD Individuals

In the episodic depression symptoms analysis, the fact that the BD-diagnosed population exhibited significantly stronger correlations between MOI and specific episodic depression symptoms, including the fraction of the day affected during the worst episode, the frequency of depressed days during the worst episode, and the number of depression episodes, suggests that episodic depression, particularly in its tougher cases, is strongly associated with MOI behavior in individuals diagnosed with BD. This emphasizes the unique and strong relationship between episodic depression and MOI in individuals diagnosed with BD, a connection that is less pronounced in individuals without a BD diagnosis.

4.3 MOI Prediction Model and Contributing Factors Analysis

The higher F1 and average precision scores achieved by this simpler model (Logistic Regression) and utilizing fewer features, indicate that predicting whether an individual engages in self-harm by MOI is a less complex and more certain task compared to predicting whether they have a BD diagnosis.

Important insights emerged from the feature importance analysis of the MOI prediction model. Bipolar disorder diagnosis ranked among the top 15 contributing factors, underscoring its significance in predicting MOI and suggesting a potential connection between the two. Furthermore, it ranked above both depressive episode and anxiety diagnoses, which supports the previous data regarding the prevalence of MOI across different psychiatric diagnoses, showing that BD has a higher MOI prevalence than other common psychiatric diagnoses such as depression and anxiety.

4.4 MOI as an Indicator of Non-Suicidal Self-Harm in the General Population

Interestingly, the feature "Ever attempted suicide" ranked 28th out of 153 contributing factors in the MOI prediction model, indicating that **MOI may primarily represent non-suicidal self-harm rather than suicide attempts for most individuals**, as a stronger association with suicide attempts would have likely placed this feature higher in the rankings. This is particularly notable, as much of the existing literature on self-harm in bipolar disorder has focused on suicidal behavior, while studies on non-suicidal self-harm have often concentrated on self-injury, such as cutting and burning, rather than self-poisoning behaviors, which encompass MOI.

This further emphasizes the under-researched nature of MOI, particularly in the context of bipolar disorder. This research, therefore, sheds new light on an under-researched behavior, MOI, offering fresh perspectives on this method of self-harm in BD that have been largely overlooked in the literature.

4.5 Implications for Medical Applications

The discovery that about 5% of the BD-diagnosed population engages in this extreme form of self-harm is crucial for improving the health outcomes of these individuals. Psychiatrists will now be more aware of this behavior, particularly in BD patients, allowing them to intervene early and prevent harm to individuals from engaging in MOI.

The results of the MOI prediction model suggest that this approach could be valuable in identifying individuals at risk of engaging in MOI, thereby enabling early intervention and treatment. To the best of my knowledge, this is the first predictive model specifically designed to identify this type of self-harm behavior in the general population.

The top-ranking features in the MOI prediction model, such as history of self-harm, recent feelings of depression, tenseness or restlessness, a tendency to take risks, past thoughts of life not being worth living, and feelings of guilt—offer practical

insights that can guide psychiatrists in formulating targeted questions to assess the likelihood of MOI engagement in their patients.

It is important to acknowledge, however, that many of these features are self-reported by patients and may be subject to variability in interpretation. For instance, one patient might consider engaging in extreme sports as a "tendency to take risks," while another might define it as merely acting impulsively in day-to-day decisions. Similarly, "tenseness" could range from occasional mild unease to persistent and severe physical or emotional discomfort. In the case of "feelings of guilt," one patient might interpret it as feeling guilty over trivial matters, while another might interpret it as guilt in response to significant events. These subjective and potentially inconsistent definitions introduce variability that must be carefully considered when applying the model's results in clinical practice.

4.6 Implications of MOI for Clinical and Computational Research

The innovative focus on the MOI phenomenon in individuals with BD opens new opportunities for deeper research into the symptoms and causes of this behavior, particularly through clinical studies rather than purely statistical analyzes.

MOI is often referred to as self-poisoning in the literature, a term that typically implies suicidal intent. This discovery, based on the MOI prediction model, suggesting that most individuals who engage in MOI do so without suicidal intent sheds new light on this behavior.

Additionally, many studies associate self-poisoning primarily with suicidal behavior, while research on non-suicidal self-harm often focuses only on injuries such as cutting and burning, excluding this not-uncommon form of non-suicidal self-harm, missing important insights.

4.6 Future Research Directions

First, my approach to handling extreme class imbalance in the model's results emphasizes the importance of comparing F1 and average precision scores to the baseline, rather than to a "default" random model score of 0.5, which assumes perfectly balanced classes. This encourages researchers to evaluate their results appropriately when dealing with extreme class imbalance and not to be discouraged by seemingly low results, as these are relative.

I suggest further research into the prevalence of suicide attempts within the population engaging in MOI. This would provide a better understanding of the phenomenon and the associated risks.

Further research on the connection between MOI and BD diagnosis is recommended through clinical studies that prioritize in-depth qualitative analysis, carried out by researchers with medical expertise. This could uncover new insights into the relationship between MOI and BD.

I see great potential in using the UK Biobank data to uncover more innovative correlations with BD diagnosis and recommend that future research begin with broad datasets similar to the one used in this research to identify other hidden discoveries. Furthermore, collaboration between computer science researchers, who can identify innovative features, and medical researchers, who can conduct clinical studies and explore these findings in greater depth, is encouraged.

However, certain factors may limit the applicability of this research in future studies. These include the potential absence of relevant features or patient-reported data in some clinical settings. Additionally, smaller patient samples may yield different results compared to the extensive dataset utilized in this study, as smaller cohorts may represent a specific subgroup rather than the general population examined here. Moreover, this research relied exclusively on data from patients residing in the UK. The findings may differ in populations from other regions due to variations in

cultural norms, genetic predispositions, and mental health treatment practices, including differences in medication usage.

Conducting similar quantitative research with large datasets from diverse global populations could provide deeper insights into self-harm by MOI and help validate the findings across different contexts. Such studies would enhance the generalizability of the results and offer a stronger foundation for clinical studies worldwide.

4.7 Conclusions

The exploratory approach, starting with broad data and allowing the analysis to reveal patterns, has led me to the discovery of important connections between BD and MOI, demonstrating the potential of data-driven methods in medical research. This is one way computer science researchers can contribute to the medical community by leveraging their expertise in large dataset analysis.

Few studies employ a hypothesis-free, exploratory data analysis approach. In a time when many medical connections have already been deeply researched, this method provides a powerful new way to uncover unexpected findings. This research opens the door for future studies to adopt similar approaches to discover previously overlooked correlations in complex health conditions.

One important outcome of this study is the development of a MOI prediction model that can assist medical experts in quickly identifying individuals at risk of using MOI. This early detection enables timely intervention, potentially reducing the risks associated with MOI. The findings suggest that MOI could be integrated into mental health screening protocols as an important risk indicator, particularly for individuals with bipolar disorder.

Additionally, this research can help improve diagnostic accuracy by helping differentiate between depression and BD, particularly through investigating MOI in patients who have not yet been diagnosed with BD. This could reduce the common misdiagnosis of depression in BD patients.

My approach to handling extreme class imbalance in the model's results further underscores the importance of using appropriate evaluation metrics, such as F1 score and average precision, when working with imbalanced datasets. This insight will be valuable for future research in fields where class imbalances are common, such as psychiatry.

The results also highlight the significance of exploring less obvious features, such as sleep disturbances, feelings of guilt, and restlessness, as top contributors to MOI prediction. This underscores the potential of machine learning to uncover underexplored but critical factors in psychiatric health.

However, it is important to note a significant limitation of this study: in the real world, the available information on each patient may not be as comprehensive as the data provided by the UK Biobank. This raises uncertainty about how well my models will perform when large portions of the features are missing, especially in the BD diagnosis prediction model, which used over 2,000 features. Future research should investigate how these models generalize with fewer available features to ensure practical applicability in clinical settings.

While the findings provide significant insights, this study is limited by my primary expertise in computer science rather than medical research. This makes it challenging to fully contextualize the results within the broader medical framework. Future research by clinical experts could build upon these findings, further exploring MOI in clinical settings and providing a deeper understanding of its medical implications.

Finally, this research has opened a new path for studying MOI as a non-suicidal self-harm method, especially in connection with BD. By addressing this

under-researched behavior, I have contributed to both psychiatric research and the development of more nuanced approaches to understanding self-harm behaviors.

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6. Appendices

- **Appendix A** - A table of all UK Biobank fields that exist in the data used in the research
- **Appendix B** - A table of all UK Biobank fields that were missing in the data used in the research
- **Appendix C** - Fields Coding Preprocessing Mapping Table
- **Appendix D** - Feature importance and weights list of BD diagnosis model
- **Appendix E** - Numeric features Distributions across the four groups
- **Appendix F** - Fields that directly indicate the presence of BD, except for the BD official diagnosis.

Appendices

Appendix A - A table of all UK Biobank fields that exist in the data used in the research

category id	field description	category path	participants count	value type	mean	std
41270	Diagnoses - ICD10	Health-related outcomes > Hospital inpatient > Summary Diagnoses	446829	Categorical (multiple)		
41202	Diagnoses - main ICD10	Health-related outcomes > Hospital inpatient > Summary Diagnoses	446824	Categorical (multiple)		
6164	Types of physical activity in last 4 weeks	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	497124	Categorical (multiple)		
6162	Types of transport used (excluding work)	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	496873	Categorical (multiple)		
6158	Why reduced smoking	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	17348	Categorical (multiple)		
6157	Why stopped smoking	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	124248	Categorical (multiple)		
6144	Never eat eggs, dairy, wheat, sugar	Assessment centre > Touchscreen > Lifestyle and environment > Diet	498719	Categorical (multiple)		
10855	Never eat eggs, dairy, wheat, sugar (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Diet	3767	Categorical (multiple)		
20112	Illnesses of adopted father	Assessment centre > Touchscreen > Family history	5318	Categorical (multiple)		
20113	Illnesses of adopted mother	Assessment centre > Touchscreen > Family history	5760	Categorical (multiple)		
20114	Illnesses of adopted siblings	Assessment centre > Touchscreen > Family history	3916	Categorical (multiple)		
20107	Illnesses of father	Assessment centre > Touchscreen > Family history	488018	Categorical (multiple)		
20110	Illnesses of mother	Assessment centre > Touchscreen > Family history	492745	Categorical (multiple)		
20111	Illnesses of siblings	Assessment centre > Touchscreen > Family history	434050	Categorical (multiple)		
6160	Leisure/social activities	Assessment centre > Touchscreen > Psychosocial factors > Social support	501314	Categorical (multiple)		
6156	Manic/hyper symptoms	Assessment centre > Touchscreen > Psychosocial factors > Mental health	46952	Categorical (multiple)		
6145	Illness, injury, bereavement, stress in last 2 years	Assessment centre > Touchscreen > Psychosocial factors > Mental health	498703	Categorical (multiple)		
10721	Illness, injury, bereavement, stress in last 2 years (pilot)	Assessment centre > Touchscreen > Psychosocial factors > Mental health	3767	Categorical (multiple)		
20544	Mental health problems ever diagnosed by a professional	Online follow-up > Mental health > Mental distress	50047	Categorical (multiple)		
20547	Activities undertaken to treat depression	Online follow-up > Mental health > Depression	40296	Categorical (multiple)		
20546	Substances taken for depression	Online follow-up > Mental health > Depression	45673	Categorical (multiple)		
20548	Manifestations of mania or irritability	Online follow-up > Mental health > Mania	29017	Categorical (multiple)		
20550	Activities undertaken to treat anxiety	Online follow-up > Mental health > Anxiety	24181	Categorical (multiple)		
20549	Substances taken for anxiety	Online follow-up > Mental health > Anxiety	26477	Categorical (multiple)		
20551	Substance of prescription or over-the-counter medication addiction	Online follow-up > Mental health > Addictions	1316	Categorical (multiple)		

20553	Methods of self-harm used	Online follow-up > Mental health > Self-harm behaviours	6855	Categorical (multiple)		
20554	Actions taken following self-harm	Online follow-up > Mental health > Self-harm behaviours	4326	Categorical (multiple)		
1100	Drive faster than motorway speed limit	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	501106	Categorical (single)		
2634	Duration of heavy DIY	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	221347	Categorical (single)		
1021	Duration of light DIY	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	268147	Categorical (single)		
10962	Duration of moderate physical activity (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	3042	Categorical (single)		
3647	Duration of other exercises	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	250605	Categorical (single)		
1001	Duration of strenuous sports	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	55420	Categorical (single)		
10971	Duration of vigorous physical activity (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	1978	Categorical (single)		
10953	Duration of walks (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	3631	Categorical (single)		
981	Duration walking for pleasure	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	365682	Categorical (single)		
2624	Frequency of heavy DIY in last 4 weeks	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	221347	Categorical (single)		
1011	Frequency of light DIY in last 4 weeks	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	268147	Categorical (single)		
3637	Frequency of other exercises in last 4 weeks	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	250605	Categorical (single)		
943	Frequency of stair climbing in last 4 weeks	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	496874	Categorical (single)		
991	Frequency of strenuous sports in last 4 weeks	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	55420	Categorical (single)		
971	Frequency of walking for pleasure in last 4 weeks	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	365682	Categorical (single)		
924	Usual walking pace	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	499439	Categorical (single)		
1110	Length of mobile phone use	Assessment centre > Touchscreen > Lifestyle and environment > Electronic device use	501312	Categorical (single)		
1120	Weekly usage of mobile phone in last 3 months	Assessment centre > Touchscreen > Lifestyle and environment > Electronic device use	432179	Categorical (single)		
10749	Time using mobile phone in last 3 months (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Electronic device use	2947	Categorical (single)		

10016	Regular use of hands-free device/speakerphone with mobile phone (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Electronic device use	2947	Categorical (single)		
1130	Hands-free device/speakerphone use with mobile phone in last 3 month	Assessment centre > Touchscreen > Lifestyle and environment > Electronic device use	432179	Categorical (single)		
1140	Difference in mobile phone use compared to two years previously	Assessment centre > Touchscreen > Lifestyle and environment > Electronic device use	432179	Categorical (single)		
10886	Difference in mobile phone use compared to one year previously (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Electronic device use	2947	Categorical (single)		
1150	Usual side of head for mobile phone use	Assessment centre > Touchscreen > Lifestyle and environment > Electronic device use	432178	Categorical (single)		
2237	Plays computer games	Assessment centre > Touchscreen > Lifestyle and environment > Electronic device use	501278	Categorical (single)		
10105	Internet user (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Electronic device use	3767	Categorical (single)		
10114	Willing to be contacted by email (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Electronic device use	3767	Categorical (single)		
1170	Getting up in morning	Assessment centre > Touchscreen > Lifestyle and environment > Sleep	498729	Categorical (single)		
1180	Morning/evening person (chronotype)	Assessment centre > Touchscreen > Lifestyle and environment > Sleep	498727	Categorical (single)		
1190	Nap during day	Assessment centre > Touchscreen > Lifestyle and environment > Sleep	501306	Categorical (single)		
1200	Sleeplessness / insomnia	Assessment centre > Touchscreen > Lifestyle and environment > Sleep	501306	Categorical (single)		
1210	Snoring	Assessment centre > Touchscreen > Lifestyle and environment > Sleep	501306	Categorical (single)		
1220	Daytime dozing / sleeping	Assessment centre > Touchscreen > Lifestyle and environment > Sleep	501306	Categorical (single)		
20160	Ever smoked	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	499477	Categorical (single)		
10895	Light smokers, at least 100 smokes in lifetime (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	934	Categorical (single)		
20116	Smoking status	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	501306	Categorical (single)		
1239	Current tobacco smoking	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	501306	Categorical (single)		
1249	Past tobacco smoking	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	464393	Categorical (single)		
2644	Light smokers, at least 100 smokes in lifetime	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	144246	Categorical (single)		
3446	Type of tobacco currently smoked	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	39622	Categorical (single)		

5959	Previously smoked cigarettes on most/all days	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	2689	Categorical (single)		
3466	Time from waking to first cigarette	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	36482	Categorical (single)		
3476	Difficulty not smoking for 1 day	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	36482	Categorical (single)		
3486	Ever tried to stop smoking	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	39622	Categorical (single)		
3496	Wants to stop smoking	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	39250	Categorical (single)		
3506	Smoking compared to 10 years previous	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	39622	Categorical (single)		
2877	Type of tobacco previously smoked	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	124956	Categorical (single)		
2907	Ever stopped smoking for 6+ months	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	124248	Categorical (single)		
10827	Ever stopped smoking for 6+ months (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	930	Categorical (single)		
10115	Why stopped smoking (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	930	Categorical (single)		
2936	Likelihood of resuming smoking	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	124248	Categorical (single)		
1259	Smoking/smokers in household	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	462141	Categorical (single)		
1329	Oily fish intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501303	Categorical (single)		
1339	Non-oily fish intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501303	Categorical (single)		
1349	Processed meat intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501302	Categorical (single)		
1359	Poultry intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501302	Categorical (single)		
1369	Beef intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501302	Categorical (single)		
1379	Lamb/mutton intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501302	Categorical (single)		
1389	Pork intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501300	Categorical (single)		
1408	Cheese intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	490372	Categorical (single)		
1418	Milk type used	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501239	Categorical (single)		

1428	Spread type	Assessment centre > Touchscreen > Lifestyle and environment > Diet	498719	Categorical (single)		
2654	Non-butter spread type details	Assessment centre > Touchscreen > Lifestyle and environment > Diet	266712	Categorical (single)		
10767	Spread type (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Diet	3767	Categorical (single)		
1448	Bread type	Assessment centre > Touchscreen > Lifestyle and environment > Diet	484532	Categorical (single)		
10776	Bread type/intake (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Diet	3650	Categorical (single)		
1468	Cereal type	Assessment centre > Touchscreen > Lifestyle and environment > Diet	421423	Categorical (single)		
1478	Salt added to food	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501300	Categorical (single)		
1508	Coffee type	Assessment centre > Touchscreen > Lifestyle and environment > Diet	394382	Categorical (single)		
1518	Hot drink temperature	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501300	Categorical (single)		
1538	Major dietary changes in the last 5 years	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501300	Categorical (single)		
1548	Variation in diet	Assessment centre > Touchscreen > Lifestyle and environment > Diet	498719	Categorical (single)		
10912	Variation in diet (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Diet	3767	Categorical (single)		
20117	Alcohol drinker status	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	501300	Categorical (single)		
1558	Alcohol intake frequency.	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	501300	Categorical (single)		
3731	Former alcohol drinker	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	43882	Categorical (single)		
1618	Alcohol usually taken with meals	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	398747	Categorical (single)		
1628	Alcohol intake versus 10 years previously	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	460940	Categorical (single)		
2664	Reason for reducing amount of alcohol drunk	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	227361	Categorical (single)		
10818	Reason for reducing amount of alcohol drunk (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	1511	Categorical (single)		
3859	Reason former drinker stopped drinking alcohol	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	20394	Categorical (single)		
10853	Reason former drinker stopped drinking alcohol (pilot)	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	138	Categorical (single)		

1717	Skin colour	Assessment centre > Touchscreen > Lifestyle and environment > Sun exposure	501273	Categorical (single)		
1727	Ease of skin tanning	Assessment centre > Touchscreen > Lifestyle and environment > Sun exposure	498076	Categorical (single)		
1747	Hair colour (natural, before greying)	Assessment centre > Touchscreen > Lifestyle and environment > Sun exposure	501273	Categorical (single)		
1757	Facial ageing	Assessment centre > Touchscreen > Lifestyle and environment > Sun exposure	498716	Categorical (single)		
2267	Use of sun/uv protection	Assessment centre > Touchscreen > Lifestyle and environment > Sun exposure	498697	Categorical (single)		
2129	Answered sexual history questions	Assessment centre > Touchscreen > Lifestyle and environment > Sexual factors	501280	Categorical (single)		
2159	Ever had same-sex intercourse	Assessment centre > Touchscreen > Lifestyle and environment > Sexual factors	452680	Categorical (single)		
1647	Country of birth (UK/elsewhere)	Assessment centre > Touchscreen > Early life factors	501274	Categorical (single)		
1677	Breastfed as a baby	Assessment centre > Touchscreen > Early life factors	501274	Categorical (single)		
1687	Comparative body size at age 10	Assessment centre > Touchscreen > Early life factors	501274	Categorical (single)		
1697	Comparative height size at age 10	Assessment centre > Touchscreen > Early life factors	501274	Categorical (single)		
1707	Handedness (chirality/laterality)	Assessment centre > Touchscreen > Early life factors	501274	Categorical (single)		
1767	Adopted as a child	Assessment centre > Touchscreen > Early life factors	501297	Categorical (single)		
1777	Part of a multiple birth	Assessment centre > Touchscreen > Early life factors	493936	Categorical (single)		
1787	Maternal smoking around birth	Assessment centre > Touchscreen > Early life factors	493936	Categorical (single)		
1797	Father still alive	Assessment centre > Touchscreen > Family history	494002	Categorical (single)		
3912	Adopted father still alive	Assessment centre > Touchscreen > Family history	7477	Categorical (single)		
1835	Mother still alive	Assessment centre > Touchscreen > Family history	494002	Categorical (single)		
3942	Adopted mother still alive	Assessment centre > Touchscreen > Family history	7477	Categorical (single)		
4501	Non-accidental death in close genetic family	Assessment centre > Touchscreen > Family history	233633	Categorical (single)		
1031	Frequency of friend/family visits	Assessment centre > Touchscreen > Psychosocial factors > Social support	498733	Categorical (single)		
10740	Frequency of friend/family visits (pilot)	Assessment centre > Touchscreen > Psychosocial factors > Social support	3767	Categorical (single)		
2110	Able to confide	Assessment centre > Touchscreen > Psychosocial factors > Social support	501285	Categorical (single)		

20126	Bipolar and major depression status	Assessment centre > Touchscreen > Psychosocial factors > Mental health	122894	Categorical (single)		
20122	Bipolar disorder status	Assessment centre > Touchscreen > Psychosocial factors > Mental health	1613	Categorical (single)		
20124	Probable recurrent major depression (moderate)	Assessment centre > Touchscreen > Psychosocial factors > Mental health	15229	Categorical (single)		
20125	Probable recurrent major depression (severe)	Assessment centre > Touchscreen > Psychosocial factors > Mental health	9389	Categorical (single)		
20123	Single episode of probable major depression	Assessment centre > Touchscreen > Psychosocial factors > Mental health	9748	Categorical (single)		
1920	Mood swings	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501293	Categorical (single)		
1930	Miserableness	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501293	Categorical (single)		
1940	Irritability	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501293	Categorical (single)		
1950	Sensitivity / hurt feelings	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501292	Categorical (single)		
1960	Fed-up feelings	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501292	Categorical (single)		
1970	Nervous feelings	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501292	Categorical (single)		
1980	Worrier / anxious feelings	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501291	Categorical (single)		
1990	Tense / 'highly strung'	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501291	Categorical (single)		
2000	Worry too long after embarrassment	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501291	Categorical (single)		
2010	Suffer from 'nerves'	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501291	Categorical (single)		
2020	Loneliness, isolation	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501290	Categorical (single)		
2030	Guilty feelings	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501290	Categorical (single)		
2040	Risk taking	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501290	Categorical (single)		
4526	Happiness	Assessment centre > Touchscreen > Psychosocial factors > Mental health	236758	Categorical (single)		
4537	Work/job satisfaction	Assessment centre > Touchscreen > Psychosocial factors > Mental health	236758	Categorical (single)		
4548	Health satisfaction	Assessment centre > Touchscreen > Psychosocial factors > Mental health	236758	Categorical (single)		

4559	Family relationship satisfaction	Assessment centre > Touchscreen > Psychosocial factors > Mental health	236758	Categorical (single)		
4570	Friendships satisfaction	Assessment centre > Touchscreen > Psychosocial factors > Mental health	236758	Categorical (single)		
4581	Financial situation satisfaction	Assessment centre > Touchscreen > Psychosocial factors > Mental health	236758	Categorical (single)		
2050	Frequency of depressed mood in last 2 weeks	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501290	Categorical (single)		
2060	Frequency of unenthusiasm / disinterest in last 2 weeks	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501289	Categorical (single)		
2070	Frequency of tenseness / restlessness in last 2 weeks	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501288	Categorical (single)		
2080	Frequency of tiredness / lethargy in last 2 weeks	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501287	Categorical (single)		
2090	Seen doctor (GP) for nerves, anxiety, tension or depression	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501286	Categorical (single)		
2100	Seen a psychiatrist for nerves, anxiety, tension or depression	Assessment centre > Touchscreen > Psychosocial factors > Mental health	501286	Categorical (single)		
4598	Ever depressed for a whole week	Assessment centre > Touchscreen > Psychosocial factors > Mental health	236758	Categorical (single)		
4631	Ever unenthusiastic/disinterested for a whole week	Assessment centre > Touchscreen > Psychosocial factors > Mental health	236758	Categorical (single)		
4642	Ever manic/hyper for 2 days	Assessment centre > Touchscreen > Psychosocial factors > Mental health	236758	Categorical (single)		
4653	Ever highly irritable/argumentative for 2 days	Assessment centre > Touchscreen > Psychosocial factors > Mental health	236758	Categorical (single)		
5663	Length of longest manic/irritable episode	Assessment centre > Touchscreen > Psychosocial factors > Mental health	46952	Categorical (single)		
5674	Severity of manic/irritable episodes	Assessment centre > Touchscreen > Psychosocial factors > Mental health	46952	Categorical (single)		
4081	Method of measuring blood pressure	Assessment centre > Physical measures > Blood pressure	501329	Categorical (single)		
23050	HSV-1 seropositivity for Herpes Simplex virus-1	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23051	HSV-2 seropositivity for Herpes Simplex virus-2	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23052	VZV seropositivity for Varicella Zoster Virus	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23053	EBV seropositivity for Epstein-Barr Virus	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23054	CMV seropositivity for Human Cytomegalovirus	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		

23055	HHV-6 overall seropositivity for Human Herpesvirus-6	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23056	HHV-6A seropositivity for Human Herpesvirus-6	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23057	HHV-6B seropositivity for Human Herpesvirus-6	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23058	HHV-7 seropositivity for Human Herpesvirus-7	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23059	KSHV seropositivity for Kaposi's Sarcoma-Associated Herpesvirus	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23060	HBV seropositivity for Hepatitis B Virus	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23061	HCV seropositivity for Hepatitis C Virus	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23062	T. gondii seropositivity for Toxoplasma gondii	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23063	HTLV-1 seropositivity for Human T-Lymphotropic Virus 1	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23064	HIV-1 seropositivity for Human Immunodeficiency Virus	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23065	BKV seropositivity for Human Polyomavirus BKV	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23066	JCV seropositivity for Human Polyomavirus JCV	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23067	MCV seropositivity for Merkel Cell Polyomavirus	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23068	HPV 16 Definition I seropositivity for Human Papillomavirus type-16	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23075	HPV 16 Definition II seropositivity for Human Papillomavirus type-16	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23069	HPV 18 seropositivity for Human Papillomavirus type-18	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23070	C. trachomatis Definition I seropositivity for Chlamydia trachomatis	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
23071	C. trachomatis Definition II seropositivity for Chlamydia trachomatis	Biological samples > Blood assays > Infectious Diseases	7617	Categorical (single)		
23073	H. pylori Definition I seropositivity for Helicobacter pylori	Biological samples > Blood assays > Infectious Diseases	4897	Categorical (single)		
23074	H. pylori Definition II seropositivity for Helicobacter pylori	Biological samples > Blood assays > Infectious Diseases	9687	Categorical (single)		
20242	Fluid intelligence completion status	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	123539	Categorical (single)		

20165	FI1	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	211729	Categorical (single)		
20167	FI2	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	211671	Categorical (single)		
20169	FI3	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	211358	Categorical (single)		
20171	FI4	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	205495	Categorical (single)		
20173	FI5	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	177010	Categorical (single)		
20175	FI6	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	144717	Categorical (single)		
20177	FI7	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	119234	Categorical (single)		
20179	FI8	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	87326	Categorical (single)		
20181	FI9	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	37713	Categorical (single)		
20183	FI10	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	23631	Categorical (single)		
20185	FI11	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	11377	Categorical (single)		
20187	FI12	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	6793	Categorical (single)		
20189	FI13	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	1600	Categorical (single)		
20193	FI14	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	589	Categorical (single)		
20246	Trail making completion status	Online follow-up > Cognitive function online > Trail making	209817	Categorical (single)		
20196	First code array presented	Online follow-up > Cognitive function online > Symbol digit substitution	208256	Categorical (single)		
20198	Test array presented	Online follow-up > Cognitive function online > Symbol digit substitution	118395	Categorical (single)		
20245	Symbol digit completion status	Online follow-up > Cognitive function online > Symbol digit substitution	208256	Categorical (single)		
20244	Pairs matching completion status	Online follow-up > Cognitive function online > Pairs matching	118456	Categorical (single)		
20499	Ever sought or received professional help for mental distress	Online follow-up > Mental health > Mental distress	157239	Categorical (single)		
20500	Ever suffered mental distress preventing usual activities	Online follow-up > Mental health > Mental distress	157239	Categorical (single)		

20446	Ever had prolonged feelings of sadness or depression	Online follow-up > Mental health > Depression	157239	Categorical (single)		
20441	Ever had prolonged loss of interest in normal activities	Online follow-up > Mental health > Depression	157239	Categorical (single)		
20445	Depression possibly related to childbirth	Online follow-up > Mental health > Depression	88963	Categorical (single)		
20447	Depression possibly related to stressful or traumatic event	Online follow-up > Mental health > Depression	88963	Categorical (single)		
20532	Did your sleep change?	Online follow-up > Mental health > Depression	88963	Categorical (single)		
20435	Difficulty concentrating during worst depression	Online follow-up > Mental health > Depression	88963	Categorical (single)		
20438	Duration of worst depression	Online follow-up > Mental health > Depression	88963	Categorical (single)		
20449	Feelings of tiredness during worst episode of depression	Online follow-up > Mental health > Depression	88963	Categorical (single)		
20450	Feelings of worthlessness during worst period of depression	Online follow-up > Mental health > Depression	88963	Categorical (single)		
20436	Fraction of day affected during worst episode of depression	Online follow-up > Mental health > Depression	88963	Categorical (single)		
20439	Frequency of depressed days during worst episode of depression	Online follow-up > Mental health > Depression	88963	Categorical (single)		
20440	Impact on normal roles during worst period of depression	Online follow-up > Mental health > Depression	88963	Categorical (single)		
20448	Professional informed about depression	Online follow-up > Mental health > Depression	88963	Categorical (single)		
20518	Recent changes in speed/amount of moving or speaking	Online follow-up > Mental health > Depression	157239	Categorical (single)		
20510	Recent feelings of depression	Online follow-up > Mental health > Depression	157239	Categorical (single)		
20507	Recent feelings of inadequacy	Online follow-up > Mental health > Depression	157239	Categorical (single)		
20519	Recent feelings of tiredness or low energy	Online follow-up > Mental health > Depression	157239	Categorical (single)		
20514	Recent lack of interest or pleasure in doing things	Online follow-up > Mental health > Depression	157239	Categorical (single)		
20511	Recent poor appetite or overeating	Online follow-up > Mental health > Depression	157239	Categorical (single)		
20513	Recent thoughts of suicide or self-harm	Online follow-up > Mental health > Depression	157239	Categorical (single)		
20508	Recent trouble concentrating on things	Online follow-up > Mental health > Depression	157239	Categorical (single)		
20534	Sleeping too much	Online follow-up > Mental health > Depression	60855	Categorical (single)		
20437	Thoughts of death during worst depression	Online follow-up > Mental health > Depression	88963	Categorical (single)		
20533	Trouble falling asleep	Online follow-up > Mental health > Depression	60855	Categorical (single)		
20517	Trouble falling or staying asleep, or sleeping too much	Online follow-up > Mental health > Depression	157239	Categorical (single)		
20535	Waking too early	Online follow-up > Mental health > Depression	60855	Categorical (single)		
20536	Weight change during worst episode of depression	Online follow-up > Mental health > Depression	88963	Categorical (single)		
20502	Ever had period extreme irritability	Online follow-up > Mental health > Mania	157239	Categorical (single)		
20501	Ever had period of mania / excitability	Online follow-up > Mental health > Mania	157239	Categorical (single)		

20492	Longest period of mania or irritability	Online follow-up > Mental health > Mania	42456	Categorical (single)		
20493	Severity of problems due to mania or irritability	Online follow-up > Mental health > Mania	42456	Categorical (single)		
20419	Difficulty concentrating during worst period of anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		
20541	Difficulty stopping worrying during worst period of anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		
20429	Easily tired during worst period of anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		
20421	Ever felt worried, tense, or anxious for most of a month or longer	Online follow-up > Mental health > Anxiety	157239	Categorical (single)		
20425	Ever worried more than most people would in similar situation	Online follow-up > Mental health > Anxiety	157239	Categorical (single)		
20537	Frequency of difficulty controlling worry during worst period of anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		
20539	Frequency of inability to stop worrying during worst period of anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		
20427	Frequent trouble falling or staying asleep during worst period of anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		
20418	Impact on normal roles during worst period of anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		
20423	Keyed up or on edge during worst period of anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		
20422	More irritable than usual during worst period of anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		
20540	Multiple worries during worst period of anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		
20543	Number of things worried about during worst period of anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		
20428	Professional informed about anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		
20505	Recent easy annoyance or irritability	Online follow-up > Mental health > Anxiety	157239	Categorical (single)		
20512	Recent feelings of foreboding	Online follow-up > Mental health > Anxiety	157239	Categorical (single)		
20506	Recent feelings or nervousness or anxiety	Online follow-up > Mental health > Anxiety	157239	Categorical (single)		
20509	Recent inability to stop or control worrying	Online follow-up > Mental health > Anxiety	157239	Categorical (single)		
20516	Recent restlessness	Online follow-up > Mental health > Anxiety	157239	Categorical (single)		
20515	Recent trouble relaxing	Online follow-up > Mental health > Anxiety	157239	Categorical (single)		
20520	Recent worrying too much about different things	Online follow-up > Mental health > Anxiety	157239	Categorical (single)		
20426	Restless during period of worst anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		
20542	Stronger worrying (than other people) during period of worst anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		
20417	Tense, sore, or aching muscles during worst period of anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		
20538	Worried most days during period of worst anxiety	Online follow-up > Mental health > Anxiety	48730	Categorical (single)		

20431	Ever addicted to a behaviour or miscellanous	Online follow-up > Mental health > Addictions	9368	Categorical (single)		
20406	Ever addicted to alcohol	Online follow-up > Mental health > Addictions	9368	Categorical (single)		
20401	Ever addicted to any substance or behaviour	Online follow-up > Mental health > Addictions	157239	Categorical (single)		
20456	Ever addicted to illicit or recreational drugs	Online follow-up > Mental health > Addictions	9368	Categorical (single)		
20457	Ongoing addiction or dependence on illicit or recreational drugs	Online follow-up > Mental health > Addictions	773	Categorical (single)		
20404	Ever physically dependent on alcohol	Online follow-up > Mental health > Addictions	3586	Categorical (single)		
20415	Ongoing addiction to alcohol	Online follow-up > Mental health > Addictions	3586	Categorical (single)		
20432	Ongoing behavioural or miscellanous addiction	Online follow-up > Mental health > Addictions	2237	Categorical (single)		
20414	Frequency of drinking alcohol	Online follow-up > Mental health > Alcohol use	157239	Categorical (single)		
20403	Amount of alcohol drunk on a typical drinking day	Online follow-up > Mental health > Alcohol use	143567	Categorical (single)		
20416	Frequency of consuming six or more units of alcohol	Online follow-up > Mental health > Alcohol use	143567	Categorical (single)		
20407	Frequency of failure to fulfil normal expectations due to drinking alcohol in last year	Online follow-up > Mental health > Alcohol use	85135	Categorical (single)		
20412	Frequency of needing morning drink of alcohol after heavy drinking session in last year	Online follow-up > Mental health > Alcohol use	85135	Categorical (single)		
20409	Frequency of feeling guilt or remorse after drinking alcohol in last year	Online follow-up > Mental health > Alcohol use	85135	Categorical (single)		
20408	Frequency of memory loss due to drinking alcohol in last year	Online follow-up > Mental health > Alcohol use	85135	Categorical (single)		
20411	Ever been injured or injured someone else through drinking alcohol	Online follow-up > Mental health > Alcohol use	157239	Categorical (single)		
20405	Ever had known person concerned about, or recommend reduction of, alcohol consumption	Online follow-up > Mental health > Alcohol use	157239	Categorical (single)		
20453	Ever taken cannabis	Online follow-up > Mental health > Cannabis use	157239	Categorical (single)		
20454	Maximum frequency of taking cannabis	Online follow-up > Mental health > Cannabis use	34831	Categorical (single)		
20468	Ever believed in an un-real conspiracy against self	Online follow-up > Mental health > Unusual and psychotic experiences	157239	Categorical (single)		
20474	Ever believed in un-real communications or signs	Online follow-up > Mental health > Unusual and psychotic experiences	157239	Categorical (single)		
20463	Ever heard an un-real voice	Online follow-up > Mental health > Unusual and psychotic experiences	157239	Categorical (single)		
20466	Ever prescribed a medication for unusual or psychotic experiences	Online follow-up > Mental health > Unusual and psychotic experiences	7793	Categorical (single)		
20471	Ever seen an un-real vision	Online follow-up > Mental health > Unusual and psychotic experiences	157239	Categorical (single)		
20477	Ever talked to a health professional about unusual or psychotic experiences	Online follow-up > Mental health > Unusual and psychotic experiences	7793	Categorical (single)		

20467	Frequency of unusual or psychotic experiences in past year	Online follow-up > Mental health > Unusual and psychotic experiences	7793	Categorical (single)		
20489	Felt loved as a child	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20488	Physically abused by family as a child	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20487	Felt hated by family member as a child	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20490	Sexually molested as a child	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20491	Someone to take to doctor when needed as a child	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20522	Been in a confiding relationship as an adult	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20523	Physical violence by partner or ex-partner as an adult	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20521	Belittlement by partner or ex-partner as an adult	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20524	Sexual interference by partner or ex-partner without consent as an adult	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20525	Able to pay rent/mortgage as an adult	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20531	Victim of sexual assault	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20529	Victim of physically violent crime	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20526	Been in serious accident believed to be life-threatening	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20530	Witnessed sudden violent death	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20528	Diagnosed with life-threatening illness	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20527	Been involved in combat or exposed to war-zone	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20497	Repeated disturbing thoughts of stressful experience in past month	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20498	Felt very upset when reminded of stressful experience in past month	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20495	Avoided activities or situations because of previous stressful experience in past month	Online follow-up > Mental health > Traumatic events	157239	Categorical (single)		
20496	Felt distant from other people in past month	Online follow-up > Mental health > Traumatic events	71130	Categorical (single)		

20494	Felt irritable or had angry outbursts in past month	Online follow-up > Mental health > Traumatic events	71130	Categorical (single)		
20479	Ever thought that life not worth living	Online follow-up > Mental health > Self-harm behaviours	157239	Categorical (single)		
20485	Ever contemplated self-harm	Online follow-up > Mental health > Self-harm behaviours	157239	Categorical (single)		
20486	Contemplated self-harm in past year	Online follow-up > Mental health > Self-harm behaviours	23154	Categorical (single)		
20480	Ever self-harmed	Online follow-up > Mental health > Self-harm behaviours	157239	Categorical (single)		
20482	Number of times self-harmed	Online follow-up > Mental health > Self-harm behaviours	6855	Categorical (single)		
20481	Self-harmed in past year	Online follow-up > Mental health > Self-harm behaviours	6855	Categorical (single)		
20483	Ever attempted suicide	Online follow-up > Mental health > Self-harm behaviours	6855	Categorical (single)		
20484	Attempted suicide in past year	Online follow-up > Mental health > Self-harm behaviours	3553	Categorical (single)		
20458	General happiness	Online follow-up > Mental health > Happiness and subjective well-being	157239	Categorical (single)		
20459	General happiness with own health	Online follow-up > Mental health > Happiness and subjective well-being	157239	Categorical (single)		
20460	Belief that own life is meaningful	Online follow-up > Mental health > Happiness and subjective well-being	157239	Categorical (single)		
22660	Gap coding	Online follow-up > Work environment > Employment history	95527	Categorical (single)		
22601	Job coding	Online follow-up > Work environment > Employment history	120231	Categorical (single)		
22617	Job code - historical	Online follow-up > Work environment > Employment history	120231	Categorical (single)		
22604	Work hours - lumped category	Online follow-up > Work environment > Employment history	99330	Categorical (single)		
22620	Job involved shift work	Online follow-up > Work environment > Employment history	120231	Categorical (single)		
22630	Day shifts worked	Online follow-up > Work environment > Employment history	34383	Categorical (single)		
22640	Mixture of day and night shifts worked	Online follow-up > Work environment > Employment history	34383	Categorical (single)		
22650	Night shifts worked	Online follow-up > Work environment > Employment history	34383	Categorical (single)		
22606	Workplace very noisy	Online follow-up > Work environment > Employment history	120020	Categorical (single)		

22607	Workplace very cold	Online follow-up > Work environment > Employment history	119886	Categorical (single)		
22608	Workplace very hot	Online follow-up > Work environment > Employment history	119903	Categorical (single)		
22609	Workplace very dusty	Online follow-up > Work environment > Employment history	119834	Categorical (single)		
22610	Workplace full of chemical or other fumes	Online follow-up > Work environment > Employment history	119847	Categorical (single)		
22611	Workplace had a lot of cigarette smoke from other people smoking	Online follow-up > Work environment > Employment history	119897	Categorical (single)		
22612	Worked with materials containing asbestos	Online follow-up > Work environment > Employment history	119792	Categorical (single)		
22613	Worked with paints, thinners or glues	Online follow-up > Work environment > Employment history	119847	Categorical (single)		
22614	Worked with pesticides	Online follow-up > Work environment > Employment history	119771	Categorical (single)		
22615	Workplace had a lot of diesel exhaust	Online follow-up > Work environment > Employment history	119750	Categorical (single)		
22616	Breathing problems during period of job	Online follow-up > Work environment > Employment history	120231	Categorical (single)		
22618	Breathing problems improved/stopped away from workplace or on holiday	Online follow-up > Work environment > Employment history	8904	Categorical (single)		
22619	Breathing problems responsible for leaving job	Online follow-up > Work environment > Employment history	7520	Categorical (single)		
22502	Cough on most days	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22504	Bring up phlegm/sputum/mucus on most days	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22506	Tobacco smoking	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22132	Doctor diagnosed alpha-1 antitrypsin deficiency	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22139	Doctor diagnosed asbestosis	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22127	Doctor diagnosed asthma	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22134	Doctor diagnosed bronchiectasis	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22129	Doctor diagnosed chronic bronchitis	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22130	Doctor diagnosed COPD (chronic obstructive pulmonary disease)	Online follow-up > Work environment > Medical information	121208	Categorical (single)		

22131	Doctor diagnosed cystic fibrosis	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22128	Doctor diagnosed emphysema	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22136	Doctor diagnosed fibrosing alveolitis/unspecified alveolitis	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22126	Doctor diagnosed hayfever or allergic rhinitis	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22135	Doctor diagnosed idiopathic pulmonary fibrosis	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22140	Doctor diagnosed lung cancer (not mesothelioma)	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22141	Doctor diagnosed mesothelioma of the lung	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22133	Doctor diagnosed sarcoidosis	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22138	Doctor diagnosed silicosis	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22137	Doctor diagnosed tuberculosis	Online follow-up > Work environment > Medical information	121208	Categorical (single)		
22172	Recent medication for alpha-1 antitrypsin deficiency	Online follow-up > Work environment > Medical information	48	Categorical (single)		
22179	Recent medication for asbestosis	Online follow-up > Work environment > Medical information	85	Categorical (single)		
22167	Recent medication for asthma	Online follow-up > Work environment > Medical information	15485	Categorical (single)		
22174	Recent medication for bronchiectasis	Online follow-up > Work environment > Medical information	1073	Categorical (single)		
22169	Recent medication for chronic bronchitis	Online follow-up > Work environment > Medical information	1382	Categorical (single)		
22170	Recent medication for COPD (Chronic Obstructive Pulmonary Disease)	Online follow-up > Work environment > Medical information	1767	Categorical (single)		
22171	Recent medication for cystic fibrosis	Online follow-up > Work environment > Medical information	9	Categorical (single)		
22168	Recent medication for emphysema	Online follow-up > Work environment > Medical information	364	Categorical (single)		
22176	Recent medication for fibrosing alveolitis/unspecified alveolitis	Online follow-up > Work environment > Medical information	46	Categorical (single)		
22166	Recent medication for hayfever or allergic rhinitis	Online follow-up > Work environment > Medical information	27685	Categorical (single)		
22175	Recent medication for idiopathic pulmonary fibrosis	Online follow-up > Work environment > Medical information	108	Categorical (single)		

22180	Recent medication for lung cancer (not mesothelioma)	Online follow-up > Work environment > Medical information	156	Categorical (single)		
22181	Recent medication for mesothelioma of the lung	Online follow-up > Work environment > Medical information	14	Categorical (single)		
22173	Recent medication for sarcoidosis	Online follow-up > Work environment > Medical information	529	Categorical (single)		
22178	Recent medication for silicosis	Online follow-up > Work environment > Medical information	8	Categorical (single)		
22177	Recent medication for tuberculosis	Online follow-up > Work environment > Medical information	654	Categorical (single)		
130891	Source of report of F30 (manic episode)	Health-related outcomes > First occurrences > Mental and behavioural disorders	547	Categorical (single)		
130893	Source of report of F31 (bipolar affective disorder)	Health-related outcomes > First occurrences > Mental and behavioural disorders	2649	Categorical (single)		
130895	Source of report of F32 (depressive episode)	Health-related outcomes > First occurrences > Mental and behavioural disorders	63272	Categorical (single)		
130897	Source of report of F33 (recurrent depressive disorder)	Health-related outcomes > First occurrences > Mental and behavioural disorders	3963	Categorical (single)		
130899	Source of report of F34 (persistent mood [affective] disorders)	Health-related outcomes > First occurrences > Mental and behavioural disorders	945	Categorical (single)		
130901	Source of report of F38 (other mood [affective] disorders)	Health-related outcomes > First occurrences > Mental and behavioural disorders	177	Categorical (single)		
130903	Source of report of F39 (unspecified mood [affective] disorder)	Health-related outcomes > First occurrences > Mental and behavioural disorders	1032	Categorical (single)		
20162	Pack years adult smoking as proportion of life span exposed to smoking	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	153484	Continuous	0.525596	0.40911
20161	Pack years of smoking	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	153484	Continuous	22.8048	18.4914
30160	Basophill count	Biological samples > Blood assays > Blood count	478166	Continuous	0.0335663	0.0514161
30220	Basophill percentage	Biological samples > Blood assays > Blood count	478171	Continuous	0.566719	0.605286
30150	Eosinophill count	Biological samples > Blood assays > Blood count	478166	Continuous	0.174489	0.138191
30210	Eosinophill percentage	Biological samples > Blood assays > Blood count	478171	Continuous	2.56798	1.87018
30030	Haematocrit percentage	Biological samples > Blood assays > Blood count	479033	Continuous	41.0948	3.549
30020	Haemoglobin concentration	Biological samples > Blood assays > Blood count	479032	Continuous	14.1807	1.24564
30300	High light scatter reticulocyte count	Biological samples > Blood assays > Blood count	470725	Continuous	0.0181279	0.0102168
30290	High light scatter reticulocyte percentage	Biological samples > Blood assays > Blood count	470726	Continuous	0.402046	0.32796
30280	Immature reticulocyte fraction	Biological samples > Blood assays > Blood count	470724	Continuous	0.29172	0.061163
30120	Lymphocyte count	Biological samples > Blood assays > Blood count	478166	Continuous	1.96305	1.19113
30180	Lymphocyte percentage	Biological samples > Blood assays > Blood count	478171	Continuous	28.8778	7.50797
30050	Mean corpuscular haemoglobin	Biological samples > Blood assays > Blood count	479029	Continuous	31.4507	1.92023
30060	Mean corpuscular haemoglobin concentration	Biological samples > Blood assays > Blood count	479026	Continuous	34.5191	1.08848

30040	Mean corpuscular volume	Biological samples > Blood assays > Blood count	479032	Continuous	91.1036	4.59008
30100	Mean platelet (thrombocyte) volume	Biological samples > Blood assays > Blood count	479024	Continuous	9.32295	1.0853
30260	Mean reticulocyte volume	Biological samples > Blood assays > Blood count	470985	Continuous	106.221	7.92109
30270	Mean sphered cell volume	Biological samples > Blood assays > Blood count	470726	Continuous	83.0869	5.42807
30130	Monocyte count	Biological samples > Blood assays > Blood count	478166	Continuous	0.473849	0.271642
30190	Monocyte percentage	Biological samples > Blood assays > Blood count	478171	Continuous	7.03632	2.71901
30140	Neutrophill count	Biological samples > Blood assays > Blood count	478166	Continuous	4.2296	1.42078
30200	Neutrophill percentage	Biological samples > Blood assays > Blood count	478171	Continuous	60.9513	8.5435
30170	Nucleated red blood cell count	Biological samples > Blood assays > Blood count	477940	Continuous	0.00236184	0.0337036
30230	Nucleated red blood cell percentage	Biological samples > Blood assays > Blood count	477936	Continuous	0.0376566	0.461243
30080	Platelet count	Biological samples > Blood assays > Blood count	479029	Continuous	252.027	60.0622
30090	Platelet crit	Biological samples > Blood assays > Blood count	478815	Continuous	0.231811	0.049067
30110	Platelet distribution width	Biological samples > Blood assays > Blood count	478814	Continuous	16.4955	0.523533
30010	Red blood cell (erythrocyte) count	Biological samples > Blood assays > Blood count	479033	Continuous	4.51879	0.416472
30070	Red blood cell (erythrocyte) distribution width	Biological samples > Blood assays > Blood count	479032	Continuous	13.4939	0.984472
30250	Reticulocyte count	Biological samples > Blood assays > Blood count	470986	Continuous	0.060733	0.0381898
30240	Reticulocyte percentage	Biological samples > Blood assays > Blood count	470986	Continuous	1.34373	0.875898
30000	White blood cell (leukocyte) count	Biological samples > Blood assays > Blood count	479028	Continuous	6.88115	2.13188
30620	Alanine aminotransferase	Biological samples > Blood assays > Blood biochemistry	470342	Continuous	23.5265	14.1129
30600	Albumin	Biological samples > Blood assays > Blood biochemistry	432048	Continuous	45.2247	2.6294
30610	Alkaline phosphatase	Biological samples > Blood assays > Blood biochemistry	470543	Continuous	83.7049	26.378
30630	Apolipoprotein A	Biological samples > Blood assays > Blood biochemistry	429501	Continuous	1.53927	0.270909
30640	Apolipoprotein B	Biological samples > Blood assays > Blood biochemistry	468199	Continuous	1.0317	0.238223
30650	Aspartate aminotransferase	Biological samples > Blood assays > Blood biochemistry	468794	Continuous	26.2422	10.6499
30710	C-reactive protein	Biological samples > Blood assays > Blood biochemistry	469541	Continuous	2.58926	4.3509
30680	Calcium	Biological samples > Blood assays > Blood biochemistry	431899	Continuous	2.38071	0.0943991
30690	Cholesterol	Biological samples > Blood assays > Blood biochemistry	470530	Continuous	5.69262	1.14657
30700	Creatinine	Biological samples > Blood assays > Blood biochemistry	470307	Continuous	72.4086	18.5266
30720	Cystatin C	Biological samples > Blood assays > Blood biochemistry	470501	Continuous	0.907934	0.17613

30660	Direct bilirubin	Biological samples > Blood assays > Blood biochemistry	400761	Continuous	1.83253	0.848514
30730	Gamma glutamyltransferase	Biological samples > Blood assays > Blood biochemistry	470288	Continuous	37.3069	41.8754
30740	Glucose	Biological samples > Blood assays > Blood biochemistry	431553	Continuous	5.12329	1.23778
30750	Glycated haemoglobin (HbA1c)	Biological samples > Blood assays > Blood biochemistry	467601	Continuous	36.1426	6.74874
30760	HDL cholesterol	Biological samples > Blood assays > Blood biochemistry	431844	Continuous	1.4505	0.383067
30770	IGF-1	Biological samples > Blood assays > Blood biochemistry	468072	Continuous	21.3825	5.69424
30780	LDL direct	Biological samples > Blood assays > Blood biochemistry	469693	Continuous	3.55594	0.870826
30790	Lipoprotein A	Biological samples > Blood assays > Blood biochemistry	377403	Continuous	44.6368	49.215
30800	Oestradiol	Biological samples > Blood assays > Blood biochemistry	77638	Continuous	459.59	429.871
30810	Phosphate	Biological samples > Blood assays > Blood biochemistry	431234	Continuous	1.16173	0.161478
30820	Rheumatoid factor	Biological samples > Blood assays > Blood biochemistry	41962	Continuous	24.5687	19.8486
30830	SHBG	Biological samples > Blood assays > Blood biochemistry	427887	Continuous	51.7025	27.7249
30850	Testosterone	Biological samples > Blood assays > Blood biochemistry	426766	Continuous	6.58172	6.06013
30840	Total bilirubin	Biological samples > Blood assays > Blood biochemistry	468571	Continuous	9.11905	4.42447
30860	Total protein	Biological samples > Blood assays > Blood biochemistry	431581	Continuous	72.5375	4.12062
30870	Triglycerides	Biological samples > Blood assays > Blood biochemistry	470160	Continuous	1.74584	1.02443
30880	Urate	Biological samples > Blood assays > Blood biochemistry	469981	Continuous	309.406	80.3959
30670	Urea	Biological samples > Blood assays > Blood biochemistry	470222	Continuous	5.41116	1.40119
30890	Vitamin D	Biological samples > Blood assays > Blood biochemistry	449653	Continuous	48.5812	21.1419
23474	3-Hydroxybutyrate	Biological samples > Blood assays > NMR metabolomics	270384	Continuous	0.0605167	0.0620751
23475	Acetate	Biological samples > Blood assays > NMR metabolomics	275052	Continuous	0.0186642	0.0330339

23476	Acetoacetate	Biological samples > Blood assays > NMR metabolomics	275231	Continuous	0.0132325	0.0125326
23477	Acetone	Biological samples > Blood assays > NMR metabolomics	275239	Continuous	0.0141975	0.00559381
23460	Alanine	Biological samples > Blood assays > NMR metabolomics	275142	Continuous	0.296598	0.0784521
23479	Albumin	Biological samples > Blood assays > NMR metabolomics	275203	Continuous	39.3765	3.39624
23440	Apolipoprotein A1	Biological samples > Blood assays > NMR metabolomics	275241	Continuous	1.46431	0.246777
23439	Apolipoprotein B	Biological samples > Blood assays > NMR metabolomics	275241	Continuous	0.848994	0.201646
23441	Apolipoprotein B to Apolipoprotein A1 ratio	Biological samples > Blood assays > NMR metabolomics	275241	Continuous	0.594062	0.165573
23433	Average Diameter for HDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	9.64089	0.204557
23432	Average Diameter for LDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	23.9268	0.089373
23431	Average Diameter for VLDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	38.6295	1.2646
23484	Cholesterol in Chylomicrons and Extremely Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0549802	0.0422651
23526	Cholesterol in IDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.838316	0.215997
23561	Cholesterol in Large HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.296985	0.169311
23533	Cholesterol in Large LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	1.1381	0.28749
23498	Cholesterol in Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.098678	0.0483563
23568	Cholesterol in Medium HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.501286	0.124539
23540	Cholesterol in Medium LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.428089	0.118783
23505	Cholesterol in Medium VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.171259	0.0661241
23575	Cholesterol in Small HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.449189	0.0627343
23547	Cholesterol in Small LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.181518	0.0446539
23512	Cholesterol in Small VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.157369	0.0518299

23554	Cholesterol in Very Large HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0811418	0.0350676
23491	Cholesterol in Very Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0539371	0.0288126
23519	Cholesterol in Very Small VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.184024	0.0497758
23580	Cholesterol to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	Biological samples > Blood assays > NMR metabolomics	264043	Continuous	29.8569	12.872
23610	Cholesterol to Total Lipids in IDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	67.6801	2.98193
23635	Cholesterol to Total Lipids in Large HDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	43.8618	5.55167
23615	Cholesterol to Total Lipids in Large LDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	71.1384	1.9131
23590	Cholesterol to Total Lipids in Large VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275208	Continuous	30.1669	4.37454
23640	Cholesterol to Total Lipids in Medium HDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	47.5875	2.98153
23620	Cholesterol to Total Lipids in Medium LDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	68.3685	1.71477
23595	Cholesterol to Total Lipids in Medium VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	29.9161	6.82957
23645	Cholesterol to Total Lipids in Small HDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	38.3899	1.88111
23625	Cholesterol to Total Lipids in Small LDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	63.2069	2.0153
23600	Cholesterol to Total Lipids in Small VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	37.8828	4.72956
23630	Cholesterol to Total Lipids in Very Large HDL percentage	Biological samples > Blood assays > NMR metabolomics	275134	Continuous	50.2011	5.03857
23585	Cholesterol to Total Lipids in Very Large VLDL percentage	Biological samples > Blood assays > NMR metabolomics	272716	Continuous	29.4813	8.18862
23605	Cholesterol to Total Lipids in Very Small VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	51.1104	4.70932
23485	Cholesteryl Esters in Chylomicrons and Extremely Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0305919	0.0233061
23418	Cholesteryl Esters in HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	1.03351	0.25849
23527	Cholesteryl Esters in IDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.619064	0.160605
23417	Cholesteryl Esters in LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	1.28159	0.326459

23562	Cholesteryl Esters in Large HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.229631	0.131734
23534	Cholesteryl Esters in Large LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.841665	0.211646
23499	Cholesteryl Esters in Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0516609	0.0237018
23569	Cholesteryl Esters in Medium HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.41291	0.100039
23541	Cholesteryl Esters in Medium LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.308138	0.0885871
23506	Cholesteryl Esters in Medium VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0918738	0.0385571
23576	Cholesteryl Esters in Small HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.332951	0.0484761
23548	Cholesteryl Esters in Small LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.131785	0.033371
23513	Cholesteryl Esters in Small VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0983496	0.0332422
23416	Cholesteryl Esters in VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.429046	0.143771
23555	Cholesteryl Esters in Very Large HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.058013	0.0280036
23492	Cholesteryl Esters in Very Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0302524	0.0147672
23520	Cholesteryl Esters in Very Small VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.126318	0.0354596
23581	Cholesteryl Esters to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	Biological samples > Blood assays > NMR metabolomics	264043	Continuous	16.9784	9.54631
23611	Cholesteryl Esters to Total Lipids in IDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	49.9637	2.44183
23636	Cholesteryl Esters to Total Lipids in Large HDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	33.8951	4.78713
23616	Cholesteryl Esters to Total Lipids in Large LDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	52.6331	1.35783
23591	Cholesteryl Esters to Total Lipids in Large VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275208	Continuous	16.258	3.46743
23641	Cholesteryl Esters to Total Lipids in Medium HDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	39.2663	2.59877
23621	Cholesteryl Esters to Total Lipids in Medium LDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	49.0976	1.96827
23596	Cholesteryl Esters to Total Lipids in Medium VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	16.2412	5.13155

23646	Cholesteryl Esters to Total Lipids in Small HDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	28.4582	1.8795
23626	Cholesteryl Esters to Total Lipids in Small LDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	45.8452	2.08641
23601	Cholesteryl Esters to Total Lipids in Small VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	23.5717	2.80208
23631	Cholesteryl Esters to Total Lipids in Very Large HDL percentage	Biological samples > Blood assays > NMR metabolomics	275134	Continuous	35.0104	3.51008
23586	Cholesteryl Esters to Total Lipids in Very Large VLDL percentage	Biological samples > Blood assays > NMR metabolomics	272716	Continuous	17.4918	6.92049
23606	Cholesteryl Esters to Total Lipids in Very Small VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	35.081	4.25464
23473	Citrate	Biological samples > Blood assays > NMR metabolomics	275215	Continuous	0.0656102	0.0131553
23404	Clinical LDL Cholesterol	Biological samples > Blood assays > NMR metabolomics	275241	Continuous	2.55109	0.737454
23481	Concentration of Chylomicrons and Extremely Large VLDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	1.65E-06	1.51E-06
23430	Concentration of HDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0153254	0.00248346
23523	Concentration of IDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.000307749	7.63E-05
23429	Concentration of LDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.00120192	0.000285563
23558	Concentration of Large HDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.00140732	0.000775063
23530	Concentration of Large LDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.000739005	0.000178752
23495	Concentration of Large VLDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	1.04E-05	5.67E-06
23565	Concentration of Medium HDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.00390622	0.00094254
23537	Concentration of Medium LDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.000293307	7.65E-05
23502	Concentration of Medium VLDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	3.50E-05	1.24E-05
23572	Concentration of Small HDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.00978118	0.00133855
23544	Concentration of Small LDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.00016961	3.76E-05
23509	Concentration of Small VLDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	3.98E-05	1.32E-05

23428	Concentration of VLDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.000145293	4.50E-05
23551	Concentration of Very Large HDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.000230665	9.57E-05
23488	Concentration of Very Large VLDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	3.52E-06	2.31E-06
23516	Concentration of Very Small VLDL Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	5.50E-05	1.38E-05
23478	Creatinine	Biological samples > Blood assays > NMR metabolomics	268722	Continuous	0.0674339	0.0154851
23443	Degree of Unsaturation	Biological samples > Blood assays > NMR metabolomics	275033	Continuous	1.35705	0.0810302
23450	Docosahexaenoic Acid	Biological samples > Blood assays > NMR metabolomics	275032	Continuous	0.237089	0.0842103
23457	Docosahexaenoic Acid to Total Fatty Acids percentage	Biological samples > Blood assays > NMR metabolomics	275032	Continuous	1.99632	0.675496
23486	Free Cholesterol in Chylomicrons and Extremely Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0243883	0.0192273
23422	Free Cholesterol in HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.295097	0.0740074
23528	Free Cholesterol in IDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.219252	0.0567213
23421	Free Cholesterol in LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.466116	0.121948
23563	Free Cholesterol in Large HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0673544	0.0379262
23535	Free Cholesterol in Large LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.296432	0.0779713
23500	Free Cholesterol in Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0470171	0.0253063
23570	Free Cholesterol in Medium HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.088376	0.0250701
23542	Free Cholesterol in Medium LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.119951	0.032663
23507	Free Cholesterol in Medium VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0793852	0.0297434
23577	Free Cholesterol in Small HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.116237	0.0166609
23549	Free Cholesterol in Small LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0497324	0.0126933
23514	Free Cholesterol in Small VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0590189	0.0189984

23420	Free Cholesterol in VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.2912	0.108022
23556	Free Cholesterol in Very Large HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0231288	0.00736765
23493	Free Cholesterol in Very Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0236846	0.0145104
23521	Free Cholesterol in Very Small VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0577062	0.0149678
23582	Free Cholesterol to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	Biological samples > Blood assays > NMR metabolomics	264043	Continuous	12.8785	4.56192
23612	Free Cholesterol to Total Lipids in IDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	17.7164	1.12035
23637	Free Cholesterol to Total Lipids in Large HDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	9.96668	1.19024
23617	Free Cholesterol to Total Lipids in Large LDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	18.5053	1.32837
23592	Free Cholesterol to Total Lipids in Large VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275208	Continuous	13.9089	1.40789
23642	Free Cholesterol to Total Lipids in Medium HDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	8.32115	0.693984
23622	Free Cholesterol to Total Lipids in Medium LDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	19.271	1.95182
23597	Free Cholesterol to Total Lipids in Medium VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	13.6749	1.76405
23647	Free Cholesterol to Total Lipids in Small HDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	9.93164	0.535279
23627	Free Cholesterol to Total Lipids in Small LDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	17.3617	2.00448
23602	Free Cholesterol to Total Lipids in Small VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	14.3111	2.23196
23632	Free Cholesterol to Total Lipids in Very Large HDL percentage	Biological samples > Blood assays > NMR metabolomics	275134	Continuous	15.1908	3.68389
23587	Free Cholesterol to Total Lipids in Very Large VLDL percentage	Biological samples > Blood assays > NMR metabolomics	272716	Continuous	11.9895	1.74573
23607	Free Cholesterol to Total Lipids in Very Small VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	16.0294	0.612398
23470	Glucose	Biological samples > Blood assays > NMR metabolomics	274782	Continuous	3.74783	1.1922
23461	Glutamine	Biological samples > Blood assays > NMR metabolomics	274419	Continuous	0.554399	0.0853339
23462	Glycine	Biological samples > Blood assays > NMR metabolomics	274869	Continuous	0.17096	0.0667409

23480	Glycoprotein Acetyls	Biological samples > Blood assays > NMR metabolomics	275242	Continuous	0.812295	0.120309
23406	HDL Cholesterol	Biological samples > Blood assays > NMR metabolomics	275241	Continuous	1.3286	0.330098
23463	Histidine	Biological samples > Blood assays > NMR metabolomics	274892	Continuous	0.0656297	0.0114244
23465	Isoleucine	Biological samples > Blood assays > NMR metabolomics	275201	Continuous	0.0511232	0.0182387
23405	LDL Cholesterol	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	1.7477	0.443662
23471	Lactate	Biological samples > Blood assays > NMR metabolomics	274750	Continuous	3.87369	1.14115
23466	Leucine	Biological samples > Blood assays > NMR metabolomics	275215	Continuous	0.103847	0.0289169
23449	Linoleic Acid	Biological samples > Blood assays > NMR metabolomics	275032	Continuous	3.46345	0.694632
23456	Linoleic Acid to Total Fatty Acids percentage	Biological samples > Blood assays > NMR metabolomics	275032	Continuous	28.8763	3.43419
23447	Monounsaturated Fatty Acids	Biological samples > Blood assays > NMR metabolomics	275032	Continuous	2.9042	0.837301
23454	Monounsaturated Fatty Acids to Total Fatty Acids percentage	Biological samples > Blood assays > NMR metabolomics	275032	Continuous	23.7477	2.66718
23444	Omega-3 Fatty Acids	Biological samples > Blood assays > NMR metabolomics	275032	Continuous	0.532881	0.22306
23451	Omega-3 Fatty Acids to Total Fatty Acids percentage	Biological samples > Blood assays > NMR metabolomics	275032	Continuous	4.38763	1.55167
23445	Omega-6 Fatty Acids	Biological samples > Blood assays > NMR metabolomics	275032	Continuous	4.51244	0.692342
23459	Omega-6 Fatty Acids to Omega-3 Fatty Acids ratio	Biological samples > Blood assays > NMR metabolomics	275012	Continuous	9.81688	4.35711
23452	Omega-6 Fatty Acids to Total Fatty Acids percentage	Biological samples > Blood assays > NMR metabolomics	275032	Continuous	37.844	3.61645
23468	Phenylalanine	Biological samples > Blood assays > NMR metabolomics	275121	Continuous	0.0472259	0.0115939
23437	Phosphatidylcholines	Biological samples > Blood assays > NMR metabolomics	275033	Continuous	2.10998	0.381098
23434	Phosphoglycerides	Biological samples > Blood assays > NMR metabolomics	275033	Continuous	2.29642	0.405016
23483	Phospholipids in Chylomicrons and Extremely Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0348166	0.0315602
23414	Phospholipids in HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	1.56414	0.322886

23525	Phospholipids in IDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.292843	0.0668434
23413	Phospholipids in LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.609714	0.141989
23560	Phospholipids in Large HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.32575	0.153247
23532	Phospholipids in Large LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.357808	0.0833015
23497	Phospholipids in Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0672819	0.0401838
23567	Phospholipids in Medium HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.492139	0.101882
23539	Phospholipids in Medium LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.162895	0.0424883
23504	Phospholipids in Medium VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.12949	0.0481766
23574	Phospholipids in Small HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.668546	0.0950561
23546	Phospholipids in Small LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0890108	0.0189786
23511	Phospholipids in Small VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0980297	0.030444
23412	Phospholipids in VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.473505	0.182642
23553	Phospholipids in Very Large HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0777004	0.0448261
23490	Phospholipids in Very Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.038742	0.0263098
23518	Phospholipids in Very Small VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.105144	0.0268
23579	Phospholipids to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	Biological samples > Blood assays > NMR metabolomics	264043	Continuous	15.2401	4.3435
23609	Phospholipids to Total Lipids in IDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	23.8384	0.910248
23634	Phospholipids to Total Lipids in Large HDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	50.5897	3.06207
23614	Phospholipids to Total Lipids in Large LDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	22.4945	0.806508
23589	Phospholipids to Total Lipids in Large VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275208	Continuous	19.0057	3.44546
23639	Phospholipids to Total Lipids in Medium HDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	47.09	1.27454

23619	Phospholipids to Total Lipids in Medium LDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	26.1606	0.82535
23594	Phospholipids to Total Lipids in Medium VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	22.2118	1.84361
23644	Phospholipids to Total Lipids in Small HDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	57.0702	1.23872
23624	Phospholipids to Total Lipids in Small LDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	31.2774	1.76559
23599	Phospholipids to Total Lipids in Small VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	23.6588	2.0855
23629	Phospholipids to Total Lipids in Very Large HDL percentage	Biological samples > Blood assays > NMR metabolomics	275134	Continuous	44.5142	6.79709
23584	Phospholipids to Total Lipids in Very Large VLDL percentage	Biological samples > Blood assays > NMR metabolomics	272716	Continuous	18.239	2.79398
23604	Phospholipids to Total Lipids in Very Small VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	29.2413	0.914346
23446	Polyunsaturated Fatty Acids	Biological samples > Blood assays > NMR metabolomics	275032	Continuous	5.04532	0.814937
23458	Polyunsaturated Fatty Acids to Monounsaturated Fatty Acids ratio	Biological samples > Blood assays > NMR metabolomics	275031	Continuous	1.81547	0.342322
23453	Polyunsaturated Fatty Acids to Total Fatty Acids percentage	Biological samples > Blood assays > NMR metabolomics	275032	Continuous	42.2316	3.75905
23472	Pyruvate	Biological samples > Blood assays > NMR metabolomics	274406	Continuous	0.0797566	0.0325376
23402	Remnant Cholesterol (Non-HDL, Non-LDL -Cholesterol)	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	1.55856	0.418678
23448	Saturated Fatty Acids	Biological samples > Blood assays > NMR metabolomics	275032	Continuous	4.12802	0.969459
23455	Saturated Fatty Acids to Total Fatty Acids percentage	Biological samples > Blood assays > NMR metabolomics	275032	Continuous	34.0206	1.95476
23438	Sphingomyelins	Biological samples > Blood assays > NMR metabolomics	275027	Continuous	0.451901	0.073275
23400	Total Cholesterol	Biological samples > Blood assays > NMR metabolomics	275241	Continuous	4.63485	0.951821
23401	Total Cholesterol Minus HDL-C	Biological samples > Blood assays > NMR metabolomics	275241	Continuous	3.30625	0.846321
23436	Total Cholines	Biological samples > Blood assays > NMR metabolomics	275033	Continuous	2.57839	0.417993
23464	Total Concentration of Branched-Chain Amino Acids (Leucine + Isoleucine + Valine)	Biological samples > Blood assays > NMR metabolomics	275015	Continuous	0.365267	0.0871965
23427	Total Concentration of Lipoprotein Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0169803	0.0025892

23415	Total Esterified Cholesterol	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	3.3682	0.685394
23442	Total Fatty Acids	Biological samples > Blood assays > NMR metabolomics	275033	Continuous	12.0775	2.43801
23419	Total Free Cholesterol	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	1.26667	0.271922
23482	Total Lipids in Chylomicrons and Extremely Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.221935	0.203324
23426	Total Lipids in HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	3.0382	0.64906
23524	Total Lipids in IDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	1.23217	0.291389
23425	Total Lipids in LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	2.50478	0.606306
23559	Total Lipids in Large HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.65316	0.325931
23531	Total Lipids in Large LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	1.59441	0.38255
23496	Total Lipids in Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.336051	0.181681
23423	Total Lipids in Lipoprotein Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	8.89609	1.67319
23566	Total Lipids in Medium HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	1.04793	0.228452
23538	Total Lipids in Medium LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.624251	0.167153
23503	Total Lipids in Medium VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.581242	0.210149
23573	Total Lipids in Small HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	1.1711	0.161538
23545	Total Lipids in Small LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.286126	0.0660079
23510	Total Lipids in Small VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.416877	0.133182
23424	Total Lipids in VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	2.12094	0.872456
23552	Total Lipids in Very Large HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.166003	0.0801329
23489	Total Lipids in Very Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.205534	0.136426
23517	Total Lipids in Very Small VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.359302	0.0895621

23411	Total Phospholipids in Lipoprotein Particles	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	2.9402	0.479035
23407	Total Triglycerides	Biological samples > Blood assays > NMR metabolomics	275241	Continuous	1.32103	0.588784
23487	Triglycerides in Chylomicrons and Extremely Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.132138	0.131295
23410	Triglycerides in HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.145458	0.0483428
23529	Triglycerides in IDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.101011	0.0265637
23409	Triglycerides in LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.147367	0.041729
23564	Triglycerides in Large HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0304243	0.0123439
23536	Triglycerides in Large LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0985015	0.0260309
23501	Triglycerides in Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.170091	0.0961391
23571	Triglycerides in Medium HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0545036	0.0194138
23543	Triglycerides in Medium LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0332676	0.0105114
23508	Triglycerides in Medium VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.280493	0.120255
23578	Triglycerides in Small HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0533697	0.0179405
23550	Triglycerides in Small LDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0155976	0.005785
23515	Triglycerides in Small VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.161479	0.0627256
23408	Triglycerides in VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.92719	0.4937
23557	Triglycerides in Very Large HDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0071606	0.0027345
23494	Triglycerides in Very Large VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.112855	0.0834369
23522	Triglycerides in Very Small VLDL	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.0701341	0.021881
23435	Triglycerides to Phosphoglycerides ratio	Biological samples > Blood assays > NMR metabolomics	275033	Continuous	0.575904	0.226999
23583	Triglycerides to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	Biological samples > Blood assays > NMR metabolomics	264043	Continuous	54.903	14.0517

23613	Triglycerides to Total Lipids in IDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	8.48152	2.49204
23638	Triglycerides to Total Lipids in Large HDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	5.54855	3.28171
23618	Triglycerides to Total Lipids in Large LDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	6.3671	1.84006
23593	Triglycerides to Total Lipids in Large VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275208	Continuous	50.8274	6.00848
23643	Triglycerides to Total Lipids in Medium HDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	5.32257	1.84251
23623	Triglycerides to Total Lipids in Medium LDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	5.47083	1.59008
23598	Triglycerides to Total Lipids in Medium VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	47.8721	8.54028
23648	Triglycerides to Total Lipids in Small HDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	4.53997	1.32494
23628	Triglycerides to Total Lipids in Small LDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	5.5157	1.82071
23603	Triglycerides to Total Lipids in Small VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	38.4584	6.69983
23633	Triglycerides to Total Lipids in Very Large HDL percentage	Biological samples > Blood assays > NMR metabolomics	275134	Continuous	5.28463	3.88462
23588	Triglycerides to Total Lipids in Very Large VLDL percentage	Biological samples > Blood assays > NMR metabolomics	272716	Continuous	52.2797	8.18029
23608	Triglycerides to Total Lipids in Very Small VLDL percentage	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	19.6483	4.19762
23469	Tyrosine	Biological samples > Blood assays > NMR metabolomics	274932	Continuous	0.0629976	0.0145309
23403	VLDL Cholesterol	Biological samples > Blood assays > NMR metabolomics	275240	Continuous	0.720247	0.247881
23467	Valine	Biological samples > Blood assays > NMR metabolomics	275023	Continuous	0.210291	0.04348
20156	Duration to complete numeric path (trail #1)	Online follow-up > Cognitive function online > Trail making	202021	Continuous	32.6446	13.3599
20157	Duration to complete alphanumeric path (trail #2)	Online follow-up > Cognitive function online > Trail making	187319	Continuous	63.8479	24.6041
22605	Work hours per week - exact value	Online follow-up > Work environment > Employment history	44299	Continuous	39.3756	10.3269
22631	Period spent working day shifts	Online follow-up > Work environment > Employment history	2310	Continuous	-279.798	455.27
22641	Period spent working mix of day and night shifts	Online follow-up > Work environment > Employment history	12131	Continuous	7.61144	7.1317

22651	Period spent working night shifts	Online follow-up > Work environment > Employment history	1083	Continuous	7.79739	7.95108
130890	Date F30 first reported (manic episode)	Health-related outcomes > First occurrences > Mental and behavioural disorders	547	Date	28/02/2004	
130892	Date F31 first reported (bipolar affective disorder)	Health-related outcomes > First occurrences > Mental and behavioural disorders	2649	Date	29/02/2000	
130894	Date F32 first reported (depressive episode)	Health-related outcomes > First occurrences > Mental and behavioural disorders	63272	Date	16/10/2002	
130896	Date F33 first reported (recurrent depressive disorder)	Health-related outcomes > First occurrences > Mental and behavioural disorders	3963	Date	08/06/2004	
130898	Date F34 first reported (persistent mood [affective] disorders)	Health-related outcomes > First occurrences > Mental and behavioural disorders	945	Date	18/02/2002	
130900	Date F38 first reported (other mood [affective] disorders)	Health-related outcomes > First occurrences > Mental and behavioural disorders	177	Date	15/11/2008	
130902	Date F39 first reported (unspecified mood [affective] disorder)	Health-related outcomes > First occurrences > Mental and behavioural disorders	1032	Date	17/05/2008	
894	Duration of moderate activity	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	421678	Integer	65.7823	74.8466
914	Duration of vigorous activity	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	309624	Integer	44.4619	46.789
874	Duration of walks	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	480861	Integer	60.9812	75.8617
884	Number of days/week of moderate physical activity 10+ minutes	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	501318	Integer	3.69995	2.32125
904	Number of days/week of vigorous physical activity 10+ minutes	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	501318	Integer	1.86299	1.95368
864	Number of days/week walked 10+ minutes	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	501322	Integer	5.44399	1.90333
1090	Time spent driving	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	501106	Integer	1.17317	1.37844
1080	Time spent using computer	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	498731	Integer	1.37073	1.54243
1070	Time spent watching television (TV)	Assessment centre > Touchscreen > Lifestyle and environment > Physical activity	501313	Integer	2.92777	1.6241
1160	Sleep duration	Assessment centre > Touchscreen > Lifestyle and environment > Sleep	501310	Integer	7.15715	1.10292
3436	Age started smoking in current smokers	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	39622	Integer	17.8968	5.90586
3456	Number of cigarettes currently smoked daily (current cigarette smokers)	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	36821	Integer	15.3841	8.43035
6194	Age stopped smoking cigarettes (current cigar/pipe or previous cigarette smoker)	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	1827	Integer	37.6527	11.7611

6183	Number of cigarettes previously smoked daily (current cigar/pipe smokers)	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	1827	Integer	17.841	10.2357
2867	Age started smoking in former smokers	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	124956	Integer	17.3035	3.67993
2887	Number of cigarettes previously smoked daily	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	119505	Integer	18.7917	10.2712
2897	Age stopped smoking	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	124956	Integer	39.7202	11.7067
2926	Number of unsuccessful stop-smoking attempts	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	124248	Integer	2.95515	7.37828
1269	Exposure to tobacco smoke at home	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	464758	Integer	0.467239	4.19905
1279	Exposure to tobacco smoke outside home	Assessment centre > Touchscreen > Lifestyle and environment > Smoking	464758	Integer	0.452112	2.35675
1289	Cooked vegetable intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501304	Integer	2.79731	1.92133
1299	Salad / raw vegetable intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501304	Integer	2.27517	2.16556
1309	Fresh fruit intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501304	Integer	2.29267	1.60617
1319	Dried fruit intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501303	Integer	0.898961	1.8261
3680	Age when last ate meat	Assessment centre > Touchscreen > Lifestyle and environment > Diet	21805	Integer	30.9499	15.0436
1438	Bread intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	498719	Integer	12.0355	8.38233
1458	Cereal intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501208	Integer	4.66724	2.73182
1488	Tea intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501300	Integer	3.48432	2.832
1498	Coffee intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501300	Integer	2.1325	2.0802
1528	Water intake	Assessment centre > Touchscreen > Lifestyle and environment > Diet	501300	Integer	2.86057	2.22047
4407	Average monthly red wine intake	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	58779	Integer	0.977111	1.7958
4418	Average monthly champagne plus white wine intake	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	58779	Integer	0.974414	1.63342
4429	Average monthly beer plus cider intake	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	58779	Integer	1.0023	2.27446
4440	Average monthly spirits intake	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	58779	Integer	0.754193	2.0713

4451	Average monthly fortified wine intake	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	58779	Integer	0.157644	0.79401
4462	Average monthly intake of other alcoholic drinks	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	58779	Integer	0.0860125	0.558773
1568	Average weekly red wine intake	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	350445	Integer	3.85414	5.4985
1578	Average weekly champagne plus white wine intake	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	350444	Integer	2.6252	4.64863
1588	Average weekly beer plus cider intake	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	350444	Integer	2.87747	5.36489
1598	Average weekly spirits intake	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	350444	Integer	1.82739	5.16364
1608	Average weekly fortified wine intake	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	350444	Integer	0.230352	1.22946
5364	Average weekly intake of other alcoholic drinks	Assessment centre > Touchscreen > Lifestyle and environment > Alcohol	163107	Integer	0.0326464	0.471006
1050	Time spend outdoors in summer	Assessment centre > Touchscreen > Lifestyle and environment > Sun exposure	498733	Integer	3.95822	2.31377
1060	Time spent outdoors in winter	Assessment centre > Touchscreen > Lifestyle and environment > Sun exposure	498733	Integer	2.21482	1.79828
1737	Childhood sunburn occasions	Assessment centre > Touchscreen > Lifestyle and environment > Sun exposure	498076	Integer	1.627	5.05181
2277	Frequency of solarium/sunlamp use	Assessment centre > Touchscreen > Lifestyle and environment > Sun exposure	498697	Integer	0.474966	4.35733
2139	Age first had sexual intercourse	Assessment centre > Touchscreen > Lifestyle and environment > Sexual factors	456845	Integer		
2149	Lifetime number of sexual partners	Assessment centre > Touchscreen > Lifestyle and environment > Sexual factors	452680	Integer		
3669	Lifetime number of same-sex sexual partners	Assessment centre > Touchscreen > Lifestyle and environment > Sexual factors	16646	Integer		
2946	Father's age	Assessment centre > Touchscreen > Family history	114639	Integer	78.4876	7.45898
1807	Father's age at death	Assessment centre > Touchscreen > Family history	393960	Integer	71.2153	13.1305
1845	Mother's age	Assessment centre > Touchscreen > Family history	199290	Integer	78.9514	8.21974
3526	Mother's age at death	Assessment centre > Touchscreen > Family history	321430	Integer	75.0706	13.3343
1873	Number of full brothers	Assessment centre > Touchscreen > Family history	493999	Integer	1.13671	1.26298
3972	Number of adopted brothers	Assessment centre > Touchscreen > Family history	7477	Integer	0.667579	1.13674
1883	Number of full sisters	Assessment centre > Touchscreen > Family history	493999	Integer	1.05888	1.19976
3982	Number of adopted sisters	Assessment centre > Touchscreen > Family history	7477	Integer	0.605393	1.02096
5057	Number of older siblings	Assessment centre > Touchscreen > Family history	207424	Integer	1.13351	1.40588
20127	Neuroticism score	Assessment centre > Touchscreen > Psychosocial factors > Mental health	401313	Integer	4.11874	3.2669

4609	Longest period of depression	Assessment centre > Touchscreen > Psychosocial factors > Mental health	125254	Integer	16.0355	40.4544
4620	Number of depression episodes	Assessment centre > Touchscreen > Psychosocial factors > Mental health	125254	Integer	5.9889	45.585
5375	Longest period of unenthusiasm / disinterest	Assessment centre > Touchscreen > Psychosocial factors > Mental health	83770	Integer	15.7918	42.939
5386	Number of unenthusiastic/disinterested episodes	Assessment centre > Touchscreen > Psychosocial factors > Mental health	83767	Integer	6.94439	31.3586
4079	Diastolic blood pressure, automated reading	Assessment centre > Physical measures > Blood pressure	475975	Integer	81.7216	10.5544
94	Diastolic blood pressure, manual reading	Assessment centre > Physical measures > Blood pressure	52594	Integer	82.2853	10.7904
95	Pulse rate (during blood-pressure measurement)	Assessment centre > Physical measures > Blood pressure	52594	Integer	70.2098	11.7046
102	Pulse rate, automated reading	Assessment centre > Physical measures > Blood pressure	475975	Integer	69.012	11.5045
4080	Systolic blood pressure, automated reading	Assessment centre > Physical measures > Blood pressure	475970	Integer	138.371	19.4671
93	Systolic blood pressure, manual reading	Assessment centre > Physical measures > Blood pressure	52594	Integer	139.287	19.5252
96	Time since interview start at which blood pressure screen(s) shown	Assessment centre > Physical measures > Blood pressure	501329	Integer	254.967	229.002
20191	Fluid intelligence score	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	212036	Integer	5.5296	1.97053
20247	Total errors traversing numeric path (trail #1)	Online follow-up > Cognitive function online > Trail making	50551	Integer	2.79405	5.14658
20248	Total errors traversing alphanumeric path (trail #2)	Online follow-up > Cognitive function online > Trail making	85831	Integer	2.72052	4.47742
20149	Interval between previous point and current one in numeric path (trail #1)	Online follow-up > Cognitive function online > Trail making	205772	Integer	1417.51	1733.93
20155	Interval between previous point and current one in alphanumeric path (trail #2)	Online follow-up > Cognitive function online > Trail making	190358	Integer	2698	2853.67
20147	Errors before selecting correct item in numeric path (trail #1)	Online follow-up > Cognitive function online > Trail making	51154	Integer	1.92252	2.82141
20148	Errors before selecting correct item in alphanumeric path (trail #2)	Online follow-up > Cognitive function online > Trail making	93706	Integer	1.77568	2.25503
20159	Number of symbol digit matches made correctly	Online follow-up > Cognitive function online > Symbol digit substitution	207594	Integer	18.8203	5.73605
20195	Number of symbol digit matches attempted	Online follow-up > Cognitive function online > Symbol digit substitution	207594	Integer	19.4811	5.37865
20200	Values wanted	Online follow-up > Cognitive function online > Symbol digit substitution	205454	Integer	4.49016	2.28618

20229	Values entered	Online follow-up > Cognitive function online > Symbol digit substitution	205454	Integer	4.4905	2.28695
20230	Duration to entering symbol choice	Online follow-up > Cognitive function online > Symbol digit substitution	205454	Integer	2800.68	1529.82
20129	Number of columns displayed in round	Online follow-up > Cognitive function online > Pairs matching	118456	Integer	3.52968	0.499118
20130	Number of rows displayed in round	Online follow-up > Cognitive function online > Pairs matching	118456	Integer	2.58905	0.600667
20131	Number of correct matches in round	Online follow-up > Cognitive function online > Pairs matching	118456	Integer	4.58424	1.81985
20132	Number of incorrect matches in round	Online follow-up > Cognitive function online > Pairs matching	118456	Integer	2.71413	3.15424
20133	Time to complete round	Online follow-up > Cognitive function online > Pairs matching	118456	Integer	23648.5	15947
20240	Maximum digits remembered correctly	Online follow-up > Cognitive function online > Numeric memory	110995	Integer	6.92406	1.48527
20433	Age at first episode of depression	Online follow-up > Mental health > Depression	88963	Integer	37.2156	15.0247
20434	Age at last episode of depression	Online follow-up > Mental health > Depression	88963	Integer	49.8368	13.049
20442	Lifetime number of depressed periods	Online follow-up > Mental health > Depression	88963	Integer	2.26495	8.30116
20420	Longest period spent worried or anxious	Online follow-up > Mental health > Anxiety	38973	Integer	27.1988	59.2544
20410	Age when known person last commented about drinking habits	Online follow-up > Mental health > Alcohol use	7016	Integer	50.581	13.1327
20455	Age when last took cannabis	Online follow-up > Mental health > Cannabis use	34831	Integer	32.2205	13.1261
20470	Number of times believed in an un-real conspiracy against self	Online follow-up > Mental health > Unusual and psychotic experiences	1260	Integer	3.55422	5.80507
20476	Number of times believed in un-real communications or signs	Online follow-up > Mental health > Unusual and psychotic experiences	1135	Integer	4.55825	10.8431
20465	Number of times heard an un-real voice	Online follow-up > Mental health > Unusual and psychotic experiences	2773	Integer	4.10033	9.64802
20473	Number of times seen an un-real vision	Online follow-up > Mental health > Unusual and psychotic experiences	5023	Integer	3.02525	5.20089
22661	Number of gap periods	Online follow-up > Work environment > Employment history	118612	Integer	1.48355	1.35121
22599	Number of jobs held	Online follow-up > Work environment > Employment history	118612	Integer	3.32267	2.19032
22200	Year of birth	Online follow-up > Work environment > Employment history	121208	Integer	1952.06	7.6554
22663	Year gap started	Online follow-up > Work environment > Employment history	95527	Integer	1993.59	15.7912
22664	Year gap ended	Online follow-up > Work environment > Employment history	95527	Integer	1989.02	12.9809

22602	Year job started	Online follow-up > Work environment > Employment history	120231	Integer	1982.12	13.8079
22603	Year job ended	Online follow-up > Work environment > Employment history	120231	Integer	1989.64	14.9289
22642	Usual length of each night shift during mixed shift periods	Online follow-up > Work environment > Employment history	26643	Integer	9.995	3.08914
22643	Number of night shifts worked monthly during mixed shift periods	Online follow-up > Work environment > Employment history	26643	Integer	8.26219	5.98586
22644	Consecutive night shifts during mixed shift periods	Online follow-up > Work environment > Employment history	26643	Integer	4.27761	3.24843
22645	Rest days during mixed shift periods	Online follow-up > Work environment > Employment history	23414	Integer	2.91026	2.55639
22652	Usual length of each night shift during night shift periods	Online follow-up > Work environment > Employment history	2819	Integer	10.079	2.17357
22653	Number of night shifts worked monthly during night shift periods	Online follow-up > Work environment > Employment history	2819	Integer	13.6591	6.74772
22654	Consecutive night shifts during night shift periods	Online follow-up > Work environment > Employment history	2819	Integer	4.06987	2.83455
22655	Rest days during night shift periods	Online follow-up > Work environment > Employment history	2688	Integer	3.3974	1.96648
22503	Years of cough on most days	Online follow-up > Work environment > Medical information	16484	Integer	12.24	14.7637
22505	Years of bringing up phlegm/sputum/mucus on most days	Online follow-up > Work environment > Medical information	10475	Integer	13.1253	15.3533
22507	Age of stopping smoking	Online follow-up > Work environment > Medical information	43983	Integer	36.9317	12.106
22508	Amount of tobacco currently smoked	Online follow-up > Work environment > Medical information	2868	Integer	13.8369	7.39401
22152	Age alpha-1 antitrypsin deficiency diagnosed by doctor	Online follow-up > Work environment > Medical information	48	Integer	48.7083	16.3592
22159	Age asbestosis diagnosed by doctor	Online follow-up > Work environment > Medical information	85	Integer	62.7412	8.00904
22147	Age asthma diagnosed by doctor	Online follow-up > Work environment > Medical information	15485	Integer	32.153	19.8915
22154	Age bronchiectasis diagnosed by doctor	Online follow-up > Work environment > Medical information	1073	Integer	47.4007	21.263
22149	Age chronic bronchitis diagnosed by doctor	Online follow-up > Work environment > Medical information	1382	Integer	37.8538	16.3388
22150	Age COPD (Chronic Obstructive Pulmonary Disease) diagnosed by doctor	Online follow-up > Work environment > Medical information	1767	Integer	59.5241	9.28005
22151	Age cystic fibrosis diagnosed by doctor	Online follow-up > Work environment > Medical information	9	Integer		

22148	Age emphysema diagnosed by doctor	Online follow-up > Work environment > Medical information	364	Integer	56.5	13.0377
22156	Age fibrosing alveolitis/unspecified alveolitis diagnosed by doctor	Online follow-up > Work environment > Medical information	46	Integer	56.2826	13.9403
22146	Age hayfever or allergic rhinitis diagnosed by doctor	Online follow-up > Work environment > Medical information	27685	Integer	28.2623	17.8977
22155	Age idiopathic pulmonary fibrosis diagnosed by doctor	Online follow-up > Work environment > Medical information	108	Integer	62.5093	10.7337
22160	Age lung cancer (not mesothelioma) diagnosed by doctor	Online follow-up > Work environment > Medical information	156	Integer	61.391	10.4634
22161	Age mesothelioma of the lung diagnosed by doctor	Online follow-up > Work environment > Medical information	14	Integer		
22153	Age sarcoidosis diagnosed by doctor	Online follow-up > Work environment > Medical information	529	Integer	40.2911	13.1013
22158	Age silicosis diagnosed by doctor	Online follow-up > Work environment > Medical information	8	Integer		
22157	Age tuberculosis diagnosed by doctor	Online follow-up > Work environment > Medical information	654	Integer	18.5031	16.0423
36	Blood pressure device ID	Assessment centre > Physical measures > Blood pressure	498715	Text		
37	Blood pressure manual sphygmomanometer device ID	Assessment centre > Physical measures > Blood pressure	498715	Text		
22662	Title for other gap	Online follow-up > Work environment > Employment history	6593	Text		
20140	When input method described	Online follow-up > Cognitive function online > Entry method	213500	Time	07/12/2018	
20135	When fluid intelligence test completed	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	212036	Time	07/01/2019	
20136	When trail making test completed	Online follow-up > Cognitive function online > Trail making	209817	Time	17/01/2019	
20137	When symbol digit substitution test completed	Online follow-up > Cognitive function online > Symbol digit substitution	208256	Time	18/01/2019	
20134	When pairs test completed	Online follow-up > Cognitive function online > Pairs matching	118456	Time	18/12/2014	
20138	When numeric memory test completed	Online follow-up > Cognitive function online > Numeric memory	110995	Time	18/12/2014	

Appendix B - A table of all UK Biobank chosen fields that were missing in the bucket

field ID	field description	category path	participants count	value type
20280	Glucose-lactate	Biological samples > Blood assays > NMR metabolomics	274576	Continuous
20281	Spectrometer-corrected alanine	Biological samples > Blood assays > NMR metabolomics	275143	Continuous
30903	UKB-PPP Consortium selected participant	Biological samples > Blood assays > Proteomics > Protein biomarkers	6230	Integer
30900	Number of proteins measured	Biological samples > Blood assays > Proteomics > Protein biomarkers	53058	Integer
30901	Plate used for sample run	Biological samples > Blood assays > Proteomics > Protein biomarkers	53058	Text
30902	Well used for sample run	Biological samples > Blood assays > Proteomics > Protein biomarkers	53058	Text
31048	Comment code pTau sample state	Biological samples > Blood assays > Neurobiomarkers	28	Categorical (single)
31049	Comment code plex sample state	Biological samples > Blood assays > Neurobiomarkers	29	Categorical (single)
31040	Plasma Amyloid beta-40	Biological samples > Blood assays > Neurobiomarkers	1273	Continuous
31041	Plasma Amyloid beta-42	Biological samples > Blood assays > Neurobiomarkers	1273	Continuous
31042	Plasma Glial fibrillary acidic protein	Biological samples > Blood assays > Neurobiomarkers	1273	Continuous
31043	Plasma NeuroFilament Light	Biological samples > Blood assays > Neurobiomarkers	1273	Continuous
31044	Plasma pTau-181	Biological samples > Blood assays > Neurobiomarkers	1273	Continuous
31045	Sample analysis batch	Biological samples > Blood assays > Neurobiomarkers	1273	Integer
31046	Sample analysis plate	Biological samples > Blood assays > Neurobiomarkers	1273	Integer
31047	Sample analysis well	Biological samples > Blood assays > Neurobiomarkers	1273	Text
29082	Belittlement by partner or ex-partner as an adult	Online follow-up > Mental well-being > Adverse life events	170133	Categorical (single)
29087	Experienced a life-threatening injury or illness	Online follow-up > Mental well-being > Adverse life events	170133	Categorical (single)
29088	Experienced a marital separation/divorce	Online follow-up > Mental well-being > Adverse life events	170133	Categorical (single)
29086	Experienced a violent or sexual assault	Online follow-up > Mental well-being > Adverse life events	170133	Categorical (single)
29090	Experienced the death of a close friend or family member due to suicide	Online follow-up > Mental well-being > Adverse life events	170133	Categorical (single)
29089	Experienced the death of a spouse or partner	Online follow-up > Mental well-being > Adverse life events	170133	Categorical (single)
29078	Felt hated by family member as a child	Online follow-up > Mental well-being > Adverse life events	170133	Categorical (single)
29076	Felt loved as a child	Online follow-up > Mental well-being > Adverse life events	170133	Categorical (single)
29083	Physical violence by partner or ex-partner as an adult	Online follow-up > Mental well-being > Adverse life events	170133	Categorical (single)
29077	Physically abused by family as a child	Online follow-up > Mental well-being > Adverse life events	170133	Categorical (single)
29085	Sexual intercourse by partner or ex-partner without consent as an adult	Online follow-up > Mental well-being > Adverse life events	170133	Categorical (single)
29084	Sexual interference by partner or ex-partner without consent as an adult	Online follow-up > Mental well-being > Adverse life events	170133	Categorical (single)
29079	Sexually molested as a child	Online follow-up > Mental well-being > Adverse life events	170133	Categorical (single)
29080	Someone to take to doctor when needed as a child	Online follow-up > Mental well-being > Adverse life events	170133	Categorical (single)
29081	Stopped from seeing friends or family by partner or ex-partner as an adult	Online follow-up > Mental well-being > Adverse life events	170133	Categorical (single)

29201	When online Adverse life events questionnaire completed	Online follow-up > Mental well-being > Adverse life events	170133	Date
29188	When online Adverse life events questionnaire started	Online follow-up > Mental well-being > Adverse life events	170133	Date
29102	Age when known person first commented about drinking habits	Online follow-up > Mental well-being > Alcohol use	6557	Integer
29103	Age when known person last commented about drinking habits	Online follow-up > Mental well-being > Alcohol use	13661	Integer
29092	Amount of alcohol drunk on a typical drinking day	Online follow-up > Mental well-being > Alcohol use	152148	Categorical (single)
29099	Ever been injured or injured someone else through drinking alcohol	Online follow-up > Mental well-being > Alcohol use	169930	Categorical (single)
29100	Ever had known person concerned about, or recommend reduction of, alcohol consumption	Online follow-up > Mental well-being > Alcohol use	169930	Categorical (single)
29093	Frequency of consuming six or more units of alcohol	Online follow-up > Mental well-being > Alcohol use	152148	Categorical (single)
29091	Frequency of drinking alcohol	Online follow-up > Mental well-being > Alcohol use	169930	Categorical (single)
29095	Frequency of failure to fulfil normal expectations due to drinking alcohol in last year	Online follow-up > Mental well-being > Alcohol use	86791	Categorical (single)
29097	Frequency of feeling guilt or remorse after drinking alcohol in last year	Online follow-up > Mental well-being > Alcohol use	86791	Categorical (single)
29094	Frequency of inability to cease drinking in last year	Online follow-up > Mental well-being > Alcohol use	86791	Categorical (single)
29098	Frequency of memory loss due to drinking alcohol in last year	Online follow-up > Mental well-being > Alcohol use	86791	Categorical (single)
29096	Frequency of needing morning drink of alcohol after heavy drinking session in last year	Online follow-up > Mental well-being > Alcohol use	86791	Categorical (single)
29101	Number of times known person has commented on drinking	Online follow-up > Mental well-being > Alcohol use	13661	Categorical (single)
29202	When online Alcohol use questionnaire completed	Online follow-up > Mental well-being > Alcohol use	169930	Date
29189	When online Alcohol use questionnaire started	Online follow-up > Mental well-being > Alcohol use	169930	Date
29157	Date first had COVID-19	Online follow-up > Mental well-being > COVID-19	102476	Date
29159	Date most recently had COVID-19	Online follow-up > Mental well-being > COVID-19	20533	Date
29158	Method of diagnosis when first had COVID-19	Online follow-up > Mental well-being > COVID-19	102476	Categorical (single)
29160	Method of diagnosis when had COVID-19 most recently	Online follow-up > Mental well-being > COVID-19	20533	Categorical (single)
29156	Number of times have had COVID-19	Online follow-up > Mental well-being > COVID-19	169451	Integer
29161	Recovery from COVID-19	Online follow-up > Mental well-being > COVID-19	102476	Categorical (single)
29207	When online COVID-19 questionnaire completed	Online follow-up > Mental well-being > COVID-19	169451	Date
29194	When online COVID-19 questionnaire started	Online follow-up > Mental well-being > COVID-19	169451	Date
29105	Age when first took cannabis	Online follow-up > Mental well-being > Cannabis use	36356	Integer
29106	Age when last took cannabis	Online follow-up > Mental well-being > Cannabis use	36356	Integer
29104	Ever used cannabis	Online follow-up > Mental well-being > Cannabis use	169838	Categorical (single)
29107	Frequency of most regular cannabis use	Online follow-up > Mental well-being > Cannabis use	36356	Categorical (single)
29203	When online Cannabis use questionnaire completed	Online follow-up > Mental well-being > Cannabis use	169838	Date
29190	When online Cannabis use questionnaire started	Online follow-up > Mental well-being > Cannabis use	169838	Date
29048	Activities have helped	Online follow-up > Mental well-being > Depression	41865	Categorical (single)

29047	Activities undertaken to treat depression	Online follow-up > Mental well-being > Depression	79888	Categorical (multiple)
29034	Age at first episode of depression	Online follow-up > Mental well-being > Depression	79888	Integer
29036	Age at last episode of depression	Online follow-up > Mental well-being > Depression	79888	Integer
29044	Amitriptyline has helped feel better	Online follow-up > Mental well-being > Depression	5427	Categorical (single)
29016	Brightening of mood in response to positive events during worst episode of depression	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29020	Change in appetite during worst episode of depression	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29040	Citalopram has helped feel better	Online follow-up > Mental well-being > Depression	9498	Categorical (single)
29035	Depression possibly related to childbirth	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29013	Depression possibly related to stressful or traumatic event	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29026	Difficulty concentrating during worst depression	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29032	Difficulty coping with rejection or negative responses	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29045	Dosulepin has helped feel better	Online follow-up > Mental well-being > Depression	709	Categorical (single)
29030	Duration of worst depression	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29011	Ever had prolonged feelings of sadness or depression	Online follow-up > Mental well-being > Depression	172912	Categorical (single)
29012	Ever had prolonged loss of interest in normal activities	Online follow-up > Mental well-being > Depression	172912	Categorical (single)
29028	Feelings of guilt during worst period of depression	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29019	Feelings of heaviness in limbs during worst episode of depression	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29018	Feelings of tiredness during worst episode of depression	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29027	Feelings of worthlessness during worst period of depression	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29041	Fluoxetine has helped feel better	Online follow-up > Mental well-being > Depression	9664	Categorical (single)
29014	Fraction of day affected during worst episode of depression	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29015	Frequency of depressed days during worst episode of depression	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29031	Impact on normal roles during worst period of depression	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29033	Lifetime number of depressed periods	Online follow-up > Mental well-being > Depression	79888	Integer
29046	Other antidepressants have helped feel better	Online follow-up > Mental well-being > Depression	8947	Categorical (single)
29043	Paroxetine has helped feel better	Online follow-up > Mental well-being > Depression	2715	Categorical (single)
29037	Professional informed about depression	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29009	Recent changes in speed/amount of moving or speaking	Online follow-up > Mental well-being > Depression	172913	Categorical (single)
29003	Recent feelings of depression	Online follow-up > Mental well-being > Depression	172913	Categorical (single)
29007	Recent feelings of inadequacy	Online follow-up > Mental well-being > Depression	172913	Categorical (single)
29005	Recent feelings of tiredness or low energy	Online follow-up > Mental well-being > Depression	172913	Categorical (single)
29002	Recent lack of interest or pleasure in doing things	Online follow-up > Mental well-being > Depression	172913	Categorical (single)
29006	Recent poor appetite or overeating	Online follow-up > Mental well-being > Depression	172913	Categorical (single)
29010	Recent thoughts of suicide or self-harm	Online follow-up > Mental well-being > Depression	172913	Categorical (single)

29008	Recent trouble concentrating on things	Online follow-up > Mental well-being > Depression	172913	Categorical (single)
29042	Sertraline has helped feel better	Online follow-up > Mental well-being > Depression	6752	Categorical (single)
29022	Sleep changed during sadness/depression or loss of interest	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29025	Sleeping too much	Online follow-up > Mental well-being > Depression	51196	Categorical (single)
29038	Substances taken for depression	Online follow-up > Mental well-being > Depression	79888	Categorical (multiple)
29029	Thoughts of death during worst depression	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29017	Time of day that mood was worse during worst episode of depression	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29023	Trouble falling asleep	Online follow-up > Mental well-being > Depression	51196	Categorical (single)
29004	Trouble falling or staying asleep, or sleeping too much	Online follow-up > Mental well-being > Depression	172913	Categorical (single)
29039	Use of specific medications	Online follow-up > Mental well-being > Depression	37234	Categorical (multiple)
29024	Waking too early	Online follow-up > Mental well-being > Depression	51196	Categorical (single)
29021	Weight change during worst episode of depression	Online follow-up > Mental well-being > Depression	79888	Categorical (single)
29198	When online Depression questionnaire completed	Online follow-up > Mental well-being > Depression	172913	Date
29185	When online Depression questionnaire started	Online follow-up > Mental well-being > Depression	172913	Date
29136	Actions and feelings during periods of overeating/binge eating	Online follow-up > Mental well-being > Eating patterns	19673	Categorical (multiple)
29123	Afraid of gaining weight or becoming fat	Online follow-up > Mental well-being > Eating patterns	18871	Categorical (single)
29126	Age when first at this low weight	Online follow-up > Mental well-being > Eating patterns	18871	Integer
29147	Age when first engaged in these behaviours for at least three months	Online follow-up > Mental well-being > Eating patterns	1604	Integer
29138	Age when first experienced overeating/binge eating regularly	Online follow-up > Mental well-being > Eating patterns	2891	Integer
29127	Age when last at this low weight	Online follow-up > Mental well-being > Eating patterns	18871	Integer
29148	Age when last engaged in these behaviours for at least three months	Online follow-up > Mental well-being > Eating patterns	1604	Integer
29139	Age when last experienced overeating/binge eating regularly	Online follow-up > Mental well-being > Eating patterns	2891	Integer
29144	Control of body weight outside of periods of low weight or regular overeating/binge eating	Online follow-up > Mental well-being > Eating patterns	169645	Categorical (single)
29146	Dependency of self-esteem on body shape or weight	Online follow-up > Mental well-being > Eating patterns	3145	Categorical (single)
29149	Dependency of self-esteem on body shape or weight currently	Online follow-up > Mental well-being > Eating patterns	169645	Categorical (single)
29129	Dependency of self-esteem on body shape or weight when at this low weight	Online follow-up > Mental well-being > Eating patterns	18871	Categorical (single)
29143	Dependency of self-esteem on body shape or weight when overeating/binge eating	Online follow-up > Mental well-being > Eating patterns	19673	Categorical (single)
29122	Did you feel fat?	Online follow-up > Mental well-being > Eating patterns	18871	Categorical (single)
29137	Distress about episodes of overeating/binge eating	Online follow-up > Mental well-being > Eating patterns	19673	Categorical (single)
29132	Ever had recurrent episodes of excessive overeating or binge eating	Online follow-up > Mental well-being > Eating patterns	169645	Categorical (single)

29134	Experienced episodes of overeating/binge eating during time(s) of low weight	Online follow-up > Mental well-being > Eating patterns	19673	Categorical (single)
29135	Frequency of feeling had no control over eating during episodes of overeating/binge eating	Online follow-up > Mental well-being > Eating patterns	19673	Categorical (single)
29131	Frequency of using methods of controlling body shape or weight when at this low weight	Online follow-up > Mental well-being > Eating patterns	4350	Categorical (single)
29141	Frequency of using methods of controlling body shape or weight when overeating/binge eating	Online follow-up > Mental well-being > Eating patterns	1759	Categorical (single)
29145	Longest amount of time that engaged in these behaviours outside of periods of low weight or overeating/binge eating	Online follow-up > Mental well-being > Eating patterns	3145	Categorical (single)
29142	Longest amount of time that engaged in these behaviours when overeating/binge eating	Online follow-up > Mental well-being > Eating patterns	956	Categorical (single)
29133	Longest amount of time that overate or binge ate at least once a week	Online follow-up > Mental well-being > Eating patterns	3336	Categorical (single)
29128	Low weight had/has negative consequences for health	Online follow-up > Mental well-being > Eating patterns	18871	Categorical (single)
29125	Lowest weight during period when underweight	Online follow-up > Mental well-being > Eating patterns	18871	Integer
29130	Methods of controlling body shape or weight when at this low weight	Online follow-up > Mental well-being > Eating patterns	18871	Categorical (multiple)
29140	Methods of controlling body shape or weight when overeating/binge eating	Online follow-up > Mental well-being > Eating patterns	2891	Categorical (multiple)
29120	Period in life when was underweight	Online follow-up > Mental well-being > Eating patterns	169645	Categorical (single)
29121	Reason for being underweight	Online follow-up > Mental well-being > Eating patterns	18871	Categorical (single)
29124	Thinking or feeling body larger than it is	Online follow-up > Mental well-being > Eating patterns	18871	Categorical (single)
29205	When online Eating patterns questionnaire completed	Online follow-up > Mental well-being > Eating patterns	169645	Date
29192	When online Eating patterns questionnaire started	Online follow-up > Mental well-being > Eating patterns	169645	Date
29154	Anxiety/depression today	Online follow-up > Mental well-being > General health	169539	Categorical (single)
29150	Mobility problems today	Online follow-up > Mental well-being > General health	169539	Categorical (single)
29153	Pain/discomfort today	Online follow-up > Mental well-being > General health	169539	Categorical (single)
29152	Problems doing usual activities	Online follow-up > Mental well-being > General health	169539	Categorical (single)
29155	Scale to indicate how health is today	Online follow-up > Mental well-being > General health	169539	Integer
29151	Self-care problems today	Online follow-up > Mental well-being > General health	169539	Categorical (single)
29206	When online General health questionnaire completed	Online follow-up > Mental well-being > General health	169539	Date
29193	When online General health questionnaire started	Online follow-up > Mental well-being > General health	169539	Date
29182	Belief that own life is meaningful	Online follow-up > Mental well-being > General well-being	169280	Categorical (single)
29181	General happiness	Online follow-up > Mental well-being > General well-being	169280	Categorical (single)
29209	When online General well-being questionnaire completed	Online follow-up > Mental well-being > General well-being	169280	Date

29196	When online General well-being questionnaire started	Online follow-up > Mental well-being > General well-being	169280	Date
29118	Age when first attempted suicide	Online follow-up > Mental well-being > Harm behaviours	4108	Integer
29112	Age when first self harmed	Online follow-up > Mental well-being > Harm behaviours	7800	Integer
29119	Age when last attempted suicide	Online follow-up > Mental well-being > Harm behaviours	4108	Integer
29113	Age when last self harmed	Online follow-up > Mental well-being > Harm behaviours	7800	Integer
29117	Attempted suicide in past year	Online follow-up > Mental well-being > Harm behaviours	4108	Categorical (single)
29110	Contemplated self-harm in past year	Online follow-up > Mental well-being > Harm behaviours	21326	Categorical (single)
29116	Ever attempted suicide	Online follow-up > Mental well-being > Harm behaviours	7800	Categorical (single)
29109	Ever contemplated self-harm	Online follow-up > Mental well-being > Harm behaviours	169758	Categorical (single)
29111	Ever self-harmed	Online follow-up > Mental well-being > Harm behaviours	169758	Categorical (single)
29108	Ever thought that life not worth living	Online follow-up > Mental well-being > Harm behaviours	169758	Categorical (single)
29115	Methods of self-harm used	Online follow-up > Mental well-being > Harm behaviours	7800	Categorical (multiple)
29114	Self-harmed in past year	Online follow-up > Mental well-being > Harm behaviours	7800	Categorical (single)
29204	When online Harm behaviours questionnaire completed	Online follow-up > Mental well-being > Harm behaviours	169759	Date
29191	When online Harm behaviours questionnaire started	Online follow-up > Mental well-being > Harm behaviours	169759	Date
29000	Mental health conditions ever diagnosed by a professional	Online follow-up > Mental well-being > Mental health	175239	Categorical (multiple)
29001	Mental health conditions experienced by first degree blood relatives	Online follow-up > Mental well-being > Mental health	175239	Categorical (multiple)
29197	When online Mental health questionnaire completed	Online follow-up > Mental well-being > Mental health	175239	Date
29184	When online Mental health questionnaire started	Online follow-up > Mental well-being > Mental health	175239	Date
29053	Age at first episode of mania or irritability	Online follow-up > Mental well-being > Mood changes	8056	Integer
29054	Age at last episode of mania or irritability	Online follow-up > Mental well-being > Mood changes	8056	Integer
29050	Ever had period extreme irritability	Online follow-up > Mental well-being > Mood changes	171301	Categorical (single)
29049	Ever had period of mania / excitability	Online follow-up > Mental well-being > Mood changes	171301	Categorical (single)
29055	Lifetime number of manic or irritable periods	Online follow-up > Mental well-being > Mood changes	8056	Integer
29052	Longest period of mania or irritability	Online follow-up > Mental well-being > Mood changes	39677	Categorical (single)
29051	Manifestations of mania or irritability	Online follow-up > Mental well-being > Mood changes	39677	Categorical (multiple)
29057	Problems caused by manic or irritable periods - aspects of life were affected	Online follow-up > Mental well-being > Mood changes	39677	Categorical (single)
29056	Problems caused by manic or irritable periods - treatment was required	Online follow-up > Mental well-being > Mood changes	39677	Categorical (single)
29199	When online Mood changes questionnaire completed	Online follow-up > Mental well-being > Mood changes	171301	Date
29186	When online Mood changes questionnaire started	Online follow-up > Mental well-being > Mood changes	171301	Date

29176	Ability to make it through stressful events	Online follow-up > Mental well-being > Social situation	169322	Categorical (single)
29179	Comes through difficult times with little trouble	Online follow-up > Mental well-being > Social situation	169322	Categorical (single)
29169	Current situation	Online follow-up > Mental well-being > Social situation	169322	Categorical (multiple)
29166	Frequency of confiding in someone close	Online follow-up > Mental well-being > Social situation	169322	Categorical (single)
29171	Frequency of feeling 'in tune' with people	Online follow-up > Mental well-being > Social situation	169322	Categorical (single)
29174	Frequency of feeling isolated from others	Online follow-up > Mental well-being > Social situation	169322	Categorical (single)
29173	Frequency of feeling left out	Online follow-up > Mental well-being > Social situation	169322	Categorical (single)
29163	Frequency of seeing friends and family in person	Online follow-up > Mental well-being > Social situation	169322	Categorical (single)
29164	Frequency of seeing friends and family on a video call	Online follow-up > Mental well-being > Social situation	169322	Categorical (single)
29165	Frequency of speaking to friends and family on a voice call	Online follow-up > Mental well-being > Social situation	169322	Categorical (single)
29172	Freuency of feeling that lacks companionship	Online follow-up > Mental well-being > Social situation	169322	Categorical (single)
29178	Hard to snap back when something bad happens	Online follow-up > Mental well-being > Social situation	169322	Categorical (single)
29162	Number of people living in household	Online follow-up > Mental well-being > Social situation	169322	Categorical (single)
29177	Quick recovery from stressful events	Online follow-up > Mental well-being > Social situation	169322	Categorical (single)
29167	Sports and social activities attended in person at least once a week	Online follow-up > Mental well-being > Social situation	169322	Categorical (multiple)
29168	Sports and social activities attended virtually at least once a week	Online follow-up > Mental well-being > Social situation	169322	Categorical (multiple)
29175	Tendency to bounce back quickly after hard times	Online follow-up > Mental well-being > Social situation	169322	Categorical (single)
29180	Tendency to take a long time to get over setbacks	Online follow-up > Mental well-being > Social situation	169322	Categorical (single)
29208	When online Social situation questionnaire completed	Online follow-up > Mental well-being > Social situation	169322	Date
29195	When online Social situation questionnaire started	Online follow-up > Mental well-being > Social situation	169322	Date
29170	When retired	Online follow-up > Mental well-being > Social situation	124809	Integer
28756	Invitation to complete online Health and Well-being Questionnaire, date sent	Online follow-up > Health and well-being	333279	Date
28755	When Health and Well-being Questionnaire completed	Online follow-up > Health and well-being	195610	Date
28754	When Health and Well-being Questionnaire started	Online follow-up > Health and well-being	195610	Date
28736	Not being able to stop or control worrying over the last 2 weeks	Online follow-up > Health and well-being	195610	Categorical (single)
28737	Little interest or pleasure in doing things over the last 2 weeks	Online follow-up > Health and well-being	195610	Categorical (single)
28738	Feeling down, depressed or hopeless over the last 2 weeks	Online follow-up > Health and well-being	195610	Categorical (single)
28735	Feeling anxious, nervous or on edge over the last 2 weeks	Online follow-up > Health and well-being	195610	Categorical (single)
28741	Difficulty learning a new task	Online follow-up > Health and well-being	195610	Categorical (single)
28743	Difficulty with being emotionally affected by health problems	Online follow-up > Health and well-being	195610	Categorical (single)
28744	Difficulty with concentrating on doing something for ten minutes	Online follow-up > Health and well-being	195610	Categorical (single)
28750	Difficulty with dealing with noisy environments	Online follow-up > Health and well-being	195610	Categorical (single)

28748	Difficulty with dealing with people you do not know	Online follow-up > Health and well-being	195610	Categorical (single)
28751	Difficulty with doing your day-to-day work	Online follow-up > Health and well-being	195610	Categorical (single)
28747	Difficulty with getting dressed	Online follow-up > Health and well-being	195610	Categorical (single)
28742	Difficulty with joining in community activities	Online follow-up > Health and well-being	195610	Categorical (single)
28752	Difficulty with looking after children/grandchildren	Online follow-up > Health and well-being	195610	Categorical (single)
28749	Difficulty with maintaining a friendship	Online follow-up > Health and well-being	195610	Categorical (single)
28740	Difficulty with taking care of household responsibilities	Online follow-up > Health and well-being	195610	Categorical (single)
28739	Difficulty with standing for long periods	Online follow-up > Health and well-being	195610	Categorical (single)
28745	Difficulty with walking a long distance	Online follow-up > Health and well-being	195610	Categorical (single)
28746	Difficulty with washing whole body	Online follow-up > Health and well-being	195610	Categorical (single)
28753	Additional help needed because of health issues identified	Online follow-up > Health and well-being	173357	Categorical (multiple)
28600	Currently suffering from a decrease in appetite	Online follow-up > Health and well-being	195610	Categorical (single)
28601	Length of time suffering from a decrease in appetite	Online follow-up > Health and well-being	14533	Categorical (single)
28602	Extent affected by decrease in appetite	Online follow-up > Health and well-being	14533	Categorical (single)
28603	Currently suffering from nausea and/or vomiting	Online follow-up > Health and well-being	195610	Categorical (single)
28604	Length of time suffering from nausea and/or vomiting	Online follow-up > Health and well-being	4325	Categorical (single)
28605	Extent affected by nausea and/or vomiting	Online follow-up > Health and well-being	4325	Categorical (single)
28606	Currently suffering from gastrointestinal issues	Online follow-up > Health and well-being	195610	Categorical (single)
28607	Length of time suffering from gastrointestinal issues	Online follow-up > Health and well-being	26013	Categorical (single)
28608	Extent affected by gastrointestinal issues	Online follow-up > Health and well-being	26013	Categorical (single)
28609	Currently suffering from vision problems	Online follow-up > Health and well-being	195610	Categorical (single)
28610	Length of time suffering from vision problems	Online follow-up > Health and well-being	28514	Categorical (single)
28611	Extent affected by vision problems	Online follow-up > Health and well-being	28514	Categorical (single)
28612	Currently suffering from a loss or change in sense of smell	Online follow-up > Health and well-being	195610	Categorical (single)
28613	Length of time suffering from a loss or change in sense of smell	Online follow-up > Health and well-being	9789	Categorical (single)
28614	Extent affected by a loss or change in sense of smell	Online follow-up > Health and well-being	9789	Categorical (single)
28615	Currently suffering from a loss or change in sense of taste	Online follow-up > Health and well-being	195610	Categorical (single)
28616	Length of time suffering from a loss or change in sense of taste	Online follow-up > Health and well-being	8070	Categorical (single)
28617	Extent affected by a loss or change in sense of taste	Online follow-up > Health and well-being	8070	Categorical (single)
28618	Currently suffering from a sore or painful throat	Online follow-up > Health and well-being	195610	Categorical (single)
28619	Length of time suffering from a sore or painful throat	Online follow-up > Health and well-being	8502	Categorical (single)
28620	Extent affected by a sore or painful throat	Online follow-up > Health and well-being	8502	Categorical (single)
28621	Currently suffering from nasal congestion	Online follow-up > Health and well-being	195610	Categorical (single)
28622	Length of time suffering from nasal congestion	Online follow-up > Health and well-being	30505	Categorical (single)
28623	Extent affected by nasal congestion	Online follow-up > Health and well-being	30505	Categorical (single)

28624	Currently suffering from tinnitus	Online follow-up > Health and well-being	195610	Categorical (single)
28625	Length of time suffering from tinnitus	Online follow-up > Health and well-being	42239	Categorical (single)
28626	Extent affected by tinnitus	Online follow-up > Health and well-being	42239	Categorical (single)
28627	Currently suffering from hearing loss	Online follow-up > Health and well-being	195610	Categorical (single)
28628	Length of time suffering from hearing loss	Online follow-up > Health and well-being	48110	Categorical (single)
28629	Extent affected by hearing loss	Online follow-up > Health and well-being	48110	Categorical (single)
28630	Currently suffering from other hearing issues	Online follow-up > Health and well-being	195610	Categorical (single)
28631	Length of time suffering from other hearing issues	Online follow-up > Health and well-being	7172	Categorical (single)
28632	Extent affected by other hearing issues	Online follow-up > Health and well-being	7172	Categorical (single)
28633	Currently suffering from headaches	Online follow-up > Health and well-being	195610	Categorical (single)
28634	Length of time suffering from headaches	Online follow-up > Health and well-being	16762	Categorical (single)
28635	Extent affected by headaches	Online follow-up > Health and well-being	16762	Categorical (single)
28636	Currently suffering from neck pain/stiff neck	Online follow-up > Health and well-being	195610	Categorical (single)
28637	Length of time suffering from neck pain/stiff neck	Online follow-up > Health and well-being	35154	Categorical (single)
28638	Extent affected by neck pain/stiff neck	Online follow-up > Health and well-being	35154	Categorical (single)
28639	Currently suffering from back pain	Online follow-up > Health and well-being	195610	Categorical (single)
28640	Length of time suffering from back pain	Online follow-up > Health and well-being	48725	Categorical (single)
28641	Extent affected by back pain	Online follow-up > Health and well-being	48725	Categorical (single)
28642	Currently suffering from chest pain	Online follow-up > Health and well-being	195610	Categorical (single)
28643	Length of time suffering from chest pain	Online follow-up > Health and well-being	4202	Categorical (single)
28644	Extent affected by chest pain	Online follow-up > Health and well-being	4202	Categorical (single)
28645	Currently suffering from pain on breathing	Online follow-up > Health and well-being	195610	Categorical (single)
28646	Length of time suffering from pain on breathing	Online follow-up > Health and well-being	2446	Categorical (single)
28647	Extent affected by pain on breathing	Online follow-up > Health and well-being	2446	Categorical (single)
28648	Currently suffering from abdominal pain/tummy ache	Online follow-up > Health and well-being	195610	Categorical (single)
28649	Length of time suffering from abdominal pain/tummy ache	Online follow-up > Health and well-being	12304	Categorical (single)
28650	Extent affected by abdominal pain/tummy ache	Online follow-up > Health and well-being	12304	Categorical (single)
28651	Currently suffering from leg pain	Online follow-up > Health and well-being	195610	Categorical (single)
28652	Length of time suffering from leg pain	Online follow-up > Health and well-being	37914	Categorical (single)
28653	Extent affected by leg pain	Online follow-up > Health and well-being	37914	Categorical (single)
28654	Currently suffering from muscle pain/achy muscles	Online follow-up > Health and well-being	195610	Categorical (single)
28655	Length of time suffering from muscle pain/achy muscles	Online follow-up > Health and well-being	46691	Categorical (single)
28656	Extent affected by muscle pain/achy muscles	Online follow-up > Health and well-being	46691	Categorical (single)
28657	Currently suffering from joint pain or swelling of joint(s)	Online follow-up > Health and well-being	195610	Categorical (single)
28658	Length of time suffering from joint pain or swelling of joint(s)	Online follow-up > Health and well-being	62191	Categorical (single)
28659	Extent affected by joint pain or swelling of joint(s)	Online follow-up > Health and well-being	62191	Categorical (single)

28660	Currently suffering from bone pain	Online follow-up > Health and well-being	195610	Categorical (single)
28661	Length of time suffering from bone pain	Online follow-up > Health and well-being	17505	Categorical (single)
28662	Extent affected by bone pain	Online follow-up > Health and well-being	17505	Categorical (single)
28663	Currently suffering from a persistent cough	Online follow-up > Health and well-being	195610	Categorical (single)
28664	Length of time suffering from a persistent cough	Online follow-up > Health and well-being	16863	Categorical (single)
28665	Extent affected by a persistent cough	Online follow-up > Health and well-being	16863	Categorical (single)
28666	Currently suffering from phlegm production/a chesty cough	Online follow-up > Health and well-being	195610	Categorical (single)
28667	Length of time suffering from phlegm production/a chesty cough	Online follow-up > Health and well-being	21344	Categorical (single)
28668	Extent affected by phlegm production/a chesty cough	Online follow-up > Health and well-being	21344	Categorical (single)
28669	Currently suffering from tightness in the chest	Online follow-up > Health and well-being	195610	Categorical (single)
28670	Length of time suffering from tightness in the chest	Online follow-up > Health and well-being	6577	Categorical (single)
28671	Extent affected by tightness in the chest	Online follow-up > Health and well-being	6577	Categorical (single)
28672	Currently suffering from chest pressure	Online follow-up > Health and well-being	195610	Categorical (single)
28673	Length of time suffering from chest pressure	Online follow-up > Health and well-being	4969	Categorical (single)
28674	Extent affected by chest pressure	Online follow-up > Health and well-being	4969	Categorical (single)
28675	Currently suffering from heart issues	Online follow-up > Health and well-being	195610	Categorical (single)
28676	Length of time suffering from heart issues	Online follow-up > Health and well-being	17303	Categorical (single)
28677	Extent affected by heart issues	Online follow-up > Health and well-being	17303	Categorical (single)
28678	Currently suffering from postural tachycardia	Online follow-up > Health and well-being	195610	Categorical (single)
28679	Length of time suffering from postural tachycardia	Online follow-up > Health and well-being	3473	Categorical (single)
28680	Extent affected by postural tachycardia	Online follow-up > Health and well-being	3473	Categorical (single)
28681	Currently suffering from dizziness/light-headedness	Online follow-up > Health and well-being	195610	Categorical (single)
28682	Length of time suffering from dizziness/light-headedness	Online follow-up > Health and well-being	21943	Categorical (single)
28683	Extent affected by dizziness/light-headedness	Online follow-up > Health and well-being	21943	Categorical (single)
28684	Currently suffering from shortness of breath or trouble breathing	Online follow-up > Health and well-being	195610	Categorical (single)
28685	Length of time suffering from shortness of breath or trouble breathing	Online follow-up > Health and well-being	15821	Categorical (single)
28686	Extent affected by shortness of breath or trouble breathing	Online follow-up > Health and well-being	15821	Categorical (single)
28687	Currently suffering from difficulty sleeping	Online follow-up > Health and well-being	195610	Categorical (single)
28688	Length of time suffering from difficulty sleeping	Online follow-up > Health and well-being	54765	Categorical (single)
28689	Extent affected by difficulty sleeping	Online follow-up > Health and well-being	54765	Categorical (single)
28690	Currently suffering from night sweats	Online follow-up > Health and well-being	195610	Categorical (single)
28691	Length of time suffering from night sweats	Online follow-up > Health and well-being	29080	Categorical (single)
28692	Extent affected by night sweats	Online follow-up > Health and well-being	29080	Categorical (single)
28693	Currently suffering from unrestful sleep	Online follow-up > Health and well-being	195610	Categorical (single)
28694	Length of time suffering from unrestful sleep	Online follow-up > Health and well-being	70032	Categorical (single)
28695	Extent affected by unrestful sleep	Online follow-up > Health and well-being	70032	Categorical (single)

28696	Currently suffering from mild fatigue	Online follow-up > Health and well-being	195610	Categorical (single)
28697	Length of time suffering from mild fatigue	Online follow-up > Health and well-being	75061	Categorical (single)
28698	Extent affected by mild fatigue	Online follow-up > Health and well-being	75061	Categorical (single)
28699	Currently suffering from severe fatigue	Online follow-up > Health and well-being	195610	Categorical (single)
28700	Length of time suffering from severe fatigue	Online follow-up > Health and well-being	2776	Categorical (single)
28701	Extent affected by severe fatigue	Online follow-up > Health and well-being	2776	Categorical (single)
28702	Currently suffering from post-exertional symptom exacerbation	Online follow-up > Health and well-being	195610	Categorical (single)
28703	Length of time suffering from post-exertional symptom exacerbation	Online follow-up > Health and well-being	16618	Categorical (single)
28704	Extent affected by post-exertional symptom exacerbation	Online follow-up > Health and well-being	16618	Categorical (single)
28705	Currently suffering from skin issues e.g. raised, red itchy areas, new rash	Online follow-up > Health and well-being	195610	Categorical (single)
28706	Length of time suffering from skin issues	Online follow-up > Health and well-being	25734	Categorical (single)
28707	Extent affected by skin issues	Online follow-up > Health and well-being	25734	Categorical (single)
28708	Currently suffering from red/purple sores or blisters on feet	Online follow-up > Health and well-being	195610	Categorical (single)
28709	Length of time suffering from red/purple sores or blisters on feet	Online follow-up > Health and well-being	2755	Categorical (single)
28710	Extent affected by red/purple sores or blisters on feet	Online follow-up > Health and well-being	2755	Categorical (single)
28711	Currently suffering from a new allergy or intolerance	Online follow-up > Health and well-being	195610	Categorical (single)
28712	Length of time suffering from a new allergy or intolerance	Online follow-up > Health and well-being	3615	Categorical (single)
28713	Extent affected by a new allergy or intolerance	Online follow-up > Health and well-being	3615	Categorical (single)
28714	Currently suffering from a fever	Online follow-up > Health and well-being	195610	Categorical (single)
28715	Length of time suffering from a fever	Online follow-up > Health and well-being	3559	Categorical (single)
28716	Extent affected by a fever	Online follow-up > Health and well-being	3559	Categorical (single)
28717	Currently suffering from chills (feeling too cold)	Online follow-up > Health and well-being	195610	Categorical (single)
28718	Length of time suffering from chills	Online follow-up > Health and well-being	3622	Categorical (single)
28719	Extent affected by chills	Online follow-up > Health and well-being	3622	Categorical (single)
28720	Currently suffering from problems thinking	Online follow-up > Health and well-being	195610	Categorical (single)
28721	Length of time suffering from problems thinking	Online follow-up > Health and well-being	42680	Categorical (single)
28722	Extent affected by problems thinking	Online follow-up > Health and well-being	42680	Categorical (single)
28723	Currently suffering from problems communicating	Online follow-up > Health and well-being	195610	Categorical (single)
28724	Length of time suffering from problems communicating	Online follow-up > Health and well-being	17208	Categorical (single)
28725	Extent affected by problems communicating	Online follow-up > Health and well-being	17208	Categorical (single)
28726	Currently suffering from problems relating to mood, anxiety and emotions	Online follow-up > Health and well-being	195610	Categorical (single)
28727	Length of time suffering from problems relating to mood, anxiety and emotions	Online follow-up > Health and well-being	42008	Categorical (single)
28728	Extent affected by problems relating to mood, anxiety and emotions	Online follow-up > Health and well-being	42008	Categorical (single)

28729	Currently suffering from weakness of muscles or difficulty moving arms and legs	Online follow-up > Health and well-being	195610	Categorical (single)
28730	Length of time suffering from weakness of muscles or difficulty moving arms and legs	Online follow-up > Health and well-being	20310	Categorical (single)
28731	Extent affected by weakness of muscles or difficulty moving arms and legs	Online follow-up > Health and well-being	20310	Categorical (single)
28732	Currently suffering from numbness or tingling somewhere in the body	Online follow-up > Health and well-being	195610	Categorical (single)
28733	Length of time suffering from numbness or tingling somewhere in the body	Online follow-up > Health and well-being	31469	Categorical (single)
28734	Extent affected by numbness or tingling somewhere in the body	Online follow-up > Health and well-being	31469	Categorical (single)
23078	Device used for pointing	Online follow-up > Cognitive function online > Entry method	213500	Categorical (single)
23077	Device used for typing	Online follow-up > Cognitive function online > Entry method	213500	Categorical (single)
29250	Aids used to assist with answering questionnaire	Online follow-up > Cognitive function online > Entry method	6671	Categorical (multiple)
23079	When mood described	Online follow-up > Cognitive function online > Mood	213130	Time
23045	Very nervous mood over last week	Online follow-up > Cognitive function online > Mood	211855	Categorical (single)
23046	Down in dumps over last week	Online follow-up > Cognitive function online > Mood	211855	Categorical (single)
23047	Felt calm over last week	Online follow-up > Cognitive function online > Mood	211855	Categorical (single)
23072	Downhearted and depressed over last week	Online follow-up > Cognitive function online > Mood	211855	Categorical (single)
23076	Happy over last week	Online follow-up > Cognitive function online > Mood	211855	Categorical (single)
20192	Number of fluid intelligence questions attempted within time limit	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	211961	Integer
20166	FI1	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	211729	Integer
20168	FI2	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	211668	Integer
20170	FI3	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	211356	Integer
20172	FI4	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	205492	Integer
20174	FI5	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	177007	Integer
20176	FI6	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	144717	Integer
20178	FI7	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	119234	Integer

20180	FI8	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	87324	Integer
20182	FI9	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	37713	Integer
20184	FI10	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	23630	Integer
20186	FI11	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	11377	Integer
20188	FI12	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	6793	Integer
20190	FI13	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	1600	Integer
20194	FI14	Online follow-up > Cognitive function online > Fluid intelligence / reasoning	589	Integer
20760	Number of puzzles correctly solved	Online follow-up > Cognitive function online > Matrix pattern completion	174585	Integer
20761	Number of puzzles viewed	Online follow-up > Cognitive function online > Matrix pattern completion	174585	Integer
20762	Item selected for each puzzle	Online follow-up > Cognitive function online > Matrix pattern completion	174585	Categorical (multiple)
20763	Duration spent answering each puzzle	Online follow-up > Cognitive function online > Matrix pattern completion	174585	Integer
20764	Matrices puzzle completion status	Online follow-up > Cognitive function online > Matrix pattern completion	176549	Categorical (single)
20765	When matrices puzzle completed	Online follow-up > Cognitive function online > Matrix pattern completion	176549	Time
20552	Behavioural and miscellaneous addictions	Online follow-up > Mental health > Addictions	2237	Categorical (multiple)
20503	Ever addicted to prescription or over-the-counter medication	Online follow-up > Mental health > Addictions	9368	Categorical (single)
20504	Ongoing addiction or dependence to over-the-counter medication	Online follow-up > Mental health > Addictions	1316	Categorical (single)
20413	Frequency of inability to cease drinking in last year	Online follow-up > Mental health > Alcohol use	85135	Categorical (single)
20461	Age when first had unusual or psychotic experience	Online follow-up > Mental health > Unusual and psychotic experiences	7793	Integer
20462	Distress caused by unusual or psychotic experiences	Online follow-up > Mental health > Unusual and psychotic experiences	7793	Categorical (single)

Appendix C - Fields Coding Preprocessing Mapping Table

e - Treat value as missing

b - Move value to a dedicated binary column

all - Value is represented by all other field columns having value of 1

Field ID	Original Value Codes	Vector Mapped Value
100316	-7	e
100316	-3	e
100316	1	1
100316	2	b
100316	3	b
100316	4	2
100316	5	3
100299	-7	e
100299	-3	e
100299	1	b
100299	2	b
100299	3	b
100299	4	b
100361	-7	e
100361	-3	e
100361	-1	e
100361	1	b
100361	2	b
100361	3	b
100361	4	b
100385	-3	e
100385	1	b
100385	2	b
100385	3	b
100385	4	b
100385	5	all
100672	-3	e
100672	1	b
100672	2	b
100672	3	b
100672	4	b
100672	5	all
1010	-27	e
1010	-23	e
1010	-21	e
1010	-17	e
1010	-13	e
1010	-11	e
1010	1	b

1010	2	b
1010	3	b
1010	4	b
1010	5	b
1010	6	b
1010	8	b
1010	9	b
1010	10	b
1010	11	b
1010	12	b
1010	13	b
1010	14	b
100328	-7	e
100328	-3	e
100328	1	b
100328	2	b
100328	3	b
100328	4	b
100328	5	b
100498	-7	e
100498	11	b
100498	12	b
100498	13	b
100498	14	b
100498	15	all
100502	-7	e
100502	-3	e
100502	1	b
100502	2	b
100502	3	b
100502	4	b
100502	5	b
100502	6	b
100683	-7	b
100683	-3	e
100683	-1	e
100683	1	b
100683	2	b
100683	3	b
100683	4	b
100683	5	b
100683	6	b
1401	-819	e
1401	-818	e
1401	1	b
1401	2	b

1401	3	b
1401	4	b
1401	5	b
1401	6	b
1401	7	b
1401	10	s
1401	11	b
1401	12	b
1401	13	b
1401	14	b
1401	15	all
1401	16	b
1401	17	b
1401	18	b
1406	-818	e
1406	1	b
1406	3	b
1405	-818	e
1405	1	b
1405	3	b
1405	4	b
1407	-818	e
1407	1	b
1407	2	b
1407	3	b
1407	5	b
1407	6	b
1407	7	b
1407	8	b
1407	9	b
1414	-818	e
1414	1	b
1414	2	b
1414	3	b
1414	4	e
1422	-818	e
1422	1	e
1422	2	b
1422	3	b
1422	4	b
1422	5	b
1422	6	b
1423	-818	e
1423	1	b
1423	3	b
1423	4	b

1423	5	b
1423	6	b
100334	-3	e
100334	-1	e
100334	1	1
100334	2	2
100334	3	3
100334	4	4
100334	5	0
100318	-3	e
100318	-1	e
100318	1	1
100318	2	2
100318	3	3
100318	4	4
100318	5	5
100318	6	6
100318	7	7
100659	-3	e
100659	-1	e
100659	1	1
100659	2	2
100659	3	3
100659	4	4
100659	5	5
100317	-3	e
100317	-1	e
100317	1	1
100317	2	2
100317	3	3
100317	4	4
100317	5	5
100317	6	6
100314	-3	e
100314	-1	e
100314	0	0
100314	1	1
100314	2	2
100314	3	3
100314	4	4
100314	5	5
100313	-7	e
100313	-3	e
100313	1	1
100313	2	2
100313	3	3

100335	-3	e
100335	-1	e
100335	0	0
100335	1	1
100335	2	2
100335	3	3
100335	4	4
100336	-3	e
100336	-1	e
100336	0	0
100336	1	1
100336	2	2
100336	3	3
100336	4	4
100336	5	5
100663	-3	e
100663	-1	e
100663	1	1
100663	2	2
100663	3	3
100663	4	4
100349	-3	e
100349	-1	e
100349	0	0
100349	1	1
100337	-3	e
100337	-1	e
100337	0	0
100337	1	1
100337	2	2
100337	3	3
100337	4	4
100338	-3	e
100338	-1	e
100338	0	2
100338	1	1
100338	2	3
100338	3	b
100664	-3	e
100664	-1	e
100664	0	2
100664	1	1
100664	2	3
100664	3	b
100339	-3	e
100339	-1	e

100339	1	1
100339	2	3
100339	3	2
100639	-3	e
100639	0	0
100639	1	1
100639	2	2
100352	-3	e
100352	0	0
100352	1	1
100341	-3	e
100341	-1	e
100341	1	1
100341	2	2
100341	3	3
100341	4	4
100342	-3	e
100342	-1	e
100342	1	1
100342	2	2
100342	3	3
100342	4	4
100343	-3	e
100343	1	1
100343	2	2
100343	3	3
100345	-3	e
100345	-1	e
100345	1	1
100345	2	0
100346	-3	e
100346	-1	e
100346	0	0
100346	1	1
100346	2	2
100346	3	3
90	-3	e
90	0	0
90	1	b
90	2	1
100347	-3	e
100347	0	0
100347	1	2
100347	2	1
100348	-3	e
100348	1	1

100348	2	2
100348	3	3
100348	4	4
100351	-7	e
100351	-3	e
100351	1	b
100351	2	b
100351	3	b
100356	-3	e
100356	-1	e
100356	1	1
100356	2	2
100356	3	3
100356	4	4
100356	5	5
100357	-3	e
100357	1	1
100357	2	2
100357	3	3
100357	4	4
100358	-3	e
100358	0	b
100358	1	b
100358	2	b
100359	-3	e
100359	1	1
100359	2	2
100359	3	3
100359	4	4
100360	-3	e
100360	1	1
100360	2	2
100360	3	3
100668	-1	e
100668	0	0
100668	1	1
100669	-3	e
100669	-1	e
100669	1	b
100669	2	b
100669	3	b
100369	-3	e
100369	-1	e
100369	1	1
100369	2	2
100369	3	3

100369	4	4
100370	-3	e
100370	0	0
100370	1	1
100370	2	2
100377	-3	e
100377	-1	e
100377	0	0
100377	1	1
100377	2	2
100377	3	3
100377	4	4
100377	5	5
100387	-3	e
100387	-1	e
100387	1	b
100387	2	b
100387	3	b
100387	4	b
100387	5	b
100387	6	e
100388	-3	e
100388	-1	e
100388	0	e
100388	1	b
100388	2	b
100388	3	b
100389	-3	e
100389	-1	e
100389	2	b
100389	4	1
100389	5	1
100389	6	2
100389	7	2
100389	8	2
100389	9	1
100673	-3	e
100673	-1	e
100673	1	1
100673	2	1
100673	3	2
100673	4	2
100673	5	b
100673	6	e
100391	-3	e
100391	-1	e

100391	1	b
100391	2	b
100391	3	b
100391	4	b
100674	-3	e
100674	-1	e
100674	1	b
100674	2	b
100674	3	b
100674	4	b
100674	5	b
100393	-3	e
100393	-1	e
100393	1	b
100393	2	b
100393	3	b
100393	4	b
100393	5	b
100394	-3	e
100394	1	1
100394	2	2
100394	3	3
100394	4	4
100397	-3	e
100397	-1	e
100397	1	0
100397	2	1
100397	3	1
100397	4	1
100398	-3	e
100398	-2	b
100398	1	1
100398	2	2
100398	3	3
100400	-3	e
100400	0	e
100400	1	b
100400	2	b
100401	-3	e
100401	-1	e
100401	1	1
100401	2	2
100401	3	3
100402	-3	e
100402	1	1
100402	2	2

100402	3	3
100402	4	4
100402	5	5
100402	6	6
100416	-6	1
100416	-3	e
100416	-1	e
100416	0	0
100416	1	2
100417	-3	e
100417	-1	e
100417	1	1
100417	2	2
100417	3	3
100418	-3	e
100418	-1	e
100418	1	b
100418	2	b
100418	3	b
100418	4	b
100418	5	b
100431	-3	e
100431	-1	e
100431	1	1
100431	2	2
100431	3	3
100431	4	4
100431	5	5
100431	6	6
100432	-3	e
100432	-1	e
100432	1	1
100432	2	2
100432	3	3
100432	4	4
100434	-3	e
100434	-1	e
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100434	2	b
100434	3	2
100434	4	3
100434	5	4
100434	6	b
100435	-3	e
100435	-1	e
100435	1	1

100435	2	3
100435	3	2
100536	-3	e
100536	-1	e
100536	1	1
100536	2	2
100536	3	3
100536	4	4
100536	5	0
100420	-3	e
100420	-1	e
100420	1	b
100420	2	b
100420	3	b
100420	4	b
100420	5	b
100420	6	e
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100428	3	2
100429	-3	e
100429	-1	e
100429	1	1
100429	2	3
100429	3	2
100430	-3	e
100430	1	1
100430	2	3
100430	3	2
100327	-3	e
100327	-1	e
100327	1	1
100327	2	2
100327	3	3
100327	4	4
100327	5	5
100327	6	6
100327	7	b
100662	-3	e
100662	1	1
100662	2	2
100662	3	3
100662	4	4
100662	5	5

100662	6	6
100662	7	b
100501	-3	e
100501	-1	e
100501	0	0
100501	1	1
100501	2	2
100501	3	3
100501	4	4
100501	5	5
100695	0	s
100695	1	s
100695	2	s
100695	3	1
100695	4	2
100695	5	3
100478	-3	e
100478	-1	e
100478	1	1
100478	2	2
100478	3	3
100478	4	4
100478	5	5
100478	6	6
100479	-3	e
100479	-1	e
100479	1	1
100479	2	2
100479	3	3
100479	4	4
100479	5	5
100479	6	6
100479	7	b
100484	-3	e
100484	-1	e
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100484	2	2
100484	3	3
100484	4	4
100499	-3	e
100499	-1	e
100499	11	2
100499	12	1
100499	13	3
100500	-3	e
100500	-1	e

100500	11	0
100500	12	1
100259	-1	e
100259	1	b
100259	2	b
100259	3	b
100259	4	e
5001	-818	e
5001	-121	e
5001	1	1
5001	2	2
5001	3	3
5001	4	4
5001	5	5
5002	-818	e
5002	-121	e
5002	1	b
5002	2	b
5002	3	b
5002	4	b
5002	5	b
5003	-818	e
5003	-121	e
5003	1	b
5003	2	b
5003	3	b
5003	4	b
5003	5	b
5004	-818	e
5004	-121	e
5004	1	1
5004	2	2
5004	3	3
5004	4	4
5004	5	5
5005	-818	e
5005	-121	e
5005	1	0
5005	2	0
5005	3	0
5005	4	1
5005	5	b
5006	-818	e
5006	-121	e
5006	1	0
5006	2	1

5006	3	0
5006	4	0
5006	5	0
5007	-818	e
5007	-121	e
5007	1	0
5007	2	0
5007	3	1
5007	4	0
5007	5	0
5008	-818	e
5008	-121	e
5008	1	0
5008	2	1
5008	3	0
5008	4	0
5008	5	0
5009	-818	e
5009	-121	e
5009	1	0
5009	2	0
5009	3	0
5009	4	1
5009	5	0
5010	-818	e
5010	-121	e
5010	1	0
5010	2	1
5010	3	0
5010	4	0
5010	5	0
5011	-818	e
5011	-121	e
5011	1	0
5011	2	1
5011	3	0
5011	4	0
5011	5	2
5015	-818	e
5015	-121	e
5015	1	0
5015	2	0
5015	3	0
5015	4	0
5015	5	0
5015	6	1

5013	-818	e
5013	-121	e
5013	1	1
5013	2	0
5013	3	0
5013	4	0
5013	5	0
5014	-818	e
5014	-121	e
5014	1	1
5014	2	0
5014	3	0
5014	4	0
5014	5	0
479	0	b
479	1	b
479	3	b
502	-818	e
502	-121	e
502	0	0
502	1	1
503	-818	e
503	0	0
503	1	1
514	-818	e
514	-313	e
514	-121	e
514	0	0
514	1	1
509	-818	e
509	1	1
509	2	2
509	3	3
509	4	4
509	5	5
509	6	6
505	-818	e
505	-121	e
505	1	1
505	2	2
505	3	3
505	4	4
506	-818	e
506	-121	e
506	1	1
506	2	2

506	3	3
510	-818	e
510	0	0
510	1	1
510	2	2
510	3	3
504	-818	e
504	1	0
504	2	1
504	3	2
504	4	3
507	-818	e
507	-121	e
507	0	b
507	1	1
507	2	2
507	3	b
515	-818	e
515	-121	e
515	1	s
515	2	s
515	3	s
516	-818	e
516	-121	e
516	0	s
516	1	s
520	-121	e
520	0	0
520	1	1
519	-818	e
519	-121	e
519	0	0
519	1	1
519	2	2
519	3	3
518	-818	e
518	-121	e
518	1	1
518	2	2
521	-818	e
521	0	0
521	1	1
521	2	2
521	3	3
521	4	4
522	-818	e

522	1	1
522	2	2
522	3	3
522	4	4
522	5	5
523	-818	e
523	1	0
523	2	1
523	3	2
523	4	3
523	5	4
524	-818	e
524	0	0
524	1	b
524	2	1
526	-818	e
526	0	0
526	1	1
526	2	2
526	3	3
526	4	4
527	-818	e
527	-121	e
527	1	1
527	2	2
527	3	3
527	4	4
529	-818	e
529	0	0
529	1	1
529	2	2
529	3	3
529	4	4
532	-818	e
532	0	0
532	1	1
532	2	2
532	3	3
532	4	4
533	-818	e
533	0	0
533	1	b
533	2	1
534	-818	e
534	0	0
534	1	1

534	2	2
534	3	3
534	4	4
535	-818	e
535	0	0
535	1	1
535	2	2
536	-818	e
536	1	1
536	2	2
536	3	3
537	-818	e
537	-121	e
537	1	1
537	2	2
537	3	3
537	4	4
537	5	5
537	6	6
538	-818	e
538	-121	e
538	1	0
538	2	1
538	3	2
538	4	3
538	5	4
486	-818	e
486	-717	b
486	-121	e
486	101	b
486	102	b
486	103	b
486	105	b
486	106	b
486	107	b
486	108	b
494	-3040	1
494	-2030	2
494	-1520	3
494	4000	4
489	0	1
489	1	2
489	9	0
493	-141	2
493	-131	1
493	-121	e

493	0	0
496	-818	e
496	111	2
496	112	1
496	113	b
496	114	0
2171	20	b
2171	21	b
2171	30	b
2171	31	b
2171	40	b
2171	41	b
2171	50	b
2171	51	b
100355	-10	0.5
100355	-3	e
100355	-1	e
100373	-10	0.5
100373	-3	e
100373	-1	e
100537	-10	0.5
100537	-3	e
100537	-1	e
528	-999	9999
528	-818	e
528	-121	e
946	-1001	0.5
946	-818	e
946	0	b
7	0	0
7	1	1
12	0	0
12	1	1
498	0	1
498	1	0
508	0	0
508	1	1
100291	-3	e
100291	-1	e
100353	-10	0.5
100353	-1	e
513	-818	e
513	-121	e
511	-999	9999
511	-818	e
525	-818	e

525	-121	e
100694	1	s
100694	2	s
100307	-3	e
100307	-2	b
100307	-1	e
100329	-10	0.5
100329	-3	e
100329	-1	e
100504	-3	e
100504	-2	b
100504	-1	e

Appendix D - Feature importance and weights list of BD diagnosis model

*** The identifier consists of the field id and coding value. For example 20553_4 means: "Methods of self-harm used"_"Ingesting a medication in excess of the normal dose"**

According to Data-Coding 1422 that is accosiated with field 20553. See link. https://biobank.ndph.ox.ac.uk/crystal/coding.cgi?id=1422

identifier	feature name	weight
41270_F32	Diagnoses - ICD10	0.009603234008
130895_40	Source of report of F32 (depressive episode)	0.007307580207
130894-0.0	Date F32 first reported (depressive episode)	0.007189821918
130895_51	Source of report of F32 (depressive episode)	0.006899004336
41270_R69	Diagnoses - ICD10	0.006239179522
41270_Z91	Diagnoses - ICD10	0.005762450863
20499	Ever sought or received professional help for mental distress	0.005462068599
41202_F33	Diagnoses - main ICD10	0.005280356854
2010	Suffer from 'nerves'	0.005178704392
41270_F41	Diagnoses - ICD10	0.004962274339
20500	Ever suffered mental distress preventing usual activities	0.004947545938
41202_R69	Diagnoses - main ICD10	0.004518054891
20476_max	Number of times believed in un-real communications or signs	0.004230105318
41202_R47	Diagnoses - main ICD10	0.003857356263
4631	Ever unenthusiastic/disinterested for a whole week	0.00370251853
41270_R93	Diagnoses - ICD10	0.003608029569
41270_R54	Diagnoses - ICD10	0.003445196897
41270_S32	Diagnoses - ICD10	0.003405008698
41202_G47	Diagnoses - main ICD10	0.003196016653
41202_D04	Diagnoses - main ICD10	0.00317607983
20131_min	Number of correct matches in round	0.003063012846
41270_K59	Diagnoses - ICD10	0.002930734307
41270_F20	Diagnoses - ICD10	0.002903148998
20549_3	Substances taken for anxiety	0.002875858219
41270_S42	Diagnoses - ICD10	0.002843971131
1930	Miserableness	0.00280575431
41270_L40	Diagnoses - ICD10	0.002795130014
20477	Ever talked to a health professional about unusual or psychotic experiences	0.002733233152
41270_F17	Diagnoses - ICD10	0.00269668363
41270_J69	Diagnoses - ICD10	0.002614162397
130897_40	Source of report of F33 (recurrent depressive disorder)	0.002610705327
41202_K02	Diagnoses - main ICD10	0.002601010492
20446	Ever had prolonged feelings of sadness or depression	0.002591375029
41270_R05	Diagnoses - ICD10	0.002565830247
130895_31	Source of report of F32 (depressive episode)	0.002555564977
41270_Z93	Diagnoses - ICD10	0.002527832286
41202_T83	Diagnoses - main ICD10	0.002527303528
41270_N17	Diagnoses - ICD10	0.002482187934
5386_min	Number of unenthusiastic/disinterested episodes	0.002445203951
20463	Ever heard an un-real voice	0.00238340511
41270_R41	Diagnoses - ICD10	0.002381319879
1990	Tense / 'highly strung'	0.00238093501
20127_avg	Neuroticism score	0.002368749119
41202_S01	Diagnoses - main ICD10	0.00236477796
20441	Ever had prolonged loss of interest in normal activities	0.002340992447
41270_X61	Diagnoses - ICD10	0.002335666912
41270_R29	Diagnoses - ICD10	0.002312153112
20473_max	Number of times seen an un-real vision	0.002263951581
20546_3	Substances taken for depression	0.002259547357
41270_F33	Diagnoses - ICD10	0.002251914004
20466	Ever prescribed a medication for unusual or psychotic experiences	0.002225869102
41270_I24	Diagnoses - ICD10	0.002224452561
41270_X60	Diagnoses - ICD10	0.002198317321
41270_N18	Diagnoses - ICD10	0.002171151806
41270_F03	Diagnoses - ICD10	0.002170877298
41270_F05	Diagnoses - ICD10	0.002158720046
41202_M54	Diagnoses - main ICD10	0.002144886646
41270_G20	Diagnoses - ICD10	0.002111966023
41270_U51	Diagnoses - ICD10	0.002111124806
41270_Z83	Diagnoses - ICD10	0.002107768785
41270_Z86	Diagnoses - ICD10	0.002106257714
20127_max	Neuroticism score	0.002092269016
41202_R41	Diagnoses - main ICD10	0.002087098313
20511	Recent poor appetite or overeating	0.002071226947
41270_S00	Diagnoses - ICD10	0.002068559872
41270_W19	Diagnoses - ICD10	0.002060036873
41270_R32	Diagnoses - ICD10	0.0020583109
41270_K02	Diagnoses - ICD10	0.002055244753
3486_2	Ever tried to stop smoking	0.002039828571
20406	Ever addicted to alcohol	0.002037413884
4620_min	Number of depression episodes	0.00203113351
41202_F32	Diagnoses - main ICD10	0.002025928348
41270_G31	Diagnoses - ICD10	0.002017354826

4609_min	Longest period of depression	0.002010154771		
41202_R29	Diagnoses - main ICD10	0.002004382201		
41270_E86	Diagnoses - ICD10	0.002002294641		
41270_J18	Diagnoses - ICD10	0.001989140641		
4598	Ever depressed for a whole week	0.001966920216		
20550_3	Activities undertaken to treat anxiety	0.001961536938		
41270_T39	Diagnoses - ICD10	0.001956695458		
1518_-2	Hot drink temperature	0.001945990603		
41270_T43	Diagnoses - ICD10	0.001931646373		
41270_I34	Diagnoses - ICD10	0.001913274988		
41270_E10	Diagnoses - ICD10	0.001912402455		
3859_1	Reason former drinker stopped drinking alcohol	0.001905122073		
41270_E55	Diagnoses - ICD10	0.001904767938		
5386_avg	Number of unenthusiastic/disinterested episodes	0.001899971627		
20553_4	Methods of self-harm used	0.001890279003		
4620_max	Number of depression episodes	0.00188824744		
41270_N39	Diagnoses - ICD10	0.001887864666		
41270_J22	Diagnoses - ICD10	0.001870329608		
20547_1	Activities undertaken to treat depression	0.001869802014		
20479	Ever thought that life not worth living	0.001867276616		
41270_F06	Diagnoses - ICD10	0.001857062802		
41270_T42	Diagnoses - ICD10	0.001851567416		
41270_K43	Diagnoses - ICD10	0.001839910517		
41270_F10	Diagnoses - ICD10	0.001824915991		
20543	Number of things worried about during worst period of anxiety	0.001817974728		
130895_50	Source of report of F32 (depressive episode)	0.001802227111		
20111_2	Illnesses of siblings	0.001797676552		
41270_R04	Diagnoses - ICD10	0.001784008928		
20474	Ever believed in un-real communications or signs	0.001775696175		
41270_A04	Diagnoses - ICD10	0.001770471688		
5386_max	Number of unenthusiastic/disinterested episodes	0.001751351752		
41270_T51	Diagnoses - ICD10	0.001743064262		
41202_F41	Diagnoses - main ICD10	0.001716359286		
41270_I45	Diagnoses - ICD10	0.001716011786		
20485	Ever contemplated self-harm	0.001698587555		
41270_Z60	Diagnoses - ICD10	0.001698093605		
20418	Impact on normal roles during worst period of anxiety	0.00169556879		
41202_R55	Diagnoses - main ICD10	0.001694931765		
41270_R47	Diagnoses - ICD10	0.001689844416		
41270_I63	Diagnoses - ICD10	0.001682648552		
41270_Z63	Diagnoses - ICD10	0.001679876936		
20480	Ever self-harmed	0.001659593778		
41270_F22	Diagnoses - ICD10	0.00165776466		
41202_T42	Diagnoses - main ICD10	0.001646622084		
3669_avg	Lifetime number of same-sex sexual partners	0.001640292117		
2060	Frequency of unenthusiasm / disinterest in last 2 weeks	0.001639771159		
41270_R18	Diagnoses - ICD10	0.001626449637		
41270_S52	Diagnoses - ICD10	0.001622569165		
41270_R45	Diagnoses - ICD10	0.001616377849		
41202_K22	Diagnoses - main ICD10	0.001615156652		
1160_min	Sleep duration	0.00159211515		
41270_I95	Diagnoses - ICD10	0.001584254904		
41270_R55	Diagnoses - ICD10	0.001581425196		
20442_avg	Lifetime number of depressed periods	0.001580615528		
41270_Z75	Diagnoses - ICD10	0.001578801312		
41270_E87	Diagnoses - ICD10	0.001574267284		
41270_S22	Diagnoses - ICD10	0.001568622654		
3436_min	Age started smoking in current smokers	0.001543528633		
20471	Ever seen an un-real vision	0.001532655209		
3942	Adopted mother still alive	0.001532014459		
41270_Z50	Diagnoses - ICD10	0.00152795983		
41270_H81	Diagnoses - ICD10	0.001524160733		
20117_1	Alcohol drinker status	0.001523107057		
3506	Smoking compared to 10 years previous	0.001518830308		
41270_L57	Diagnoses - ICD10	0.001513806987		
1090_min	Time spent driving	0.001511008712		
1160_max	Sleep duration	0.001510355156		
41270_K92	Diagnoses - ICD10	0.001500723301		
2664_1	Reason for reducing amount of alcohol drunk	0.001497730031		
20534	Sleeping too much	0.001491280389		
1190	Nap during day	0.001481633284		
20554_1	Actions taken following self-harm	0.001479385886		
41202_R06	Diagnoses - main ICD10	0.001476522186		
41270_A09	Diagnoses - ICD10	0.001475029625		
6145_1	Illness, injury, bereavement, stress in last 2 years	0.00147212937		
41270_E14	Diagnoses - ICD10	0.00146754575		
41270_D64	Diagnoses - ICD10	0.001461480395		

41270_N84	Diagnoses - ICD10	0.0014556885		
3669_min	Lifetime number of same-sex sexual partners	0.001453915494		
41270_F60	Diagnoses - ICD10	0.001452502445		
5375_avg	Longest period of unenthusiasm / disinterest	0.001450278563		
20542	Stronger worrying (than other people) during period of worst anxiety	0.001448083785		
3680_avg	Age when last ate meat	0.001443888643		
4653	Ever highly irritable/argumentative for 2 days	0.001436757389		
3476	Difficulty not smoking for 1 day	0.00143476692		
20111_12	Illnesses of siblings	0.001425263239		
41270_K58	Diagnoses - ICD10	0.001414772705		
20436	Fraction of day affected during worst episode of depression	0.001411469071		
130895_30	Source of report of F32 (depressive episode)	0.001409601769		
20454	Maximum frequency of taking cannabis	0.001408795593		
41270_E03	Diagnoses - ICD10	0.001404397422		
2050	Frequency of depressed mood in last 2 weeks	0.001396619598		
4620_avg	Number of depression episodes	0.001386850141		
1090_max	Time spent driving	0.001384668867		
41270_R35	Diagnoses - ICD10	0.001383704948		
20442_max	Lifetime number of depressed periods	0.001383499359		
41202_T43	Diagnoses - main ICD10	0.001382159418		
5375_max	Longest period of unenthusiasm / disinterest	0.001375177759		
20110_12	Illnesses of mother	0.001369841862		
41270_R20	Diagnoses - ICD10	0.001368482946		
20514	Recent lack of interest or pleasure in doing things	0.001365403179		
95_min	Pulse rate (during blood-pressure measurement)	0.001362473122		
41270_R60	Diagnoses - ICD10	0.001361349015		
20467	Frequency of unusual or psychotic experiences in past year	0.001350878621		
4609_avg	Longest period of depression	0.001345973928		
41270_R26	Diagnoses - ICD10	0.001339618117		
41270_L89	Diagnoses - ICD10	0.001333398279		
3456_min	Number of cigarettes currently smoked daily (current cigarette smokers)	0.001326293102		
41270_S09	Diagnoses - ICD10	0.001321463846		
20107_12	Illnesses of father	0.00132000912		
41270_R15	Diagnoses - ICD10	0.001318346942		
3446_1	Type of tobacco currently smoked	0.001310581923		
130897_30	Source of report of F33 (recurrent depressive disorder)	0.001307465369		
41270_G30	Diagnoses - ICD10	0.001305984799		
41270_G40	Diagnoses - ICD10	0.001295923837		
3456_max	Number of cigarettes currently smoked daily (current cigarette smokers)	0.001295654802		
20468	Ever believed in an un-real conspiracy against self	0.001283946214		
41270_M65	Diagnoses - ICD10	0.001273794915		
1418_4	Milk type used	0.001272660331		
41270_L30	Diagnoses - ICD10	0.001268372172		
41270_E83	Diagnoses - ICD10	0.001266737119		
41270_S72	Diagnoses - ICD10	0.001259263488		
41270_R79	Diagnoses - ICD10	0.001258780132		
20539	Frequency of inability to stop worrying during worst period of anxiety	0.001258202712		
41202_F23	Diagnoses - main ICD10	0.001257057651		
20421	Ever felt worried, tense, or anxious for most of a month or longer	0.001250124769		
41270_R25	Diagnoses - ICD10	0.00124134589		
41270_R11	Diagnoses - ICD10	0.00123530603		
41270_J44	Diagnoses - ICD10	0.001226722845		
6144_2	Never eat eggs, dairy, wheat, sugar	0.001225333894		
41202_R51	Diagnoses - main ICD10	0.001225126325		
22642_min	Usual length of each night shift during mixed shift periods	0.001217320561		
41270_N40	Diagnoses - ICD10	0.001211968483		
41270_N13	Diagnoses - ICD10	0.001207686961		
41270_S01	Diagnoses - ICD10	0.001206554938		
41270_Z72	Diagnoses - ICD10	0.001205690205		
22642_max	Usual length of each night shift during mixed shift periods	0.001199056976		
20476_avg	Number of times believed in un-real communications or signs	0.00119678874		
41202_M79	Diagnoses - main ICD10	0.001194915501		
41270_M81	Diagnoses - ICD10	0.001185993198		
41270_I50	Diagnoses - ICD10	0.001185804955		
41270_C50	Diagnoses - ICD10	0.00118175149		
41270_R50	Diagnoses - ICD10	0.001179110492		
41202_J18	Diagnoses - main ICD10	0.00116908201		
41270_K52	Diagnoses - ICD10	0.001166600385		
22630	Day shifts worked	0.001165766502		
20157_max	Duration to complete alphanumeric path (trail #2)	0.001165025984		
22504	Bring up phlegm/sputum/mucus on most days	0.001164550078		
41202_M23	Diagnoses - main ICD10	0.001152851153		
20148_max	Errors before selecting correct item in alphanumeric path (trail #2)	0.001145749586		
20401	Ever addicted to any substance or behaviour	0.001145340735		
20513	Recent thoughts of suicide or self-harm	0.001144755399		
41270_N20	Diagnoses - ICD10	0.001143853995		
20425	Ever worried more than most people would in similar situation	0.001136467559		

3680_min	Age when last ate meat	0.001135540777		
20521	Belittlement by partner or ex-partner as an adult	0.001125492854		
3436_max	Age started smoking in current smokers	0.001122903777		
22506	Tobacco smoking	0.00111788814		
20487	Felt hated by family member as a child	0.001113528386		
41270_D50	Diagnoses - ICD10	0.00110754394		
6145_5	Illness, injury, bereavement, stress in last 2 years	0.001100288355		
41202_M25	Diagnoses - main ICD10	0.001099388814		
41270_L03	Diagnoses - ICD10	0.001094561536		
41270_R53	Diagnoses - ICD10	0.001090896898		
2070	Frequency of tenseness / restlessness in last 2 weeks	0.00108906487		
1647_5	Country of birth (UK/elsewhere)	0.001082784496		
20448	Professional informed about depression	0.001075984677		
41270_R33	Diagnoses - ICD10	0.001074254513		
20537	Frequency of difficulty controlling worry during worst period of anxiety	0.001064199838		
41202_K92	Diagnoses - main ICD10	0.001059747068		
41270_H36	Diagnoses - ICD10	0.001050525345		
41202_F25	Diagnoses - main ICD10	0.001049357699		
20497	Repeated disturbing thoughts of stressful experience in past month	0.001048870035		
5375_min	Longest period of unenthusiasm / disinterest	0.001048297971		
20508	Recent trouble concentrating on things	0.001046555233		
20450	Feelings of worthlessness during worst period of depression	0.001039331779		
20107_13	Illnesses of father	0.001038484043		
991	Frequency of strenuous sports in last 4 weeks	0.001034477376		
20416	Frequency of consuming six or more units of alcohol	0.001031978638		
41270_Z85	Diagnoses - ICD10	0.001023320016		
1468_3	Cereal type	0.001022240729		
41270_R13	Diagnoses - ICD10	0.001019588904		
20419	Difficulty concentrating during worst period of anxiety	0.001012420282		
22663_avg	Year gap started	0.00101223879		
41270_Z03	Diagnoses - ICD10	0.001011744956		
41202_R13	Diagnoses - main ICD10	0.001010959619		
22507_avg	Age of stopping smoking	0.001009404426		
6157_2	Why stopped smoking	0.001008939347		
20148_min	Errors before selecting correct item in alphanumeric path (trail #2)	0.001007973682		
20434_max	Age at last episode of depression	0.001005350263		
41202_J22	Diagnoses - main ICD10	0.00100258342		
20230_avg	Duration to entering symbol choice	0.001001093304		
1239	Current tobacco smoking	0.001000982593		
20429	Easily tired during worst period of anxiety	0.001000821707		
22640	Mixture of day and night shifts worked	0.0009998717578		
20248_avg	Total errors traversing alphanumeric path (trail #2)	0.0009987573139		
41270_I67	Diagnoses - ICD10	0.0009904949693		
20440	Impact on normal roles during worst period of depression	0.0009903277969		
20523	Physical violence by partner or ex-partner as an adult	0.0009902212769		
20408	Frequency of memory loss due to drinking alcohol in last year	0.0009856686229		
2946_avg	Father's age	0.0009843228618		
41270_Y49	Diagnoses - ICD10	0.0009807071183		
41270_M47	Diagnoses - ICD10	0.0009801620618		
41270_E66	Diagnoses - ICD10	0.0009745273273		
41202_I63	Diagnoses - main ICD10	0.0009685763507		
23648_max	Triglycerides to Total Lipids in Small HDL percentage	0.0009678446804		
41202_R42	Diagnoses - main ICD10	0.0009673110908		
41270_R00	Diagnoses - ICD10	0.0009672666783		
6144_1	Never eat eggs, dairy, wheat, sugar	0.0009670549189		
2654_2	Non-butter spread type details	0.0009664034005		
41270_Z80	Diagnoses - ICD10	0.0009590536938		
1970	Nervous feelings	0.0009577648598		
41270_M25	Diagnoses - ICD10	0.000954213494		
41270_M54	Diagnoses - ICD10	0.0009505322669		
20133_max	Time to complete round	0.0009420204442		
41270_U07	Diagnoses - ICD10	0.0009377421229		
41270_F25	Diagnoses - ICD10	0.0009362580022		
20412	Frequency of needing morning drink of alcohol after heavy drinking session in last year	0.0009361602133		
4609_max	Longest period of depression	0.0009309043526		
6145_6	Illness, injury, bereavement, stress in last 2 years	0.0009271732997		
23598_max	Triglycerides to Total Lipids in Medium VLDL percentage	0.0009266919224		
41270_K63	Diagnoses - ICD10	0.0009232526063		
41270_G56	Diagnoses - ICD10	0.0009183908696		
41270_R31	Diagnoses - ICD10	0.0009146833327		
20155_avg	Interval between previous point and current one in alphanumeric path (trail #2)	0.0009112225962		
41202_A41	Diagnoses - main ICD10	0.0009099686285		
41270_Z92	Diagnoses - ICD10	0.0009097052389		
20547_3	Activities undertaken to treat depression	0.000906975416		
41270_Z87	Diagnoses - ICD10	0.0009041680023		
93_max	Systolic blood pressure, manual reading	0.0009035009425		
22608	Workplace very hot	0.000903483131		

20507	Recent feelings of inadequacy	0.0009006302571		
20433_max	Age at first episode of depression	0.0008986927569		
20502	Ever had period extreme irritability	0.0008962897118		
41270_I80	Diagnoses - ICD10	0.0008954121149		
20230_max	Duration to entering symbol choice	0.0008934411453		
4451_avg	Average monthly fortified wine intake	0.0008923728019		
1747_2	Hair colour (natural, before greying)	0.0008900246467		
1538_1	Major dietary changes in the last 5 years	0.00088726799		
41270_K25	Diagnoses - ICD10	0.0008861773531		
41270_Z13	Diagnoses - ICD10	0.0008811448934		
2926_min	Number of unsuccessful stop-smoking attempts	0.0008791129803		
93_avg	Systolic blood pressure, manual reading	0.0008787788684		
20484	Attempted suicide in past year	0.0008787100087		
41270_J45	Diagnoses - ICD10	0.0008783253143		
22167	Recent medication for asthma	0.0008762772195		
20135-0.0	When fluid intelligence test completed	0.0008754657465		
6162_1	Types of transport used (excluding work)	0.0008746293606		
20156_max	Duration to complete numeric path (trail #1)	0.0008745231899		
41270_G25	Diagnoses - ICD10	0.0008738932665		
20453	Ever taken cannabis	0.0008735486772		
22660_105	Gap coding	0.0008712458075		
20159_avg	Number of symbol digit matches made correctly	0.0008615463157		
20195_max	Number of symbol digit matches attempted	0.0008533025393		
41270_R46	Diagnoses - ICD10	0.000852242636		
41202_M20	Diagnoses - main ICD10	0.0008511960623		
2277_max	Frequency of solarium/sunlamp use	0.0008503433201		
6160_3	Leisure/social activities	0.000849443255		
41202_N39	Diagnoses - main ICD10	0.0008479605895		
41270_F23	Diagnoses - ICD10	0.0008447014261		
20240_max	Maximum digits remembered correctly	0.0008414206095		
20409	Frequency of feeling guilt or remorse after drinking alcohol in last year	0.0008413352771		
4548	Health satisfaction	0.000838962791		
20518	Recent changes in speed/amount of moving or speaking	0.0008385202382		
20175	FI6	0.0008384850807		
41270_E11	Diagnoses - ICD10	0.0008369185962		
41202_R19	Diagnoses - main ICD10	0.0008347299299		
20494	Felt irritable or had angry outbursts in past month	0.0008318861946		
22613	Worked with paints, thinners or glues	0.0008307203534		
30290_max	High light scatter reticulocyte percentage	0.0008290523547		
23610_max	Cholesterol to Total Lipids in IDL percentage	0.0008278639289		
41270_A41	Diagnoses - ICD10	0.0008258565795		
22644_avg	Consecutive night shifts during mixed shift periods	0.0008254438872		
23600_max	Cholesterol to Total Lipids in Small VLDL percentage	0.0008247963269		
41270_K64	Diagnoses - ICD10	0.000823702896		
1170	Getting up in morning	0.0008217089926		
20411	Ever been injured or injured someone else through drinking alcohol	0.000819887151		
1558	Alcohol intake frequency.	0.000818300643		
22604	Work hours - lumped category	0.0008173615788		
20240_avg	Maximum digits remembered correctly	0.0008168914937		
41270_Z11	Diagnoses - ICD10	0.0008154108073		
20191_max	Fluid intelligence score	0.0008131242357		
20117	Alcohol drinker status	0.0008106136811		
23606_max	Cholesteryl Esters to Total Lipids in Very Small VLDL percentage	0.0008089758921		
2277_min	Frequency of solarium/sunlamp use	0.0008078787941		
20428	Professional informed about anxiety	0.0008052458288		
41202_T81	Diagnoses - main ICD10	0.0008050270844		
20526_1	Been in serious accident believed to be life-threatening	0.0008038043743		
20155_max	Interval between previous point and current one in alphanumeric path (trail #2)	0.0007989614969		
23434_min	Phosphoglycerides	0.0007988978759		
2946_max	Father's age	0.0007947506965		
23604_max	Phospholipids to Total Lipids in Very Small VLDL percentage	0.0007933384622		
20132_max	Number of incorrect matches in round	0.0007926580147		
1100	Drive faster than motorway speed limit	0.0007924535894		
20161_max	Pack years of smoking	0.0007920451462		
41270_F29	Diagnoses - ICD10	0.0007916161558		
20165	FI1	0.0007864292711		
41202_K52	Diagnoses - main ICD10	0.00078401051		
23597_avg	Free Cholesterol to Total Lipids in Medium VLDL percentage	0.0007830832619		
3466	Time from waking to first cigarette	0.0007826061919		
41270_R06	Diagnoses - ICD10	0.0007819060702		
2897_min	Age stopped smoking	0.0007780268788		
23582_max	Free Cholesterol to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	0.0007774208207		
93_min	Systolic blood pressure, manual reading	0.0007757557905		
22620	Job involved shift work	0.0007747596246		
23452_avg	Omega-6 Fatty Acids to Total Fatty Acids percentage	0.0007744450704		
22601_3199	Job coding	0.0007743695751		
22644_max	Consecutive night shifts during mixed shift periods	0.0007729217759		

3669_max	Lifetime number of same-sex sexual partners	0.0007727854536		
1110	Length of mobile phone use	0.0007711870712		
22602_min	Year job started	0.0007688329206		
20110_10	Illnesses of mother	0.0007643299759		
41270_K21	Diagnoses - ICD10	0.0007613262278		
1220	Daytime dozing / sleeping	0.0007611488691		
23594_avg	Phospholipids to Total Lipids in Medium VLDL percentage	0.0007601280231		
41270_Z82	Diagnoses - ICD10	0.0007584796986		
20136-0.0	When trail making test completed	0.000758180453		
41270_Z53	Diagnoses - ICD10	0.0007567701978		
23620_min	Cholesterol to Total Lipids in Medium LDL percentage	0.0007532878662		
23630_avg	Cholesterol to Total Lipids in Very Large HDL percentage	0.0007494118763		
23618_min	Triglycerides to Total Lipids in Large LDL percentage	0.0007463820511		
20111_4	Illnesses of siblings	0.0007461513742		
20230_min	Duration to entering symbol choice	0.0007447937969		
20111_8	Illnesses of siblings	0.0007438692846		
23644_avg	Phospholipids to Total Lipids in Small HDL percentage	0.0007420686889		
20173_5	FI5	0.0007398555754		
23624_min	Phospholipids to Total Lipids in Small LDL percentage	0.0007397014997		
20423	Keyed up or on edge during worst period of anxiety	0.0007393979467		
20162_max	Pack years adult smoking as proportion of life span exposed to smoking	0.0007386387442		
20149_avg	Interval between previous point and current one in numeric path (trail #1)	0.000738570292		
41202_C50	Diagnoses - main ICD10	0.0007379650488		
41270_T81	Diagnoses - ICD10	0.0007378110313		
30280_avg	Immature reticulocyte fraction	0.0007373060216		
23595_avg	Cholesterol to Total Lipids in Medium VLDL percentage	0.0007365102065		
23611_min	Cholesteryl Esters to Total Lipids in IDL percentage	0.0007343270699		
4418_max	Average monthly champagne plus white wine intake	0.0007341764285		
6162_4	Types of transport used (excluding work)	0.0007337676361		
23448_avg	Saturated Fatty Acids	0.0007329229265		
41270_R51	Diagnoses - ICD10	0.0007318952121		
23608_max	Triglycerides to Total Lipids in Very Small VLDL percentage	0.0007309523062		
20522	Been in a confiding relationship as an adult	0.000730597123		
30800_avg	Oestradiol	0.0007292035734		
22663_max	Year gap started	0.0007289812784		
22603_min	Year job ended	0.0007268204354		
20111_9	Illnesses of siblings	0.0007261025603		
23424_min	Total Lipids in VLDL	0.0007259341655		
20156_avg	Duration to complete numeric path (trail #1)	0.0007255885284		
41202_K30	Diagnoses - main ICD10	0.0007254992379		
41202_F05	Diagnoses - main ICD10	0.0007226568414		
5057_max	Number of older siblings	0.000721902994		
41270_Y83	Diagnoses - ICD10	0.0007218940882		
41202_L98	Diagnoses - main ICD10	0.0007215181249		
23599_max	Phospholipids to Total Lipids in Small VLDL percentage	0.0007213678327		
22617_231	Job code - historical	0.0007162204711		
130899_30	Source of report of F34 (persistent mood [affective] disorders)	0.0007150980528		
22502	Cough on most days	0.0007110153092		
22660_108	Gap coding	0.0007106999401		
23605_min	Cholesterol to Total Lipids in Very Small VLDL percentage	0.0007104102988		
23618_max	Triglycerides to Total Lipids in Large LDL percentage	0.0007097108755		
23609_min	Phospholipids to Total Lipids in IDL percentage	0.0007085927064		
23633_min	Triglycerides to Total Lipids in Very Large HDL percentage	0.0007085321122		
20157_avg	Duration to complete alphanumeric path (trail #2)	0.000708348176		
41270_Z09	Diagnoses - ICD10	0.000708257081		
23607_min	Free Cholesterol to Total Lipids in Very Small VLDL percentage	0.000707834668		
1269_max	Exposure to tobacco smoke at home	0.0007064627134		
30720_min	Cystatin C	0.0007061441429		
41270_S12	Diagnoses - ICD10	0.0007061419892		
23605_avg	Cholesterol to Total Lipids in Very Small VLDL percentage	0.0007059861091		
20161_avg	Pack years of smoking	0.0007056258619		
22616	Breathing problems during period of job	0.0007055150345		
22663_min	Year gap started	0.0007050384884		
6160_4	Leisure/social activities	0.0007034654845		
20510	Recent feelings of depression	0.0007008601679		
1767	Adopted as a child	0.0007007154636		
23605_max	Cholesterol to Total Lipids in Very Small VLDL percentage	0.0006993426359		
20161_min	Pack years of smoking	0.0006983508938		
41270_D12	Diagnoses - ICD10	0.000697194424		
5364_max	Average weekly intake of other alcoholic drinks	0.0006970037939		
20107_2	Illnesses of father	0.0006960051833		
20107_6	Illnesses of father	0.0006951540709		
94_max	Diastolic blood pressure, manual reading	0.000695073104		
23588_min	Triglycerides to Total Lipids in Very Large VLDL percentage	0.0006948552909		
20110_5	Illnesses of mother	0.000694421411		
1598_min	Average weekly spirits intake	0.0006936946884		
23473_max	Citrate	0.0006934754783		

2030	Guilty feelings	0.0006931434618		
23581_max	Cholesteryl Esters to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	0.0006922321045		
1608_max	Average weekly fortified wine intake	0.0006916871644		
23447_min	Monounsaturated Fatty Acids	0.0006905875052		
1279_min	Exposure to tobacco smoke outside home	0.0006900003063		
30010_min	Red blood cell (erythrocyte) count	0.0006892218953		
23473_avg	Citrate	0.0006888760836		
22603_max	Year job ended	0.0006878732238		
30840_min	Total bilirubin	0.000687789463		
23454_min	Monounsaturated Fatty Acids to Total Fatty Acids percentage	0.0006875668187		
4080_max	Systolic blood pressure, automated reading	0.0006875139079		
23602_min	Free Cholesterol to Total Lipids in Small VLDL percentage	0.0006861728034		
20447	Depression possibly related to stressful or traumatic event	0.0006853288505		
23615_min	Cholesterol to Total Lipids in Large LDL percentage	0.0006851159851		
5057_min	Number of older siblings	0.000684563769		
130902-0.0	Date F39 first reported (unspecified mood [affective] disorder)	0.000684354105		
1608_min	Average weekly fortified wine intake	0.0006838849513		
20138-0.0	When numeric memory test completed	0.0006820961135		
20116	Smoking status	0.0006779165124		
20405	Ever had known person concerned about, or recommend reduction of, alcohol consumption	0.0006775030633		
23435_min	Triglycerides to Phosphoglycerides ratio	0.00067740347		
2664_3	Reason for reducing amount of alcohol drunk	0.0006762402481		
23592_max	Free Cholesterol to Total Lipids in Large VLDL percentage	0.0006755599752		
23645_max	Cholesterol to Total Lipids in Small HDL percentage	0.0006747466396		
20498	Felt very upset when reminded of stressful experience in past month	0.0006744100247		
23585_avg	Cholesterol to Total Lipids in Very Large VLDL percentage	0.0006740906392		
23442_avg	Total Fatty Acids	0.0006734980852		
2149_min	Lifetime number of sexual partners	0.0006724228733		
23626_min	Cholesteryl Esters to Total Lipids in Small LDL percentage	0.0006724108243		
23635_min	Cholesterol to Total Lipids in Large HDL percentage	0.000670059293		
23581_min	Cholesteryl Esters to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	0.0006697727367		
30010_max	Red blood cell (erythrocyte) count	0.0006697449717		
2897_avg	Age stopped smoking	0.0006693977048		
23636_avg	Cholesteryl Esters to Total Lipids in Large HDL percentage	0.0006691078306		
4559	Family relationship satisfaction	0.000668440829		
23615_max	Cholesterol to Total Lipids in Large LDL percentage	0.0006680760998		
23627_max	Free Cholesterol to Total Lipids in Small LDL percentage	0.0006675506593		
41270_M13	Diagnoses - ICD10	0.0006675353507		
23613_avg	Triglycerides to Total Lipids in IDL percentage	0.0006656626938		
41270_M19	Diagnoses - ICD10	0.0006635537138		
41270_K22	Diagnoses - ICD10	0.0006627273979		
23644_min	Phospholipids to Total Lipids in Small HDL percentage	0.0006627132534		
41202_F99	Diagnoses - main ICD10	0.0006623672671		
30750_min	Glycated haemoglobin (HbA1c)	0.0006621246575		
41270_M20	Diagnoses - ICD10	0.0006621163338		
20133_avg	Time to complete round	0.0006615241873		
2926_avg	Number of unsuccessful stop-smoking attempts	0.000661318074		
30840_max	Total bilirubin	0.0006609414122		
23601_max	Cholesteryl Esters to Total Lipids in Small VLDL percentage	0.0006609177799		
41202_H02	Diagnoses - main ICD10	0.0006607561372		
23584_max	Phospholipids to Total Lipids in Very Large VLDL percentage	0.0006598641048		
1299_avg	Salad / raw vegetable intake	0.0006596682942		
20155_min	Interval between previous point and current one in alphanumeric path (trail #2)	0.0006595168379		
1339	Non-oily fish intake	0.0006592120626		
23613_max	Triglycerides to Total Lipids in IDL percentage	0.0006586553645		
23629_avg	Phospholipids to Total Lipids in Very Large HDL percentage	0.0006570717669		
20137-0.0	When symbol digit substitution test completed	0.0006567810196		
2149_avg	Lifetime number of sexual partners	0.0006566498196		
1418_1	Milk type used	0.0006561827613		
943	Frequency of stair climbing in last 4 weeks	0.0006554726278		
23599_min	Phospholipids to Total Lipids in Small VLDL percentage	0.0006551873521		
6144_3	Never eat eggs, dairy, wheat, sugar	0.0006550934049		
23631_max	Cholesteryl Esters to Total Lipids in Very Large HDL percentage	0.000654870586		
23471_min	Lactate	0.0006546264631		
2867_max	Age started smoking in former smokers	0.0006542230258		
30800_min	Oestradiol	0.0006531175459		
23613_min	Triglycerides to Total Lipids in IDL percentage	0.0006529712118		
23633_avg	Triglycerides to Total Lipids in Very Large HDL percentage	0.0006528797094		
20509	Recent inability to stop or control worrying	0.000650852744		
1578_max	Average weekly champagne plus white wine intake	0.0006503487821		
1845_avg	Mother's age	0.0006494547124		
41270_K31	Diagnoses - ICD10	0.0006489885855		
23462_max	Glycine	0.0006482154131		
23634_max	Phospholipids to Total Lipids in Large HDL percentage	0.000648018613		
23622_min	Free Cholesterol to Total Lipids in Medium LDL percentage	0.0006480059819		
4080_avg	Systolic blood pressure, automated reading	0.0006475969567		
23431_min	Average Diameter for VLDL Particles	0.0006474579568		

30750_max	Glycated haemoglobin (HbA1c)	0.0006470990484		
2149_max	Lifetime number of sexual partners	0.0006464233156		
30890_max	Vitamin D	0.000645681459		
30890_min	Vitamin D	0.0006448667846		
23411_min	Total Phospholipids in Lipoprotein Particles	0.0006447193446		
22614	Worked with pesticides	0.0006446466432		
1883_min	Number of full sisters	0.00064463733		
20489	Felt loved as a child	0.0006422716542		
41270_R94	Diagnoses - ICD10	0.000640244165		
22644_min	Consecutive night shifts during mixed shift periods	0.0006401986466		
23611_max	Cholesteryl Esters to Total Lipids in IDL percentage	0.0006401548162		
41270_M16	Diagnoses - ICD10	0.0006395811797		
22602_max	Year job started	0.0006389550981		
1618	Alcohol usually taken with meals	0.0006359895342		
23639_max	Phospholipids to Total Lipids in Medium HDL percentage	0.0006359399413		
1568_max	Average weekly red wine intake	0.0006357499515		
4581	Financial situation satisfaction	0.0006352089695		
41270_I44	Diagnoses - ICD10	0.0006344248541		
30660_min	Direct bilirubin	0.0006336250808		
23612_max	Free Cholesterol to Total Lipids in IDL percentage	0.0006335458602		
23594_max	Phospholipids to Total Lipids in Medium VLDL percentage	0.0006331141922		
20520	Recent worrying too much about different things	0.000633006217		
23614_min	Phospholipids to Total Lipids in Large LDL percentage	0.0006327493466		
23603_avg	Triglycerides to Total Lipids in Small VLDL percentage	0.0006323995767		
23475_max	Acetate	0.0006320900866		
30010_avg	Red blood cell (erythrocyte) count	0.0006310419994		
20439	Frequency of depressed days during worst episode of depression	0.0006310403114		
22605_min	Work hours per week - exact value	0.0006304684794		
1468_2	Cereal type	0.0006295923376		
1080_min	Time spent using computer	0.0006294474588		
22602_avg	Year job started	0.0006294128252		
41202_Z12	Diagnoses - main ICD10	0.0006294017658		
2926_max	Number of unsuccessful stop-smoking attempts	0.0006288065342		
23635_max	Cholesterol to Total Lipids in Large HDL percentage	0.0006284287083		
41270_K62	Diagnoses - ICD10	0.0006282028626		
23453_min	Polyunsaturated Fatty Acids to Total Fatty Acids percentage	0.0006276885979		
1269_min	Exposure to tobacco smoke at home	0.0006264179247		
23581_avg	Cholesteryl Esters to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	0.000625829678		
102_min	Pulse rate, automated reading	0.0006254115142		
1050_max	Time spend outdoors in summer	0.0006248126738		
23634_min	Phospholipids to Total Lipids in Large HDL percentage	0.0006243616808		
1717	Skin colour	0.0006240665098		
23456_avg	Linoleic Acid to Total Fatty Acids percentage	0.0006235789042		
864_min	Number of days/week walked 10+ minutes	0.0006224659155		
1578_min	Average weekly champagne plus white wine intake	0.0006223056116		
23598_avg	Triglycerides to Total Lipids in Medium VLDL percentage	0.0006218859344		
41270_H52	Diagnoses - ICD10	0.0006217508344		
23456_max	Linoleic Acid to Total Fatty Acids percentage	0.0006209963467		
4080_min	Systolic blood pressure, automated reading	0.0006206243415		
23595_min	Cholesterol to Total Lipids in Medium VLDL percentage	0.0006205042009		
20420_max	Longest period spent worried or anxious	0.0006203475059		
23600_min	Cholesterol to Total Lipids in Small VLDL percentage	0.0006193845766		
20488	Physically abused by family as a child	0.0006193358568		
22146_max	Age hayfever or allergic rhinitis diagnosed by doctor	0.0006185134989		
23639_min	Phospholipids to Total Lipids in Medium HDL percentage	0.0006181215285		
30210_min	Eosinophill percentage	0.0006177225732		
23479_min	Albumin	0.0006175868912		
1359	Poultry intake	0.0006173392176		
23583_max	Triglycerides to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	0.0006164435181		
30130_max	Monocyte count	0.0006159980549		
20179	FI8	0.0006141603226		
23589_min	Phospholipids to Total Lipids in Large VLDL percentage	0.0006136685261		
23589_max	Phospholipids to Total Lipids in Large VLDL percentage	0.0006135876756		
41270_R63	Diagnoses - ICD10	0.0006128108362		
6164	Types of physical activity in last 4 weeks	0.0006126975641		
2159	Ever had same-sex intercourse	0.0006122493069		
1140	Difference in mobile phone use compared to two years previously	0.0006120880716		
95_avg	Pulse rate (during blood-pressure measurement)	0.0006118373713		
2624	Frequency of heavy DIY in last 4 weeks	0.0006115804426		
2139_max	Age first had sexual intercourse	0.0006109866081		
6157_3	Why stopped smoking	0.000610758434		
30700_min	Creatinine	0.000610516814		
20107_9	Illnesses of father	0.0006097440491		
23474_min	3-Hydroxybutyrate	0.0006092357798		
1070_avg	Time spent watching television (TV)	0.0006089614471		
2634	Duration of heavy DIY	0.0006086605717		
41202_K62	Diagnoses - main ICD10	0.0006084276829		

30700_avg	Creatinine	0.0006083446788		
23582_avg	Free Cholesterol to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	0.0006078748265		
41270_K29	Diagnoses - ICD10	0.0006073203404		
23423_max	Total Lipids in Lipoprotein Particles	0.0006068491493		
2867_min	Age started smoking in former smokers	0.000606416841		
23629_max	Phospholipids to Total Lipids in Very Large HDL percentage	0.0006058973959		
30260_max	Mean reticulocyte volume	0.0006051494274		
23600_avg	Cholesterol to Total Lipids in Small VLDL percentage	0.0006051021628		
20110_9	Illnesses of mother	0.0006048972718		
23407_max	Total Triglycerides	0.0006048692157		
30120_avg	Lymphocyte count	0.0006043599569		
1369	Beef intake	0.0006037897547		
30040_min	Mean corpuscular volume	0.000603737135		
23638_max	Triglycerides to Total Lipids in Large HDL percentage	0.0006036987761		
20515	Recent trouble relaxing	0.0006035169354		
2897_max	Age stopped smoking	0.0006034502294		
23593_max	Triglycerides to Total Lipids in Large VLDL percentage	0.0006031825906		
22660_103	Gap coding	0.0006030466175		
23400_min	Total Cholesterol	0.0006023962633		
1807_max	Father's age at death	0.0006023521419		
30180_max	Lymphocyte percentage	0.0006016052794		
23614_max	Phospholipids to Total Lipids in Large LDL percentage	0.0006015921826		
41270_D22	Diagnoses - ICD10	0.0006013815873		
23454_max	Monounsaturated Fatty Acids to Total Fatty Acids percentage	0.0006010630168		
23593_avg	Triglycerides to Total Lipids in Large VLDL percentage	0.0006000638241		
2887_max	Number of cigarettes previously smoked daily	0.000599321269		
20491	Someone to take to doctor when needed as a child	0.0005989820929		
1389	Pork intake	0.0005986311589		
23606_min	Cholesteryl Esters to Total Lipids in Very Small VLDL percentage	0.0005980437272		
23625_max	Cholesterol to Total Lipids in Small LDL percentage	0.0005980097922		
23455_min	Saturated Fatty Acids to Total Fatty Acids percentage	0.0005978055997		
30190_max	Monocyte percentage	0.0005976542598		
30240_min	Reticulocyte percentage	0.0005975558888		
30820_max	Rheumatoid factor	0.0005972817307		
4537_7	Work/job satisfaction	0.0005963096628		
4526	Happiness	0.0005962011055		
23453_max	Polyunsaturated Fatty Acids to Total Fatty Acids percentage	0.0005957155372		
30860_min	Total protein	0.0005955203087		
20160	Ever smoked	0.0005951780477		
23452_min	Omega-6 Fatty Acids to Total Fatty Acids percentage	0.0005947666359		
23638_min	Triglycerides to Total Lipids in Large HDL percentage	0.0005946569727		
23470_min	Glucose	0.0005945814773		
1438_min	Bread intake	0.0005944481236		
41270_Z81	Diagnoses - ICD10	0.0005933869397		
1150	Usual side of head for mobile phone use	0.0005928854807		
41270_I83	Diagnoses - ICD10	0.0005924599245		
1598_max	Average weekly spirits intake	0.0005922962446		
4570	Friendships satisfaction	0.000591288961		
1468_1	Cereal type	0.0005902186967		
20426	Restless during period of worst anxiety	0.0005895061768		
23632_min	Free Cholesterol to Total Lipids in Very Large HDL percentage	0.000589491392		
23645_min	Cholesterol to Total Lipids in Small HDL percentage	0.0005894727656		
20438	Duration of worst depression	0.0005889595486		
4429_max	Average monthly beer plus cider intake	0.0005884124548		
30620_min	Alanine aminotransferase	0.0005880699609		
1807_min	Father's age at death	0.0005880317767		
30760_min	HDL cholesterol	0.0005879148957		
2907	Ever stopped smoking for 6+ months	0.0005874572671		
30110_min	Platelet distribution width	0.0005871905014		
41270_Z37	Diagnoses - ICD10	0.0005871541216		
23592_avg	Free Cholesterol to Total Lipids in Large VLDL percentage	0.0005870400346		
23640_avg	Cholesterol to Total Lipids in Medium HDL percentage	0.0005856391508		
4081_2	Method of measuring blood pressure	0.0005856198259		
30270_max	Mean sphered cell volume	0.0005851753522		
1438_avg	Bread intake	0.0005849851295		
23628_min	Triglycerides to Total Lipids in Small LDL percentage	0.0005846597487		
30700_max	Creatinine	0.0005833925097		
30020_min	Haemoglobin concentration	0.0005833776086		
914_max	Duration of vigorous activity	0.000583355024		
30140_min	Neutrophill count	0.0005831690505		
41202_D12	Diagnoses - main ICD10	0.0005830685841		
23636_max	Cholesteryl Esters to Total Lipids in Large HDL percentage	0.0005829061847		
30270_min	Mean sphered cell volume	0.0005823895335		
23644_max	Phospholipids to Total Lipids in Small HDL percentage	0.0005823365645		
20149_max	Interval between previous point and current one in numeric path (trail #1)	0.0005817678175		
23459_max	Omega-6 Fatty Acids to Omega-3 Fatty Acids ratio	0.0005816618213		
30610_min	Alkaline phosphatase	0.000581452914		

30610_max	Alkaline phosphatase	0.0005807453417		
23591_max	Cholesteryl Esters to Total Lipids in Large VLDL percentage	0.000580285443		
23449_max	Linoleic Acid	0.0005798475468		
22599_avg	Number of jobs held	0.0005795750185		
30280_max	Immature reticulocyte fraction	0.0005794118624		
1488_avg	Tea intake	0.0005782378139		
23456_min	Linoleic Acid to Total Fatty Acids percentage	0.0005778352497		
30120_max	Lymphocyte count	0.0005777141196		
1319_min	Dried fruit intake	0.0005758377374		
1588_avg	Average weekly beer plus cider intake	0.0005757651525		
30690_max	Cholesterol	0.0005753024016		
23608_min	Triglycerides to Total Lipids in Very Small VLDL percentage	0.0005750218988		
30040_max	Mean corpuscular volume	0.0005748076946		
30050_min	Mean corpuscular haemoglobin	0.0005745426752		
884_avg	Number of days/week of moderate physical activity 10+ minutes	0.0005743568181		
23601_avg	Cholesteryl Esters to Total Lipids in Small VLDL percentage	0.0005742860376		
30600_max	Albumin	0.0005738744512		
1130	Hands-free device/speakerphone use with mobile phone in last 3 month	0.00057352765		
1628	Alcohol intake versus 10 years previously	0.000573147845		
30870_min	Triglycerides	0.0005731057026		
23583_min	Triglycerides to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	0.000572910707		
2040	Risk taking	0.0005723598297		
102_avg	Pulse rate, automated reading	0.0005715326988		
1528_min	Water intake	0.0005713283317		
30890_avg	Vitamin D	0.0005711214617		
2237	Plays computer games	0.0005710828118		
23593_min	Triglycerides to Total Lipids in Large VLDL percentage	0.00057082891		
41270_I10	Diagnoses - ICD10	0.0005705140065		
23442_min	Total Fatty Acids	0.0005702448543		
30830_max	SHBG	0.0005701209302		
23630_min	Cholesterol to Total Lipids in Very Large HDL percentage	0.000570014643		
23624_max	Phospholipids to Total Lipids in Small LDL percentage	0.0005698995665		
30200_avg	Neutrophill percentage	0.0005696576554		
30710_max	C-reactive protein	0.0005694962456		
23586_min	Cholesteryl Esters to Total Lipids in Very Large VLDL percentage	0.0005694242427		
23459_min	Omega-6 Fatty Acids to Omega-3 Fatty Acids ratio	0.0005691842525		
30000_min	White blood cell (leukocyte) count	0.0005687039811		
23471_max	Lactate	0.00056835945		
1845_min	Mother's age	0.0005678242305		
30770_max	IGF-1	0.00056714128		
1120	Weekly usage of mobile phone in last 3 months	0.0005668444792		
23620_max	Cholesterol to Total Lipids in Medium LDL percentage	0.000566652976		
23637_max	Free Cholesterol to Total Lipids in Large HDL percentage	0.0005665177014		
41202_I21	Diagnoses - main ICD10	0.0005663354532		
30030_avg	Haematocrit percentage	0.0005654408014		
1031	Frequency of friend/family visits	0.0005653081462		
30200_min	Neutrophill percentage	0.0005649101804		
1588_min	Average weekly beer plus cider intake	0.0005648441729		
23460_max	Alanine	0.0005646906211		
22605_avg	Work hours per week - exact value	0.0005646695499		
23588_avg	Triglycerides to Total Lipids in Very Large VLDL percentage	0.0005646324717		
30620_avg	Alanine aminotransferase	0.0005642622127		
23455_max	Saturated Fatty Acids to Total Fatty Acids percentage	0.0005641898024		
874_max	Duration of walks	0.00056372158		
1309_min	Fresh fruit intake	0.0005627111532		
30650_avg	Aspartate aminotransferase	0.0005625935155		
1737_avg	Childhood sunburn occasions	0.0005623174366		
30880_max	Urate	0.0005623042816		
30030_min	Haematocrit percentage	0.0005616035778		
1259	Smoking/smokers in household	0.0005613975227		
30770_avg	IGF-1	0.0005612063687		
23464_max	Total Concentration of Branched-Chain Amino Acids (Leucine + Isoleucine + Valine)	0.00056104135		
22611	Workplace had a lot of cigarette smoke from other people smoking	0.0005604394828		
23616_min	Cholesteryl Esters to Total Lipids in Large LDL percentage	0.000560377026		
20437	Thoughts of death during worst depression	0.0005599777214		
23624_avg	Phospholipids to Total Lipids in Small LDL percentage	0.0005598370917		
4079_avg	Diastolic blood pressure, automated reading	0.0005593975075		
41270_K80	Diagnoses - ICD10	0.0005589328939		
23434_avg	Phosphoglycerides	0.0005586791667		
4079_max	Diastolic blood pressure, automated reading	0.0005586755578		
904_max	Number of days/week of vigorous physical activity 10+ minutes	0.0005583241		
1299_min	Salad / raw vegetable intake	0.0005581661826		
20107_3	Illnesses of father	0.0005578538985		
2110	Able to confide	0.0005577859702		
41202_L72	Diagnoses - main ICD10	0.0005577683332		
20140-0.0	When input method described	0.000557685853		
30730_min	Gamma glutamyltransferase	0.0005576221738		

23470_max	Glucose	0.0005576005206		
20116_1	Smoking status	0.0005566957407		
22664_avg	Year gap ended	0.0005565853207		
30080_max	Platelet count	0.0005560658174		
1379	Lamb/mutton intake	0.000555753184		
1180	Morning/evening person (chronotype)	0.0005556098185		
30180_avg	Lymphocyte percentage	0.000555165112		
41270_R42	Diagnoses - ICD10	0.0005549294874		
4079_min	Diastolic blood pressure, automated reading	0.0005547662149		
1309_max	Fresh fruit intake	0.0005542000872		
874_avg	Duration of walks	0.0005527682952		
1528_avg	Water intake	0.0005526406458		
3637	Frequency of other exercises in last 4 weeks	0.0005525613669		
30050_avg	Mean corpuscular haemoglobin	0.0005524485023		
23452_max	Omega-6 Fatty Acids to Total Fatty Acids percentage	0.0005519815022		
23590_max	Cholesterol to Total Lipids in Large VLDL percentage	0.0005518531543		
23619_min	Phospholipids to Total Lipids in Medium LDL percentage	0.0005517043173		
1647_1	Country of birth (UK/elsewhere)	0.0005511918571		
1845_max	Mother's age	0.000551109435		
3526_min	Mother's age at death	0.0005508570466		
22603_avg	Year job ended	0.000550419325		
3526_avg	Mother's age at death	0.0005502501153		
30260_min	Mean reticulocyte volume	0.0005500923726		
1727	Ease of skin tanning	0.0005498641403		
1319_max	Dried fruit intake	0.0005497814273		
23646_max	Cholesteryl Esters to Total Lipids in Small HDL percentage	0.0005492031341		
2139_min	Age first had sexual intercourse	0.0005485229194		
20107_4	Illnesses of father	0.0005480505642		
30800_max	Oestradiol	0.0005476514925		
23622_max	Free Cholesterol to Total Lipids in Medium LDL percentage	0.0005475897342		
6164_2	Types of physical activity in last 4 weeks	0.0005474669742		
23449_avg	Linoleic Acid	0.000547094387		
1797	Father still alive	0.0005470157485		
30830_avg	SHBG	0.0005467961309		
22127	Doctor diagnosed asthma	0.0005467227311		
1598_avg	Average weekly spirits intake	0.0005466621369		
30880_min	Urate	0.000546635245		
30080_min	Platelet count	0.0005465322174		
1021	Duration of light DIY	0.0005463958369		
1438_max	Bread intake	0.0005460863467		
102_max	Pulse rate, automated reading	0.0005458262749		
30770_min	IGF-1	0.0005453636986		
30620_max	Alanine aminotransferase	0.0005448533338		
914_avg	Duration of vigorous activity	0.0005442157853		
23597_max	Free Cholesterol to Total Lipids in Medium VLDL percentage	0.0005438363878		
30610_avg	Alkaline phosphatase	0.0005435750354		
23637_min	Free Cholesterol to Total Lipids in Large HDL percentage	0.0005430972087		
41270_I73	Diagnoses - ICD10	0.0005430951132		
20422	More irritable than usual during worst period of anxiety	0.0005421526148		
30680_min	Calcium	0.0005417807843		
23461_min	Glutamine	0.0005417166976		
30100_min	Mean platelet (thrombocyte) volume	0.0005417127395		
20133_min	Time to complete round	0.0005416101776		
20540	Multiple worries during worst period of anxiety	0.0005415644846		
23647_min	Free Cholesterol to Total Lipids in Small HDL percentage	0.0005415269989		
1458_avg	Cereal intake	0.0005413754261		
6162_3	Types of transport used (excluding work)	0.0005410548765		
41270_K76	Diagnoses - ICD10	0.0005407033022		
1210	Snoring	0.000540593639		
30860_max	Total protein	0.000540193636		
1488_max	Tea intake	0.0005397376372		
41202_K63	Diagnoses - main ICD10	0.0005396293709		
884_min	Number of days/week of moderate physical activity 10+ minutes	0.0005389804719		
1468_5	Cereal type	0.0005381997908		
30220_max	Basophill percentage	0.0005378949572		
904_avg	Number of days/week of vigorous physical activity 10+ minutes	0.0005377607304		
30740_min	Glucose	0.0005375642213		
30200_max	Neutrophill percentage	0.0005373705062		
30190_min	Monocyte percentage	0.0005363633391		
22130	Doctor diagnosed COPD (chronic obstructive pulmonary disease)	0.0005359380739		
30670_max	Urea	0.0005358122871		
20111_1	Illnesses of siblings	0.0005356495967		
1873_min	Number of full brothers	0.0005348977284		
1568_avg	Average weekly red wine intake	0.0005347411497		
1299_max	Salad / raw vegetable intake	0.0005345760146		
30650_max	Aspartate aminotransferase	0.0005345561076		
1498_min	Coffee intake	0.0005344877136		

23434_max	Phosphoglycerides	0.0005344392266		
20420_avg	Longest period spent worried or anxious	0.0005340935313		
3647	Duration of other exercises	0.0005338683841		
22664_min	Year gap ended	0.000532308768		
41270_Z90	Diagnoses - ICD10	0.0005320645869		
23442_max	Total Fatty Acids	0.0005320328637		
41202_R07	Diagnoses - main ICD10	0.0005315448507		
1050_avg	Time spend outdoors in summer	0.0005314704613		
30600_min	Albumin	0.0005311047425		
23588_max	Triglycerides to Total Lipids in Very Large VLDL percentage	0.0005306663807		
30080_avg	Platelet count	0.0005304156803		
30820_min	Rheumatoid factor	0.000529979181		
1588_max	Average weekly beer plus cider intake	0.0005299536278		
30630_min	Apolipoprotein A	0.0005293553113		
4451_max	Average monthly fortified wine intake	0.000528609904		
1070_max	Time spent watching television (TV)	0.0005284722429		
30640_min	Apolipoprotein B	0.0005277447053		
23449_min	Linoleic Acid	0.0005276508164		
894_max	Duration of moderate activity	0.0005274859141		
30150_min	Eosinophill count	0.0005269104149		
30710_min	C-reactive protein	0.0005268224049		
2946_min	Father's age	0.0005266599474		
874_min	Duration of walks	0.0005244415952		
1349	Processed meat intake	0.0005242898478		
864_max	Number of days/week walked 10+ minutes	0.0005239029415		
30790_avg	Lipoprotein A	0.000523588853		
30790_max	Lipoprotein A	0.0005234946148		
2267	Use of sun/uv protection	0.0005234307027		
30100_max	Mean platelet (thrombocyte) volume	0.0005230139941		
30000_avg	White blood cell (leukocyte) count	0.0005227351794		
20134-0.0	When pairs test completed	0.0005221028114		
23629_min	Phospholipids to Total Lipids in Very Large HDL percentage	0.0005220338935		
22126	Doctor diagnosed hayfever or allergic rhinitis	0.0005205566995		
971	Frequency of walking for pleasure in last 4 weeks	0.0005203254404		
41270_N95	Diagnoses - ICD10	0.0005202388274		
30780_max	LDL direct	0.0005196215352		
30140_avg	Neutrophill count	0.0005193245597		
894_min	Duration of moderate activity	0.0005187536008		
23580_min	Cholesterol to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	0.0005184343318		
1757	Facial ageing	0.0005177411949		
23627_min	Free Cholesterol to Total Lipids in Small LDL percentage	0.0005175787373		
23634_avg	Phospholipids to Total Lipids in Large HDL percentage	0.000516967033		
30180_min	Lymphocyte percentage	0.000516936474		
1289_min	Cooked vegetable intake	0.0005169109791		
30210_max	Eosinophill percentage	0.0005167151685		
41270_M23	Diagnoses - ICD10	0.0005160256987		
1080_max	Time spent using computer	0.0005159651628		
30260_avg	Mean reticulocyte volume	0.0005146021722		
30670_min	Urea	0.0005143294693		
23580_max	Cholesterol to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	0.0005121221184		
30060_max	Mean corpuscular haemoglobin concentration	0.0005110708298		
23426_min	Total Lipids in HDL	0.0005101431161		
41202_H25	Diagnoses - main ICD10	0.0005099778064		
1498_max	Coffee intake	0.0005098787951		
924	Usual walking pace	0.0005094261724		
41202_K44	Diagnoses - main ICD10	0.0005084882723		
1950	Sensitivity / hurt feelings	0.0005076131201		
30070_min	Red blood cell (erythrocyte) distribution width	0.0005076081725		
23448_max	Saturated Fatty Acids	0.0005073507782		
23585_min	Cholesterol to Total Lipids in Very Large VLDL percentage	0.0005072235363		
1418_2	Milk type used	0.0005067053717		
23582_min	Free Cholesterol to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	0.0005054563517		
30850_max	Testosterone	0.0005054268404		
20525	Able to pay rent/mortgage as an adult	0.0005052234046		
23423_min	Total Lipids in Lipoprotein Particles	0.0005042606499		
1940	Irritability	0.0005041602999		
20458	General happiness	0.0005020807148		
2644	Light smokers, at least 100 smokes in lifetime	0.0005020429962		
30730_max	Gamma glutamyltransferase	0.0005011609755		
23579_max	Phospholipids to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	0.0005005897256		
6160_2	Leisure/social activities	0.0004999918165		
23640_min	Cholesterol to Total Lipids in Medium HDL percentage	0.0004998471122		
6160_5	Leisure/social activities	0.0004996649222		
914_min	Duration of vigorous activity	0.0004980276572		
30220_min	Basophill percentage	0.0004978636862		
22601_3235	Job coding	0.0004978366196		
1647_3	Country of birth (UK/elsewhere)	0.0004970206646		

20414	Frequency of drinking alcohol	0.0004968213034		
23587_max	Free Cholesterol to Total Lipids in Very Large VLDL percentage	0.000496476132		
1448_1	Bread type	0.0004957703059		
30830_min	SHBG	0.0004954592441		
4407_max	Average monthly red wine intake	0.0004951430601		
1249	Past tobacco smoking	0.0004941204679		
1279_max	Exposure to tobacco smoke outside home	0.0004940620274		
30810_min	Phosphate	0.0004940070794		
20110_8	Illnesses of mother	0.0004940056824		
1687	Comparative body size at age 10	0.0004933601595		
20516	Recent restlessness	0.0004933153978		
3526_max	Mother's age at death	0.0004928209819		
41202_K04	Diagnoses - main ICD10	0.000492666557		
41270_Z51	Diagnoses - ICD10	0.000491656363		
1329	Oily fish intake	0.0004911593278		
1835	Mother still alive	0.0004891739809		
30880_avg	Urate	0.0004883945803		
2664_5	Reason for reducing amount of alcohol drunk	0.0004882488283		
23612_min	Free Cholesterol to Total Lipids in IDL percentage	0.0004881336936		
2887_min	Number of cigarettes previously smoked daily	0.0004878470791		
20107_1	Illnesses of father	0.000487508456		
6144_4	Never eat eggs, dairy, wheat, sugar	0.0004865457304		
30790_min	Lipoprotein A	0.0004857804743		
884_max	Number of days/week of moderate physical activity 10+ minutes	0.0004855263105		
23603_min	Triglycerides to Total Lipids in Small VLDL percentage	0.0004850868427		
1468_4	Cereal type	0.0004841395712		
41202_H26	Diagnoses - main ICD10	0.000483308133		
1677	Breastfed as a baby	0.0004821718903		
41202_R39	Diagnoses - main ICD10	0.0004816922592		
30230_min	Nucleated red blood cell percentage	0.0004813770356		
41270_G55	Diagnoses - ICD10	0.0004811724939		
6160_1	Leisure/social activities	0.0004799058661		
23585_max	Cholesterol to Total Lipids in Very Large VLDL percentage	0.0004798742593		
23400_max	Total Cholesterol	0.000479025708		
41202_K29	Diagnoses - main ICD10	0.0004783829791		
23636_min	Cholesteryl Esters to Total Lipids in Large HDL percentage	0.0004768870422		
30730_avg	Gamma glutamyltransferase	0.0004743146419		
23603_max	Triglycerides to Total Lipids in Small VLDL percentage	0.0004737213021		
41202_I20	Diagnoses - main ICD10	0.000473294931		
23586_max	Cholesteryl Esters to Total Lipids in Very Large VLDL percentage	0.0004722499871		
23423_avg	Total Lipids in Lipoprotein Particles	0.0004711757938		
894_avg	Duration of moderate activity	0.0004696168471		
981	Duration walking for pleasure	0.0004690528731		
23626_max	Cholesteryl Esters to Total Lipids in Small LDL percentage	0.0004689303169		
23583_avg	Triglycerides to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	0.0004686661414		
1060_max	Time spent outdoors in winter	0.0004686264147		
1508	Coffee type	0.0004683323787		
41270_J47	Diagnoses - ICD10	0.0004683088628		
20460	Belief that own life is meaningful	0.000468123093		
6145_3	Illness, injury, bereavement, stress in last 2 years	0.0004675542878		
20505	Recent easy annoyance or irritability	0.0004674418014		
20132_avg	Number of incorrect matches in round	0.0004673395015		
1448_4	Bread type	0.0004672557407		
23633_max	Triglycerides to Total Lipids in Very Large HDL percentage	0.0004664767475		
41270_E21	Diagnoses - ICD10	0.0004636501835		
41270_H53	Diagnoses - ICD10	0.000462112017		
41270_C79	Diagnoses - ICD10	0.0004618369276		
20246_3	Trail making completion status	0.0004615976359		
23616_max	Cholesteryl Esters to Total Lipids in Large LDL percentage	0.0004615322978		
1707	Handedness (chirality/laterality)	0.0004614242062		
41270_H35	Diagnoses - ICD10	0.0004603289708		
41270_M17	Diagnoses - ICD10	0.0004561280366		
23631_min	Cholesteryl Esters to Total Lipids in Very Large HDL percentage	0.0004540857335		
41202_K57	Diagnoses - main ICD10	0.000453906745		
1428_1	Spread type	0.000452866836		
1050_min	Time spend outdoors in summer	0.0004517250927		
23580_avg	Cholesterol to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	0.0004499121569		
41270_W01	Diagnoses - ICD10	0.0004478493065		
23630_max	Cholesterol to Total Lipids in Very Large HDL percentage	0.0004472935398		
1787	Maternal smoking around birth	0.0004465747334		
1518	Hot drink temperature	0.0004464801459		
23598_min	Triglycerides to Total Lipids in Medium VLDL percentage	0.0004461825592		
1448_3	Bread type	0.0004451870918		
1478	Salt added to food	0.0004443966318		
41270_L72	Diagnoses - ICD10	0.0004440543707		
20149_min	Interval between previous point and current one in numeric path (trail #1)	0.0004433019785		
4537	Work/job satisfaction	0.0004432360292		

23579_min	Phospholipids to Total Lipids in Chylomicrons and Extremely Large VLDL percentage	0.0004417766177		
20506	Recent feelings or nervousness or anxiety	0.0004414394789		
2080	Frequency of tiredness / lethargy in last 2 weeks	0.0004411119444		
1980	Worrier / anxious feelings	0.0004400151083		
22200_avg	Year of birth	0.0004399490717		
20532	Did your sleep change?	0.0004370733513		
20110_1	Illnesses of mother	0.0004370069655		
23479_max	Albumin	0.0004340662563		
41270_R07	Diagnoses - ICD10	0.0004337127612		
23400_avg	Total Cholesterol	0.0004329637159		
41202_M17	Diagnoses - main ICD10	0.0004328498908		
41270_M75	Diagnoses - ICD10	0.0004320777953		
1697	Comparative height size at age 10	0.0004316534905		
2000	Worry too long after embarrassment	0.0004309044161		
20512	Recent feelings of foreboding	0.0004300236469		
2887_avg	Number of cigarettes previously smoked daily	0.0004293684906		
41270_E78	Diagnoses - ICD10	0.0004280221765		
20417	Tense, sore, or aching muscles during worst period of anxiety	0.0004267995537		
20110_2	Illnesses of mother	0.0004256627581		
41270_I84	Diagnoses - ICD10	0.0004256198881		
22610	Workplace full of chemical or other fumes	0.0004250313214		
41270_M51	Diagnoses - ICD10	0.0004228875914		
1747	Hair colour (natural, before greying)	0.0004228266189		
20167_3	FI2	0.0004207373422		
20529_1	Victim of physically violent crime	0.0004179595271		
1200	Sleeplessness / insomnia	0.0004171159235		
20173	FI5	0.0004166793078		
23595_max	Cholesterol to Total Lipids in Medium VLDL percentage	0.0004166071012		
20403	Amount of alcohol drunk on a typical drinking day	0.0004160121898		
6162_2	Types of transport used (excluding work)	0.0004146618594		
20517	Trouble falling or staying asleep, or sleeping too much	0.0004138787044		
2654	Non-butter spread type details	0.0004136382195		
4462_min	Average monthly intake of other alcoholic drinks	0.0004110405862		
41270_K40	Diagnoses - ICD10	0.0004094079486		
20111_6	Illnesses of siblings	0.0004085201654		
94_min	Diastolic blood pressure, manual reading	0.0004077495541		
41270_I48	Diagnoses - ICD10	0.0004062717489		
20107_8	Illnesses of father	0.0004053641169		
1428_3	Spread type	0.0004045750538		
6158_2	Why reduced smoking	0.0004039366322		
22506_113	Tobacco smoking	0.000403826416		
41270_F99	Diagnoses - ICD10	0.0004032814468		
20177	FI7	0.0004024658119		
41270_F43	Diagnoses - ICD10	0.0003930525854		
1737_max	Childhood sunburn occasions	0.0003929798258		
41270_Z88	Diagnoses - ICD10	0.0003923373588		
41202_K20	Diagnoses - main ICD10	0.000392006943		
41270_H26	Diagnoses - ICD10	0.0003904919722		
1548	Variation in diet	0.0003896553535		
23643_max	Triglycerides to Total Lipids in Medium HDL percentage	0.000387030479		
41270_C77	Diagnoses - ICD10	0.0003869058564		
20519	Recent feelings of tiredness or low energy	0.0003867784399		
22129	Doctor diagnosed chronic bronchitis	0.0003855904215		
6145_2	Illness, injury, bereavement, stress in last 2 years	0.0003778079699		
41270_R10	Diagnoses - ICD10	0.0003754236677		
41202_K21	Diagnoses - main ICD10	0.0003734204511		
4501	Non-accidental death in close genetic family	0.0003709758457		
41202_R10	Diagnoses - main ICD10	0.0003706684511		
41270_Z95	Diagnoses - ICD10	0.0003706252028		
41270_K44	Diagnoses - ICD10	0.000367799832		
20546_4	Substances taken for depression	0.0003639878996		
4440_max	Average monthly spirits intake	0.0003622231307		
2877_1	Type of tobacco previously smoked	0.0003605141537		
41270_I20	Diagnoses - ICD10	0.0003590411507		
20169_4	FI3	0.0003587879473		
1538_2	Major dietary changes in the last 5 years	0.0003574154689		
41270_N28	Diagnoses - ICD10	0.000354852149		
41270_B37	Diagnoses - ICD10	0.0003486650821		
4418_min	Average monthly champagne plus white wine intake	0.000347313704		
20131_max	Number of correct matches in round	0.0003471458913		
41270_M48	Diagnoses - ICD10	0.0003363680735		
20107_10	Illnesses of father	0.0003353315988		
41202_Z46	Diagnoses - main ICD10	0.0003334192152		
41270_I25	Diagnoses - ICD10	0.0003331178159		
41270_N85	Diagnoses - ICD10	0.0003326037549		
4429_min	Average monthly beer plus cider intake	0.0003298381052		
1001	Duration of strenuous sports	0.0003294452908		

22612	Worked with materials containing asbestos	0.0003238557838		
41270_N92	Diagnoses - ICD10	0.0003217882477		
41270_J90	Diagnoses - ICD10	0.0003132076527		
41202_R31	Diagnoses - main ICD10	0.0003129820107		
20490	Sexually molested as a child	0.0003083631746		
41270_M15	Diagnoses - ICD10	0.0002954820811		
41270_K30	Diagnoses - ICD10	0.0002920441621		
41202_C44	Diagnoses - main ICD10	0.000291595934		
20110_3	Illnesses of mother	0.0002801643568		
22660_106	Gap coding	0.0002740062191		
41270_R56	Diagnoses - ICD10	0.0002731693094		
20530	Witnessed sudden violent death	0.0002617650898		
41202_I25	Diagnoses - main ICD10	0.000258394226		
4081_1	Method of measuring blood pressure	0.0002568773925		
20171	FI4	0.0002534943924		
20459	General happiness with own health	0.0002482859127		
20473_avg	Number of times seen an un-real vision	0.000229843019		
20541	Difficulty stopping worrying during worst period of anxiety	0.000227870536		
22605_max	Work hours per week - exact value	0.0002256589651		
20110_6	Illnesses of mother	0.0002227773221		
20554_3	Actions taken following self-harm	0.0002106630855		
41202_S62	Diagnoses - main ICD10	0.000208148791		
22645_max	Rest days during mixed shift periods	0.0002009289165		
41202_K40	Diagnoses - main ICD10	0.0001986509596		
20229_max	Values entered	0.0001735546539		
6157_4	Why stopped smoking	0.0001734091784		
41270_D05	Diagnoses - ICD10	0.0001627454039		
3859_3	Reason former drinker stopped drinking alcohol	0		
2664_4	Reason for reducing amount of alcohol drunk	0		
10912	Variation in diet (pilot)	0		
3859_5	Reason former drinker stopped drinking alcohol	0		
10776_3	Bread type/intake (pilot)	0		
3859_4	Reason former drinker stopped drinking alcohol	0		
10776_2	Bread type/intake (pilot)	0		
10767	Spread type (pilot)	0		
1647_2	Country of birth (UK/elsewhere)	0		
10818_1	Reason for reducing amount of alcohol drunk (pilot)	0		
41270_A69	Diagnoses - ICD10	0		
1031_7	Frequency of friend/family visits	0		
22503_avg	Years of cough on most days	0		
130899_40	Source of report of F34 (persistent mood [affective] disorders)	0		
130903_40	Source of report of F39 (unspecified mood [affective] disorder)	0		
20247_avg	Total errors traversing numeric path (trail #1)	0		
20410_avg	Age when known person last commented about drinking habits	0		
20455_avg	Age when last took cannabis	0		
20465_avg	Number of times heard an un-real voice	0		
22645_avg	Rest days during mixed shift periods	0		
22505_avg	Years of bringing up phlegm/sputum/mucus on most days	0		
22174	Recent medication for bronchiectasis	0		
22154_avg	Age bronchiectasis diagnosed by doctor	0		
22149_avg	Age chronic bronchitis diagnosed by doctor	0		
22150_avg	Age COPD (Chronic Obstructive Pulmonary Disease) diagnosed by doctor	0		
22148_avg	Age emphysema diagnosed by doctor	0		
22146_avg	Age hayfever or allergic rhinitis diagnosed by doctor	0		
22160_avg	Age lung cancer (not mesothelioma) diagnosed by doctor	0		
22161_avg	Age mesothelioma of the lung diagnosed by doctor	0		
22166	Recent medication for hayfever or allergic rhinitis	0		
22618	Breathing problems improved/stopped away from workplace or on holiday	0		
10740	Frequency of friend/family visits (pilot)	0		
22617_353	Job code - historical	0		
22617_912	Job code - historical	0		
22617_116	Job code - historical	0		
22617_543	Job code - historical	0		
22617_913	Job code - historical	0		
22617_115	Job code - historical	0		
22617_244	Job code - historical	0		
22617_112	Job code - historical	0		
22617_243	Job code - historical	0		
22617_114	Job code - historical	0		
22617_621	Job code - historical	0		
22617_812	Job code - historical	0		
22617_813	Job code - historical	0		
22617_522	Job code - historical	0		
22617_122	Job code - historical	0		
22617_811	Job code - historical	0		
22617_341	Job code - historical	0		
22157_avg	Age tuberculosis diagnosed by doctor	0		

20140-0.1	When input method described	0		
20140-0.2	When input method described	0		
22149_max	Age chronic bronchitis diagnosed by doctor	0		
22654_min	Consecutive night shifts during night shift periods	0		
22655_max	Rest days during night shift periods	0		
22503_max	Years of cough on most days	0		
22508_max	Amount of tobacco currently smoked	0		
22508_min	Amount of tobacco currently smoked	0		
22147_max	Age asthma diagnosed by doctor	0		
22154_max	Age bronchiectasis diagnosed by doctor	0		
22148_max	Age emphysema diagnosed by doctor	0		
20140-0.3	When input method described	0		
22160_max	Age lung cancer (not mesothelioma) diagnosed by doctor	0		
22161_max	Age mesothelioma of the lung diagnosed by doctor	0		
22153_max	Age sarcoidosis diagnosed by doctor	0		
22157_max	Age tuberculosis diagnosed by doctor	0		
22631_max	Period spent working day shifts	0		
22641_max	Period spent working mix of day and night shifts	0		
22641_min	Period spent working mix of day and night shifts	0		
22654_max	Consecutive night shifts during night shift periods	0		
22653_min	Number of night shifts worked monthly during night shift periods	0		
22653_max	Number of night shifts worked monthly during night shift periods	0		
22652_min	Usual length of each night shift during night shift periods	0		
22617_117	Job code - historical	0		
22617_414	Job code - historical	0		
22617_549	Job code - historical	0		
6194_min	Age stopped smoking cigarettes (current cigar/pipe or previous cigarette smoker)	0		
6183_min	Number of cigarettes previously smoked daily (current cigar/pipe smokers)	0		
3972_min	Number of adopted brothers	0		
3982_max	Number of adopted sisters	0		
20247_max	Total errors traversing numeric path (trail #1)	0		
20147_max	Errors before selecting correct item in numeric path (trail #1)	0		
20147_min	Errors before selecting correct item in numeric path (trail #1)	0		
20410_max	Age when known person last commented about drinking habits	0		
20470_max	Number of times believed in an un-real conspiracy against self	0		
20465_max	Number of times heard an un-real voice	0		
22643_max	Number of night shifts worked monthly during mixed shift periods	0		
22643_min	Number of night shifts worked monthly during mixed shift periods	0		
22617_925	Job code - historical	0		
22617_311	Job code - historical	0		
22617_351	Job code - historical	0		
20530_1	Witnessed sudden violent death	0		
20431	Ever addicted to a behaviour or miscellanous	0		
20456	Ever addicted to illicit or recreational drugs	0		
20457	Ongoing addiction or dependence on illicit or recreational drugs	0		
20404	Ever physically dependent on alcohol	0		
20415	Ongoing addiction to alcohol	0		
20411_1	Ever been injured or injured someone else through drinking alcohol	0		
20531_1	Victim of sexual assault	0		
20528_1	Diagnosed with life-threatening illness	0		
22601_3435	Job coding	0		
20527_1	Been involved in combat or exposed to war-zone	0		
20483	Ever attempted suicide	0		
22660_-717	Gap coding	0		
22660_101	Gap coding	0		
22660_102	Gap coding	0		
22660_107	Gap coding	0		
22601_2984	Job coding	0		
20538	Worried most days during period of worst anxiety	0		
20427	Frequent trouble falling or staying asleep during worst period of anxiety	0		
20536	Weight change during worst episode of depression	0		
20536_0	Weight change during worst episode of depression	0		
23050	HSV-1 seropositivity for Herpes Simplex virus-1	0		
23052	VZV seropositivity for Varicella Zoster Virus	0		
23053	EBV seropositivity for Epstein-Barr Virus	0		
23054	CMV seropositivity for Human Cytomegalovirus	0		
23057	HHV-6B seropositivity for Human Herpesvirus-6	0		
23062	T. gondii seropositivity for Toxoplasma gondii	0		
23066	JCV seropositivity for Human Polyomavirus JCV	0		
23067	MCV seropositivity for Merkel Cell Polyomavirus	0		
23074	H. pylori Definition II seropositivity for Helicobacter pylori	0		
20167_4	FI2	0		
20169_2	FI3	0		
20181	FI9	0		
20183	FI10	0		
20185	FI11	0		
20246_1	Trail making completion status	0		

22601_3419	Job coding	0		
22601_3382	Job coding	0		
22617_511	Job code - historical	0		
22617_421	Job code - historical	0		
22601_3313	Job coding	0		
22617_232	Job code - historical	0		
22617_611	Job code - historical	0		
22617_118	Job code - historical	0		
22617_711	Job code - historical	0		
22617_412	Job code - historical	0		
22617_354	Job code - historical	0		
22617_241	Job code - historical	0		
22601_2891	Job coding	0		
22617_321	Job code - historical	0		
22617_415	Job code - historical	0		
22617_322	Job code - historical	0		
22617_612	Job code - historical	0		
22617_613	Job code - historical	0		
22617_213	Job code - historical	0		
22617_113	Job code - historical	0		
22601_3156	Job coding	0		
22601_3287	Job coding	0		
22601_3276	Job coding	0		
22601_2709	Job coding	0		
22601_3432	Job coding	0		
22601_3172	Job coding	0		
22601_2995	Job coding	0		
22601_3347	Job coding	0		
22601_3210	Job coding	0		
22601_3032	Job coding	0		
22601_2551	Job coding	0		
22601_3220	Job coding	0		
22601_3018	Job coding	0		
22601_3107	Job coding	0		
22601_3406	Job coding	0		
22601_2943	Job coding	0		
22601_2563	Job coding	0		
22601_2847	Job coding	0		
22601_2793	Job coding	0		
1428_2	Spread type	0		
41202_N76	Diagnoses - main ICD10	0		
1418_5	Milk type used	0		
41270_H58	Diagnoses - ICD10	0		
41270_K10	Diagnoses - ICD10	0		
41270_J43	Diagnoses - ICD10	0		
41270_H47	Diagnoses - ICD10	0		
41270_X44	Diagnoses - ICD10	0		
41270_K83	Diagnoses - ICD10	0		
41270_D89	Diagnoses - ICD10	0		
41270_V82	Diagnoses - ICD10	0		
41270_M86	Diagnoses - ICD10	0		
41270_Z71	Diagnoses - ICD10	0		
41270_N62	Diagnoses - ICD10	0		
41270_H46	Diagnoses - ICD10	0		
41270_J81	Diagnoses - ICD10	0		
41270_D41	Diagnoses - ICD10	0		
41270_R44	Diagnoses - ICD10	0		
41270_C67	Diagnoses - ICD10	0		
41270_D47	Diagnoses - ICD10	0		
41270_E04	Diagnoses - ICD10	0		
41270_H83	Diagnoses - ICD10	0		
41270_I65	Diagnoses - ICD10	0		
41270_B35	Diagnoses - ICD10	0		
41270_J61	Diagnoses - ICD10	0		
41270_I47	Diagnoses - ICD10	0		
41270_S49	Diagnoses - ICD10	0		
41270_J98	Diagnoses - ICD10	0		
41270_U83	Diagnoses - ICD10	0		
41270_Z98	Diagnoses - ICD10	0		
41270_F40	Diagnoses - ICD10	0		
41270_L60	Diagnoses - ICD10	0		
41270_Z94	Diagnoses - ICD10	0		
41270_Y43	Diagnoses - ICD10	0		
41270_E80	Diagnoses - ICD10	0		
41270_W44	Diagnoses - ICD10	0		
41270_B18	Diagnoses - ICD10	0		
41270_O16	Diagnoses - ICD10	0		

41270_F15	Diagnoses - ICD10	0		
41270_G90	Diagnoses - ICD10	0		
41270_E07	Diagnoses - ICD10	0		
41270_Z40	Diagnoses - ICD10	0		
41270_T54	Diagnoses - ICD10	0		
41270_T45	Diagnoses - ICD10	0		
41270_K70	Diagnoses - ICD10	0		
41270_S68	Diagnoses - ICD10	0		
41270_O60	Diagnoses - ICD10	0		
41270_D17	Diagnoses - ICD10	0		
41270_Q76	Diagnoses - ICD10	0		
41270_N63	Diagnoses - ICD10	0		
41270_Z30	Diagnoses - ICD10	0		
41270_T65	Diagnoses - ICD10	0		
41270_S55	Diagnoses - ICD10	0		
41270_Z45	Diagnoses - ICD10	0		
41270_I27	Diagnoses - ICD10	0		
41270_S89	Diagnoses - ICD10	0		
41270_M90	Diagnoses - ICD10	0		
41270_Y86	Diagnoses - ICD10	0		
41270_T88	Diagnoses - ICD10	0		
41270_Z48	Diagnoses - ICD10	0		
41270_I38	Diagnoses - ICD10	0		
41270_S92	Diagnoses - ICD10	0		
41270_M43	Diagnoses - ICD10	0		
41270_G58	Diagnoses - ICD10	0		
41270_D10	Diagnoses - ICD10	0		
41270_N31	Diagnoses - ICD10	0		
41270_H02	Diagnoses - ICD10	0		
41270_G83	Diagnoses - ICD10	0		
41270_Y45	Diagnoses - ICD10	0		
41270_D70	Diagnoses - ICD10	0		
41270_T44	Diagnoses - ICD10	0		
41270_V03	Diagnoses - ICD10	0		
41270_N47	Diagnoses - ICD10	0		
41270_T56	Diagnoses - ICD10	0		
41270_W29	Diagnoses - ICD10	0		
41270_M05	Diagnoses - ICD10	0		
41270_X99	Diagnoses - ICD10	0		
41270_T40	Diagnoses - ICD10	0		
41270_V17	Diagnoses - ICD10	0		
41270_D32	Diagnoses - ICD10	0		
41270_I70	Diagnoses - ICD10	0		
41270_G06	Diagnoses - ICD10	0		
41270_J36	Diagnoses - ICD10	0		
41270_O43	Diagnoses - ICD10	0		
41270_N23	Diagnoses - ICD10	0		
41270_L28	Diagnoses - ICD10	0		
41270_F19	Diagnoses - ICD10	0		
41270_I21	Diagnoses - ICD10	0		
41270_G44	Diagnoses - ICD10	0		
41270_L02	Diagnoses - ICD10	0		
41270_K05	Diagnoses - ICD10	0		
41270_M32	Diagnoses - ICD10	0		
41270_R89	Diagnoses - ICD10	0		
41270_Z76	Diagnoses - ICD10	0		
41270_T31	Diagnoses - ICD10	0		
41270_M00	Diagnoses - ICD10	0		
41270_J15	Diagnoses - ICD10	0		
41270_M35	Diagnoses - ICD10	0		
41270_C64	Diagnoses - ICD10	0		
41270_L05	Diagnoses - ICD10	0		
41270_C34	Diagnoses - ICD10	0		
41270_E65	Diagnoses - ICD10	0		
41270_O06	Diagnoses - ICD10	0		
41270_G45	Diagnoses - ICD10	0		
41270_S93	Diagnoses - ICD10	0		
41270_T47	Diagnoses - ICD10	0		
41270_Y00	Diagnoses - ICD10	0		
41270_T79	Diagnoses - ICD10	0		
41270_S61	Diagnoses - ICD10	0		
41270_K45	Diagnoses - ICD10	0		
41270_F13	Diagnoses - ICD10	0		
41270_Y52	Diagnoses - ICD10	0		
41270_O80	Diagnoses - ICD10	0		
41270_D75	Diagnoses - ICD10	0		
41270_L82	Diagnoses - ICD10	0		

41270_E70	Diagnoses - ICD10	0		
41270_M10	Diagnoses - ICD10	0		
41270_R16	Diagnoses - ICD10	0		
41270_L27	Diagnoses - ICD10	0		
41270_D56	Diagnoses - ICD10	0		
41270_B50	Diagnoses - ICD10	0		
41270_I00	Diagnoses - ICD10	0		
41270_I86	Diagnoses - ICD10	0		
41270_H10	Diagnoses - ICD10	0		
41270_Z57	Diagnoses - ICD10	0		
41270_R09	Diagnoses - ICD10	0		
41270_D45	Diagnoses - ICD10	0		
41270_S63	Diagnoses - ICD10	0		
41270_C91	Diagnoses - ICD10	0		
41270_S71	Diagnoses - ICD10	0		
41270_M70	Diagnoses - ICD10	0		
41270_N49	Diagnoses - ICD10	0		
41270_Z59	Diagnoses - ICD10	0		
41270_S31	Diagnoses - ICD10	0		
41270_H44	Diagnoses - ICD10	0		
41270_A49	Diagnoses - ICD10	0		
41270_I87	Diagnoses - ICD10	0		
41270_D80	Diagnoses - ICD10	0		
41270_D61	Diagnoses - ICD10	0		
41270_O68	Diagnoses - ICD10	0		
41270_S14	Diagnoses - ICD10	0		
41270_N36	Diagnoses - ICD10	0		
41270_Y08	Diagnoses - ICD10	0		
41270_D69	Diagnoses - ICD10	0		
41270_N04	Diagnoses - ICD10	0		
41270_M85	Diagnoses - ICD10	0		
41270_R17	Diagnoses - ICD10	0		
41270_I05	Diagnoses - ICD10	0		
41270_I97	Diagnoses - ICD10	0		
41270_Z99	Diagnoses - ICD10	0		
41270_F02	Diagnoses - ICD10	0		
41270_H55	Diagnoses - ICD10	0		
41270_Z47	Diagnoses - ICD10	0		
41270_H65	Diagnoses - ICD10	0		
41270_I23	Diagnoses - ICD10	0		
41270_F11	Diagnoses - ICD10	0		
41270_I64	Diagnoses - ICD10	0		
41270_G13	Diagnoses - ICD10	0		
41270_X42	Diagnoses - ICD10	0		
41270_B34	Diagnoses - ICD10	0		
41270_G94	Diagnoses - ICD10	0		
41270_N93	Diagnoses - ICD10	0		
41270_Z61	Diagnoses - ICD10	0		
41270_N29	Diagnoses - ICD10	0		
41270_I74	Diagnoses - ICD10	0		
41270_K41	Diagnoses - ICD10	0		
41270_J82	Diagnoses - ICD10	0		
41270_R86	Diagnoses - ICD10	0		
41270_Z04	Diagnoses - ICD10	0		
41270_S11	Diagnoses - ICD10	0		
41270_D36	Diagnoses - ICD10	0		
41270_W17	Diagnoses - ICD10	0		
41270_Z22	Diagnoses - ICD10	0		
41270_Y56	Diagnoses - ICD10	0		
41270_O61	Diagnoses - ICD10	0		
41270_T68	Diagnoses - ICD10	0		
41270_X83	Diagnoses - ICD10	0		
41270_S27	Diagnoses - ICD10	0		
41270_M95	Diagnoses - ICD10	0		
41270_F79	Diagnoses - ICD10	0		
41270_B98	Diagnoses - ICD10	0		
41270_R74	Diagnoses - ICD10	0		
41270_I30	Diagnoses - ICD10	0		
41270_N08	Diagnoses - ICD10	0		
41270_H15	Diagnoses - ICD10	0		
41270_N87	Diagnoses - ICD10	0		
41270_O48	Diagnoses - ICD10	0		
41270_L71	Diagnoses - ICD10	0		
41270_S06	Diagnoses - ICD10	0		
41270_N25	Diagnoses - ICD10	0		
41270_R78	Diagnoses - ICD10	0		
41270_O46	Diagnoses - ICD10	0		

41270_K86	Diagnoses - ICD10	0		
41270_Y42	Diagnoses - ICD10	0		
41270_M22	Diagnoses - ICD10	0		
41270_X78	Diagnoses - ICD10	0		
41270_Y11	Diagnoses - ICD10	0		
41270_N89	Diagnoses - ICD10	0		
41270_T86	Diagnoses - ICD10	0		
41270_B95	Diagnoses - ICD10	0		
41270_M11	Diagnoses - ICD10	0		
41270_R61	Diagnoses - ICD10	0		
41270_W84	Diagnoses - ICD10	0		
41270_M94	Diagnoses - ICD10	0		
41270_M84	Diagnoses - ICD10	0		
41270_M45	Diagnoses - ICD10	0		
41270_F39	Diagnoses - ICD10	0		
41270_H93	Diagnoses - ICD10	0		
41270_I11	Diagnoses - ICD10	0		
41270_G21	Diagnoses - ICD10	0		
41270_D62	Diagnoses - ICD10	0		
41270_A63	Diagnoses - ICD10	0		
41270_H01	Diagnoses - ICD10	0		
41270_F90	Diagnoses - ICD10	0		
41270_C49	Diagnoses - ICD10	0		
41270_S60	Diagnoses - ICD10	0		
41270_G04	Diagnoses - ICD10	0		
41270_X31	Diagnoses - ICD10	0		
41270_R40	Diagnoses - ICD10	0		
41270_D58	Diagnoses - ICD10	0		
41270_Q21	Diagnoses - ICD10	0		
41270_L42	Diagnoses - ICD10	0		
41270_O32	Diagnoses - ICD10	0		
41270_F21	Diagnoses - ICD10	0		
41270_N12	Diagnoses - ICD10	0		
41270_K60	Diagnoses - ICD10	0		
41270_S41	Diagnoses - ICD10	0		
41270_N60	Diagnoses - ICD10	0		
41270_K46	Diagnoses - ICD10	0		
41270_O86	Diagnoses - ICD10	0		
41270_C85	Diagnoses - ICD10	0		
41270_D30	Diagnoses - ICD10	0		
41270_Y87	Diagnoses - ICD10	0		
41270_K65	Diagnoses - ICD10	0		
41270_T18	Diagnoses - ICD10	0		
41270_C10	Diagnoses - ICD10	0		
41270_G82	Diagnoses - ICD10	0		
41270_S90	Diagnoses - ICD10	0		
41270_K08	Diagnoses - ICD10	0		
41270_R62	Diagnoses - ICD10	0		
41270_R43	Diagnoses - ICD10	0		
41270_X41	Diagnoses - ICD10	0		
41270_W18	Diagnoses - ICD10	0		
41270_Q66	Diagnoses - ICD10	0		
41270_G81	Diagnoses - ICD10	0		
41270_N27	Diagnoses - ICD10	0		
41270_L91	Diagnoses - ICD10	0		
41270_M77	Diagnoses - ICD10	0		
41270_W02	Diagnoses - ICD10	0		
41270_N14	Diagnoses - ICD10	0		
41270_N86	Diagnoses - ICD10	0		
41270_G47	Diagnoses - ICD10	0		
41270_J40	Diagnoses - ICD10	0		
41270_F12	Diagnoses - ICD10	0		
41270_N15	Diagnoses - ICD10	0		
41270_D18	Diagnoses - ICD10	0		
41270_M53	Diagnoses - ICD10	0		
41270_S91	Diagnoses - ICD10	0		
41270_F81	Diagnoses - ICD10	0		
41270_K26	Diagnoses - ICD10	0		
41270_S34	Diagnoses - ICD10	0		
41270_Y53	Diagnoses - ICD10	0		
41270_D57	Diagnoses - ICD10	0		
41270_T37	Diagnoses - ICD10	0		
41270_Y55	Diagnoses - ICD10	0		
41270_L29	Diagnoses - ICD10	0		
41270_H49	Diagnoses - ICD10	0		
41270_G70	Diagnoses - ICD10	0		
41270_W55	Diagnoses - ICD10	0		

41270_T58	Diagnoses - ICD10	0		
41270_N70	Diagnoses - ICD10	0		
41270_B44	Diagnoses - ICD10	0		
41270_W03	Diagnoses - ICD10	0		
41270_X15	Diagnoses - ICD10	0		
41270_S70	Diagnoses - ICD10	0		
41270_C84	Diagnoses - ICD10	0		
41270_R82	Diagnoses - ICD10	0		
41270_I98	Diagnoses - ICD10	0		
41270_D38	Diagnoses - ICD10	0		
41270_D16	Diagnoses - ICD10	0		
41270_Y04	Diagnoses - ICD10	0		
41270_B24	Diagnoses - ICD10	0		
41270_O99	Diagnoses - ICD10	0		
41270_C45	Diagnoses - ICD10	0		
41270_E53	Diagnoses - ICD10	0		
41270_F34	Diagnoses - ICD10	0		
41270_F84	Diagnoses - ICD10	0		
41270_S81	Diagnoses - ICD10	0		
41270_D51	Diagnoses - ICD10	0		
41270_T71	Diagnoses - ICD10	0		
41270_N10	Diagnoses - ICD10	0		
41270_D52	Diagnoses - ICD10	0		
41270_Y41	Diagnoses - ICD10	0		
41270_H00	Diagnoses - ICD10	0		
41270_S51	Diagnoses - ICD10	0		
41270_N48	Diagnoses - ICD10	0		
41270_D26	Diagnoses - ICD10	0		
41270_D68	Diagnoses - ICD10	0		
41270_Q18	Diagnoses - ICD10	0		
41270_S35	Diagnoses - ICD10	0		
41270_N42	Diagnoses - ICD10	0		
41270_L85	Diagnoses - ICD10	0		
41270_M49	Diagnoses - ICD10	0		
41270_Z54	Diagnoses - ICD10	0		
41270_S20	Diagnoses - ICD10	0		
41270_G32	Diagnoses - ICD10	0		
41270_X68	Diagnoses - ICD10	0		
41270_E16	Diagnoses - ICD10	0		
41270_J02	Diagnoses - ICD10	0		
41270_T38	Diagnoses - ICD10	0		
41270_G46	Diagnoses - ICD10	0		
41270_G62	Diagnoses - ICD10	0		
41270_C81	Diagnoses - ICD10	0		
41270_E51	Diagnoses - ICD10	0		
41270_I82	Diagnoses - ICD10	0		
41270_D73	Diagnoses - ICD10	0		
41270_R01	Diagnoses - ICD10	0		
41270_K56	Diagnoses - ICD10	0		
41270_L53	Diagnoses - ICD10	0		
41270_I72	Diagnoses - ICD10	0		
41270_D86	Diagnoses - ICD10	0		
41270_Z02	Diagnoses - ICD10	0		
41270_V92	Diagnoses - ICD10	0		
41270_M87	Diagnoses - ICD10	0		
41270_H80	Diagnoses - ICD10	0		
41270_D59	Diagnoses - ICD10	0		
41270_R90	Diagnoses - ICD10	0		
41270_F45	Diagnoses - ICD10	0		
41270_Q51	Diagnoses - ICD10	0		
41270_S39	Diagnoses - ICD10	0		
41270_I78	Diagnoses - ICD10	0		
41270_Y95	Diagnoses - ICD10	0		
41270_F92	Diagnoses - ICD10	0		
41270_O41	Diagnoses - ICD10	0		
41270_J31	Diagnoses - ICD10	0		
41270_H72	Diagnoses - ICD10	0		
41270_N88	Diagnoses - ICD10	0		
41270_N81	Diagnoses - ICD10	0		
41270_S10	Diagnoses - ICD10	0		
41270_W11	Diagnoses - ICD10	0		
41270_M92	Diagnoses - ICD10	0		
41270_F69	Diagnoses - ICD10	0		
41270_I77	Diagnoses - ICD10	0		
41270_G03	Diagnoses - ICD10	0		
41270_T93	Diagnoses - ICD10	0		
41270_Z00	Diagnoses - ICD10	0		

41270_K14	Diagnoses - ICD10	0		
41270_H59	Diagnoses - ICD10	0		
41270_M14	Diagnoses - ICD10	0		
41270_K71	Diagnoses - ICD10	0		
41270_E88	Diagnoses - ICD10	0		
41270_T46	Diagnoses - ICD10	0		
41270_N41	Diagnoses - ICD10	0		
41270_B02	Diagnoses - ICD10	0		
41270_M99	Diagnoses - ICD10	0		
41270_X69	Diagnoses - ICD10	0		
41270_C80	Diagnoses - ICD10	0		
41270_C18	Diagnoses - ICD10	0		
41270_G72	Diagnoses - ICD10	0		
41270_Y47	Diagnoses - ICD10	0		
41270_J84	Diagnoses - ICD10	0		
41270_R52	Diagnoses - ICD10	0		
41270_R57	Diagnoses - ICD10	0		
41270_K91	Diagnoses - ICD10	0		
41270_C09	Diagnoses - ICD10	0		
41270_W49	Diagnoses - ICD10	0		
41270_Q79	Diagnoses - ICD10	0		
41270_D84	Diagnoses - ICD10	0		
41270_N03	Diagnoses - ICD10	0		
41270_Y44	Diagnoses - ICD10	0		
41270_J33	Diagnoses - ICD10	0		
41270_N99	Diagnoses - ICD10	0		
41270_C19	Diagnoses - ICD10	0		
41270_N64	Diagnoses - ICD10	0		
41270_N19	Diagnoses - ICD10	0		
41270_K90	Diagnoses - ICD10	0		
41270_J00	Diagnoses - ICD10	0		
41270_K12	Diagnoses - ICD10	0		
41270_L12	Diagnoses - ICD10	0		
41270_T85	Diagnoses - ICD10	0		
41270_K42	Diagnoses - ICD10	0		
41270_C43	Diagnoses - ICD10	0		
41270_N90	Diagnoses - ICD10	0		
41270_K81	Diagnoses - ICD10	0		
41270_O20	Diagnoses - ICD10	0		
41270_V47	Diagnoses - ICD10	0		
41270_M30	Diagnoses - ICD10	0		
41270_F48	Diagnoses - ICD10	0		
41270_K00	Diagnoses - ICD10	0		
41270_K11	Diagnoses - ICD10	0		
41270_G59	Diagnoses - ICD10	0		
41270_Z74	Diagnoses - ICD10	0		
41270_T98	Diagnoses - ICD10	0		
41270_J39	Diagnoses - ICD10	0		
41270_H43	Diagnoses - ICD10	0		
41270_H73	Diagnoses - ICD10	0		
41270_Z29	Diagnoses - ICD10	0		
41270_Z43	Diagnoses - ICD10	0		
41270_J30	Diagnoses - ICD10	0		
41270_Y46	Diagnoses - ICD10	0		
41270_Y40	Diagnoses - ICD10	0		
41270_E29	Diagnoses - ICD10	0		
41270_N35	Diagnoses - ICD10	0		
41270_J10	Diagnoses - ICD10	0		
41270_Y51	Diagnoses - ICD10	0		
41270_F61	Diagnoses - ICD10	0		
41270_T84	Diagnoses - ICD10	0		
41270_R68	Diagnoses - ICD10	0		
41270_E61	Diagnoses - ICD10	0		
41270_T23	Diagnoses - ICD10	0		
41270_J42	Diagnoses - ICD10	0		
41270_E22	Diagnoses - ICD10	0		
41270_V18	Diagnoses - ICD10	0		
41270_V28	Diagnoses - ICD10	0		
41270_C71	Diagnoses - ICD10	0		
41270_L50	Diagnoses - ICD10	0		
41270_G95	Diagnoses - ICD10	0		
41270_E05	Diagnoses - ICD10	0		
41270_J92	Diagnoses - ICD10	0		
41270_Z97	Diagnoses - ICD10	0		
41270_W22	Diagnoses - ICD10	0		
41270_W05	Diagnoses - ICD10	0		
41270_R39	Diagnoses - ICD10	0		

41270_G43	Diagnoses - ICD10	0		
41270_I88	Diagnoses - ICD10	0		
41270_B97	Diagnoses - ICD10	0		
41270_W45	Diagnoses - ICD10	0		
41270_O02	Diagnoses - ICD10	0		
41270_H27	Diagnoses - ICD10	0		
41270_V02	Diagnoses - ICD10	0		
41270_T48	Diagnoses - ICD10	0		
41270_R12	Diagnoses - ICD10	0		
41270_G51	Diagnoses - ICD10	0		
41270_R14	Diagnoses - ICD10	0		
41270_R03	Diagnoses - ICD10	0		
41270_M89	Diagnoses - ICD10	0		
41270_C25	Diagnoses - ICD10	0		
41270_H54	Diagnoses - ICD10	0		
41270_I37	Diagnoses - ICD10	0		
41270_I71	Diagnoses - ICD10	0		
41270_M50	Diagnoses - ICD10	0		
41270_M07	Diagnoses - ICD10	0		
41270_T09	Diagnoses - ICD10	0		
41270_M24	Diagnoses - ICD10	0		
41270_F42	Diagnoses - ICD10	0		
10115_3	Why stopped smoking (pilot)	0		
41202_H57	Diagnoses - main ICD10	0		
41202_R78	Diagnoses - main ICD10	0		
41202_T82	Diagnoses - main ICD10	0		
41202_K86	Diagnoses - main ICD10	0		
41202_R20	Diagnoses - main ICD10	0		
41202_K07	Diagnoses - main ICD10	0		
41202_O80	Diagnoses - main ICD10	0		
41202_O47	Diagnoses - main ICD10	0		
41202_F40	Diagnoses - main ICD10	0		
41202_K59	Diagnoses - main ICD10	0		
41202_S09	Diagnoses - main ICD10	0		
41202_Z86	Diagnoses - main ICD10	0		
41202_T45	Diagnoses - main ICD10	0		
41202_I50	Diagnoses - main ICD10	0		
41202_H95	Diagnoses - main ICD10	0		
41202_K55	Diagnoses - main ICD10	0		
41202_N63	Diagnoses - main ICD10	0		
41202_A08	Diagnoses - main ICD10	0		
41202_B37	Diagnoses - main ICD10	0		
41202_O64	Diagnoses - main ICD10	0		
41202_Z45	Diagnoses - main ICD10	0		
41202_I27	Diagnoses - main ICD10	0		
41202_R79	Diagnoses - main ICD10	0		
41202_K10	Diagnoses - main ICD10	0		
41202_K83	Diagnoses - main ICD10	0		
41202_N25	Diagnoses - main ICD10	0		
41202_S42	Diagnoses - main ICD10	0		
41202_I87	Diagnoses - main ICD10	0		
41202_M94	Diagnoses - main ICD10	0		
41202_Z53	Diagnoses - main ICD10	0		
41202_Z04	Diagnoses - main ICD10	0		
41202_H81	Diagnoses - main ICD10	0		
41202_F70	Diagnoses - main ICD10	0		
41202_R45	Diagnoses - main ICD10	0		
41202_O62	Diagnoses - main ICD10	0		
41202_N83	Diagnoses - main ICD10	0		
41202_N61	Diagnoses - main ICD10	0		
41202_R61	Diagnoses - main ICD10	0		
41202_N28	Diagnoses - main ICD10	0		
41202_F53	Diagnoses - main ICD10	0		
41202_H61	Diagnoses - main ICD10	0		
41202_R05	Diagnoses - main ICD10	0		
41202_G21	Diagnoses - main ICD10	0		
41202_G54	Diagnoses - main ICD10	0		
41202_C23	Diagnoses - main ICD10	0		
41202_G40	Diagnoses - main ICD10	0		
41202_G04	Diagnoses - main ICD10	0		
41202_R40	Diagnoses - main ICD10	0		
41202_I26	Diagnoses - main ICD10	0		
41202_T68	Diagnoses - main ICD10	0		
41202_J90	Diagnoses - main ICD10	0		
41202_C02	Diagnoses - main ICD10	0		
41202_I61	Diagnoses - main ICD10	0		
41202_D48	Diagnoses - main ICD10	0		

41202_H11	Diagnoses - main ICD10	0		
41202_G12	Diagnoses - main ICD10	0		
41202_O01	Diagnoses - main ICD10	0		
41202_N85	Diagnoses - main ICD10	0		
41202_F13	Diagnoses - main ICD10	0		
41202_F19	Diagnoses - main ICD10	0		
41202_S92	Diagnoses - main ICD10	0		
41202_M43	Diagnoses - main ICD10	0		
41202_G50	Diagnoses - main ICD10	0		
41202_R27	Diagnoses - main ICD10	0		
41202_J35	Diagnoses - main ICD10	0		
41202_N31	Diagnoses - main ICD10	0		
41202_D70	Diagnoses - main ICD10	0		
41202_K01	Diagnoses - main ICD10	0		
41202_T44	Diagnoses - main ICD10	0		
41202_S82	Diagnoses - main ICD10	0		
41202_N94	Diagnoses - main ICD10	0		
41202_S00	Diagnoses - main ICD10	0		
41202_T56	Diagnoses - main ICD10	0		
41202_A40	Diagnoses - main ICD10	0		
41202_I70	Diagnoses - main ICD10	0		
41202_R33	Diagnoses - main ICD10	0		
41202_N32	Diagnoses - main ICD10	0		
41202_I45	Diagnoses - main ICD10	0		
41202_G06	Diagnoses - main ICD10	0		
41202_J36	Diagnoses - main ICD10	0		
41202_L89	Diagnoses - main ICD10	0		
41202_R46	Diagnoses - main ICD10	0		
41202_D24	Diagnoses - main ICD10	0		
41202_M18	Diagnoses - main ICD10	0		
41202_J44	Diagnoses - main ICD10	0		
41202_D89	Diagnoses - main ICD10	0		
41202_M86	Diagnoses - main ICD10	0		
41202_Z71	Diagnoses - main ICD10	0		
41202_K43	Diagnoses - main ICD10	0		
41202_N62	Diagnoses - main ICD10	0		
41202_R44	Diagnoses - main ICD10	0		
41202_D05	Diagnoses - main ICD10	0		
41202_E04	Diagnoses - main ICD10	0		
41202_O30	Diagnoses - main ICD10	0		
41202_Q83	Diagnoses - main ICD10	0		
41202_I65	Diagnoses - main ICD10	0		
41202_N17	Diagnoses - main ICD10	0		
41202_S49	Diagnoses - main ICD10	0		
41202_J98	Diagnoses - main ICD10	0		
41202_N47	Diagnoses - main ICD10	0		
41202_L02	Diagnoses - main ICD10	0		
41202_S32	Diagnoses - main ICD10	0		
41202_M32	Diagnoses - main ICD10	0		
41202_Z76	Diagnoses - main ICD10	0		
41202_O06	Diagnoses - main ICD10	0		
41202_O03	Diagnoses - main ICD10	0		
41202_G45	Diagnoses - main ICD10	0		
41202_S93	Diagnoses - main ICD10	0		
41202_S69	Diagnoses - main ICD10	0		
41202_N43	Diagnoses - main ICD10	0		
41270_Y84	Diagnoses - ICD10	0		
41202_I84	Diagnoses - main ICD10	0		
20113_2	Illnesses of adopted mother	0		
20113_1	Illnesses of adopted mother	0		
20112_12	Illnesses of adopted father	0		
20112_8	Illnesses of adopted father	0		
20112_2	Illnesses of adopted father	0		
6158_1	Why reduced smoking	0		
41202_K74	Diagnoses - main ICD10	0		
41202_R26	Diagnoses - main ICD10	0		
41202_M62	Diagnoses - main ICD10	0		
41202_T78	Diagnoses - main ICD10	0		
41202_H40	Diagnoses - main ICD10	0		
41202_J93	Diagnoses - main ICD10	0		
20113_5	Illnesses of adopted mother	0		
41202_Z91	Diagnoses - main ICD10	0		
41202_M06	Diagnoses - main ICD10	0		
41202_I51	Diagnoses - main ICD10	0		
41202_S05	Diagnoses - main ICD10	0		
41202_N80	Diagnoses - main ICD10	0		
41202_M76	Diagnoses - main ICD10	0		

41202_C56	Diagnoses - main ICD10	0		
41202_Z42	Diagnoses - main ICD10	0		
41202_H92	Diagnoses - main ICD10	0		
41202_T11	Diagnoses - main ICD10	0		
41202_S99	Diagnoses - main ICD10	0		
20113_3	Illnesses of adopted mother	0		
20113_8	Illnesses of adopted mother	0		
41202_A49	Diagnoses - main ICD10	0		
20549_1	Substances taken for anxiety	0		
3446_3	Type of tobacco currently smoked	0		
10886	Difference in mobile phone use compared to one year previously (pilot)	0		
1140_3	Difference in mobile phone use compared to two years previously	0		
10953	Duration of walks (pilot)	0		
10971	Duration of vigorous physical activity (pilot)	0		
20554_6	Actions taken following self-harm	0		
20554_5	Actions taken following self-harm	0		
20553_5	Methods of self-harm used	0		
20553_3	Methods of self-harm used	0		
20553_2	Methods of self-harm used	0		
20551_2	Substance of prescription or over-the-counter medication addiction	0		
20546_1	Substances taken for depression	0		
20113_9	Illnesses of adopted mother	0		
10721_6	Illness, injury, bereavement, stress in last 2 years (pilot)	0		
10721_1	Illness, injury, bereavement, stress in last 2 years (pilot)	0		
20111_13	Illnesses of siblings	0		
20111_10	Illnesses of siblings	0		
20111_3	Illnesses of siblings	0		
20110_11	Illnesses of mother	0		
20110_4	Illnesses of mother	0		
20107_11	Illnesses of father	0		
20114_8	Illnesses of adopted siblings	0		
20114_6	Illnesses of adopted siblings	0		
20113_12	Illnesses of adopted mother	0		
41202_L73	Diagnoses - main ICD10	0		
41202_J38	Diagnoses - main ICD10	0		
41202_D06	Diagnoses - main ICD10	0		
41202_R60	Diagnoses - main ICD10	0		
41202_K64	Diagnoses - main ICD10	0		
41202_I05	Diagnoses - main ICD10	0		
41202_N30	Diagnoses - main ICD10	0		
41202_H65	Diagnoses - main ICD10	0		
41202_I23	Diagnoses - main ICD10	0		
41202_N93	Diagnoses - main ICD10	0		
41202_I74	Diagnoses - main ICD10	0		
41202_F22	Diagnoses - main ICD10	0		
41202_O68	Diagnoses - main ICD10	0		
41202_F06	Diagnoses - main ICD10	0		
41202_G57	Diagnoses - main ICD10	0		
41202_R00	Diagnoses - main ICD10	0		
41202_J05	Diagnoses - main ICD10	0		
41202_M10	Diagnoses - main ICD10	0		
41202_B50	Diagnoses - main ICD10	0		
41202_N75	Diagnoses - main ICD10	0		
41202_H71	Diagnoses - main ICD10	0		
41202_C79	Diagnoses - main ICD10	0		
41202_D45	Diagnoses - main ICD10	0		
41202_M70	Diagnoses - main ICD10	0		
41202_F01	Diagnoses - main ICD10	0		
41202_R87	Diagnoses - main ICD10	0		
41202_M93	Diagnoses - main ICD10	0		
41202_M15	Diagnoses - main ICD10	0		
41202_I73	Diagnoses - main ICD10	0		
41202_M72	Diagnoses - main ICD10	0		
41202_F42	Diagnoses - main ICD10	0		
41202_I24	Diagnoses - main ICD10	0		
41202_E86	Diagnoses - main ICD10	0		
41202_G56	Diagnoses - main ICD10	0		
41202_L97	Diagnoses - main ICD10	0		
41202_R53	Diagnoses - main ICD10	0		
41202_R63	Diagnoses - main ICD10	0		
41202_E23	Diagnoses - main ICD10	0		
41202_G99	Diagnoses - main ICD10	0		
41202_D23	Diagnoses - main ICD10	0		
41202_H18	Diagnoses - main ICD10	0		
41202_G55	Diagnoses - main ICD10	0		
41202_I60	Diagnoses - main ICD10	0		
41202_C92	Diagnoses - main ICD10	0		

41202_L21	Diagnoses - main ICD10	0		
41202_R91	Diagnoses - main ICD10	0		
41270_I31	Diagnoses - ICD10	0		
41202_J86	Diagnoses - main ICD10	0		
41202_R49	Diagnoses - main ICD10	0		
41202_M81	Diagnoses - main ICD10	0		
41202_N95	Diagnoses - main ICD10	0		
41202_N13	Diagnoses - main ICD10	0		
41202_J34	Diagnoses - main ICD10	0		
41202_H33	Diagnoses - main ICD10	0		
41202_I42	Diagnoses - main ICD10	0		
41202_K82	Diagnoses - main ICD10	0		
41202_J40	Diagnoses - main ICD10	0		
41202_S22	Diagnoses - main ICD10	0		
41270_D33	Diagnoses - ICD10	0		
41270_E06	Diagnoses - ICD10	0		
41270_B07	Diagnoses - ICD10	0		
41270_J93	Diagnoses - ICD10	0		
41270_I69	Diagnoses - ICD10	0		
41270_E89	Diagnoses - ICD10	0		
41270_I62	Diagnoses - ICD10	0		
41270_Y54	Diagnoses - ICD10	0		
41270_Z33	Diagnoses - ICD10	0		
41270_I51	Diagnoses - ICD10	0		
41270_H66	Diagnoses - ICD10	0		
41270_T83	Diagnoses - ICD10	0		
41270_Z56	Diagnoses - ICD10	0		
41270_J99	Diagnoses - ICD10	0		
41270_X23	Diagnoses - ICD10	0		
41270_S76	Diagnoses - ICD10	0		
41270_O36	Diagnoses - ICD10	0		
41270_N80	Diagnoses - ICD10	0		
41270_M76	Diagnoses - ICD10	0		
41270_G63	Diagnoses - ICD10	0		
41270_I12	Diagnoses - ICD10	0		
41270_F44	Diagnoses - ICD10	0		
41270_K51	Diagnoses - ICD10	0		
41270_F38	Diagnoses - ICD10	0		
41270_W25	Diagnoses - ICD10	0		
41270_T78	Diagnoses - ICD10	0		
41270_M62	Diagnoses - ICD10	0		
41202_K58	Diagnoses - main ICD10	0		
41202_E83	Diagnoses - main ICD10	0		
41202_M87	Diagnoses - main ICD10	0		
41202_M13	Diagnoses - main ICD10	0		
41202_R90	Diagnoses - main ICD10	0		
41202_F45	Diagnoses - main ICD10	0		
41202_I78	Diagnoses - main ICD10	0		
41202_D13	Diagnoses - main ICD10	0		
41202_T38	Diagnoses - main ICD10	0		
41202_H50	Diagnoses - main ICD10	0		
41202_T50	Diagnoses - main ICD10	0		
41202_T71	Diagnoses - main ICD10	0		
41202_D52	Diagnoses - main ICD10	0		
41202_N48	Diagnoses - main ICD10	0		
41270_C54	Diagnoses - ICD10	0		
41202_D26	Diagnoses - main ICD10	0		
41202_R59	Diagnoses - main ICD10	0		
41202_R35	Diagnoses - main ICD10	0		
41202_J01	Diagnoses - main ICD10	0		
41202_Z51	Diagnoses - main ICD10	0		
41202_I10	Diagnoses - main ICD10	0		
41202_R25	Diagnoses - main ICD10	0		
41202_D25	Diagnoses - main ICD10	0		
41202_I31	Diagnoses - main ICD10	0		
41202_K75	Diagnoses - main ICD10	0		
41270_K74	Diagnoses - ICD10	0		
41270_V43	Diagnoses - ICD10	0		
41270_C06	Diagnoses - ICD10	0		
41270_T13	Diagnoses - ICD10	0		
41270_R49	Diagnoses - ICD10	0		
41270_I89	Diagnoses - ICD10	0		
41270_H90	Diagnoses - ICD10	0		
41270_X70	Diagnoses - ICD10	0		
41270_V78	Diagnoses - ICD10	0		
41270_R23	Diagnoses - ICD10	0		
41270_T17	Diagnoses - ICD10	0		

41270_M67	Diagnoses - ICD10	0		
41270_R91	Diagnoses - ICD10	0		
41270_N76	Diagnoses - ICD10	0		
41270_M80	Diagnoses - ICD10	0		
41270_J32	Diagnoses - ICD10	0		
41270_R72	Diagnoses - ICD10	0		
41270_T95	Diagnoses - ICD10	0		
41270_H21	Diagnoses - ICD10	0		
41270_H04	Diagnoses - ICD10	0		
41270_G93	Diagnoses - ICD10	0		
41270_B15	Diagnoses - ICD10	0		
41270_V49	Diagnoses - ICD10	0		
41270_R48	Diagnoses - ICD10	0		
41270_H33	Diagnoses - ICD10	0		
41270_J12	Diagnoses - ICD10	0		
41270_I42	Diagnoses - ICD10	0		
41270_L24	Diagnoses - ICD10	0		
41270_W23	Diagnoses - ICD10	0		
41270_L81	Diagnoses - ICD10	0		
41270_U82	Diagnoses - ICD10	0		
41270_E46	Diagnoses - ICD10	0		
41270_K72	Diagnoses - ICD10	0		
41270_C78	Diagnoses - ICD10	0		
41270_W26	Diagnoses - ICD10	0		
41270_Y57	Diagnoses - ICD10	0		
41270_J46	Diagnoses - ICD10	0		
41270_R85	Diagnoses - ICD10	0		
41270_R64	Diagnoses - ICD10	0		
41270_L73	Diagnoses - ICD10	0		
41270_J38	Diagnoses - ICD10	0		
41270_N50	Diagnoses - ICD10	0		
41270_L04	Diagnoses - ICD10	0		
41270_K28	Diagnoses - ICD10	0		
41270_L97	Diagnoses - ICD10	0		
41270_X40	Diagnoses - ICD10	0		
41270_O75	Diagnoses - ICD10	0		
41270_D53	Diagnoses - ICD10	0		
41270_D03	Diagnoses - ICD10	0		
41270_B25	Diagnoses - ICD10	0		
41270_W54	Diagnoses - ICD10	0		
41270_E23	Diagnoses - ICD10	0		
41270_G99	Diagnoses - ICD10	0		
41270_Z35	Diagnoses - ICD10	0		
41270_E27	Diagnoses - ICD10	0		
41270_K23	Diagnoses - ICD10	0		
41202_D07	Diagnoses - main ICD10	0		
41202_I72	Diagnoses - main ICD10	0		
41202_E03	Diagnoses - main ICD10	0		
41202_T51	Diagnoses - main ICD10	0		
41202_I22	Diagnoses - main ICD10	0		
41202_G43	Diagnoses - main ICD10	0		
41202_I88	Diagnoses - main ICD10	0		
41202_H91	Diagnoses - main ICD10	0		
41202_S83	Diagnoses - main ICD10	0		
41202_O70	Diagnoses - main ICD10	0		
41202_G20	Diagnoses - main ICD10	0		
41202_R12	Diagnoses - main ICD10	0		
41202_I95	Diagnoses - main ICD10	0		
41202_R14	Diagnoses - main ICD10	0		
41202_I44	Diagnoses - main ICD10	0		
41202_I71	Diagnoses - main ICD10	0		
41202_Z52	Diagnoses - main ICD10	0		
41202_C61	Diagnoses - main ICD10	0		
41202_I48	Diagnoses - main ICD10	0		
41202_M50	Diagnoses - main ICD10	0		
41202_R93	Diagnoses - main ICD10	0		
41202_R54	Diagnoses - main ICD10	0		
41202_E05	Diagnoses - main ICD10	0		
41202_J39	Diagnoses - main ICD10	0		
41202_E10	Diagnoses - main ICD10	0		
41202_Z29	Diagnoses - main ICD10	0		
41202_M48	Diagnoses - main ICD10	0		
41202_S86	Diagnoses - main ICD10	0		
41202_K25	Diagnoses - main ICD10	0		
41202_J84	Diagnoses - main ICD10	0		
41202_U07	Diagnoses - main ICD10	0		
41202_C80	Diagnoses - main ICD10	0		

41202_S50	Diagnoses - main ICD10	0		
41202_N99	Diagnoses - main ICD10	0		
41202_D35	Diagnoses - main ICD10	0		
41202_D37	Diagnoses - main ICD10	0		
41202_D46	Diagnoses - main ICD10	0		
41202_K90	Diagnoses - main ICD10	0		
41202_T85	Diagnoses - main ICD10	0		
41202_K42	Diagnoses - main ICD10	0		
41202_K06	Diagnoses - main ICD10	0		
41202_O44	Diagnoses - main ICD10	0		
41202_N90	Diagnoses - main ICD10	0		
41202_L92	Diagnoses - main ICD10	0		
41202_I35	Diagnoses - main ICD10	0		
41202_K91	Diagnoses - main ICD10	0		
41202_N81	Diagnoses - main ICD10	0		
41202_S12	Diagnoses - main ICD10	0		
41202_T22	Diagnoses - main ICD10	0		
41202_N02	Diagnoses - main ICD10	0		
41202_F00	Diagnoses - main ICD10	0		
41202_H59	Diagnoses - main ICD10	0		
41202_N88	Diagnoses - main ICD10	0		
41202_T46	Diagnoses - main ICD10	0		
41202_S02	Diagnoses - main ICD10	0		
41202_Z08	Diagnoses - main ICD10	0		
41202_N82	Diagnoses - main ICD10	0		
41202_H74	Diagnoses - main ICD10	0		
41202_R04	Diagnoses - main ICD10	0		
41202_S36	Diagnoses - main ICD10	0		
41202_Z36	Diagnoses - main ICD10	0		
41202_C85	Diagnoses - main ICD10	0		
41202_K50	Diagnoses - main ICD10	0		
41202_L03	Diagnoses - main ICD10	0		
41202_D27	Diagnoses - main ICD10	0		
41202_Z13	Diagnoses - main ICD10	0		
41202_T18	Diagnoses - main ICD10	0		
41202_G82	Diagnoses - main ICD10	0		
41202_R22	Diagnoses - main ICD10	0		
41202_J69	Diagnoses - main ICD10	0		
41202_M12	Diagnoses - main ICD10	0		
41202_N35	Diagnoses - main ICD10	0		
41202_G81	Diagnoses - main ICD10	0		
41202_E66	Diagnoses - main ICD10	0		
41202_K85	Diagnoses - main ICD10	0		
41202_K35	Diagnoses - main ICD10	0		
41202_L91	Diagnoses - main ICD10	0		
41202_M77	Diagnoses - main ICD10	0		
41202_S51	Diagnoses - main ICD10	0		
41202_G62	Diagnoses - main ICD10	0		
41202_K76	Diagnoses - main ICD10	0		
41202_I80	Diagnoses - main ICD10	0		
41202_K56	Diagnoses - main ICD10	0		
41202_I98	Diagnoses - main ICD10	0		
41202_K13	Diagnoses - main ICD10	0		
41202_T58	Diagnoses - main ICD10	0		
41202_Z73	Diagnoses - main ICD10	0		
41202_R11	Diagnoses - main ICD10	0		
41202_H05	Diagnoses - main ICD10	0		
41202_J11	Diagnoses - main ICD10	0		
41202_T84	Diagnoses - main ICD10	0		
41202_C17	Diagnoses - main ICD10	0		
41202_Z11	Diagnoses - main ICD10	0		
41202_E22	Diagnoses - main ICD10	0		
41202_I49	Diagnoses - main ICD10	0		
41202_M31	Diagnoses - main ICD10	0		
41202_C73	Diagnoses - main ICD10	0		
41202_E11	Diagnoses - main ICD10	0		
41202_H60	Diagnoses - main ICD10	0		
41202_J95	Diagnoses - main ICD10	0		
41202_R21	Diagnoses - main ICD10	0		
41202_N15	Diagnoses - main ICD10	0		
41202_D18	Diagnoses - main ICD10	0		
41202_M53	Diagnoses - main ICD10	0		
41202_N45	Diagnoses - main ICD10	0		
41202_L51	Diagnoses - main ICD10	0		
41202_E14	Diagnoses - main ICD10	0		
41202_F12	Diagnoses - main ICD10	0		
41202_F60	Diagnoses - main ICD10	0		

41202_I67	Diagnoses - main ICD10	0		
22651_max	Period spent working night shifts	0		

Appendix E - Numeric features Distributions across the four groups

Feature	Group 1 - BD & SHBMOI	Group 2 - BD (No SHBMOI)	Group 3 - SHBMOI (No BD)	Group 4 - Control (No SHBMOI or BD)
psychosocial factors 20127_avg 0.0024 Neuroticism score	{'count': 83.0, 'mean': 7.686746987951807, 'std': 3.3126796714949576}	{'count': 1411.0, 'mean': 6.949681077250177, 'std': 3.6072648679150467}	{'count': 638.0, 'mean': 6.109717868338558, 'std': 3.46643917416998}	{'count': 79305.0, 'mean': 4.0785952966395564, 'std': 3.2541694218335864}
psychosocial factors 20127_max 0.0021 Neuroticism score	{'count': 83.0, 'mean': 7.686746987951807, 'std': 3.3126796714949576}	{'count': 1411.0, 'mean': 6.949681077250177, 'std': 3.6072648679150467}	{'count': 638.0, 'mean': 6.109717868338558, 'std': 3.46643917416998}	{'count': 79305.0, 'mean': 4.0785952966395564, 'std': 3.2541694218335864}
depression 20511 0.0021 Recent poor appetite or overeating	{'count': 99.0, 'mean': 1.101010101010101, 'std': 1.1909090122285297}	{'count': 277.0, 'mean': 0.6137184115523465, 'std': 0.9736898853764603}	{'count': 785.0, 'mean': 0.7006369426751592, 'std': 0.9978610297044803}	{'count': 30560.0, 'mean': 0.24728403141361258, 'std': 0.6123897912352505}
psychosocial factors 4609_min 0.0020 Longest period of depression	{'count': 55.0, 'mean': 52.96363636363636, 'std': 107.92040339070954}	{'count': 558.0, 'mean': 36.77598566308244, 'std': 92.69979149535159}	{'count': 330.0, 'mean': 32.163636363636364, 'std': 78.14850572610452}	{'count': 18845.0, 'mean': 14.522791191297426, 'std': 37.61189311046399}
self harm 20479 0.0019 Ever thought that life not worth living	{'count': 98.0, 'mean': 1.8265306122448979, 'std': 0.5182347158409152}	{'count': 275.0, 'mean': 1.1890909090909092, 'std': 0.9125389157330622}	{'count': 780.0, 'mean': 1.6051282051282052, 'std': 0.5956404382519582}	{'count': 30391.0, 'mean': 0.4466782929156658, 'std': 0.7499773425045249}
self harm 20485 0.0017 Ever contemplated self-harm	{'count': 99.0, 'mean': 1.7676767676767677, 'std': 0.5116656040551474}	{'count': 272.0, 'mean': 0.8639705882352942, 'std': 0.9131408668295333}	{'count': 785.0, 'mean': 1.5057324840764332, 'std': 0.5604118882272199}	{'count': 30462.0, 'mean': 0.1880375549865406, 'std': 0.5262213063928822}
anxiety 20418 0.0017 Impact on normal roles during worst period of anxiety	{'count': 80.0, 'mean': 2.625, 'std': 0.6438609803562539}	{'count': 187.0, 'mean': 2.4224598930481283, 'std': 0.731861922347914}	{'count': 481.0, 'mean': 2.32016632016632, 'std': 0.8350329168841024}	{'count': 9091.0, 'mean': 1.8268617313826863, 'std': 0.937043566349037}
psychosocial factors 2060 0.0016 Frequency of unenthusiasm / disinterest in last 2 weeks	{'count': 97.0, 'mean': 1.9175257731958764, 'std': 1.0475179303634805}	{'count': 1738.0, 'mean': 1.7940161104718066, 'std': 0.9997863236159068}	{'count': 765.0, 'mean': 1.6614379084967321, 'std': 0.9176229950946685}	{'count': 95433.0, 'mean': 1.3023063300954596, 'std': 0.6376339577323499}
depression 20442_avg 0.0016 Lifetime number of depressed periods	{'count': 33.0, 'mean': 8.181818181818182, 'std': 17.69614107908583}	{'count': 140.0, 'mean': 5.285714285714286, 'std': 10.532092589142447}	{'count': 440.0, 'mean': 3.0386363636363636, 'std': 3.590782676789571}	{'count': 13662.0, 'mean': 2.1937490850534327, 'std': 6.554050476028509}
psychosocial factors 5375_avg 0.0015 Longest period of unenthusiasm / disinterest	{'count': 50.0, 'mean': 67.53333333333333, 'std': 153.46343194165397}	{'count': 487.0, 'mean': 34.8021902806297, 'std': 71.37535059051484}	{'count': 271.0, 'mean': 28.44956949569496, 'std': 57.821837890686055}	{'count': 11868.0, 'mean': 14.980634198404676, 'std': 41.567214624249175}
depression 20436 0.0014 Fraction of day affected during worst episode of depression	{'count': 94.0, 'mean': 3.702127659574468, 'std': 0.5453574783815855}	{'count': 249.0, 'mean': 3.4096385542168677, 'std': 0.7936666325787353}	{'count': 694.0, 'mean': 3.35014409221902, 'std': 0.7558477991721535}	{'count': 15734.0, 'mean': 2.825473496885725, 'std': 0.9361063309063067}

psychosocial factors 2050 0.0014 Frequency of depressed mood in last 2 weeks	{'count': 97.0, 'mean': 1.907216494845361, 'std': 1.0416580755659473}	{'count': 1740.0, 'mean': 1.8643678160919541, 'std': 1.0173850515264162}	{'count': 764.0, 'mean': 1.7408376963350785, 'std': 0.9291308978078736}	{'count': 94671.0, 'mean': 1.3206578572107615, 'std': 0.6363084539723914}
depression 20442_max 0.0014 Lifetime number of depressed periods	{'count': 33.0, 'mean': 8.181818181818182, 'std': 17.69614107908583}	{'count': 140.0, 'mean': 5.285714285714286, 'std': 10.532092589142447}	{'count': 440.0, 'mean': 3.0386363636363636, 'std': 3.590782676789571}	{'count': 13662.0, 'mean': 2.1937490850534327, 'std': 6.554050476028509}
psychosocial factors 5375_max 0.0014 Longest period of unenthusiasm / disinterest	{'count': 50.0, 'mean': 72.22, 'std': 161.6844104155641}	{'count': 487.0, 'mean': 36.86858316221766, 'std': 80.46707259661108}	{'count': 271.0, 'mean': 30.74169741697417, 'std': 63.29056798312545}	{'count': 11868.0, 'mean': 15.632035726322885, 'std': 43.29298020851299}
depression 20514 0.0014 Recent lack of interest or pleasure in doing things	{'count': 98.0, 'mean': 0.9489795918367347, 'std': 1.0781087772862659}	{'count': 277.0, 'mean': 0.6534296028880866, 'std': 0.9940570542436226}	{'count': 784.0, 'mean': 0.6377551020408163, 'std': 0.9230429222114699}	{'count': 30504.0, 'mean': 0.23495279307631786, 'std': 0.5582806832708616}
psychosocial factors 4609_avg 0.0013 Longest period of depression	{'count': 55.0, 'mean': 67.0030303030303, 'std': 129.84650439107463}	{'count': 558.0, 'mean': 38.311529271206695, 'std': 95.38806255527005}	{'count': 330.0, 'mean': 35.06717171717172, 'std': 80.53635289023205}	{'count': 18845.0, 'mean': 15.22431679490581, 'std': 38.3721242183958}
anxiety 20539 0.0013 Frequency of inability to stop worrying during worst period of anxiety	{'count': 80.0, 'mean': 2.625, 'std': 0.5597241635310256}	{'count': 184.0, 'mean': 2.4782608695652173, 'std': 0.6771567183397669}	{'count': 480.0, 'mean': 2.5833333333333335, 'std': 0.5791554333730861}	{'count': 9016.0, 'mean': 2.2463398402839396, 'std': 0.7342261907947438}
depression 20513 0.0011 Recent thoughts of suicide or self-harm	{'count': 98.0, 'mean': 0.6428571428571429, 'std': 0.9974193505365446}	{'count': 273.0, 'mean': 0.22344322344322345, 'std': 0.6044259654280985}	{'count': 769.0, 'mean': 0.3198959687906372, 'std': 0.6990559032223977}	{'count': 30362.0, 'mean': 0.04808642381924774, 'std': 0.262483133521034}
traumatic events 20521 0.0011 Belittlement by partner or ex-partner as an adult	{'count': 99.0, 'mean': 1.1313131313131313, 'std': 1.382444335126651}	{'count': 276.0, 'mean': 0.6413043478260869, 'std': 1.0260057246602345}	{'count': 784.0, 'mean': 1.2295918367346939, 'std': 1.3844020104077943}	{'count': 30510.0, 'mean': 0.41822353326778106, 'std': 0.8813268142626788}
traumatic events 20487 0.0011 Felt hated by family member as a child	{'count': 99.0, 'mean': 1.1313131313131313, 'std': 1.382444335126651}	{'count': 277.0, 'mean': 0.6028880866425993, 'std': 1.113679255354446}	{'count': 780.0, 'mean': 0.9756410256410256, 'std': 1.341802085373312}	{'count': 30512.0, 'mean': 0.2790049816465653, 'std': 0.7447241724227944}
psychosocial factors 2070 0.0011 Frequency of tenseness / restlessness in last 2 weeks	{'count': 97.0, 'mean': 1.9381443298969072, 'std': 0.9875731300947911}	{'count': 1745.0, 'mean': 1.8343839541547278, 'std': 0.995729690355844}	{'count': 768.0, 'mean': 1.6653645833333333, 'std': 0.8718386346370063}	{'count': 95084.0, 'mean': 1.3457574355306887, 'std': 0.634030656530931}
anxiety 20537 0.0011 Frequency of difficulty controlling worry during worst period of anxiety	{'count': 80.0, 'mean': 2.7, 'std': 0.4878264891785847}	{'count': 186.0, 'mean': 2.5268817204301075, 'std': 0.6079010916963982}	{'count': 479.0, 'mean': 2.5762004175365343, 'std': 0.6118917178661032}	{'count': 8999.0, 'mean': 2.277364151572397, 'std': 0.7233214642310793}
traumatic events 20497 0.0010 Repeated disturbing thoughts of stressful experience in past month	{'count': 99.0, 'mean': 1.3535353535353536, 'std': 1.3348785109677568}	{'count': 277.0, 'mean': 0.7545126353790613, 'std': 1.0722231732966143}	{'count': 785.0, 'mean': 0.8942675159235669, 'std': 1.1101481123729273}	{'count': 30547.0, 'mean': 0.3687105116705405, 'std': 0.7252363998219821}

psychosocial factors 5375_min 0.0010 Longest period of unenthusiasm / disinterest	{'count': 50.0, 'mean': 62.84, 'std': 149.0239482192615}	{'count': 487.0, 'mean': 32.94455852156057, 'std': 68.27940514409484}	{'count': 271.0, 'mean': 26.225092250922508, 'std': 56.280161275819026}	{'count': 11868.0, 'mean': 14.333923154701719, 'std': 40.807344620184836}
depression 20508 0.0010 Recent trouble concentrating on things	{'count': 98.0, 'mean': 1.0816326530612246, 'std': 1.1985684707721005}	{'count': 276.0, 'mean': 0.6195652173913043, 'std': 0.9245231652067744}	{'count': 784.0, 'mean': 0.6211734693877551, 'std': 0.9142608767265786}	{'count': 30553.0, 'mean': 0.2225967990050077, 'std': 0.5493193427420138}
depression 20434_max 0.0010 Age at last episode of depression	{'count': 88.0, 'mean': 54.20454545454545, 'std': 10.103099661961142}	{'count': 231.0, 'mean': 54.26406926406926, 'std': 11.470736259090625}	{'count': 659.0, 'mean': 48.49924127465857, 'std': 12.997003958046141}	{'count': 14897.0, 'mean': 49.763979324696244, 'std': 13.045179258515024}
depression 20440 0.0010 Impact on normal roles during worst period of depression	{'count': 96.0, 'mean': 2.7916666666666665, 'std': 0.5412785384073073}	{'count': 256.0, 'mean': 2.6171875, 'std': 0.6873774400560723}	{'count': 713.0, 'mean': 2.3814866760168303, 'std': 0.7719044958640567}	{'count': 16739.0, 'mean': 1.8702431447517773, 'std': 0.9250231501529284}
traumatic events 20523 0.0010 Physical violence by partner or ex-partner as an adult	{'count': 99.0, 'mean': 0.5353535353535354, 'std': 1.0233312081102948}	{'count': 273.0, 'mean': 0.30036630036630035, 'std': 0.7557864120403762}	{'count': 781.0, 'mean': 0.7516005121638925, 'std': 1.1852785561164434}	{'count': 30505.0, 'mean': 0.20573676446484182, 'std': 0.6281176129627003}
psychosocial factors 4609_max 0.0009 Longest period of depression	{'count': 55.0, 'mean': 80.98181818181818, 'std': 177.33338459785085}	{'count': 558.0, 'mean': 39.763440860215056, 'std': 101.25425960580009}	{'count': 330.0, 'mean': 38.00909090909091, 'std': 86.72317297985491}	{'count': 18845.0, 'mean': 15.955319713451845, 'std': 40.23435274090613}
depression 20507 0.0009 Recent feelings of inadequacy	{'count': 98.0, 'mean': 1.0816326530612246, 'std': 1.136765799196015}	{'count': 273.0, 'mean': 0.6483516483516484, 'std': 0.9514728486778643}	{'count': 782.0, 'mean': 0.7519181585677749, 'std': 1.0208279903426567}	{'count': 30451.0, 'mean': 0.2445568290039736, 'std': 0.5815946961767559}
depression 20433_max 0.0009 Age at first episode of depression	{'count': 86.0, 'mean': 23.5, 'std': 11.221565372610218}	{'count': 236.0, 'mean': 28.8135593220339, 'std': 12.355341098500507}	{'count': 669.0, 'mean': 26.87443946188341, 'std': 13.287552869121457}	{'count': 15318.0, 'mean': 37.51880141010576, 'std': 14.969796331054145}
psychosocial factors 4548 0.0008 Health satisfaction	{'count': 60.0, 'mean': 3.433333333333333, 'std': 1.110301022958153}	{'count': 749.0, 'mean': 3.317757009345794, 'std': 1.1448406888771427}	{'count': 446.0, 'mean': 3.100896860986547, 'std': 0.9948853937222165}	{'count': 44075.0, 'mean': 2.76712422007941, 'std': 0.8671546753058129}
depression 20518 0.0008 Recent changes in speed/amount of moving or speaking	{'count': 99.0, 'mean': 0.8080808080808081, 'std': 1.0849317450248224}	{'count': 277.0, 'mean': 0.33935018050541516, 'std': 0.72756563285914}	{'count': 782.0, 'mean': 0.24040920716112532, 'std': 0.6348833853558519}	{'count': 30543.0, 'mean': 0.07111285728317454, 'std': 0.3384986358917677}
traumatic events 20494 0.0008 Felt irritable or had angry outbursts in past month	{'count': 75.0, 'mean': 1.28, 'std': 1.2793579470800018}	{'count': 178.0, 'mean': 0.8595505617977528, 'std': 1.0562933915666988}	{'count': 551.0, 'mean': 0.8439201451905626, 'std': 1.0397352219644351}	{'count': 13428.0, 'mean': 0.5187667560321716, 'std': 0.7556185010270422}
traumatic events 20522 0.0007 Been in a confiding relationship as an adult	{'count': 97.0, 'mean': 2.3195876288659796, 'std': 1.34277690931096}	{'count': 271.0, 'mean': 2.7601476014760147, 'std': 1.3681693555771968}	{'count': 773.0, 'mean': 2.6041397153945667, 'std': 1.2575506422248062}	{'count': 29795.0, 'mean': 2.951032052357778, 'std': 1.3083601422432463}

depression 20510 0.0007 Recent feelings of depression	{'count': 98.0, 'mean': 0.9183673469387755, 'std': 1.0421376661513801}	{'count': 275.0, 'mean': 0.6072727272727273, 'std': 0.9233101639887955}	{'count': 782.0, 'mean': 0.6841432225063938, 'std': 0.9101669135092554}	{'count': 30483.0, 'mean': 0.26004658334153463, 'std': 0.5525234454692199}
traumatic events 20498 0.0007 Felt very upset when reminded of stressful experience in past month	{'count': 99.0, 'mean': 1.5353535353535352, 'std': 1.3651129228399828}	{'count': 278.0, 'mean': 0.960431654676259, 'std': 1.1281830192459652}	{'count': 784.0, 'mean': 1.1326530612244898, 'std': 1.1525994174713814}	{'count': 30544.0, 'mean': 0.4994106862231535, 'std': 0.7880934135678672}
psychosocial factors 4559 0.0007 Family relationship satisfaction	{'count': 58.0, 'mean': 3.0689655172413794, 'std': 1.3227041541825717}	{'count': 737.0, 'mean': 2.7639077340569878, 'std': 1.1318750949666947}	{'count': 440.0, 'mean': 2.727272727272727, 'std': 1.0643024465160131}	{'count': 43862.0, 'mean': 2.26790844010761, 'std': 0.9055987860087773}
anxiety 20509 0.0007 Recent inability to stop or control worrying	{'count': 98.0, 'mean': 0.9693877551020408, 'std': 1.0498314212502848}	{'count': 277.0, 'mean': 0.555956678700361, 'std': 0.8895176014750111}	{'count': 782.0, 'mean': 0.6457800511508951, 'std': 0.9044498573112089}	{'count': 30454.0, 'mean': 0.29940237735601233, 'std': 0.6324256542076335}
traumatic events 20489 0.0006 Felt loved as a child	{'count': 99.0, 'mean': 2.404040404040404, 'std': 1.362165082740183}	{'count': 275.0, 'mean': 2.898181818181818, 'std': 1.1448856298808328}	{'count': 783.0, 'mean': 2.5593869731800765, 'std': 1.2110892698828941}	{'count': 30467.0, 'mean': 3.2353694160895397, 'std': 0.9586262490364819}
psychosocial factors 4581 0.0006 Financial situation satisfaction	{'count': 60.0, 'mean': 2.95, 'std': 1.1412897847967254}	{'count': 741.0, 'mean': 3.098515519568151, 'std': 1.227945090259027}	{'count': 446.0, 'mean': 3.0470852017937218, 'std': 1.107696476865017 7}	{'count': 43959.0, 'mean': 2.6786551104438225, 'std': 0.9584464716281814}
anxiety 20520 0.0006 Recent worrying too much about different things	{'count': 99.0, 'mean': 1.02020202020202, 'std': 1.078356629318834}	{'count': 276.0, 'mean': 0.6594202898550725, 'std': 0.9184681065307045}	{'count': 781.0, 'mean': 0.7387964148527529, 'std': 0.9286842557949873}	{'count': 30456.0, 'mean': 0.39315734173890204, 'std': 0.6715440418164021}
depression 20439 0.0006 Frequency of depressed days during worst episode of depression	{'count': 95.0, 'mean': 2.7578947368421054, 'std': 0.4546635294060923}	{'count': 251.0, 'mean': 2.601593625498008, 'std': 0.5938328470194312}	{'count': 704.0, 'mean': 2.5681818181818183, 'std': 0.5728907416672155}	{'count': 16229.0, 'mean': 2.26871649516298, 'std': 0.6401029467110035}
anxiety 20420_max 0.0006 Longest period spent worried or anxious	{'count': 42.0, 'mean': 75.02380952380952, 'std': 148.86112173976576}	{'count': 104.0, 'mean': 30.03846153846154, 'std': 59.76733580040286}	{'count': 292.0, 'mean': 47.1541095890411, 'std': 85.90960775549335}	{'count': 6123.0, 'mean': 26.721051772007186, 'std': 56.815559208013944}
traumatic events 20488 0.0006 Physically abused by family as a child	{'count': 99.0, 'mean': 0.7474747474747475, 'std': 1.1723292212204006}	{'count': 275.0, 'mean': 0.36363636363636365, 'std': 0.7960586387553957}	{'count': 784.0, 'mean': 0.7551020408163265, 'std': 1.0798157402988284}	{'count': 30525.0, 'mean': 0.2817035217035217, 'std': 0.6653978303247995}
anxiety 20515 0.0006 Recent trouble relaxing	{'count': 99.0, 'mean': 1.1515151515151516, 'std': 1.1281521496355325}	{'count': 277.0, 'mean': 0.6787003610108303, 'std': 0.9971051071345399}	{'count': 784.0, 'mean': 0.7895408163265306, 'std': 0.9762664007213225}	{'count': 30503.0, 'mean': 0.36104645444710354, 'std': 0.6734274551239614}
traumatic events 20491 0.0006 Someone to take to doctor when needed as a child	{'count': 98.0, 'mean': 3.173469387755102, 'std': 1.2437514768500302}	{'count': 275.0, 'mean': 3.5272727272727273, 'std': 0.880745898518485}	{'count': 785.0, 'mean': 3.535031847133758, 'std': 0.9170206194990967}	{'count': 30376.0, 'mean': 3.7313339478535688, 'std': 0.746049488057956}

psychosocial factors 4526 0.0006 Happiness	{'count': 57.0, 'mean': 3.192982456140351, 'std': 0.9717178546123515}	{'count': 743.0, 'mean': 2.9663526244952894, 'std': 0.9503572995364356}	{'count': 442.0, 'mean': 2.9615384615384617, 'std': 0.8252617997944018}	{'count': 44070.0, 'mean': 2.5715452688904015, 'std': 0.6965571100463139}
psychosocial factors 4570 0.0006 Friendships satisfaction	{'count': 58.0, 'mean': 2.810344827586207, 'std': 1.2767405945118733}	{'count': 735.0, 'mean': 2.529251700680272, 'std': 0.9703514128156719}	{'count': 435.0, 'mean': 2.5724137931034483, 'std': 0.8752471218080498}	{'count': 43736.0, 'mean': 2.283565026522773, 'std': 0.745754747785812}
depression 20438 0.0006 Duration of worst depression	{'count': 95.0, 'mean': 3.694736842105263, 'std': 1.5916917549504224}	{'count': 252.0, 'mean': 3.4047619047619047, 'std': 1.5470242424829108}	{'count': 703.0, 'mean': 3.7610241820768135, 'std': 1.6250584309411151}	{'count': 16526.0, 'mean': 3.008471499455404, 'std': 1.537603573674855}
psychosocial factors 1031 0.0006 Frequency of friend/family visits	{'count': 97.0, 'mean': 2.8556701030927836, 'std': 1.080024022896818}	{'count': 1780.0, 'mean': 2.8691011235955055, 'std': 1.3244152064248647}	{'count': 778.0, 'mean': 3.089974293059126, 'std': 1.2363550236530152}	{'count': 97562.0, 'mean': 2.8266538201348888, 'std': 1.136632730229625}
psychosocial factors 2110 0.0006 Able to confide	{'count': 98.0, 'mean': 3.357142857142857, 'std': 1.7775808882953796}	{'count': 1778.0, 'mean': 3.4505061867266593, 'std': 1.8165971119678335}	{'count': 774.0, 'mean': 3.2777777777777777, 'std': 1.9446672288643931}	{'count': 95628.0, 'mean': 3.6278391266156356, 'std': 1.8521488830912722}
anxiety 20420_avg 0.0005 Longest period spent worried or anxious	{'count': 42.0, 'mean': 75.02380952380952, 'std': 148.86112173976576}	{'count': 104.0, 'mean': 30.03846153846154, 'std': 59.76733580040286}	{'count': 292.0, 'mean': 47.1541095890411, 'std': 85.90960775549335}	{'count': 6123.0, 'mean': 26.721051772007186, 'std': 56.815559208013944}
traumatic events 20525 0.0005 Able to pay rent/mortgage as an adult	{'count': 99.0, 'mean': 3.3737373737373737, 'std': 1.191687695235923}	{'count': 270.0, 'mean': 3.5555555555555554, 'std': 1.032315523843499}	{'count': 775.0, 'mean': 3.4812903225806453, 'std': 0.9681482295678026}	{'count': 30067.0, 'mean': 3.70495892506735, 'std': 0.8652990547069721}
anxiety 20516 0.0005 Recent restlessness	{'count': 98.0, 'mean': 0.7040816326530612, 'std': 0.9438808206424625}	{'count': 277.0, 'mean': 0.34296028880866425, 'std': 0.7431298201369179}	{'count': 784.0, 'mean': 0.3979591836734694, 'std': 0.7713224737327161}	{'count': 30533.0, 'mean': 0.14603871221301543, 'std': 0.45704427877157944}
anxiety 20505 0.0005 Recent easy annoyance or irritability	{'count': 98.0, 'mean': 0.8979591836734694, 'std': 1.0303617212743144}	{'count': 276.0, 'mean': 0.4855072463768116, 'std': 0.8244932967046703}	{'count': 780.0, 'mean': 0.5846153846153846, 'std': 0.8118311483123806}	{'count': 30412.0, 'mean': 0.3167828488754439, 'std': 0.585019941806939}
psychosocial factors 4537 0.0004 Work/job satisfaction	{'count': 29.0, 'mean': 2.6551724137931036, 'std': 1.078221487614989}	{'count': 397.0, 'mean': 2.7531486146095716, 'std': 0.9997582589520193}	{'count': 327.0, 'mean': 2.770642201834862, 'std': 1.0299177481269044}	{'count': 29798.0, 'mean': 2.6132290757768977, 'std': 0.8679553451262879}
anxiety 20506 0.0004 Recent feelings or nervousness or anxiety	{'count': 99.0, 'mean': 0.98989898989899, 'std': 1.0350485495361694}	{'count': 277.0, 'mean': 0.6101083032490975, 'std': 0.8844299251923432}	{'count': 783.0, 'mean': 0.6947637292464879, 'std': 0.8890125929346024}	{'count': 30475.0, 'mean': 0.3453650533223954, 'std': 0.6361398530509513}
psychosocial factors 2080 0.0004 Frequency of tiredness / lethargy in last 2 weeks	{'count': 97.0, 'mean': 2.3711340206185567, 'std': 1.1022664872591872}	{'count': 1770.0, 'mean': 2.209039548022599, 'std': 1.0408978185413915}	{'count': 772.0, 'mean': 2.1891191709844557, 'std': 0.9786227391983569}	{'count': 95938.0, 'mean': 1.7530279972482228, 'std': 0.8498881721219115}
anxiety 20512 0.0004 Recent feelings of foreboding	{'count': 99.0, 'mean': 0.8181818181818182, 'std': 1.0725102764707832}	{'count': 277.0, 'mean': 0.44404332129963897, 'std': 0.8173451887279664}	{'count': 783.0, 'mean': 0.5402298850574713, 'std': 0.8762880607994172}	{'count': 30447.0, 'mean': 0.21483233159260354, 'std': 0.5549305348810911}

depression 20517 0.0004 Trouble falling or staying asleep, or sleeping too much	{'count': 98.0, 'mean': 1.4591836734693877, 'std': 1.2776296298500998}	{'count': 278.0, 'mean': 1.0575539568345325, 'std': 1.1063961346757507}	{'count': 785.0, 'mean': 1.21656050955414, 'std': 1.0756966853614913}	{'count': 30524.0, 'mean': 0.7012842353557857, 'std': 0.8919679972772347}
depression 20519 0.0004 Recent feelings of tiredness or low energy	{'count': 99.0, 'mean': 1.4343434343434343, 'std': 1.1172270352064742}	{'count': 277.0, 'mean': 1.032490974729242, 'std': 1.0012810295313743}	{'count': 785.0, 'mean': 1.151592356687898, 'std': 1.039378069996902}	{'count': 30528.0, 'mean': 0.6550707547169812, 'std': 0.8060499252762585}
traumatic events 20490 0.0003 Sexually molested as a child	{'count': 95.0, 'mean': 0.6421052631578947, 'std': 1.1384553689537698}	{'count': 267.0, 'mean': 0.24344569288389514, 'std': 0.7233382042681938}	{'count': 764.0, 'mean': 0.468586387434555, 'std': 0.9525065733862125}	{'count': 30258.0, 'mean': 0.14026042699451385, 'std': 0.5112585362959677}

Appendix F

A list of fields that directly indicate the presence of BD in a patient, except for the BD official diagnosis.

Those categories were removed from the data during the data preparation, in order to prevent trivial features with a very tight correlation with the diagnosis target prediction.

Fields that could indicate BD experiences, aside from the diagnosis fields

- 20548: Manifestations of mania or irritability (Online follow-up Mental health Mania)
- 20122: Bipolar disorder status (Assessment centre Touchscreen Psychosocial factors Mental health)
- 20501: Ever had a period of mania/excitability (Online follow-up Mental health Mania)
- 20492: Longest period of mania or irritability (Online follow-up Mental health Mania)
- 20493: Severity of problems due to mania or irritability (Online follow-up Mental health Mania)
- 130893: Source of report of F31 (bipolar affective disorder) (Health-related outcomes First occurrences Mental and behavioral disorders)
- 130892: Date F31 first reported (bipolar affective disorder) (Health-related outcomes First occurrences Mental and behavioral disorders)

Specific values in fields that directly related to BD that were also removed

Additionally, specific values in fields that directly related to BD were removed:

- 20544: Mental health problems ever diagnosed by a professional (Online follow-up Mental health Mental distress)
    - Value: 10 - Mania, hypomania, bipolar, or manic-depression
- 20126: Bipolar and major depression status (Assessment center Touchscreen Psychosocial factors Mental health)
    - Values:
        - 0 - No Bipolar or Depression
        - 1 - Bipolar I Disorder
        - 2 - Bipolar II Disorder