Lifebrain

D2.1. Data harmonisation guidelines and standardized data management/processing protocol across sites

Project title:	Healthy minds from 0-100 years: Optimising the use of European brain imaging cohorts
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Dissemination level		
PU	**Public**	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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Executive Summary

The deliverable is a report on the implementation of part of Task WP2.1 “Data harmonization guidelines and standardized data management plan/processing protocol across sites”.

This task aims to develop and implement harmonization protocols to unify and bridge the different coding standards of target variables between sites. In this process, we will develop guidelines for addressing differences in data management systems and routines, and MR image quality control procedures across sites to secure efficient application and utilization of data transfer, storage and processing systems.

In this deliverable we

1. Categorized all available and in principle shareable data for all Lifebrain studies and time points.
2. Provided necessary information to the work done in other WP2 tasks:
    a. Task 2.3 “Enrichment of existing cohorts by online data collection (M6-M18)
    b. Task 2.4 “Enrichment of existing cohorts by home collection of dried blood spots (DBS)” (M6–M36)
    c. Task 2.5 “Enrichment of existing cohorts by administration of buccal swabs for epigenetic analysis” (M6–M36)
    d. Task 2.6 “Generation of new GWAS (genome-wide association study) data and harmonization of genetic data across samples” (M6-M24)
    e. Task 3.2. “Development and validation of a posteriori harmonization of MRI data”, (M1-M9)
3. Identified and selected variables of initial interest
4. Obtained site-specific code books, containing information on inclusion/exclusion criteria, standard operating procedures, data collection methods, and metadata on the variables of initial interest.
5. Provided a general evaluation of the data harmonization potential of variables of initial interest and formulate general data harmonization strategies

Next steps:

1. Continue with quality control and completion of site-specific study protocols.
   The latter specifically concerns documenting the instructions given to subjects during cognitive tests.
2. Continue with the stringent quality control of the site-specific variable code books on completeness, organization and formatting.
3. Establish work groups for a in depth evaluation of data harmonization for specific dimensions and clusters of variables

4. Define and establish variables codes and meta-data for variables of initial interest to Lifebrain. Generate Lifebrain formatted tables template for site-specific variables to the Lifebrain database, developed in Task 3.1 “Development of a data storage and management system” (M1-M6), and develop conversion scripts to populate Lifebrain tables with site-specific data.

List of acronyms / abbreviations

Lifebrain	Healthy minds from 0-100 years: Optimising the use of European brain imaging cohorts
WP	Work package
GA	Grant Agreement
UiO	University of Oslo
UmU	Umeå Universitet
UOXF	University of Oxford
MPIB	Max Plank Institute for Human Development
UB	University of Barcelona
REGIONH	Region Hovedstaden
VUMC	University Medical Center Amsterdam
MRC	Medical Research Council
UCAM	University of Cambridge
MRI	Magnetic Resonance Imaging

Abbreviations of test and questionnaires that have been employed in Lifebrain studies are provided in Appendix 1.

Introduction

Task 2.1 description

"*Task 2.1 Establish a data management and processing protocol for harmonization of data for pooling, integration, quality control across sites. Lead: REGIONH; Participants: UmU, UOXF, MPIB, UB, MRC, VUMC (M1-M6) The task will develop and implement harmonization protocols, i.e. develop technical and semantic data standards, and quality protocols to unify and bridge the different coding standards of target variables between sites. It will also define guidelines*
for addressing differences in data management systems and routines, and MR image quality control procedures across sites to secure the efficient application and utilization of the data transfer, storage and processing system developed in T3.1. Moreover, T2.1 will facilitate the implementation of the innovative post hoc harmonization algorithms, developed in T3.2, to correct MR images for scanner-specific differences in tissue contrast and intensity, non-uniformity. Finally, T 2.1 will ensure the efficient implementation and management of the new dried blood spot assays and online data collection system developed in T3.5 and 3.6, respectively."

Background

Lifebrain is a European multi-site study aimed to capitalize on existing multidimensional cross sectional and longitudinal retrospectively acquired biological, behavioural and cognitive, medical, mental health, and in vivo neuroimaging data.

The objective of Lifebrain is to establish a solid foundation of knowledge for understanding how brain, cognitive and mental health can be *optimized through the lifespan*. Identification of determinants of brain, cognitive and mental health at different stages of life requires a large database of detailed information about brain imaging measures, cognitive function, mental and medical health, as well as biological measures.

Central to (large-scale) multi-site initiatives such as Lifebrain are data integration, standardization and harmonization. The international European aspect adds an extra layer of unique possibilities as well as challenges. The coordinated research efforts within Lifebrain allows for multiple analytic strategies (2), increase statistical power, allow more advanced subgroup analyses, enhance generalizability of findings and support cross validation or replication of findings across datasets.

Status of task/state-of-the art in the topic

In June 2016, the international Journal of Epidemiology published the "Maelstrom Research guidelines for rigorous retrospective data harmonization" (2). Over a nine-year period, using "*a phone survey with 34 major international research initiatives, a series of workshops with experts, and case studies applying the proposed guidelines*" the authors developed generic guidelines for successful retrospective data harmonization that include several interdependent steps: "

1. Define the research question, objectives and protocol
2. **Assemble pre-existing knowledge and select studies**
3. **Define targeted variables and evaluate harmonization potential**
4. Process data
5. Estimate quality of the harmonized dataset(s) generated
6. Disseminate and preserve final harmonization products"

The current deliverable primarily concerns steps 2 and 3. Overall Lifebrain research questions have been outlined in the grant application and are detailed in WP4: Demonstration. Steps 4, 5 and 6 are out of the scope of the current deliverable and are the main subject of other work packages.

Objectives

The overall objective of the deliverable is to provide a solid foundation for establishing a Lifebrain database consisting of available behavioural, cognitive, medical and mental health, neuroimaging and biological data, in-depth data harmonization and development and implementation of guidelines for standardized data management and processing protocols across sites.

We will:

- Categorize available data for all Lifebrain studies and time points
- Identify an initial set of variables of interest
- Acquire site-specific code books containing information on study design, standard operating procedures, data collection methods, and metadata on variables e.g. variable names, variable description, data type, data format, allowable values etc.
- Identify commonalities in available data across sites, evaluate general harmonization potential and formulate general data harmonization strategies

Perspective

Details and implementation of exact data harmonization techniques and the evaluation of their applicability and quality are dependent on the specific research questions formulated in WP4 and what studies will be targeted

Data harmonization, data management and proper documentation will requires constant focus and effort throughout the lifespan of Lifebrain.

Collaboration among partners

The large number of Lifebrain researchers that have contributed to the deliverable reflects the strong, transparent and focussed collaborative framework that Lifebrain provides. Each site designated a team consisting of the study PIs and dedicated research personnel to discuss and specify the dimensions and variables of interest as well as data harmonization and to provide detailed information on study setup and protocols, and metadata for variables of interest as well as expertise and experience in data organization and harmonization.

1. Included studies per site

UiO	LCBC: Lifespan Changes in Brain and Cognition (consist of subject of Hukommelse Prosjekt, Neurocognitive Development, Neurocognitive Plasticity, and Mor og Barn) (3 time points)
UmU	Betula - Aging, Memory and Dementia (2 time points)
UOXF	Whitehall II: Imaging (1 time point)
MPIB	BASE (Berlin Altersstudie, 8 time points) BASE II (Berlin Altersstudie, 2 time points)
UB	WAHA (Walnut intervention study: 3 time points) MSA (Multi-Systemic Atrophy: 1 time point) PD (Parkinson's Disease: 3 time points) GABA (GABA Spectroscopy: 1 time point) iTBS (Theta-burst stimulation: 1 time point) CR (Cognitive Reserve: 1 time point)
REGIONH	HUBU ("Hjernens Udvikling hos Børn og Unge"; Brain maturation in children and adolescents: 12 time points) LISA (Live Active Successful Ageing: 1 time point)
VUMC	NESDA (Netherlands Study of Depression and Anxiety: 6 time points)
MRC	CamCan (Cambridge Centre for Ageing and Neuroscience: 3 time points)
UCAM	CALM (Centre for Attention, Learning and Memory: 1 time point)

In Figure 1. we provide the total number of subjects and observations. A complete overview of the total number of unique participants and observations with behavioural data only and with behavioural and MRI data for all individual Lifebrain studies is provided in Appendix 2.

	Lifebrain
	All studies
Total unique subjects	12527
Behaviour only	7327
MRI+Behavior	5200
Total observations	27972
Behaviour only	19873
MRI+Behavior	8099

FIGURE 1. NUMBER OF SUBJECTS AND OBSERVATIONS IN LIFEBRAIN

2. Description of activities

The groundwork for the Lifebrain data harmonization effort was laid down in the grant application and during the Lifebrain Kick-off meeting held in Brussels, January 16-18, 2017. During the first 6 months of Lifebrain, the WP2.1 leader, RegionH, and data harmonization teams of individual Lifebrain sites communicated through email, Slack, OneDrive, Skype and telephone to discuss and organize all necessary information.

1.1. Mapping the data

The first task was to map all data available and in principle shareable within Lifebrain.
Based on the discussion at the kick off meeting a spread sheet was created containing identified dimensions and variables. This spread sheet was than populated and if necessary extended by each site with information on data availability, and used tests, protocols, questionnaires etc. The dimensions that were included are displayed in Figure 2. A detailed overview of the variables within each of dimensions is provided in Appendix 3.

Study set up/ participants
Setup
Start and end year
Time between subsequent assessments
Assessment date
Participants
Number of subjects
Sex
Number of Females
Number of Males
Age related
Age Range
Can share birth date
Can share birth month
Can share birth year
Can share calculated age
Mortality general info
Mortality Date of death
Demographics
Language
Language of tests
Mother tongue/native
Bilingual
Second language
Education
Subject education
Mother education
Father education
Guardian education
Partner eduction
Occupation
Subject /Partner/Parent/gardian
Current
Highest attained
Longest
history
Housing
Info on type of housing
Info on geographic location
Income
Household income (per year,...)
Person (per year, ...)
Partner (per year, ...)
Parents/Guardian (per year, ...)
Currency
Marital status/relation
Family composition
Social Network

Physical measures
Weight
Weight at birth
Height
Grip strength
Waist circumference
Blood pressure
Handedness
Dexterity
Hearing
Vision
Eye dominance
Chair rise
Gait assessment
Walking speed
Oxygen uptake
Lung function
Hip circumference
Foot dominence
Body composition (fat, muscle)
Smell recognition
Physical Health
ADL Activities of Daily Living
Alcohol
Smoking
Substance use
Physical activity
Medication
Sleep
Diet
Mental health
Attachment style
Anxiety
Worry
Depression/mood
Phobias
Sleep problems/fatigue
Somatic symptoms
Childhood trauma
Diagnosis
Stress
Life events/experiences
Social contact
Retirement
Quality of life
Personality
MMSE Mini Mental State Examination
Psychiatric Family history
Behavioral disturbances

Medical Health
physical Examination
info on general health
info on cardio vascular disease
info on Vascular risk factors
info on stroke
info on diabetes
info on Longstanding illness
info on Sickness absence
Women's health
Cognitive Tests
IQ or equivalent
Attention
Working memory
Executive function
Verbal memory
Visual memory
Memory self-assessment/Everyday memory
Verbal fluency
Simple reaction time
Processing speed
Motor speed/function
Cognitive screening test / global cognition
Cognitive test miscellenaneous
MRI
Scanner vendor
Scanner type
Field strenght
Number of channels Headcoil
T1-weighted
Sequence name
Orientation
voxel dimensions
TR in seconds
Number of slices
duration
T2-weighted
Sequence name
orientation
voxel dimensions
TR in seconds
Number of slices
duration
DWI
Sequence name
number of directions
Number of b-values used
b-values
TR in seconds
Number of volumes / b-value
duration
rs-fMRI
Sequence name
Instuction: eyes open/ closed / fixation
TR in seconds
Number of volumes
Duration
Task fmri
paradigm 1
paradigm 2
paradigm 3
Miscellenaneous
ASL
MRS
FLAIR
T2*
MT/noMT

Biomarkers
Blood
Freezer: -20 / -80
Whole blood
Serum
Plasma
Buffy coat
Info on time of the day
Info on fasting or no fasting
Info hours since last meal
Info on time to Scan/Assessment
Saliva
Freezer: -20 / -80
Info on time of the day
Info on fasting or no fasting
Info hours since last meal
Info on time to Scan/Assessment
Hormones
measured
Used test
Acquired marker
Metabolites
measured
Used test
Acquired markers
Immune marker
measured
Used test
Acquired markers
Miscellenaneous
Vitamin D
Cholesterol
Retinol
Fatty acids
DNA
Blood
Genetic info available
Whole -genome
SNPs
type of analysis /chip
Custome genotyping
type of analysis
Measured polymorphisms/Genes
Saliva
Genetic info available
Whole -genome
SNPs
type of analysis
Custome genotyping
type of analysis
Measured polymorphisms/Genes

FIGURE 2. LIFEBRAIN DATA DIMENSIONS

1.2. Selection of variables of initial focus

Based on the detailed overview of in principle shareable data it has been decided, which variables to initial focus on (see Figure 3). The decision was informed by observed availability of data across sites, the focus of the research in WP4, specifically Task 4.2 "Analysis of individual pathways/mediator variables in relation to risk for mental health problems and resilience" (M18-M48), and Task 4.3 "Analysis of individual pathways/mediator variables in relation to risk for poor cognitive function and decline versus resilience" (M18-M 48).

The decision was to focus our efforts on the dimensions:

- Study set up/participants
- Demographics
- Physical Measures
- Physical Health
- Mental Health and
- Cognitive Tests.

The level of detail obtained for the MRI, Biomarkers, and DNA data dimensions was sufficient to inform the specific tasks on these dimensions i.e.

- Task 3.2. "Development and validation of a posteriori harmonization of MRI data" (M1-M9);
- Task 2.4 "Enrichment of existing cohorts by home collection of dried blood spots (DBS)" (M6–M36);
- Task 2.5 "Enrichment of existing cohorts by administration of buccal swabs for epigenetic analysis"(M6–M36); and
- Task 2.6 "Generation of new GWAS (genome-wide association study) data and harmonization of genetic data across samples" (M6-M24).

Study set up/ participants
Setup
Start and end year
Time between subsequent assessments
Assessment date
Participants
Number of subjects
Sex
Number of Females
Number of Males
Age related
Age Range
Can share birth date
Can share birth month
Can share birth year
Can share calculated age
Mortality general info
Mortality Date of death
Demographics
Language
Language of tests
Education
Subject education
Mother education
Father education
Guardian education
Income
Household income (per year,...)
Currency
Marital status/relation
Physical measures
Weight
Weight at birth
Height
Grip strength
Waist circumference
Blood pressure
Handedness

Physical Health
Alcohol
Smoking
Substance use
Physical activity
Medication
Sleep
Mental health
Anxiety
Depression/mood
Stress
Life events/experiences
Personality
MMSE Mini Mental State Examination
Medical Health
physical Examination
info on general health
info on cardio vascular disease
info on Vascular risk factors
info on stroke
info on diabetes
info on Longstanding illness
info on Sickness absence
Cognitive Tests
IQ or equivalent
Working memory
Verbal memory
Visual memory
Memory self-assessment/Everyday memory
Verbal fluency
Processing speed
MRI
Biomarkers
DNA

FIGURE 3. DIMENSIONS AND VARIABLES OF INITIAL FOCUS

Data harmonization of the MRI, Biomarker and DNA data is closely coupled to the work in these tasks.

1.3. Gathering study protocols and site-specific variables meta data

Next, spreadsheets were developed for gathering detailed information on respectively study protocols, i.e. employed inclusion and exclusion criteria and the order in which biological, physical, behavioural and cognitive, and neuroimaging assessments were performed (see Figure 4), and variable meta-data i.e. site-specific information on variable name, variable description, allowable values, data type, data format, allowable values, value description, and coding of missing data (see Figure 5).

Study:	HUBU											
	Timepoints	1	Instructions	Comments	2	Instructions	Comments	3	Instructions	Comments	4	Instructions	Comments
	List order in which assessments were typically performed. Use headings for specific block of tests. Add /delete rows if necessary. The first column is just an example which you can overwrite. State test instructions in adjacent column if applicable												
		Child tests and questionnaires			Child tests and questionnaires			Child tests and questionnaires			Child tests and questionnaires		
1		Inventory		Questionnaire	Inventory		Questionnaire	MOT (CANTAB)	Followed Cantab instructions	Test	MOT (CANTAB)	Followed Cantab instructions	Test
2		MOT (CANTAB)	Followed Cantab instructions	Test	MOT (CANTAB)	Followed Cantab instructions	Test	DMS (CANTAB)	Followed Cantab instructions	Test	RTI (CANTAB)	Followed Cantab instructions	Test
3		DMS (CANTAB)	Followed Cantab instructions	Test	DMS (CANTAB)	Followed Cantab instructions	Test	RVP (CANTAB)	Followed Cantab instructions	Test	SST (CANTAB)	Followed Cantab instructions	Test
4		RVP (CANTAB)	Followed Cantab instructions	Test	RVP (CANTAB)	Followed Cantab instructions	Test	SST (CANTAB)	Followed Cantab instructions	Test	SWM (CANTAB)	Followed Cantab instructions	Test
5		SST (CANTAB)	Followed Cantab instructions	Test	SST (CANTAB)	Followed Cantab instructions	Test	*Break*			*Break*		
6		*Break*			*Break*			Verbal fluency	Animal and words (S) - 60 s	Test	Verbal fluency	Animal and words (S) - 60 s	Test
7		Colour vision		Test	Verbal fluency	Animal and words (S) - 60 s	Test	RTI (CANTAB)	Followed Cantab instructions	Test	Emotional Go/Nogo		Test
8		Verbal fluency	Animal and words (S) - 60 s	Test	RTI (CANTAB)	Followed Cantab instructions	Test	SWM (CANTAB)	Followed Cantab instructions	Test	FMC		Test
9		SOC (CANTAB)	Followed Cantab instructions	Test, half of subjects	SWM (CANTAB)	Followed Cantab instructions	Test	FMC		Test	J-EPQ		Questionnaire
10		RTI (CANTAB)	Followed Cantab instructions	Test	FMC		Test						
11		SWM (CANTAB)	Followed Cantab instructions	Test									
12		FMC		Test, half of subjects									
13													
14													
15													
16		Parent questionnaires			Parent questionnaires			Parent questionnaires			Parent questionnaires		
17		Five-to-fifteen	Written on questionnaire	Questionnaire	BRIEF	Written on questionnaire	Questionnaire			None collected			None collected
18		Screening	Written on questionnaire	Questionnaire	SDQ	Written on questionnaire	Questionnaire						
19					Demographic	Written on questionnaire	Questionnaire						
20													
21													
22													
23		MRI			MRI			MRI			MRI		
24		localizer			localizer			localizer			localizer		
25		T1 1			T1 1			T1 1			T1 1		
26		T1 2			DWI			DWI			DWI		
27		T2_tse3d_vfl_ns_sag			DWI fieldmap 1			DWI fieldmap 1			DWI fieldmap 1		
28		T2_pd_tse_tra			DWI fieldmap 2			DWI fieldmap 2			DWI fieldmap 2		
29		DWI			T1 2			T1 2			T1 2		
30		DWI fieldmap 1			T2_tse3d_vfl_ns_sag			T2_tse3d_vfl_ns_sag			T2_tse3d_vfl_ns_sag		
31		DWI fieldmap 2			T2_pd_tse_tra			T2_pd_tse_tra			T2_pd_tse_tra		
32					ep2d_diffsteam_b1_BC0			ep2d_diffsteam_b1_BC0			ep2d_diffsteam_b1_BC0		
33		Saliva samples			Saliva samples			Saliva samples			Saliva samples		
34		Child tests and questionnaires			Child tests and questionnaires			Child tests and questionnaires			Child tests and questionnaires		
35		Inventory		Questionnaire	Inventory		Questionnaire	MOT (CANTAB)	Followed Cantab instructions	Test	MOT (CANTAB)	Followed Cantab instructions	Test
36		MOT (CANTAB)	Followed Cantab instructions	Test	MOT (CANTAB)	Followed Cantab instructions	Test	DMS (CANTAB)	Followed Cantab instructions	Test	RTI (CANTAB)	Followed Cantab instructions	Test
37		DMS (CANTAB)	Followed Cantab instructions	Test	DMS (CANTAB)	Followed Cantab instructions	Test	RVP (CANTAB)	Followed Cantab instructions	Test	SST (CANTAB)	Followed Cantab instructions	Test

FIGURE 4. EXAMPLE SPREADSHEET LAYOUT FOR GATHERING SITE SPECIFIC STUDY PROTOCOLS

A	B	C	D	E	F	G	H	I	J	K	L
PLEASE NOTE	the goal is to get an overview how data is CURRENTLY CODED in the seperate studies and assessment rounds	below are only some examples /snippets of some possible Tests (you can just deleted the rows)	Create Blue header rows for each test (example below)	Create new TABS for each Assessment round of a specific study and name TAB accordingly (i.e. Study 1,2,... Code Book Round 1,2, 3,...) and copy the first 3 rows from the Code Book Template into it	Allowable values for category variables with more than two response possibilities (not including missing values) should be listed in the LOOKUP Tab (see LOOKUP_example tab for guidance)						
Site:	INSERT SITE NAME HERE	Study:	INSERT STUDY NAME							Define missing data codes used in the studies on the Readme tab. ONLY LIST exeptions of your rule here!!	specifics on coding scheme, reference t articles, other ....
Test_ID	Test_name	Variable_name	Variable_name_in_test	Variable_description	Type	Format /lenght	Allowable values	Value description	Examples	Missing data	Comments
SUBJECT	NA										
		Subject_ID	NA	Specific study subject id start with a character	string	7			hubu001		
		DOB	NA	Date of Birth	Date	YYYY-MM-DD			1957-12-02		
		DB	NA	Day of Birth	Integer	DD	1 - 31		2		
		MB	NA	Month of Birth	Integer	MM	1 - 12		12		
		YB	NA	Year of Birth	Integer	YYYY			1957		
		Sex	NA	biological sex	Categories	Enumeration	male, female		male		
DEMO	Demographics										
		education	NA	highest eduction attained	Categories	Enumeration	lookup table				
		edu_yrs		years of education	Integer	15	0-80				calculation methode used
DMS	CANTAB: Delayed matching to										
		Investigator_ID	NA	investigator doing the testing	Categories	Enumeration	Lookup table		I001		
		DMS_time	Test start time	NA	Date	HH:MM:SS			12:12:56		
		DMS_date	Test start date	NA	Time	YYYY-MM-DD			1957-07-05		
		DMS_CL	DMS Mean correct latency	NA	Decimal	#,#			123,76655		
		DMS_CL_all	DMS Mean correct latency (all delays)	NA	Decimal	4,2			1233,76		
		DMS_CL_sim	DMS Mean correct latency (simultaneous)	NA	Decimal	#,#			123,76655		

FIGURE 5. EXAMPLE SPREADSHEET FOR GATHERING SITE SPECIFIC VARIABE META DATA

1.4. Checking code book consistency

All sites provided the required information in study inclusion/ exclusion criteria and study protocols. Organization of the information on the specific instructions subjects were given during cognitive tests, part of the study protocols, is ongoing.

All sites provided information on variable metadata for the variables of initial focus. A stringent quality control of the site specific variable code books on consistency and completeness, with respect to reported information in the general shared variables overview, organization and formatting is ongoing.

The provided variable data allowed us to assess data availability as well the level of detail in which dimensions and variables of interest were assessed and sampled across Lifebrain sites. The latter allowed us to perform an overall evaluation of the data harmonization potential of the different types of variables.

1.5. Preliminary data harmonization potential

A detailed overview of the data available in Lifebrain is provided in Appendix 3.1- 3.3. In what follows, an overall evaluation of data harmonization potential of dimensions and cluster of variables is given.

1. Date of assessments, time of assessments, investigator doing the assessment, and subject sex, birth date, birth month, birth year, calculated age, and general info on mortality, and date of death.

This data does not need harmonization in the sense that scores, except for "Investigator doing the assessment" have the same meaning across sites. Sex will be recoded to female, male. Overall, for all variables that will be used in Lifebrain, we will impose a stringent coding regime i.e. organization and formatting of the meta data associated with Lifebrain variables. We strive to follow international standards and standards used in other large consortia comparable to Lifebrain in scoop and focus, in order to enable efficient future coupling of Lifebrain data to that of other consortia.

2. Subject, mother, father, guardian, person accompanying child educational

Lifebrain has a good coverage of subject education. The available data will allow two strategies:

   a. Record highest attained education and convert to years of education following the International Standard Classification of Education (current version 2011) (3a, b).
   b. Re-categorize available data into approximately four categories (see for example, 3). Additionally, we will statistically account for possible cohort and country effects. While not available in all studies, importantly, information on parent education is available or available in principle in studies including partially (LCBC) or exclusively (HUBU, CALM) children. Of note, in CALM, education was registered for the person who accompanied the child. Education of mother/father/guardian/other can be retrieved from this data.

3. Subject occupation

Information is in principle available for most of the studies. If feasible, we will record and convert acquired data using International Standard Classification of Occupations (ISCO) 08 (4).

4. Income

Data is not available in all studies. Harmonization of and/or including income in statistical models for future specific research questions is not straight forward and need to account for national differences in e.g. cost of daily living, housing prices, taxes, inflation etc (5).

5. Marital and relationship status

Harmonization will include re-categorisation to ensure uniform coding.

6. Weight, Weight at birth, Height, Grip strength, Waist circumference, Blood pressure, Handedness

Data harmonization on these variables will in principle only requires re-coding. However, we need to account for differences between sites in the protocols and methods used to derive these measures (e.g. Weight measured using a weight balance or reported; Blood pressure measured sitting, lying down, or both, ...).

7. Alcohol

Most sites assessed alcohol use. However, assessments differ substantial in the level of detail of acquired information (e.g. typical/ heavy drinking, type of alcohol beverage, quantity, frequency, drinking pattern, reference period) and instruments used. Successful harmonization/ modelling of alcohol consumption will depend on which studies are included in specific investigations. Cultural and cohort differences need to be accounted for (6).

8. Smoking

Most sites assessed smoking habits. However, assessments differ greatly in the level of detail of acquired information (type: cigarettes, cigars, pipe, quantity, frequency, reference time, age of starting/stopping). Categorizations such as "never", "current", "not current" or ever smoked "yes/no" might be possible. Depending on the studies included in specific investigations definition of variables on quantity /frequency may be feasible (7).

9. Substance use

Substance use has been assessed in several studies. However, assessments differ in the level of detail (e.g. status, type of drug, frequency, age started/stopped). Depending on studies and the number of subjects that have used substances of abuse, we may be able to model its possible effects, for example using a categorical variable "never, "current, "not current" and/or exclude subjects from analyses.

10. Physical activity

Most sites assessed physical activity. However, the level of detail of acquired information (e.g. leisure, occupational, transport, daily living, organized, type, duration, regularity, intensity, frequency, MET or Calories equivalents) differs across sites as well as the assessment instruments that were used. We strive to harmonize on intensity, frequency, duration, and/or a categorical variable for level of activity (8,9).

11. Medication

Most sites assessed medication use. However, level of detail (e.g medication history, types of medication, medication codes, frequency, doses) and assessments instruments used differ greatly across sites. Data harmonization likely will involve categorical variables.

12. Sleep

Most sites assessed sleep. Eight studies used the Pittsburgh Sleep Quality Index. Others used in-house questionnaires. The data harmonization potential is deemed good and allows identifying common variables.

13. Anxiety, Depression and Mood

Most studies assessed anxiety and depression and mood variables. However, there is considerable variation in the specific assessment instruments that were used as well as the number of instruments used in each individual study. Moreover, not all studies can provide item level data. We will identify common variables, and assess the feasibility of implementing e.g. latent factor models, item response theory (IRT) (9, 10).

14. Memory self-assessment and Everyday memory, Stress, Life events and experience, Personality

These dimensions were assessed in several studies. However, there is considerable variation in the specific assessment instruments that were used as well as the number of instruments used in each individual study. Moreover, not all studies can provide item level data. We will identify common variables, and assess the feasibility of implementing e.g. latent factor models, item response theory (IRT) (9, 10, 11).

15. Physical Examination

Physical examinations were performed in several studies. However, level of detail and assessments instruments used differ greatly across sites. Information on general health, cardio vascular disease, diabetes, longstanding illness, stroke, vascular risk factors or sickness absence seems available. We strive to identify common variables and explore the possibility of creating categorical variables.

16. IQ or equivalent, Working memory, Verbal and visual memory, Mini Mental State Examination, Verbal fluency

Most studies assessed these variables. However, studies differ by the specific tests that were employed as well as by the number of test used in each individual study. We will identify common variables, and assess the feasibility of implementing e.g. latent factor models (10, 13, 14). The Mini Mental State Examination can be readily harmonized. Assessed letter and/ or semantic fluency, while differing in used protocols, will likely allow us to normalized scores for this variable. Most sites assessed letter and/ or semantic fluency allowing us to generate common variables and possibly use normalized scores.

17. Processing speed

Several sites assessed processing speed. However, studies differ by the specific tests that were employed as well as by the number of test used in each individual study. We will identify common variables, and assess the feasibility of implementing e.g. latent factor models (10, 13, 14). Of note, most studies employed versions of the trail making task, making it feasible to use normalized scores.

2. Next steps

We continue with quality control and completion of site-specific study protocols. The latter specifically concerns documenting the instructions given to subjects during cognitive tests. Additionally, we continue with stringent quality control of the site-specific variable code books on completeness, organization and formatting.

Lifebrain will allow for different approaches depending on the specific research questions and hypotheses. It will allow for centralized analyses by creating one dataset for analyses, which requires harmonization of targeted datasets, or coordinated independent analyses (1).

2.1. General harmonization procedures

The current deliverable gathered and organized information about all variables of interest across cohorts in Lifebrain. While harmonization of some of the dimensions/variables will be straightforward, other dimensions/variables will require more effort to harmonise given the large variation in assessment instruments used for some of the dimensions. In our data harmonization efforts we will build on other initiatives, such as EPOSA (16), and BIOSHARE (17) (see Figure 6).

In the autumn of 2017, we will establish specific workgroups for data harmonization of specific dimensions/variables. The task groups will generate guidelines on how to harmonize specific dimensions/variables, and on what analytic approaches are feasible and/or recommendable. It is important to determine whether each of the dimensions/variables measures the same concept in order for the harmonization to proceed. If the variable does not measure the same concept, harmonization of the data will not be possible. If the variable does measure the same concept, then the harmonization procedures can proceed.
Another important step is to determine whether response categories overlap. If they do not overlap, variables will be matched on categories, e.g. smoking yes/no. If they do overlap, the task group will determine possible harmonization algorithms that allows for as little loss of information as possible.

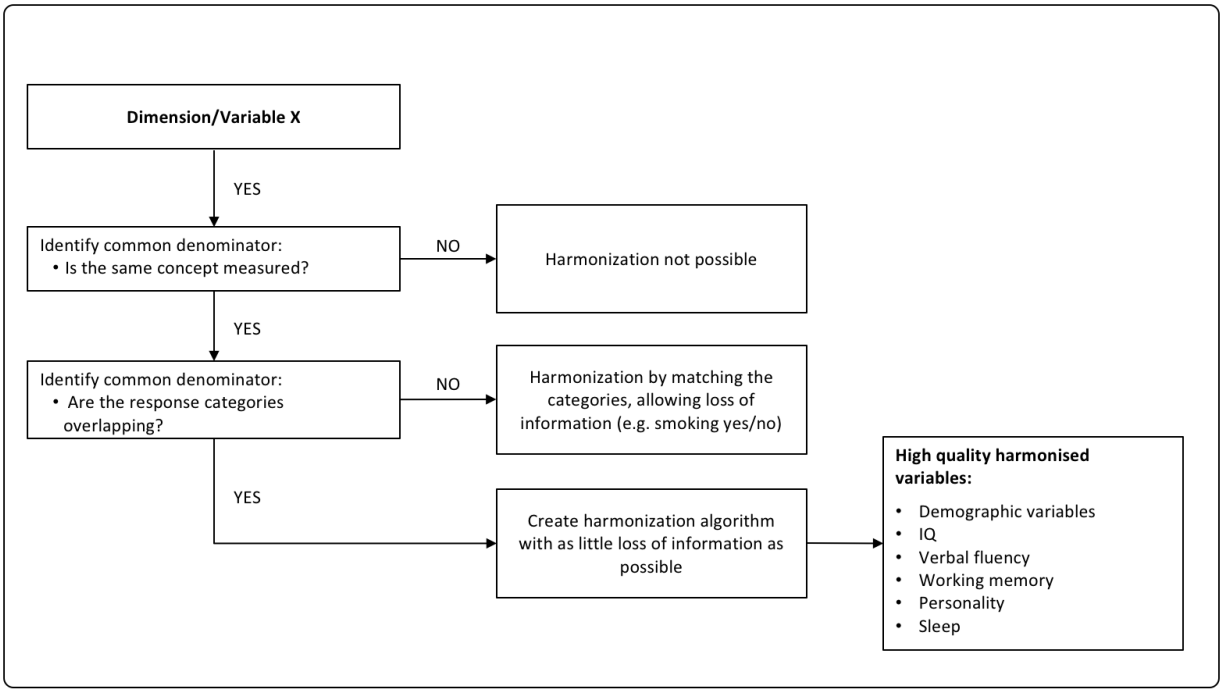

FIGURE 6. SCHEMATIC PRESENTATION OF THE HARMONIZATION PROCESS FOR ALL DIMENSIONS/VARIABLES ADAPTED FROM (16)

2.2. Designing the Lifebrain database

In the autumn of 2017 and in parallel with the data harmonization efforts we will start with designing the Lifebrain database tables that will ultimately populate the Lifebrain database using the infrastructure developed in Task 3.1 "Development of a data storage and management system" (M1-M6), and develop conversion scripts to populate Lifebrain tables with site-specific data.

3. Conclusion

The objectives of the current deliverable were fulfilled as detailed below:

- Map and categorize available data for all Lifebrain studies and time points: Completed
- Identify an initial set of variables of interest: Completed
- Obtain site specific code books, which contain information on study specific designs, standard operating procedures, data collection methods, and metadata on variables e.g. variable names, variable description, data type, data format, allowable values etc.
    - Site-specific code books, which contain information on study specific designs, standard operating procedures were generated. Gathering the instructions given to subjects during test is in progress.
    - All sites provided information on variable metadata. The detailed quality control of the site specific variable code books on consistency and completeness, with respect to reported information in the general shared variables overview, and formatting is still in progress.
- Evaluate commonalities across sites and overall harmonization potential
    - Preliminary data harmonization potential of initial variables of interest has been evaluated

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5. Appendix

Appendix 1: Abbreviations of test and questionnaires that have been employed in Lifebrain studies (PDF)
Appendix 2: Number of subjects and observations (PDF)
Appendix 3.1: Detailed overview of the data available in Lifebrain (PDF)
Appendix 3.2: Detailed overview of the data available in Lifebrain (PDF)
Appendix 3.3: Detailed overview of the data available in Lifebrain (PDF)

Appendix 1

Abbreviations of test and questionnaires that have been employed in Lifebrain studies

Abbreviations	Full name
(Child and Parents)	Indicates that both the participant and parents have filled out a version of the questionnaire
(Parents)	Indicates that the parents filled out the questionnaire
4DSQ, 4DKL (in German)	The Four-Dimensional Symptom Questionnaire
AC	Alcohol Consumption
ACE-R	Addenbrookes Cognitive Examination Revised
AGORA	Angoraphobia
AH4	non-verbal reasoning part of the Alice Heim Group Ability Test
ANT, Emotional ANT	Attention Networks Test
ASEBA	Achenbach System of Empirically Based Assessment
ASI	Addiction Severity Index
AUDIT	Alcohol Use Disorders Identification Test
BAECKE	Baecke Physical Activity Questionnaire
BAI	Beck Anxiety Inventory
BASE activity questionnaire	Berlin Ageing Study activity questionnaire
Basecog	Berlin Ageing Study Cognitive test battery
BDI	Beck Depression Inventory
BIG five	The five-factor model of personality
BIS-11	Barrett's Impulsiveness Scale
BIS/BAS	Behavioural Inhibition/Approach System
BNT-60	Boston Naming Test
BPRS	Brief Psychiatric Rating Scale
BRIEF	Behaviour Rating Inventory of Executive Function
Brugha	aka The List of Threatening Experiences (LTE)
CAGE	Acronym created from 4 alcohol dependence questions (Ewing, 1984)
CAMB	Copenhagen Aging and Midlife Biobank
CAMT	Cimbi affective memory task
CASE	Child and Adolescent Survey of Experiences
CASP	control', 'autonomy', 'pleasure' and 'self-realization'; quality of life measure in older age
CC3000	Cambridge Centre for Ageing Neuroscience 3000 sample
CDDR	Customary Drinking and Drug Use Record
CDQ	Cognitive Dysfunction questionnaire
CERAD	The Consortium to Establish a Registry for Alzheimer's Disease
CES-D	Centre for Epidemiological Studies Depression Scale
CHAMPS	CHAMPS Physical Activity Questionnaire for Older Adults
CIDI	Composite International Diagnostic Interview (WHO)
CIS-R	Clinical Interview Schedule – Revised
CLOX	Clock drawing task
CN / 10MQ	10 memory self-report questions
CPT	Continuos Performance Test
CVA	CerebroVascular Accident
CVLT	California Verbal Learning Test
DAST-20	Drug Abuse Screening Test
DE	Dependence Symptoms
DHEA-S	Dehydroepiandrosterone S mg
DKEFS	Delis-Kaplan Executive Function System
DMS(Cantab)	Delayed Matching to Sample
DSM-III-R	Diagnostic and Statistical Manual of Mental Disorders III revised
E2	Estradiol
EFIT	Emotional face identification task
EHI	Edinburgh handedness inventory
EMO	Emotional go/nogo task
EMQ	Everyday memory questionaire (Sunderland et al. 1983)
EPI	Echo-Planar Imaging
EPIC	European Prospective Investigation into Cancer and Nutrition
EPIC EPAQ-2	EPIC Physical Activity Questionnaire
ERQ	Emotion Regulation Quiestionnaire
F-HAM	Family history assessment module
FAB	Frontal Assessement Battery
FCSRT	Free and Cued Selective Reminding Test (Buschke)
FEAR	FEAR Questionnaire
FFQ	Food Frequency Questionnaire
Framingham CHD	Framingham Coronary Heart Disease risk score
Framingham CVD	Framingham cardiovascular disease risk score
FTF	Five to fifteen
FTND	the Fagerström Test for Nicotine Dependence
GAD	Generalized Anxiety Disorder
GDS	Geriatric Depression Scale (Yesavage)
GHQ	General Health Questionnaire
GMS -A/B	Geriatric Mental State (GMS), Version A/B (Copeland et al.,1988)
HADS	Hospital Anxiety and Depressive Scale
HAMD	Hamilton Depression Scale
HAS items	History and Aetiology Schedule
HC	Head coil
HDRS	Hamilton Depression Rating Scale
HiPIC	Hierarchical Personality Inventory for Children
HNC	Head-neck coil
HSP	Highly Sensitive Person
HU	Harmful alcohol Use
HVLT-R	Hopkins Verbal Learning Test-Revised
IADL	Instrumental Activities of daily Living (Lawton & Brodfy 1969)
ICU	Inveotory of Callous-Unemotional traits
IDS	Inventory of depressive symptomatology
IPAQ	International Physical Activity Questionaire
IPAQ-S	International Physical Activity Questionnaire short version 2002
IST-2000-R	Intelligens Struktur Test 2000 Revised
J-EPQ	Junior Eysenck personality questionnaire
Jenskins	Jenkins Sleep Questionnaire
JLO	Judgement of Line Orientation
KSQ	Karolinska Sleep Questionnaire
LOT-R	Life Orientation-Revised
LTE-Q	List of Threatening Experiences questionnaire
MACA	MacArthur stress reactivity questionnaire
MADRS	Montgomery-Asberg Depression Rating Scale
MASQ	Mood and Anxiety Symptom Questionnaire
MB	Multi-band
MDI	Major depression inventory
MDQ	Mood Disorder Questionnaire
MEMPR	Multi-Echo MPRAGE
MET	Metabolic Equivalent Total
MFQ	Memory Functioning Questionnaire (MFQ) (Gilewski 1990)
MID	Major depression inventory
MIDI	Midlife Development Inventory (MIDI) Scale
Mill Hill	Mill Hill vocabulary scale
MMSE	Mini Mental State Examination
MNA	Mini Nutritional Assessment
MOCA	Montreal Cognitive Assessment
MPRAGE	Magnetization-Prepared Rapid Gradient Echo
MTCF	Modified Taylor Complex Figure Test
N-back	Working Memory Test
NA (VUMC)	Negative Affect
NART	National Adult Reading Test
Neo- Pi-R	NEO Personality Inventory-Revised
NEO-FFI	Neuroticism Extraversion Openness Five-Factor Inventory
NEPSY	a neuropsychological assessment instrument
NEPSY VA	NEPSY- Visual Attention subtest
NPI	Neuropsychiatric Inventory (Cummings)
PA	Panic Disorder
PA (VUMC)	Positive Affect
PAL	Paired Associated Learning (visual memory and learning) CANTAB
PASE	Physical Activity Scale for the Elderly
PGCMS	The Philadelphia Geriatric Center (PGC) Morale Scale
PHQ-9	Preceived Health questionnaire
PING	Pediatric Imaging, Neurocognition, and Genetics
PSQI	Pittsburgh Sleep Quality Index
PSS	Preceived Stress Scale
PSWQ	Penn-State Worry Questionnaire ultrabrief version
RAVLT	Rey Auditory Verbal Learning Test
RCFT	Rey Complex Figure Test
Rey-0	Rey–Osterrieth complex figure test
ROCF	Rey-Osterreich complex figure
RQ	The Relationship Questionnaire (Bartholomew & Horowitz, 1991)
RTI (CANTAB)	Cambridge Neuropsychological Test Automated Battery Reaction Time touchscreen version
RVP	Rapid Visual Information Processing (CANTAB)
SA (VUMC)	Somatic Arousal
SCD-Q	Subjective Cognitive Decline Questionnaire (Rami et al., 2014)
SCID-I	Structured Clinical Interview for DSM-IV-TR Axis I Dis- orders
SCL-90	Symptom Checklist 90 items
SDMT	Symbol Digit Modalities Test
SDQ	Strenght and difficulties questionaire
SF-36	36-Item Short Form Health Surve
SHBG	Sex Hormone Binding Globulin
SOC (CANTAB)	Stockings of Cambridge
SOEP	German Socio-Economic Panel Study (SOEP)
SPSRQ-CR	Sensitivity to Punishment and Sensitivity to Reward Questionnaire - Child Revised
SST (CANTAB)	Stop-Signal Task
STAI	State and Trait Anxiety Inventory
STAI-C	State Trait Anxiety Inventory for Children
STW	Spot the word
SWLS	The Satisfaction With Life Scale
SWM (CANTAB)	Spatial Working Memory
TCF	Taylor Complex Figure Test
TCI	Temperament and Character Inventory
TFEQ	Three Factor Eating Questionnaire
TMT A,B	Trail Making Test A,B
TMT-A	Trail Making Test part A
TMT-B	Trail Making Test part B
TOPF	Test of Premorbid Functioning
TOT	Tip of The Tongue
UCLA	UCLA University of California, Los Angeles) Lonelinness Scale
UPSIT	University of Pennsylvania Smell Identification Test
VOSP	Visual Object and Space Perception Battery
WAIS	Wechsler Adult Intelligence Scale
WAIS-IV DS, DC	Digit Span (DS) and Coding (DC) tests from the Wechsler Adult Intelligence Scale - Fourth Edition (WAIS- IV;
WASI	Wechsler Abbreviated Scale of Intelligence
WHIIS	Women's Health Initiative Insomnia Rating Scale
WHODAS	World Health Organization Disability Assessment Schedule
WISC	Wechsler Intelligence Scale
WMS III	Wechsler Memory Scale-3rd ed
WPPSI	Wechsler Preschool and Primary Scale of Intelligence
WQ	Womens questionnaire
Young	Young Mania Rating Scale

Appendix 2

Lifebrain: overview of the total number of unique participants and observations

Lifebrain	Site	UiO	UmU	UOXF	MPIB		UB						REGIONH		VUMC	MRC	UCAM
All studies	Study	LCBC	Betula	Whitehall II Imaging	BASE	BASE II	WAHA	MSA_PSP	PD	GABA	iTBS	CR	HUBU	LISA	NESDA	CamCAN	CALM
	Number of time points	3	3	1	8	2	3	1	3	1	1	1	12	1	6	3	1
12527	Total unique subjects	1677	376	800	516	2200	82	24	46	33	27	49	94	450	2981	2690	482
7327 7387	Behaviour only	39		25	516	1755								90	2680	2057	255
5200 5140	MRI+Behavior	1638	376	775		445	82	24	46	33	27	49	94	390 450	301	633	227
27972	Total observations	2533	707	800	1402	2527	229	24	105	33	27	49	817	450	14860	2927	482
19873	Behaviour only	39		25	1402	1755	52							60	14228	2057	255
8099	MRI+Behavior	2494	707	775		772	177	24	105	33	27	49	817	390	632	870	227

Appendix 3.1

Detailed overview of the data available in Lifebrain

include	Categories	Variables	Subvar	Site															
1				UiO	UMU	UOXF	MPIB		UB						REGIOH		VUMC	MRC	UCAM
1	Study	Study	Study name	LCBC	Betula:	Whitehall II	BASE	BASE-II	WAHA	MSA_PSP	PD	GABA	iTBS	CR	HUBU	LISA	NESDA	CamCAN	CALM
1	Study	Study	Time points	3	2	1	8	2	3	1	3	1	1	1	12	1	6	3	1
1	Study	Study	Date of assessments	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	Study	Study	Time of assessments	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	Study	Study	Investigator doing the assessment	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	Study	Subject	Sex	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	Study	Subject	Age Range (specify)	4-93	25-85	60-84	70-95+	24-40 /61-81	63-80	38-81	36-81	60-79	61-83	48-89	7.5-21.5	62-70	18-74	18-102	5-18
1	Study	Subject	Birth date	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
1	Study	Subject	Birth month and year	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
1	Study	Subject	Birth year	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
1	Study	Subject	Calculated age	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	Study	Subject	General info mortality	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0
1	Study	Subject	Date of death	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
1	Demographics	Language	Language of tests (specify)	Norwegian	Swedish	English	German	German	Spanish	Spanish	Spanish	Spanish	Spanish	Spanish	Danish	Danish	Dutch	English	English
0	Demographics	Language	Mother tongue/native	1	1	1	0	1	1	0	1	0	0	0	1	1	0	1	1
0	Demographics	Language	assessed Bilingual	1	1	0	0	0	1	0	1	0	0	0	0	0	0	1	1
0	Demographics	Language	assesed Second language	1	0	0	0	0	1	0	0	1	1	1	0	0	0	1	1
0	Demographics	Language	asked generally to list "other languages spoken at home"	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Demographics	Language	Basic ethnicity info	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Demographics	Language	CC3000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
0	Demographics	Language	Cognitive reserve Solé-Padullés et al., 2009	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0
0	Demographics	Language	Mayer, K. U., Maas, I., & Wagner, M. (1999).	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Language	witin Medical history	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
0	Demographics	Language	Modified CAMB questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
0	Demographics	Language	only checked if English is mother tounge	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Language	unstructured interview (self report)	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Language	In-house questioinnaire	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
0	Demographics	Education	Assessed	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1
0	Demographics	Education	CC3000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
0	Demographics	Education	Modified CAMB questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
0	Demographics	Education	SOEP-questions	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Education	In-house questionairre	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
0	Demographics	Education	unstructured interview (self report)	1	1	1	0	1	1	1	1	1	1	1	0	0	0	0	0
1	Demographics	Subject education	Highest attained	1	1	1	1	1	1	0	0	1	1	1	0	1	1	1	0
1	Demographics	Subject education	Years of education (Full-/Partime)	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0
1	Demographics	Subject education	Education history	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1
0	Demographics	Partner education	Highest attained	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
0	Demographics	Partner education	Years of education	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Demographics	Mother education	Highest attained	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0	1
1	Demographics	Mother education	Years of education	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
1	Demographics	Father education	Highest attained	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0	1
1	Demographics	Father education	Years of education	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
1	Demographics	Parental education (either father or mother)	Highest attained	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0
1	Demographics	Guardian education	Highest attained	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	1
1	Demographics	Guardian education	Years of education	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0
0	Demographics	Occupation	Assessed	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0
0	Demographics	Occupation	CC3000 (Cascot coded)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Demographics	Occupation	Modified CAMB questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
0	Demographics	Occupation	TIC – P	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Demographics	Occupation	Cognitive reserve questionnaire (Solé-Padullés 2009)	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0
0	Demographics	Occupation	Detailed career history questionnaire (Cf. Mayer et al.,	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Occupation	in-house (Mayer, K. U. (1979). Berufliche Tätigkeit, berufliche	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Occupation	Various standardised and non-standardised occupational	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Occupation	Self-report	0	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0
1	Demographics	Subject occupation	Current	0	1	1	1	1	0	1	1	1	1	1	0	1	1	1	0
1	Demographics	Subject occupation	Highest attained	0	1	0	1	1	1	1	1	1	1	1	0	1	0	0	0
1	Demographics	Subject occupation	Longest	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0
1	Demographics	Subject occupation	Occupation history	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0
0	Demographics	Partner occupation	Current /Last	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1	0
0	Demographics	Partner occupation	Highest attained; before, immediately after mariage	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Partner occupation	Longest; during mariage and before devorce/death	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
0	Demographics	Parent occupation	Occupation Mother	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Parent occupation	Occupation father	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Gardian occupation	Occupation guardian	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Housing	Info on type of housing (e.g. private, public, appartment, etc), residental history	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	0
0	Demographics	Housing	Info on geographic location (e.g. Large city, small city, rural)	0	1	0	1	1	0	0	0	0	0	0	1	0	1	0	0
0	Demographics	Housing	Household composition	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Housing	Postal code, combined with dutch geo-data	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Demographics	Housing	CC3000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Demographics	Housing	diw_datadoc_2009-046.pdf	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Housing	In-house	1	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0
0	Demographics	Income	assessed	1	0	0	1	1	1	0	1	0	0	0	1	1	1	1	0
1	Demographics	Income	Currency (specify)	NOK	0	0	DM	Euro	Euro	0	Euro	0	0	0	DKK	0	Euro	Sterling	0
1	Demographics	Income	Household (per year, ...)	1	0	0	1	1	1	0	1	0	0	0	1	0	1	1	0
0	Demographics	Income	Parents/Gardian (per year, ...)	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
0	Demographics	Income	Partner (per year, ...)	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Income	Person (per year, ...)	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0
0	Demographics	Income	CC3000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Demographics	Income	Modified CAMB questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
0	Demographics	Income	in-house Questionairre	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0
0	Demographics	Income	in-house interview	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Income	unstructured interview (self report)	1	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0
0	Demographics	Social information	Assessed	0	0	1	1	1	1	0	1	1	1	1	0	0	0	0	0
0	Demographics	Social information	Champ- Qestionnaire	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Social information	Cognitive reserve questionnaire (Sole-Padulles 2009	0	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0
0	Demographics	Social information	Loneliness scale Russel 1984	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
0	Demographics	Social information	Number of confidants (Antonucci)	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
0	Demographics	Social information	SOEP-Person-questionnaire	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
0	Demographics	Social information	in-house structured interview	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Social information	In-house questionairre	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Social information	unstructured interview (self report)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Demographics	Marital status	assessed	0	1	1	1	1	1	0	1	0	0	0	0	1	1	1	0
1	Demographics	Relationship status	assessed	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Family	Info on family (e.g. # children, grandchildren, brothers and sisters, ...)	1	1	0	1	1	1	0	1	0	0	0	1	0	1	1	0
0	Demographics	Network	Info on Social network	0	1	0	1	1	1	0	1	0	0	0	0	0	1	1	0
0	Demographics	Other	Info on Hobbies	0	1	0	1	1	1	0	1	1	1	1	1	0	0	1	0
0	Demographics	Other	Info on Activities	0	1	1	1	1	1	0	1	1	1	1	1	0	1	1	0
0	Demographics	Other	Life events	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Work life/satisfaction	Assessed	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0
0	Demographics	Work life/satisfaction	Karasek questionire	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Demographics	Work life/satisfaction	PGCMS (15 items) and others	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Work life/satisfaction	SWLS	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	Demographics	Work life/satisfaction	wellbeing, loneliness	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Demographics	Work life/satisfaction	in-house Questionairre	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	**Physical measures**	Weight	Measured	1	1	0	1	1	1	0	1	0	0	0	1	1	1	1	1
1	**Physical measures**	Weight	unstructured interview (self report)	0	0	1	1	1	1	0	0	0	0	0	0	0	1	1	1
1	**Physical measures**	Weight at birth	From records	1	0	0	0	0	0	0	0	0	0	0	0	0	0		0
1	**Physical measures**	Weight at birth	unstructured interview (self report)	0	1	0	0	1	1	0	1	0	0	0	0	0	0		1
1	**Physical measures**	Height	Measured	1	1	0	1	1	1	0	1	0	0	0	1	1	1	1	1
1	**Physical measures**	Height	unstructured interview (self report)	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	1
1	**Physical measures**	Grip strength	Tested	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0
1	**Physical measures**	Grip strength	Dynamometer	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	**Physical measures**	Grip strength	Hand-dynamometer	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	**Physical measures**	Grip strength	Jamar dynamometer	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	**Physical measures**	Grip strength	Standardized dynametry	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	**Physical measures**	Waist circumference	Measured	0	1	0	1	1	1	0	1	0	0	0	0	0	1	0	0
1	**Physical measures**	Blood pressure	Measured	1	1	1	1	1	1	0	1	0	0	0	0	0	1	1	0
1	**Physical measures**	Blood pressure	Left/right arm while sitting, liyng & standing (TP1)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	**Physical measures**	Blood pressure	Lying; sitting;standing syst/diast. mmHG	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	**Physical measures**	Blood pressure	Sitting after 1hr mental exercise. average of 2 readings. right arm	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	**Physical measures**	Blood pressure	supine rest	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	**Physical measures**	Blood pressure	rest 5minutes: sitting down, right arm, average of 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	**Physical measures**	Blood pressure	Sitting, 1 minute rest	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1	**Physical measures**	Blood pressure	blood pressure monitor (lying, standing, standing after 3 min)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	**Physical measures**	Blood pressure	sitting down, with automated machine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	**Physical measures**	Handedness	Measured	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	0
1	**Physical measures**	Handedness	Biggs 1975 self-report questionnaire	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	**Physical measures**	Handedness	Description of laterilazation	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	**Physical measures**	Handedness	Edinburgh Handedness Inventory	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0
1	**Physical measures**	Handedness	in-house Questionairre	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	**Physical measures**	Handedness	unstructured interview (self report)	1	1	0	1	0	1	1	1	0	1	1	0	0	1	0	0
0	**Physical measures**	Dexterity	Tested	0	0	1	1	1	0	0	0	0	0	0	1	0	0	0	0
0	**Physical measures**	Dexterity	Balance and Gait test	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Dexterity	Biggs 1975 self-report questionnaire	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Dexterity	Hand coordination - circle drawing	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	**Physical measures**	Dexterity	Pegboard	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Dexterity	Reitan Trail Making, Complex Figures	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Hearing	Tested	0	1	0	1	1	0	0	0	0	0	0	0	0	0	1	0
0	**Physical measures**	Hearing	Audiogram	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Hearing	AudioMester PA 444' / Company: Hortmann	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Hearing	Five Minute Hearing Test	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Hearing	Hearing Handicap Inventory for the Elderly	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Hearing	Hearing threshold level; audiometry , frequences from	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Hearing	Oldenburger Inventar	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Hearing	Pure tone hearing threshold (0.5 - 2.0 kHz; 3.0 - 8.0 kHz)	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Hearing	Siemen's Hearcheck Screener	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	**Physical measures**	Hearing	unstructured interview (self report)	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0
0	**Physical measures**	Vision	Tested	0	1	0	1	1	0	0	0	0	0	0	1	0	0	1	0
0	**Physical measures**	Vision; acuity	CC3000 Snellen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	**Physical measures**	Vision; acuity	If pp could read on a board from 3 and 5 meters	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Vision; acuity	Reading chart/distance chart: Snellen chart score	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Vision; colour	Colour blindness self reported on VSTM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	**Physical measures**	Vision; colour	Colour test reported	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	**Physical measures**	Vision; colour	Colour vision	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	**Physical measures**	Vision; other	Info on Glasses/contact lenses	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
0	**Physical measures**	Vision; other	Info on Glasses/contact lenses strenghts	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	**Physical measures**	Vision; other	National Eye Institute Visional Functioning Questionnaire – 25 (VFQ-25)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Vision; other	Only noted if affected test performance	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Vision; other	unstructured interview (self report)	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Chair rise	Measured	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0
0	**Physical measures**	Chair rise	4-Meter Gehstreckentest	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Chair rise	Timed up&go Test	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Chair rise	Tinetti	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Chair rise	in-house test	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	**Physical measures**	Gait assessment	Measured	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Gait assessment	4-Meter Gehstreckentest	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Gait assessment	Experimental device	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Gait assessment	Timed up&go Test	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Gait assessment	Tinetti	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Lung function	Measured	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0
0	**Physical measures**	Lung function	Diagnostic & measurement	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Lung function	Peak flow	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	**Physical measures**	Hip circumference	Measured	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0
0	**Physical measures**	Foot dominence	Tested	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	**Physical measures**	Foot dominence	CC3000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	**Physical measures**	Body composition (fat, muscle)	Tested	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	**Physical measures**	Body composition (fat, muscle)	Impedance (InBody, Adults only)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	**Health Qs**	ADL Activities of Daily Living	Measured	0	0	0	1	1	0	1	1	0	0	0	1	0	1	1	0
0	**Health Qs**	ADL Activities of Daily Living	ADL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	**Health Qs**	ADL Activities of Daily Living	Baltes, M. M., Maas, I., Wilms, H.-U., Borchelt, M., & Little, T. D.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	**Health Qs**	ADL Activities of Daily Living	Barthel-Index plus 2 IADL items from Lawton & Brody	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	**Health Qs**	ADL Activities of Daily Living	IADL	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
0	**Health Qs**	ADL Activities of Daily Living	WHODAS questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	**Health Qs**	ADL Activities of Daily Living	Yesterday-Interview & BASE Activitity Questionnaire	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	**Health Qs**	ADL Activities of Daily Living	In-house Physical activity (child and parent)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	**Health Qs**	ADL Activities of Daily Living	in-house interview	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	**Health Qs**	ADL Activities of Daily Living	unstructured interview (self report)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Alcohol	Measured	1	1	0	1	1	1	0	0	1	1	1	1	1	1	1	0
1	**Health Qs**	Alcohol	Audit questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	**Health Qs**	Alcohol	CAMB questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	**Health Qs**	Alcohol	CC3000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	**Health Qs**	Alcohol	CDDR+ other questionnaires put together	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	**Health Qs**	Alcohol	CIDI	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	**Health Qs**	Alcohol	Dependence identified by SCID-I and CAGE	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Alcohol	GMS-A/-B	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Alcohol	Mediterranean diet questiostionnaire	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Alcohol	in-house structured interview	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Alcohol	in-house questionnaire	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0
1	**Health Qs**	Alcohol	unstructured interview (self report)	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Smoking	Measured	1	1	1	1	1	1	0	1	0	0	0	1	1	1	1	0
1	**Health Qs**	Smoking	CAMB questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	**Health Qs**	Smoking	CC3000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	**Health Qs**	Smoking	CDDR+ other questionnaires put together	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	**Health Qs**	Smoking	Fagerstrom Test for Nicotine Dependence (FTND)	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	**Health Qs**	Smoking	In-house questionnaire	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Smoking	in-house structured interview	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Smoking	unstructured interview (self report)	1	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0
1	**Health Qs**	Substance use	Measured	0	1	1	1	1	0	0	0	0	0	0	1	0	1	1	0
1	**Health Qs**	Substance use	CDDR+ other questionnaires put together	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	**Health Qs**	Substance use	DAST-20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	**Health Qs**	Substance use	GMS-A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Substance use	Soft and hard drug use	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	**Health Qs**	Substance use	in-house structured interview	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Substance use	unstructured interview (self report)	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0
1	**Health Qs**	Physical activity	measured	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0
1	**Health Qs**	Physical activity	frequency and duration reported for 3 intensity levels of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Physical activity	Baecke Index	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
1	**Health Qs**	Physical activity	CHAMPS	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Physical activity	EPIC EPAQ-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	**Health Qs**	Physical activity	IPAQ	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0
1	**Health Qs**	Physical activity	Medical interview	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	**Health Qs**	Physical activity	Metabolic Equivalent of Task (MET)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Physical activity	Modified Minnesota scale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Physical activity	PASE	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	**Health Qs**	Physical activity	Cognitive reserve questionnaire (Sole-Padulles 2009)	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
1	**Health Qs**	Physical activity	Self-report questionnaire	0	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0
1	**Health Qs**	Physical activity	Walking, cycling, sedentary activity	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Physical activity	In-house questionnaire	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0
1	**Health Qs**	Medication	Info on medication use	1	1	1	1	1	1	0	1	1	1	0	0	1	1	1	1
1	**Health Qs**	Medication	In-housequestionnaire	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Medication	GMS-A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Medication	Info on types of medication	0	1	1	1	1	1	0	1	0	1	0	0	1	1	1	0
1	**Health Qs**	Medication	Medical interview	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	**Health Qs**	Medication	Medication history	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	0
1	**Health Qs**	Medication	Medication information recorded for children with ADHD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	**Health Qs**	Medication	Medication use according to ATC codes, frequency and	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	**Health Qs**	Medication	in-house Questionairre	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Medication	unstructured interview (self report)	1	1	1	0	1	1	0	1	1	1	0	0	1	0	0	0
1	**Health Qs**	Sleep	Measured	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0
1	**Health Qs**	Sleep	CAMB questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	**Health Qs**	Sleep	In-house, sleep night before	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	**Health Qs**	Sleep	In-house, based on Spiegel, 1981	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Sleep	Insomnia rating Scale	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	**Health Qs**	Sleep	Jenkins	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Sleep	Karolinska Sleep Questionnaire	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Sleep	Pittsburg sleep inventory (child and parents)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	**Health Qs**	Sleep	PSQI	1	0	1	0	0	1	0	1	1	1	0	0	0	0	1	0
1	**Health Qs**	Sleep	Sleep duration	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	**Health Qs**	Sleep	in-house Questionairre	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Sleep	in-house structured interview	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
1	**Health Qs**	Sleep	unstructured interview (self report)	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0
0	**Health Qs**	Diet	Assessed	0	0	0	1	1	1	0	0	1	1	1	0	1	1	1	0
0	**Health Qs**	Diet	(Types of) calorie intake	0	0	0	1	0	1	0	0	0	0	0	0	0	1	1	0
0	**Health Qs**	Diet	Body image	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	**Health Qs**	Diet	CAMB questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
0	**Health Qs**	Diet	CC3000 food consumed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	**Health Qs**	Diet	Detailed info on dietary habits	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	**Health Qs**	Diet	EPIC questionnaire	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	**Health Qs**	Diet	FFQ	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	**Health Qs**	Diet	Food frequency list (7 days protocol)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	**Health Qs**	Diet	In-house nutrition questionnaire	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	**Health Qs**	Diet	Mediterranean diet adherence: Schroder 2014	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0
0	**Health Qs**	Diet	MNA (Mini Nutritional Assessment)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.2

Detailed overview of the data available in Lifebrain

include	Categories	Variables	Subvar	Site															
1				UiO	UMU	UOXF	MPIB		UB						REGIOH		VUMC	MRC	UCAM
1	Study	Study	Study name	LCBC	Betula:	Whitehall II	BASE	BASE-II	WAHA	MSA_PSP	PD	GABA	iTBS	CR	HUBU	LISA	NESDA	CamCAN	CALM
1	Study	Study	Time points	3	2	1	8	2	3	1	3	1	1	1	12	1	6	3	1
0	Mental health	Attachment style	Measured	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
0	Mental health	Attachment style	Child and parent Social dominance orientation +	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Mental health	Attachment style	Parental Bonding Inventory, Interpersonal relationships	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Anxiety	Assessed	1	1	1	1	0	0	0	1	0	1	1	1	1	1	1	1
1	Mental health	Anxiety	STAI-C	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Mental health	Anxiety	ASI	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Anxiety	BAI	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Anxiety	BPRS	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Anxiety	CAMB quest	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	Mental health	Anxiety	CIDI	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Anxiety	FEAR	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Anxiety	GHQ	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Anxiety	GMS-A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Anxiety	HADS	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0
1	Mental health	Anxiety	NPI	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1	Mental health	Anxiety	Revised Children's Anxiety and Depression Scale-25 (Chorpita et	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	Mental health	Anxiety	SCL-90	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	Mental health	Anxiety	SDQ	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Anxiety	STAI	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Anxiety	Ever been told by a doctor?	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Anxiety	unstructured interview (self report)	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Worry	Measured	0	0	1	?	0	0	0	0	0	0	0	0	0	1	0	1
0	Mental health	Worry	Penn State Worry Questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Mental health	Worry	PSWQ	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Worry	Revised Children's Anxiety and Depression Scale-25 , child self-report and parent report	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	Mental health	Depression/mood	Measured	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
1	Mental health	Depression/mood	Apathy Scale (Sergio Starkstein)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1	Mental health	Depression/mood	BDI	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1	Mental health	Depression/mood	BSI	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Depression/mood	CAMB quest	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	Mental health	Depression/mood	CES-D	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Depression/mood	CIDI	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Depression/mood	CIS-R	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Depression/mood	DSM-III-R	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Depression/mood	GDS	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1	Mental health	Depression/mood	GHQ	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Depression/mood	HADS	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0
1	Mental health	Depression/mood	HAMD	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Depression/mood	HDRS	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1	Mental health	Depression/mood	IDS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Depression/mood	MADRS (fmri sample only)	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Depression/mood	MASQ	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Depression/mood	MDI	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Mental health	Depression/mood	MDQ	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Depression/mood	PGCMS	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Depression/mood	PHQ-9	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Depression/mood	Revised Children's Anxiety and Depression Scale-25 , child self-report and parent report	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	Mental health	Depression/mood	SCID-I	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Depression/mood	SDQ	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Depression/mood	Young	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Depression/mood	in-house structured interview	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Depression/mood	Ever been told by a doctor?	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Depression/mood	unstructured interview (self report)	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0
0	Mental health	Phobias	Assessed	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
0	Mental health	Phobias	CIDI,SocPhob, Agora, GAD, PA	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Mental health	Phobias	CIS-R	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Phobias	GMS-A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Sleep problems/fatigue	Assessed	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1
0	Mental health	Sleep problems/fatigue	Insomnia rating Scale	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Mental health	Sleep problems/fatigue	PSQI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Mental health	Sleep problems/fatigue	Revised Children's Anxiety and Depression Scale-25 (Chorpita et	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Mental health	Sleep problems/fatigue	in-house structured interview	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Somatic symptoms	Assessed	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
0	Mental health	Somatic symptoms	CIS-R	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Somatic symptoms	Complaint List (von Zerssen, 1990)	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Somatic symptoms	Presence of 20 diseases, GP records, 4DKL, migraine, chronic	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Mental health	Childhood trauma	Measured	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0
0	Mental health	Childhood trauma	CAMB questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
0	Mental health	Childhood trauma	Childhood Trauma Questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Mental health	Childhood trauma	NEMESIS questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Mental health	Childhood trauma	in-house structured interview	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Mental health	Childhood trauma	unstructured interview (self report)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Childhood trauma	War experiences / SOEP	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Memory self-assessment/ Everyday memory	Assessed	1	1	0	1	1	1	1	1	1	0	0	0	0	1	1	0
1	Mental health	Memory self-assessment/ Everyday memory	10 Memory Self-Report Questions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	Mental health	Memory self-assessment/ Everyday memory	CDQ	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Memory self-assessment/ Everyday memory	Clinical interview	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Memory self-assessment/ Everyday memory	Do you have any cognitive/memory complaint? Yes / No item	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1	Mental health	Memory self-assessment/ Everyday memory	EMQ	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Memory self-assessment/ Everyday memory	GMS-A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Memory self-assessment/ Everyday memory	MFQ	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1	Mental health	Memory self-assessment/ Everyday memory	SCD-Q	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1	Mental health	Memory self-assessment/ Everyday memory	Self reported and/or observed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	Mental health	Memory self-assessment/ Everyday memory	subjective memory complaints (Frank Jessen)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Memory self-assessment/ Everyday memory	unstructured interview (self report)	0	1	0	0	0	0	1	1	0	0	0	0	0	0	1	0
0	Mental health	Diagnosis	Assessed	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	1
0	Mental health	Diagnosis	based on self-report	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Diagnosis	Case Report Form (CRF) ist the whole medical examination,	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Diagnosis	CC3000, specific diagnoses enquired about: bipolar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Mental health	Diagnosis	CIDI (only mood, bipolar, anxiety, alcohol.)	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Mental health	Diagnosis	DSM-3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Diagnosis	DSM-4-5	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1
0	Mental health	Diagnosis	ICD-10	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Diagnosis	ICD-10 (based onself report)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Diagnosis	ICD-9	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Diagnosis	Reported by professionals referring children to the CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Mental health	Diagnosis	SCID-I	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Diagnosis	in-house questionairre/interview	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Diagnosis	unstructured interview (self report)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Stress	Assessed	0	1	1	0	1	0	0	0	0	0	0	1	1	1	0	0
1	Mental health	Stress	"How much stress in the past 4 weeks?"	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Stress	4DSQ	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Stress	Brugha questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Stress	CASE	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Mental health	Stress	TICS (Trier Inventory for Chronic Stress)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Stress	Daily Hassles questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Stress	MACA	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Stress	Perceived stress (Perceived Stress Scale, PSS) (Cohen,	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Stress	PSQ	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Stress	SCL-90	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	Mental health	Stress	Unstructured interview (self report)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Life events/experiences	Assessed	1	1	1	0	1	0	0	0	0	0	0	1	0	1	1	0
1	Mental health	Life events/experiences	months between	30	6	3-5	0	0	0	0	0	0	0	0	12	0	12	lifetime	0
1	Mental health	Life events/experiences	Lifetime	1	1	1	0	1	0	0	0	0	0	0	1	0	1	1	0
1	Mental health	Life events/experiences	FTF	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Mental health	Life events/experiences	In-house family history	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	Mental health	Life events/experiences	Last 12 months CASE	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Mental health	Life events/experiences	Life events	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Life events/experiences	Life events (Brown & Harris, 1989; Holmes & Rahe, 1967;	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Life events/experiences	LTE-Q	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Life events/experiences	NEMESIS questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Mental health	Life events/experiences	Parent-reported CASE made into lifetime	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Mental health	Life events/experiences	The Lifetime of Experiences Questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	Mental health	Life events/experiences	unstructured interview (self report)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Social contact	Measured	1	1	0	1	1	1	0	1	1	1	1	1	0	1	1	0
0	Mental health	Social contact	ASEBA	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Social contact	Cognitive reserve questionnaire	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
0	Mental health	Social contact	Loneliness scale	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
0	Mental health	Social contact	Number of confidants (Antonucci)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
0	Mental health	Social contact	Relationship questionnaire - peers and family	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Mental health	Social contact	Social activities & social support	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Mental health	Social contact	Social contacts questions developed by Valenzuela	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Mental health	Social contact	Social dominance orientation	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Mental health	Social contact	Social Networks in Adult Life Questionnaire	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Social contact	in-house structured interview	0	0	0	1	0	0	0	1	1	1	1	0	0	0	0	0
0	Mental health	Social contact	unstructured interview (self report)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Retirement	Assessed	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Retirement	in-house Questionairre	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Retirement	Within questionnaire on occupational career	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Quality of life	Assessed	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Quality of life	Satifaction with Life Scale (Pavot & Diener, 1993),	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Quality of life	PGCMS	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Quality of life	unstructured interview (self report)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Personality	Measured	1	0	1	1	1	0	0	0	0	1	1	1	1	1	0	0
1	Mental health	Personality	BAS	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Mental health	Personality	BIS	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Mental health	Personality	BIS-11	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Mental health	Personality	HiPIC	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Personality	J-EPQ	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Mental health	Personality	LOT-R	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Personality	MIDI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Personality	NEO	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Personality	NEO-FFI	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0
1	Mental health	Personality	NEO-P-R	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Personality	Big five	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Personality	numerous other aspects of the self and personality: cf. Smith, J.,	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	Personality	SDQ	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Mental health	Personality	TCI	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Mental health	MMSE Mini Mental State Examination	Assessed	1	1	0	1	1	1	1	1	1	1	1	0	0	0	1	0
0	Mental health	Psychiatric Family history	Measured	0	0	1	1	1	0	0	0	0	0	0	1	0	1	0	0
0	Mental health	Psychiatric Family history	Case Report Form (CRF) ist the whole medical examination,	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Psychiatric Family history	F-HAM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Mental health	Psychiatric Family history	Family history of dementias	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Psychiatric Family history	Family tree inventory	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Mental health	Psychiatric Family history	HAS-Items	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Psychiatric Family history	PING	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Mental health	Psychiatric Family history	unstructured interview (self report)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Behavioral disturbances	Measured	1	0	0	0	0	0	1	1	0	0	0	1	0	0	0	1
0	Mental health	Behavioral disturbances	BRIEF	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0	Mental health	Behavioral disturbances	ERQ	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Behavioral disturbances	NPI	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
0	Mental health	Behavioral disturbances	Questionnaire on control beliefs (cf. Smith & Baltes, 1999)	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Behavioral disturbances	Questionnaire on coping styles (in-house; Smith & Baltes, 1999)	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Behavioral disturbances	Self-perceived efficacy	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	physical Examination	Performed	0	1	1	1	1	1	1	1	0	0	0	0	1	1	0	0
1	Mental health	physical Examination	CAMB questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	Mental health	physical Examination	Case Report Form (CRF) ist the whole medical examination,	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	physical Examination	CC3000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	Mental health	physical Examination	Framingham CHD	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	physical Examination	Framingham CVD	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	physical Examination	Framingham Stroke Risk Score	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	physical Examination	Info on cardio vascular disease	0	1	1	1	1	1	0	0	0	0	0	0	1	1	1	0
1	Mental health	physical Examination	Info on diabetes	0	1	1	1	1	1	0	1	1	0	0	0	1	1	1	0
1	Mental health	physical Examination	Info on general health	0	1	1	1	1	1	0	0	1	1	0	0	1	1	1	0
1	Mental health	physical Examination	info on Longstanding illness	0	1	1	1	1	0	0	0	1	1	0	0	0	1	1	0
1	Mental health	physical Examination	Info on medication (HTA, diabetes, dyslipmeia)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	physical Examination	Info on Sickness absence	0	1	0	1	1	0	0	0	1	1	0	0	0	1	1	0
1	Mental health	physical Examination	Info on stroke	0	1	1	1	1	1	0	1	1	1	0	0	0	1	1	0
1	Mental health	physical Examination	Info on Vascular risk factors	0	1	1	1	1	1	0	1	1	1	0	0	0	1	1	0
1	Mental health	physical Examination	Medical assessment	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	Mental health	physical Examination	PASE	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	Mental health	physical Examination	Visit with Neuropsychologist	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1	Mental health	physical Examination	Visit with doctor + Clinical records	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0
1	Mental health	physical Examination	In-house (Steinhagen-Thiessen, E., & Borchelt, M. (1999).	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	physical Examination	Inhouse structured interview	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Mental health	physical Examination	unstructured interview (self report)	1	1	0	0	0	1	0	1	1	1	0	0	1	0	0	0
1	Mental health	physical Examination	In-house questionnaire	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Mental health	Women's health	Assessed	0	1	0	1	1	0	0	0	0	0	0	1	0	1	1	0
0	Mental health	Women's health	CAMB quest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Women's health	CC3000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Mental health	Women's health	Children	0	1	0	1	1	0	0	0	0	0	0	0	0	1	1	0
0	Mental health	Women's health	Contraceptive pill	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0
0	Mental health	Women's health	Female sex hormone	0	1	0	0	1	0	0	0	0	0	0	1	0	1	0	0
0	Mental health	Women's health	In-house	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Mental health	Women's health	Menopause	0	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0
0	Mental health	Women's health	Only for the female MR-subsample, questions on	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Women's health	Question in the form "Formulär 1", not in the WQ-form	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Women's health	unstructured interview (self report)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Women's health	Within medical anamnesis (Incl. info on menarche, pregnancies,	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Mental health	Women's health	Womens Questionnaire (created within Betula)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.3

Detailed overview of the data available in Lifebrain

include	Categories	Variables	Subvar	Site															
1				UiO	UMU	UOXF	MPIB		UB						REGIOH		VUMC	MRC	UCAM
1	Study	Study	Study name	LCBC	Betula:	Whitehall II	BASE	BASE-II	WAHA	MSA_PSP	PD	GABA	iTBS	CR	HUBU	LISA	NESDA	CamCAN	CALM
1	Study	Study	Time points	3	2	1	8	2	3	1	3	1	1	1	12	1	6	3	1
1	Cognitive Tests	IQ or equivalent	Measured	1	0	1	1	1	1	1	1	1	1	1	0	1	0	1	1
1	Cognitive Tests	IQ or equivalent	Vocabulary (WAIS /WAIS-III)	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0
1	Cognitive Tests	IQ or equivalent	Vocabulary WISC	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Cognitive Tests	IQ or equivalent	Vocabulary (WASI / WPPSI)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	IQ or equivalent	BASECog: g-score	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	IQ or equivalent	Block Design (WASI / WPPSI)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	IQ or equivalent	Blocks WAIS	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	IQ or equivalent	Blocks WISC	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Cognitive Tests	IQ or equivalent	Cattell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	Cognitive Tests	IQ or equivalent	Composite scores used to estimate g	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	IQ or equivalent	IST-2000-R	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	Cognitive Tests	IQ or equivalent	Matrix (WASI / WPPSI)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	IQ or equivalent	Matrix Reasoning, WASI (Wechsler Abbreviated Scale of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	Cognitive Tests	IQ or equivalent	NART	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0
1	Cognitive Tests	IQ or equivalent	Practical problems, figural analogies, letter series (fluid	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	IQ or equivalent	Similarities (WAIS)	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
1	Cognitive Tests	IQ or equivalent	Similarities (WASI/WPPSI)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	IQ or equivalent	Spot The Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	Cognitive Tests	IQ or equivalent	TOPF	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Attention	Measured	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1
0	Cognitive Tests	Attention	Antisaccade	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Attention	ANT	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Attention	Balloons Hunt, Test of Everyday Attention for Children 2 (Manly,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Cognitive Tests	Attention	Barking, Test of Everyday Attention for Children 2 (Manly,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Cognitive Tests	Attention	CPT	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Attention	Exogene cuing task	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Cognitive Tests	Attention	Hector Cancellation, Test of Everyday Attention for Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Cognitive Tests	Attention	Memory + distraction	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Attention	Red, Blues, Bags and Shoes, Test of Everyday Attention for	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Cognitive Tests	Attention	Simple Reaction Time, Test of Everyday Attention for Children	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Cognitive Tests	Attention	TMT-A	0	0	1	0	0	1	1	1	1	1	1	0	0	0	0	0
0	Cognitive Tests	Attention	TMT-B	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Attention	Vigil, Test of Everyday Attention for Children 2 (Manly, et al.,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	Cognitive Tests	Working memory	Measured	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
1	Cognitive Tests	Working memory	Plus-Minus	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Working memory	Spatial span (Wechsler Memory Scale)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1	Cognitive Tests	Working memory	Automated Working Memory Assessment (Alloway, 2007)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	Cognitive Tests	Working memory	BASECog: memory	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Working memory	Coding (DC) (WAIS- IV)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Working memory	Digit Recall	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	Cognitive Tests	Working memory	Digit Recall Backward	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	Cognitive Tests	Working memory	Digit Recall, Automated Working Memory Assessment (Alloway	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	Cognitive Tests	Working memory	Digit Span (DS)	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Cognitive Tests	Working memory	Digit Span (DS) (WAIS- IV)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Working memory	Digit span backward (WISC/WASI)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Working memory	Digit span forward (WISC/WASI)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Working memory	Digits backwards (WAIS)	0	0	0	0	0	1	1	1	0	1	1	0	0	0	0	0
1	Cognitive Tests	Working memory	Dot Matrix, Automated Working Memory Assessment (Alloway,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	Cognitive Tests	Working memory	In-house Visual Short-Term Memory	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	Cognitive Tests	Working memory	Letter digit substitution	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Working memory	Letter updating	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Working memory	Mental control (Wechsler Memory Scale)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1	Cognitive Tests	Working memory	Mr X, Automated Working Memory Assessment (Alloway,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	Cognitive Tests	Working memory	N-back	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Cognitive Tests	Working memory	N-Back (2-back)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Working memory	N-Back (number)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Working memory	Spatial span forward (WISC/WASI)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Working memory	Spatial updating	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Working memory	Spatial working memory CANTAB	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
1	Cognitive Tests	Working memory	Working memory (card-sorting)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Executive function	Measured	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1
0	Cognitive Tests	Executive function	BRIEF (parents)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Cognitive Tests	Executive function	CLOX	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Executive function	FAB	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Executive function	Flanker	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Executive function	Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Cognitive Tests	Executive function	Keep track	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Executive function	Local-global	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Executive function	Multi-source interference	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Executive function	NEPSY Directors task	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Executive function	Plus-minus	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Executive function	RCFT	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Executive function	SOC (CANTAB)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Cognitive Tests	Executive function	SST (CANTAB)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Cognitive Tests	Executive function	Stroop	0	0	0	0	0	1	0	1	0	1	1	0	0	0	0	0
0	Cognitive Tests	Executive function	TMT-B	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0
0	Cognitive Tests	Executive function	Tower of London	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0
0	Cognitive Tests	Executive function	Tower Test, Delis Kaplan Executive Function System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Cognitive Tests	Motor speed/function	Reitan Trail Making	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Executive function	Trail making	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal memory	Measured	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	Cognitive Tests	Verbal memory	CAMT	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Cognitive Tests	Verbal memory	CVLT	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal memory	Emotional memory task, imaging only	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Cognitive Tests	Verbal memory	FCSRT (Buschke)	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal memory	HVLT	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal memory	HVLT-R	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal memory	IST-2000-R	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	Cognitive Tests	Verbal memory	Letter memory	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal memory	Logical Memory WMS III	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	Cognitive Tests	Verbal memory	Memory for text	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal memory	Mill Hill	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal memory	RAVLT	0	0	0	0	0	1	1	1	0	1	1	0	0	0	0	0
1	Cognitive Tests	Verbal memory	Recall of sentences and words	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal memory	Story Recall, Children's Memory Scale (Cohen, 1997)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	Cognitive Tests	Verbal memory	VLMT: verbal learning and memory test	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Visual memory	Measured	1	1	1	1	1	1	0	0	1	1	1	1	0	0	1	0
1	Cognitive Tests	Visual memory	DMS (CANTAB)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Cognitive Tests	Visual memory	e.g., Paired Associates	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Visual memory	Face recognition	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Visual memory	Face-profession task	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Visual memory	In-house Emotional Memory	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	Cognitive Tests	Visual memory	Object location	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Visual memory	PAL Cantab	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1	Cognitive Tests	Visual memory	Rey Complex Figure Test	1	0	1	0	0	1	0	0	0	1	1	1	0	0	0	0
1	Cognitive Tests	Visual memory	Scene encoding	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal fluency	Measured	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0
1	Cognitive Tests	Verbal fluency	ACE-R	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	Cognitive Tests	Verbal fluency	Boston Naming Test (BNT)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal fluency	FAB fluency	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal fluency	Fluency (2 tasks)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal fluency	Fluency (4 tasks)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal fluency	Letter fluency (F-A-S)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal fluency	Letter fluency (P-M-R)	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0
1	Cognitive Tests	Verbal fluency	Letter fluency (P)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal fluency	VFL phonemic + semantic	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal fluency	VLF Categories (animals)	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0
1	Cognitive Tests	Verbal fluency	WASI/WPPSI Vocabulary	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Verbal fluency	Words beginning with "S"	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0
1	Cognitive Tests	Processing speed	Measured	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1	0
1	Cognitive Tests	Processing speed	Choice Reaction Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	Cognitive Tests	Processing speed	Digit symbol (Echsler)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Processing speed	Letter-digit	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Processing speed	Perceptual speed	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1	Cognitive Tests	Processing speed	Rapid automated naming task	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	Cognitive Tests	Processing speed	RVP (Cantab)	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
1	Cognitive Tests	Processing speed	RTI (CANTAB)	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
1	Cognitive Tests	Processing speed	SDMT	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0
1	Cognitive Tests	Processing speed	TMT-A	0	0	1	0	0	1	0	1	1	1	1	0	0	0	0	0
1	Cognitive Tests	Processing speed	Word-color interference	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Simple reaction time	Measured	0	0	1	0	1	1	0	0	0	0	0	1	0	1	1	1
0	Cognitive Tests	Simple reaction time	Control task	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Simple reaction time	CPT reaction time	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Simple reaction time	IAT	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Cognitive Tests	Simple reaction time	Reaction time to neutral stimuli in cognitive tests can be utlized	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Cognitive Tests	Simple reaction time	Simple Reaction Time Test	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
0	Cognitive Tests	Motor speed/function	Measured	0	0	1	1	1	1	1	1	1	1	1	1	0	0	1	1
0	Cognitive Tests	Motor speed/function	DKEFS Trail Making Test	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Cognitive Tests	Motor speed/function	Electronic Tapping Test (Medical assessment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Motor speed/function	Force Matching	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Cognitive Tests	Motor speed/function	Hand coordination	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Cognitive Tests	Motor speed/function	Motor Learning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Cognitive Tests	Motor speed/function	Reitan Trail Making	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Motor speed/function	TMT-A	0	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0
0	Cognitive Tests	Cognitive screening test / global cognition	Measured	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1
1	Cognitive Tests	Cognitive screening test / global cognition	ACE-R	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1	Cognitive Tests	Cognitive screening test / global cognition	BRIEF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1	Cognitive Tests	Cognitive screening test / global cognition	IST-2000-R	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1	Cognitive Tests	Cognitive screening test / global cognition	MMSE	1	1	0	1	1	1	1	1	1	1	1	0	0	0	1	0
1	Cognitive Tests	Cognitive screening test / global cognition	MOCA	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Cognitive Other	Measured	1	0	1	1	1	1	1	1	1	1	1	0	0	1	1	1
0	Cognitive Tests	Cognitive Other	10 Memory Self-Report Questions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Cognitive Tests	Cognitive Other	Alliteration, Phonological Assessment Battery (Frederickson, et al., 1997)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Cognitive Tests	Cognitive Other	Approach-avoidance task	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Cognitive Tests	Cognitive Other	Benton Faces	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Cognitive Tests	Cognitive Other	Boston Naming Test (BNT)	0	0	0	0	0	1	1	1	0	1	1	0	0	0	0	0
0	Cognitive Tests	Cognitive Other	BRIEF	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Cognitive Tests	Cognitive Other	Cimbi affective meMory task	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Cognitive Tests	Cognitive Other	CN-Rep (nonword repetition), Gathercole 1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Cognitive Tests	Cognitive Other	Delayed discounting	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Cognitive Other	Dexterity (Pegboard)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Cognitive Other	Ekman Face Emotion Recognition	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Cognitive Tests	Cognitive Other	Emotion Regulation (in one half of people) (Re-appraising negative movies)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Cognitive Tests	Cognitive Other	Emotional face identification task	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Cognitive Tests	Cognitive Other	Face Emotional Go/Nogo	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Cognitive Tests	Cognitive Other	Famous Faces	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Cognitive Tests	Cognitive Other	Five-to-fifteen	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Cognitive Tests	Cognitive Other	Implicit association test	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0	Cognitive Tests	Cognitive Other	JLO	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0
0	Cognitive Tests	Cognitive Other	Naming Speed, Phonological Assessment Battery (Frederickson, Frith & Reason	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Cognitive Tests	Cognitive Other	Numerical Operations, Wechsler Individual Achievement Test II (Wechsler, 2006)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Cognitive Tests	Cognitive Other	Numerous (e.g., Enhanced Cued Recall; Complex Figure)	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Cognitive Other	Picture Priming	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Cognitive Tests	Cognitive Other	Picture Supplemented Alliteration, Phonological Assessment Battery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Cognitive Tests	Cognitive Other	proverbs (frontal test)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Cognitive Tests	Cognitive Other	RAN/RAS	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Cognitive Tests	Cognitive Other	Reading Comprehension, Wechsler Individual Achievement Test II (Wechsler	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Cognitive Tests	Cognitive Other	SDQ	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	Cognitive Tests	Cognitive Other	Serial recall	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	Cognitive Tests	Cognitive Other	Single Word Reading, Wechsler Individual Achievement Test II (Wechsler, 2006)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Cognitive Tests	Cognitive Other	Spelling Wechsler Individual Achievement Test II (Wechsler, 2006)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	Cognitive Tests	Cognitive Other	Syntatic/Semantic Comprehension	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Cognitive Tests	Cognitive Other	Tip of The Tongue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
0	Cognitive Tests	Cognitive Other	VOSP (number location and incomplete letters)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1	Imaging	MRI	Measured	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1
1	Imaging	MRI	T1-weighted	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1
1	Imaging	MRI	T2-weighted	1	1	1	0	0	0	1	1	0	0	1	1	1	0	1	1
1	Imaging	MRI	DWI	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1
1	Imaging	MRI	rs-fMRI	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1
1	Biomarker	Blood	Measured	1	1	1	0	1	0	0	0	0	0	0	0	0	1	0	0
1	Biomarker	Saliva	Measured	1	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1
1	Biomarker	Hormones	Measured	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
1	Biomarker	Metabilites	Measured	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1	Biomarker	Immune markers	Measured	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0
1	DNA	Blood	Measured	0	1	1	1	1	1	0	0	0	1	1	0	0	1	0	0
1	DNA	Saliva	Measured	1	1	0	0	1	0	0	0	0	0	0	1	0	1	1	1