



Lifebrain

D.2.3. Enrichment of existing cohorts by online data collection

Project title:	Healthy minds from 0-100 years: Optimising the use of European brain imaging cohorts
Due date of deliverable:	30th June, 2018
Submission date of deliverable:	26th June, 2018
Leader for this deliverable:	VU University Medical Center Amsterdam



This project has received funding from the *European Union's Horizon2020 research and innovation programme* under grant agreement No 732592.

Contributors to deliverable:	Name	Organisation	Role / Title
Deliverable Leader	Brenda Penninx	VUmc	PI
Contributing Author(s)	Laura Nawijn	VUmc	Researcher
	Julia Binnewies	VUmc	Researcher
	Brenda Penninx	VUmc	PI
	William Baaré	RegionH	PI, WP2 leader
	Klaus Ebmeier	UOXF	PI, WP3 leader
Reviewer(s)	Enikő Zsoldos	UOXF	Researcher
	Louise Baruël Johansen	RegionH	Researcher
	Kathrine Skak Madsen	RegionH	Researcher
	Ulman Lindenberger	MPIB	PI
	Sandra Düzel	MPIB	Researcher
	Julia Delius	MPIB	Researcher
	Rik Henson	UCAM	PI
	Rogier Kievit	UCAM	Researcher
	Lara Bridge	UCAM	Researcher
	Tina Emery	UCAM	Researcher
	David Bartrés-Faz	UB	PI
	Cristina Solé-Padullés	UB	Researcher
	René Westerhausen	UiO	WP7 leader
Final review and approval	Barbara B. Friedman	UiO	Administrative coordinator

Document History				
Release	Date	Reason for Change	Status (Draft/In-review/Submitted)	Distribution
1.0.	15.05.2018	First draft to the participating sites	Sent for commenting	Email
2.0	04.06.2018	Second draft sent to the Oslo consortium meeting participants	Sent for commenting	OneDrive, slack
3.0.	26.06.2019	Final version	Final revision	OneDrive, slack

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)	

Table of contents

Table of contents	3
Executive Summary	4
List of acronyms / abbreviations	5
1. Introduction	6
1.1. Description of deliverable.....	6
1.2. Objectives.....	6
1.3. Collaboration among partners.....	7
2. Enrichment data collection	7
2.1. Enrichment variables	7
2.2. Ethics approvals and protection of personal data	9
2.3. Means of data collection	9
2.4. Data storage, security and back-up	9
2.5. Data transfer	10
2.6. Timeline	10
2.7. Participants.....	10
Table 1. Timelines of ethical approval and data collection	12
Table 2. Participants for enrichment	13
Table 3. Data collection methods	14
Table 4. Data storage and safety	15
Annex	17
Annex 1 - Lifebrain Enrichment Questionnaire	18

Executive Summary

The aim of D2.3. is to perform data-collection for the enrichment of Lifebrain cohorts to gain – as to the extent possible – a complete set of target variables across all sites. The collaborative enrichment of existing cohorts will facilitate direct comparison and data-exchange between sites, and successful demonstration and data analysis as described in WP4 Demonstration.

Implementation included 3 major steps:

- 1) We have identified and operationalized a set of variables to be included in the enrichment, consisting of both self-report questionnaires and behavioural tasks
- 2) The participating sites have translated the instructions, questionnaires and tests, and applied for local ethics and data-sharing approvals (see table 1)
- 3) The data-enrichment is in various stages of being conducted at the different study sites (ongoing at UiO, UCAM, MPIB, UB; see table 1).

Data harmonisation (including the enrichment data) and secure data transfer from local sites to the Lifebrain central database will further follow the set-up protocol for Lifebrain data harmonisation as described in D2.1 and Lifebrain data transfer as described in D3.1.

At several sites (RegionH, MPIB), data-enrichment is run parallel with the enrichment of biological data, e.g. dried blood spots (T2.4) and buccal swabs (T2.5).

Most data collection for D2.3 is expected to be finished by the end of 2018 (excluding VUmc, MPIB).

List of acronyms / abbreviations

BASE	Berlin Aging Study (MPIB)
BASE II	Berlin Aging Study II (MPIB)
EB	Executive Board
CALM	Centre for Attention, Learning and Memory, University of Cambridge
Cam-CAN	Cambridge Centre for Ageing and Neuroscience, University of Cambridge
HUBU	Hjernens Udvikling hos Børn og Unge/Brain Development of Children and Adolescents (RegionH)
HUK	Hukommelse Prosjekt/Memory Project (UiO)
M	Month
MPIB	Max Planck Institute for Human Development Berlin
NCP	Neurocognitive Plasticity (UiO)
NESDA	The Netherlands Study of Depression and Anxiety (VUmc)
OS	Operating System
PD	Parkinson`s Disease (study at UB)
PI	Principal Investigator
RegionH	Region Hovedstaden
SB	Safety Board
SES	Socio-economic Status
SFTP	Secure File Transfer Protocol
TSD	Services for Sensitive Data
UB	University of Barcelona
UCAM	University of Cambridge
UiO	University of Oslo
UOXF	University of Oxford
VUmc	VU University Medical Center Amsterdam
WAHA	Walnuts intervention (UB)

1. Introduction

1.1. Description of deliverable

D2.3: Enrichment of existing cohorts by online data collection

Task 2.3: Enrichment of existing cohorts by online data collection.

- Lead: VUmc
- Participants: UiO, UmU, UOXF, MPIB, UB, RegionH, UCAM
- Planning: M6-M18

Lifebrain aims to develop and apply a tool for online collection of data to enrich available database, allowing Lifebrain databases to attain data which not all sites have available and data on new variables, and by doing so optimize the utilization of the existing data (actual tool development see Task 3.6 and D3.4 Month 12).

The aim is to gain – as to the extent possible – a complete set of target variables across all sites, and be able to directly compare and exchange data. Online data collection will be opened up for all participants, who will be invited to participate through an e-mail or an invitation letter which contain personal URLs and pin codes. Participants will be instructed to enter the URL in their web browser and enter the pin code to access the online assessment tool. We will maintain options for pen-and paper data collection for those who prefer or do not have internet access. The items will be identical across cohorts, but tailored to each so that redundant information is not gathered. Specifically, data collection will consist of a general cognitive measure, a working memory measure, information on mental health (e.g. depression, sleep, anxiety), life style and (life course) socio-economic status. Overall, we will choose instruments that have been shown to be feasible in online, self-report collections and that have been validated preferably in various European studies and languages. Data instruments will be brief in order to limit overall data collection time.

1.2. Objectives

Carry out data-collection for enrichment of Lifebrain cohorts to gain an as complete as possible set of target variables across all sites, and to be able to directly compare and exchange data, in order to achieve successful demonstration and data analysis as described in WP4 Demonstration.

1.3. Collaboration among partners

During and after the Lifebrain kick-off meeting in Brussels (16-18th January 2017), the first discussions took place in the Lifebrain consortium, concerning the content and methods of enrichment. Discussions continued between the Lifebrain enrichment participating sites (UiO, MPIB, UB, RegionH, UOXF, UCAM) via skype conversations, email and slack. Close collaboration was kept with other task-groups in WP2, WP3 and WP4, specifically those involved in T2.1 Data harmonisation, T3.4 Online enrichment, WP4 Demonstration as well as WP7 Ethics with respect to the ethical, data sharing and data protection issues.

Variables for enrichment were chosen if these were only partially covered in existing Lifebrain data, or if deemed of particular interest to Lifebrain based on expertise and state-of-the-art knowledge within the various Lifebrain partner-sites. When necessary, external experts were consulted. A final set of questionnaires/questions was set-up and approved by all enrichment partner-sites. Subsequently, individual sites proceeded with translations and local ethical approvals.

2. Enrichment data collection

2.1. Enrichment variables

Based on the harmonisation overview of available data in the various cohorts (D2.1), we identified which important variables for answering specific Lifebrain research questions (e.g. (childhood-) socio-economic status) were absent in the enrichment cohorts. Furthermore, we included variables that were important for addressing specific Lifebrain research questions that were mentioned in the grant application, but were yet not covered (e.g. masculinity/femininity). Also, we included variables (e.g. urbanisation) that just recently have been associated with mental/ cognitive/ brain health in some of the Lifebrain cohorts. The choice of which specific questionnaires/questions to use was based on several factors, with a preference to include:

- Questionnaires/questions already used in some or most of the Lifebrain cohorts
- Questionnaires/questions that have been (internationally) validated, if possible also validated in required languages (i.e. English, Danish, Norwegian, Spanish, German, Dutch)
- Questionnaires/questions considered to be “Golden standard” according to experts in the field
- Questionnaires/questions that measure stable traits (instead of state measures) to allow for inferences across different time points of data collection (e.g. personality).

We provide below a short overview of included variables:

Cognition:

- Working memory: Backwards digit span task
- General intelligence: Cattell fluid intelligence task

Self-report questionnaires:

- Socio-economic status
 - Various questions concerning current and childhood socio-economic status (e.g. (parental) occupation & education)
- Lifestyle
 - Sleep: Pittsburgh sleep quality inventory (PSQI, Buysse et al, 1989)
 - Physical activity: International Physical Activity Questionnaire (IPAQ, Booth et al, 2000), validated in most EU-languages
 - Smoking, alcohol, drug-use, weight & height
- Mental health
 - Depression: LIDAS lifetime depression diagnosis assessment (Bot et al, 2016)
 - Mental health: self-report of lifetime psychiatric diagnoses
 - Family mental health history: self-report of lifetime psychiatric diagnoses in 1st-degree family members
- Personality
 - Eysenck Personality Questionnaire - Revised Short Scale (EPQ-RSS, Eysenck et al, 1985). The initial choice for the NEO-FFI (McCrae & Costa, 2010) was altered to EPQ-RSS due to high costs and publisher's distribution requirements towards the use of the NEO-FFI (e.g. only allowed to collect the NEO-FFI through using the publishers website).
- Gender
 - Masculinity and femininity questionnaire (Kachel et al, 2016)

For the full questionnaire, see Annex 1.

2.2. Ethics approvals and protection of personal data

Ethics approvals for the Lifebrain online enrichment were covered locally by the local ethical review boards. All enrichment sites received approval from their local ethical boards (see Table 1 for timeline). All local ethical board applications included permission to share data with the Lifebrain consortium (see also WP7 Ethics).

2.3. Means of data collection

The enrichment is performed locally at the different study sites participating in the enrichment (UB, UiO, RegionH, UCAM, MPIB, VUmc), employing the secure online data-collection on browser-based platforms available at the local sites and/or using paper self-report forms (e.g. in elderly populations) and/or face-to-face interviews. In Table 3, we provide an overview of the characteristics of the local means of data collection and (online) platforms (see also D3.4, Month 12).

UCAM has programmed the behavioural tasks to be used in the online enrichment (i.e. Working memory task: Digit span; General intelligence: Cattell task; additional tasks not prioritized for Lifebrain enrichment are available (e.g. reaction time, Stroop etc.)) and arranged a publisher's license to use the Cattell task (publisher Hogrefe) for the Lifebrain enrichment. Some of the sites will collect the behavioural tasks through the UCAM server (e.g. UCAM, RegionH, MPIB - Digit span only, UiO - Cattell task only), others will use their own version of these tasks programmed on their own data collection platforms (e.g. VUmc, MPIB - Cattell task).

2.4. Data storage, security and back-up

Local: Local data storage, security and back-up protocols may differ per site (see Table 4). All sites comply with national and international data protection rules and provide secure storage on local servers (encrypted and/or firewalled), with automatic and regular back-up procedures. All stored data is pseudo-anonymised, with personal information taken out or stored separately from other data.

See also D3.1 and the following link of the UiO for the system description: <https://www.uio.no/english/services/it/research/sensitive-data/about/description-of-the-system.html>. In addition to standard (encrypted) tape backup, snapshots of files and folders for the last three days are also created. This allows both long-term secure data storage, in addition to fast recovery of files by the users stored in snapshots, without administrator intervention.

2.5. Data transfer

See also D3.1. Development of a data storage and management system.

Data transfer of enrichment data from the local sites to the general Lifebrain database will follow the same procedures as other Lifebrain data sharing. Data transfer is handled by a special purpose file staging service and the TSD project administrator controls access rights for all members of the Lifebrain TSD-project.

By default, Lifebrain consortium TSD project members can transfer data to site import folders and within project-specific folders they may have access to. Only the Lifebrain consortium data administrator, data manager and other selected and approved members of the export-group can transfer data out of the system. Copy/paste is disabled from the system, but users are still able to paste text into the system.

2.6. Timeline

Seeing that all participating sites include already existing longitudinal cohorts, the timelines of the enrichment of various cohorts differ slightly depending on new data-collection waves. Table 1 gives an overview of the timeline for enrichment.

UB had new data-collection waves planned in January 2017, and was therefore the first to start. This data-collection is finished, only for the DBS subsample cognition measures and a few enrichment questionnaires will be added before end of 2018. UCAM, UiO and MPIB have finished translation and ethical approvals, and are in the middle of data collection after careful preparation, designing, coding and testing the questionnaires for usage on (online) platforms. RegionH has ethical approval and prepared, designed, and tested the questionnaires on their online platform, but are awaiting approval from their data protection agency for using UCAM online cognitive tests. VUmc has a new data-collection wave planned at a later time point (starting end of 2018).

2.7. Participants

In total, we hope to invite a total of around 4.700 Lifebrain cohort participants for additional self-report questionnaire and behavioural data enrichment in 2017-2018 (UB, RegionH, UCAM, MPIB, UiO; see Table 2 for detailed overview of participants). Depending on enrichment of VUmc this number could increase (by ~2.950).

For UOXF and VUmc, the vast majority of enrichment variables was already included in their samples at a previous time point and will also be included in the new waves of data collection (e.g. digit span, personality, mental health). UOXF will therefore not participate in



Healthy minds from 0-100 years: Optimising the use of European brain imaging cohorts

the enrichment. For VUmc, some enrichment questions will be added, such as current and childhood socio-economic status. However, the enrichment wave of VUmc will take place at a later time point and data will therefore not be available in time to be included in any Lifebrain analyses planned to start in 2018 (see WP4 Demonstration).

Table 1. Timelines of ethical approval and data collection

1.	UB		RegionH	UCAM		MPIB	UiO		VUmc
	WAHA	PD	HUBU	Cam-CAN	CALM	BASE II	HUK	NCP	NESDA
Timeline ethics:									
Application for ethical approval	2016	2013	11.Nov.17 (Online enrichment) / dec-17 (DBS) Update data protection; Mar-18	jan-18	feb-18	march-18	in place	in place	middle of 2018
(Anticipated) ethical approval	2016	2013	21.Nov.17 (Online enrichment) / end Dec-17 (DBS) Data protection approval ~ May-June, 2018	jan-18	apr-18	apr-18	in place	in place	end 2018
Timeline data collection:									
Start of data collection	1 st wave: jan-17 2 nd wave: oct-18	feb-17	aug-18	jun-18	jun-18	may-18	jun-18	sept-18	~end 2018
(Anticipated) end of data collection	1 st wave: sep-17 2 nd wave: end 2018	jul-17	oct-18	sep-18	sep-18	sep-19	dec-18	dec -18	early 2021

Table 2. Participants for enrichment

2.	UB		RegionH	UCAM		MPIB	UiO		VUmc
	WAHA	PD	HUBU	Cam-CAN	CALM	BASE II	HUK	NCP	NESDA
Participants for enrichment									
Imaging									
Collected	0	0	0	0	0	0	0	0	0
Total anticipated	0	0	0	0	~200	0	0	0	~150
Questionnaires									
Collected	39 (1 st wave, jan-17)	8 (incomplete)	0	0	0	0	0	0	0
Total anticipated	~ 80 (2 nd wave, oct-18)	8	94	~2000	~600	1250	~400	236	~2950
Behavioural tasks									
Collected	39 (1 st wave, jan-17)	0	0	0	0	0	0	0	0
Total anticipated	~ 80 (2 nd wave, oct-18)	0	94	~2000	~600	1250	~400	236	2950 invited
Other (e.g. DBS, blood, buccal swabs)									
Collected	0	0	0	0	0	0	0	0	0
Total anticipated	DBS: ~ 80 (2 nd wave)	0	DBS & buccal swabs: 94	0	0	Blood: 1250 (older participants only)	DBS: ~ 800 Buccal swabs: ~ 1400		Blood: ~2950

Table 3. Data collection methods

3.	UB		RegionH	UCAM		MPIB	UiO		VUmc
	WAHA	PD	HUBU	Cam-CAN	CALM	BASE II	HUK	NCP	NESDA
Means of data-collection:									
Paper/pencil self-report	Yes	Yes	No	Yes	Yes	Yes	Upon participant request	upon participant request	Yes
Face2face interview	Yes	No	No	No	No	Yes	No	No	Yes
Face2face behavioural assessment	Yes	No	No	No	No	Yes	No	No	Yes
Online questionnaire	No	No	Yes	Yes	Yes	Possibly, if subjects have internet	Yes	Yes	Yes
Online behavioural assessment	No	No	Yes	Yes	Yes	Yes	Yes, partly	Yes, partly	Yes
- Digit span: Working memory	No	n/a	Yes	Yes	Yes	Yes	No	No	Yes: use own version of digit span task
- Cattell task: General intelligence	No	n/a	Yes	Yes	Yes	No (similar task already included in BASE II)	Yes	Yes	No
Online Platform used	No	n/a	Redcap (Research Electronic Data Capture)	JATOS	JATOS	Not yet decided	nettskjema.uio.no	nettskjema.uio.no	NETQ healthcare

Table 4. Data storage and safety

4.	UB		RegionH	UCAM		MPIB	UiO		VUmc
	WAHA	PD	HUBU	Cam-CAN	CALM	BASE II	HUK	NCP	NESDA
Data storage:									
Data storage (local)	clustered storage for neuroimaging data	clustered storage for neuroimaging data	Data protection approved RegionH servers and local servers	local, Nexenta, not encrypted (but firewall protected), desktop PCs don't have publically routable IP addresses	local, Nexenta, not encrypted (but firewall protected), desktop PCs don't have publically routable IP addresses	local servers, central network storage (protocol SMB)	Central UiO server for sensitive data (TSD)	Central UiO server for sensitive data (TSD)	Local encrypted servers (questionnaire/interview data), store4ever IBM spectrum scale (imaging/genetics)
Back-up system in place / frequency	yes, 3 copies of raw data (neuroimaging data)	yes, 3 copies of raw data (neuroimaging data)	yes, minimally 1x per day	yes, every 4 hours, offsite in Cambridge	yes, every 4 hours, offsite in Cambridge	yes, minimally 1x per day	yes, daily	yes, daily	yes, minimally 1x per day
Encryption method used (communication / data backup / data transfer)	No	no	yes, exact method depending on server and client	HTTPS (encrypted) for server communication during internet tests, rsh (encrypted) or owncloud (encrypted) or ftp (unencrypted) for transferring data	HTTPS (encrypted) for server communication during internet tests, rsh (encrypted) or owncloud (encrypted) or ftp (unencrypted) for transferring data	yes, SSL, cryptshare for data transfer	yes, exact method depending on server and client	yes, exact method depending on server and client	yes. Method: AES 256 for data transfer
Data (pseudo-) anonymized	yes, pseudo-anonymized	yes, pseudo-anonymized	yes, pseudo-anonymized	yes, pseudo-anonymized	yes, pseudo-anonymized	yes, pseudo-anonymized	yes, pseudo-anonymized	yes, pseudo-anonymized	yes, pseudo-anonymized

Authentication for access	yes, for two copies. One copy with no authentication	yes, for two copies. One copy with no authentication	yes (access only after approved research proposal; via RegionH and DRCMR data management)	yes (access only after approved research proposal/ Cam-CAN data management)	yes (access only after approved research proposal/ CALM management committee)	yes (access only after approved research proposal / BASE-II steering committee)	yes, access only by LCBC data managers, then two-step authentication for login	yes, access only by LCBC data managers, then two-step authentication for login	yes (access only after approved research proposal, and only via NESDA data management)
----------------------------------	--	--	---	---	---	---	--	--	--



Healthy minds from 0-100 years: Optimising the use of European brain imaging cohorts

Annex



Annex 1 - Lifebrain Enrichment Questionnaire

Lifebrain data enrichment questionnaire- FINAL SET

< Cohort-specific introduction for questionnaire >

< Cohort-specific identification questions >

- **Color coding: Red text = comments / additional info, not to be included in the actual questionnaire**
- **PLEASE mind the comments, as some questions need to be tailored depending on age of your cohort**

Demographic & family

State, missing in: UiO, HUBU, UCAM.

1. Which of the following best describes your current situation? (YOU CAN SELECT MORE THAN ONE)
 - a) In paid employment, full time (at least 30 hours/week)
 - b) In paid employment, part- time (less than 30 hours/week)
 - c) Employed in organization with 10 or less employees
 - d) Employed in organization with more than 10 employees
 - e) Self-employed
 - f) Employer with less than 10 employees
 - g) Employer with more than 10 employees
 - h) Retired, at age
 - i) Looking after home and/or family
 - j) Unable to work because of sickness or disability
 - k) Unemployed, short term (< 12 months)
 - l) Unemployed, long term (> 12 months)
 - m) Never had a job
 - n) Doing unpaid or voluntary work
 - o) Student
 - p) Other,

< wording should match educational system in your country, and be translatable to low education level (1/2), intermediate education level (3/4), high education level (5) >

see ISCED https://en.wikipedia.org/wiki/International_Standard_Classification_of_Education



option 1: ISCED 2011 level 0 and 1 (non/primary educ), low SES

option 2: ISCED 2011 level 2 and 3 (secondary educ), low SES

option 3: ISCED 2011 level 4 and 5 (post-secondary/first stage tertiary educ): middle SES

option 4: ISCED 2011 level 6, 7, and 8 (tertiary education, Bachelor, Master): high SES

2. Which of the following best fits your present job, or (if no longer working) your last held job?
 - Unskilled job that usually doesn't need any schooling
 - Job that usually needs a secondary school degree or short specific training, but not a college / vocational degree
 - Job that usually needs a college / vocational degree, but not university
 - Job that usually needs a university degree / bachelor or master degree
 - Not applicable
3. What is the specific job title, level of function and responsibility for other personal (if any) of your current or last held profession? If applicable, please describe the nature and size of the organization you work for.

For example: Lead nurse, in charge of 35 nurses in a group of hospital wards in a hospital (1000 employees); Retail assistant in a clothes shop (7 employees), no responsibility for other staff; Self-employed builder, responsible for 5 staff working for me.

.....

< For relevant cohort population (e.g. young people), include questions on:

- a) highest level of education,*
- b) current income >*

State, missing in: UiO, HUBU, PD.

< match to age-group. Marital for elderly, relationship for young cohorts.

married/divorced, widow options can be left out for young cohorts >

4. a. Which of the following best describes your current marital/relationship status:
 - a) not in a stable relationship
 - b) in a stable relationship, not married (see question b)
 - c) married (see question b)
 - d) divorced
 - e) widow/widower

b. What is the duration of your current relationship:

... years and ... months

Stable 'trait', missing in: PD, WAHA, UCAM

< use education categories tailored to cohort country >

5. What is/was the highest level of education completed by your parents?

a. Father:

- ☐ Not applicable
- ☐ I don't know
- ☐ No education
- ☐ Primary school
- ☐ Special educational school
- ☐ Secondary school
- ☐ Vocational training
- ☐ University degree

b. Mother:

- ☐ Not applicable
- ☐ I don't know
- ☐ No education
- ☐ Primary school
- ☐ Special educational school
- ☐ Secondary school
- ☐ Vocational training
- ☐ University degree

c. Other important care-taker: ...* (*describe relationship to you, e.g. stepfather, guardian)

- ☐ Not applicable
- ☐ I don't know
- ☐ No education
- ☐ Primary school
- ☐ Special educational school
- ☐ Secondary school
- ☐ Vocational training
- ☐ University degree

6. During your childhood, what was your parents' longest held profession?

a. Father: ...

- ☐ Not applicable
- ☐ I don't know
- ☐ No job
- ☐ Unskilled job that usually doesn't need any schooling
- ☐ Job that usually needs a secondary school degree or short specific training, but not a college / vocational degree
- ☐ Job that usually needs a college / vocational degree, but not university
- ☐ Job that usually needs a university degree / bachelor or master degree

b. Mother:

- ☐ Not applicable
- ☐ I don't know
- ☐ No job
- ☐ Unskilled job that usually doesn't need any schooling
- ☐ Job that usually needs a secondary school degree or short specific training, but not a college / vocational degree
- ☐ Job that usually needs a college / vocational degree, but not university
- ☐ Job that usually needs a university degree / bachelor or master degree

c. Other important care-taker: ...* (*describe relationship to you, e.g. stepfather, guardian)

- ☐ Not applicable
- ☐ I don't know
- ☐ No job
- ☐ Unskilled job that usually doesn't need any schooling
- ☐ Job that usually needs a secondary school degree or short specific training, but not a college / vocational degree
- ☐ Job that usually needs a college / vocational degree, but not university
- ☐ Job that usually needs a university degree / bachelor or master degree

7. What is/was your parents' highest attained profession, throughout their life?

a. Father: ...

- ☐ Not applicable
- ☐ I don't know
- ☐ No job
- ☐ Unskilled job that usually doesn't need any schooling
- ☐ Job that usually needs a secondary school degree or short specific training, but not a college / vocational degree
- ☐ Job that usually needs a college / vocational degree, but not university
- ☐ Job that usually needs a university degree / bachelor or master degree

b. Mother:

- ☐ Not applicable
- ☐ I don't know
- ☐ No job
- ☐ Unskilled job that usually doesn't need any schooling

- Job that usually needs a secondary school degree or short specific training, but not a college / vocational degree
 - Job that usually needs a college / vocational degree, but not university
 - Job that usually needs a university degree / bachelor or master degree
- c. Other important care-taker: ...* (*describe relationship to you, e.g. stepfather, guardian)
- Not applicable
 - I don't know
 - No job
 - Unskilled job that usually doesn't need any schooling
 - Job that usually needs a secondary school degree or short specific training, but not a college / vocational degree
 - Job that usually needs a college / vocational degree, but not university
 - Job that usually needs a university degree / bachelor or master degree

Trait: New for all

8. During your childhood, how would you rate your family's economic standing compared to other families?
- Poor / difficult
 - Below average
 - Average
 - Above average
 - Well-off
9. How would you rate your current economic standing compared to others?
- Poor / difficult
 - Below average
 - Average
 - Above average
 - Well-off



Birth

Stable 'trait', missing for: UiO, UCAM, HUBU.

< Imperial units of pounds can be added for UK >

1. What was your birth weight in grams? (you may be able to find this info on a birth certificate, engraved on a birth gift or by asking your parents)
 - ☐ grams
 - ☐ This is an estimation
 - ☐ This is from record
 - ☐ I don't know.

Stable 'trait', missing for most

2. Where you born via caesarian section?
 - ☐ yes
 - ☐ no
 - ☐ I don't know
3. Where you born too early / prematurely?
 - ☐ yes, born at weeks (normal pregnancy duration is 40 weeks)
 - ☐ yes, but I don't know how early
 - ☐ no
 - ☐ I don't know

Masculinity & femininity

Trait: New for all.

[translation available in German] Kachel et al, 2016,
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4932111/>

Introduction for gender questions: Each individual is unique and has different personality traits. For example, everybody falls somewhere on a masculine/feminine scale. What is considered masculine or feminine often slightly differs for each culture and/or place in time. The degree of masculinity and femininity varies in males and females and is not directly linked to biological sex. Some males have traits that are considered more feminine, and some females have traits that are considered more masculine.

The following statements refer to the way you perceive yourself as feminine or masculine. Please describe yourself by selecting the answers that match best to yourself. There are no right or wrong answers: We are interested in your own experience.

1.

- a) I consider myself as...
Totally masculine ☐ 1. ☐ 2. ☐ 3. ☐ 4. (intermediate) ☐ 5. ☐ 6. ☐ 7. Totally feminine
☐ I prefer not to answer.
- b) Ideally, I would like to be...
Totally masculine ☐ 1. ☐ 2. ☐ 3. ☐ 4. (intermediate) ☐ 5. ☐ 6. ☐ 7. Totally feminine
☐ I prefer not to answer.
- c) Traditionally, my interests would be considered as...
Totally masculine ☐ 1. ☐ 2. ☐ 3. ☐ 4. (intermediate) ☐ 5. ☐ 6. ☐ 7. Totally feminine
☐ I prefer not to answer.
- d) Traditionally, my attitudes and beliefs would be considered as...
Totally masculine ☐ 1. ☐ 2. ☐ 3. ☐ 4. (intermediate) ☐ 5. ☐ 6. ☐ 7. Totally feminine
☐ I prefer not to answer.
- e) Traditionally, my behaviour would be considered as...
Totally masculine ☐ 1. ☐ 2. ☐ 3. ☐ 4. (intermediate) ☐ 5. ☐ 6. ☐ 7. Totally feminine
☐ I prefer not to answer.
- f) Traditionally, my outer appearance would be considered as...
Totally masculine ☐ 1. ☐ 2. ☐ 3. ☐ 4. (intermediate) ☐ 5. ☐ 6. ☐ 7. Totally feminine
☐ I prefer not to answer.

Personality

Missing for: PD, WAHA, Cam-CAN

Eysenck Personality Questionnaire - Revised Short (EPQ-RS)

< *Reference: Eysenck, Eysenck & Barrett, 1985; full original version: <http://collections.crest.ac.uk/335/1/fulltext.pdf> >*

< *NEW ADDITION February 2018. Due to logistic and financial limitations of using the NEO-FFI, we decided to include the Eysenck personality questionnaire Revised short version instead. >*

NB - answering options: The EPQ-RS originally has 2 answering categories for each question (Yes / No). In Lifebrain we have included the option to use a 4-point answering scale (Yes, a lot; Yes, a little; No, not that much; No, not at all). Region H has previously used the 4-point scale in their cohort, which gives more variance in the data with retention of the original psychometrics of the questionnaire and can easily be recoded to the original binary scales.

NB - subscale options: If time is limited, we suggest not to include all 48 questions, but the Neuroticism and Extraversion subscales only for a total set of 24 questions (i.e. the following: Neuroticism=questions 1, 5, 9, 13, 17, 21, 25, 30, 34, 38, 42, 46; Extraversion=questions 3, 7, 11, 15, 19, 23, 27, 32, 36, 41, 44, 48), as these have been most consistently associated with mental and somatic health, and to exclude the Psychoticism (questions 2, 6, 10, 14, 18, 22, 26, 28, 31, 35, 39, 43) and Social desirability (questions 4, 8, 12, 16, 20, 24, 29, 33, 37, 40, 45, 47) subscales.

Introduction (original version)

Please answer each question by clicking the 'Yes' or the 'No' button following the question. There are no right or wrong answers, and no trick questions. Work quickly and do not think too long about the exact meaning of the questions.

Answering options (original version)

- ☐ Yes
- ☐ No

Introduction (Lifebrain version)

Please answer each question by rating how well each item fits to you and clicking one of the answer buttons following the question. There are no right or wrong answers, and no trick questions. Work quickly and do not think too long about the exact meaning of the questions.

Answering options (Lifebrain version)

- ☐ Yes, a lot
- ☐ Yes, a little
- ☐ No, not that much
- ☐ No, not at all



Questions

1. Does your mood often go up and down?
2. Do you take much notice of what people think?
3. Are you a talkative person?
4. If you say you will do something, do you always keep your promise no matter how inconvenient it might be?
5. Do you ever feel 'just miserable' for no reason?
6. Would being in debt worry you?
7. Are you rather lively?
8. Were you ever greedy by helping yourself to more than your share of anything?
9. Are you an irritable person?
10. Would you take drugs which may have strange or dangerous effects?
11. Do you enjoy meeting new people?
12. Have you ever blamed someone for doing something you knew was really your fault?
13. Are your feelings easily hurt?
14. Do you prefer to go your own way rather than act by the rules?
15. Can you usually let yourself go and enjoy yourself at a lively party?
16. Are *all* your habits good and desirable ones?
17. Do you often feel 'fed-up'?
18. Do good manners and cleanliness matter much to you?
19. Do you usually take the initiative in making new friends?
20. Have you ever taken anything (even a pin or button) that belonged to someone else?
21. Would you call yourself a nervous person?
22. Do you think marriage is old-fashioned and should be done away with?
23. Can you easily get some life into a rather dull party?
24. Have you ever broken or lost something belonging to someone else?
25. Are you a worrier?
26. Do you enjoy co-operating with others?
27. Do you tend to keep in the background on social occasions?
28. Does it worry you if you know there are mistakes in your work?



29. Have you ever said anything bad or nasty about anyone?
30. Would you call yourself tense or 'highly-strung'?
31. Do you think people spend too much time safeguarding their future with savings and insurances?
32. Do you like mixing with people?
33. As a child were you ever cheeky to your parents?
34. Do you worry too long after an embarrassing experience?
35. Do you try not to be rude to people?
36. Do you like plenty of bustle and excitement around you?
37. Have you ever cheated at a game?
38. Do you suffer from 'nerves'?
39. Would you like other people to be afraid of you?
40. Have you ever taken advantage of someone?
41. Are you mostly quiet when you are with other people?
42. Do you often feel lonely?
43. Is it better to follow society's rules than go your own way?
44. Do other people think of you as being very lively?
45. Do you always practice what you preach?
46. Are you often troubled about feelings of guilt?
47. Do you sometimes put off until tomorrow what you ought to do today?
48. Can you get a party going?



Mood

Trait and state: Missing for: UiO, HUBU, PD, WAHA and CALM

LIDAS

- **CAREFULLY CHECK ALL SKIPS ARE CORRECT IN YOUR FINAL QUESTIONNAIRE!**
- **IF DONE ON PAPER: PLEASE PAY A LOT OF ATTENTION TO LAY-OUT, to make the skips clear and easy to follow!**

Lifetime Screener questions:

The next questions are about periods of sadness and depression in your life.

1. Have you ever had a time in your life when you felt sad, empty or depressed for two weeks or longer?
☐1 Yes
☐0 No ▶ go to question 3
2. For the next question, think about a period of two weeks in your life when these feelings were worst. During this period of two weeks, how often did you feel this way?
☐1 Almost every day, most of the day ▶ go to question 5
☐0 Less often
3. Have you ever had a time in your life lasting two weeks or more when you lost interest in most things like hobbies, work, or activities that usually give you pleasure?
☐1 Yes
☐0 No ▶ go to question 35
4. For the next question, think about the period of two weeks in your life when your loss of interest was worst. During this period of two weeks, how often did you feel this way?
☐1 Almost every day, most of the day ▶ go to question 7
☐0 Less often ▶ go to question 35
5. During this period that you felt sad, empty or depressed, did you ever have a period lasting two weeks or more when you lost interest in most things like hobbies, work, or activities that usually give you pleasure?
☐1 Yes
☐0 No ▶ go to question 7
6. For the next question, think about the period of two weeks in your life when your loss of interest were worst. During this period of two weeks, how often did you feel this way?
☐1 Almost every day, most of the day
☐0 Less often

Current Screener questions:

7. In the past month, have you had a period when you felt sad, empty or depressed for two weeks or longer?
- ☐1 Yes
- ☐0 No ▶ go to question 9
8. During this period of two weeks, how often did you feel this way?
- ☐1 Almost every day, most of the day ▶ go to question 11.
- ☐0 Less often
9. In the past month, have you had a period lasting two weeks or more when you lost interest in most things like hobbies, work, or activities that usually give you pleasure?
- ☐1 Yes
- ☐0 No ▶ go to question 13
10. During this period of two weeks, how often did you feel this way?
- ☐1 Almost every day, most of the day ▶ go to question 13
- ☐0 Less often
11. During this period that you felt sad, empty or depressed, did you have a period lasting two weeks or more when you lost interest in most things like hobbies, work, or activities that usually give you pleasure?
- ☐1 Yes
- ☐0 No ▶ go to question 13
12. For the next question, think about the period of two weeks in in the past month when your loss of interest was worst. During this period of two weeks, how often did you feel this way?
- ☐1 Almost every day, most of the day
- ☐0 Less often

INFO ON SKIPS: --> Positive screener past MDD (question 2, 4 or 6 are answered with option 1: complete question 13 to 29 (for period in your life).

--> Positive screener current MDD (question 8, 10 or 12 are answered with option 1): also complete question 13 to 29* (for period in the past month).*

Follow-up questionnaire lifetime/current

People who have periods in which they feel sad, empty or depressed or lose interest, often have other problems at the same time. During the period in your life of at least two weeks when you felt sad, empty or depressed or lost interest in things:

13. ... did you lack energy or feel tired more than usual?
- ☐1 Yes
- ☐0 No
14. ... did you have less appetite than usual almost every day?
- ☐1 Yes



☐0 No

15. ... did you lose weight without trying to, as much as a kilo a week for several weeks?

☐1 Yes

☐0 No ▶ go to question 17

16. About how much weight did you lose in these weeks during the period in your life?

.... kg

During this period in your life of at least two weeks when you felt sad, empty or depressed or lost interest in things:

17. did you have a much larger appetite than usual almost every day for two weeks or more?

☐2 Yes

☐1 Yes, only because of pregnancy or a growth spurt

☐0 No

18. ... did your eating increase so much that you gained weight, as much as a kilo a week for several weeks?

☐1 Yes

☐0 No ▶ go to question 20

19. About how much weight did you gain in these weeks?

.... kg

During this period in your life of at least two weeks when you felt sad, empty or depressed or lost interest in things:

20. did you have trouble sleeping almost every night, either trouble falling asleep, waking in the middle of the night, or waking up too early?

☐1 Yes

☐0 No ▶ go to question 22

21. did you wake up at least two hours before you wanted to, every day for at least two weeks?

☐1 Yes

☐0 No

22. were you sleeping too much almost every day?

☐1 Yes

☐0 No

During this period in your life of at least two weeks when you felt sad, empty or depressed or lost interest in things:

23. did you talk or move more slowly than is normal for you almost every day, in a way that other people have noticed?

- ☐2 Yes, I talked or moved more slowly and other people did notice
☐1 Yes, I talked or moved more slowly but other people did not notice
☐0 No

24. did you have to be moving all the time, that is, you couldn't sit still and paced up and down or couldn't keep your hands still when sitting, in a way that other people noticed?

- ☐2 Yes, I had to be moving all the time and other people did notice
☐1 Yes, I had to be moving all the time but other people did not notice
☐0 No

25. During this period in your life of two weeks, did you have a lot more trouble concentrating than usual?

- ☐1 Yes
☐0 No

26. During this period, were you able to make up your mind about things you ordinarily had no trouble deciding about?

- ☐1 Yes
☐0 No

27. People sometimes feel down on themselves, no good, or worthless. During this period of two weeks in your life, did you feel guilty or worthless?

- ☐1 Yes
☐0 No

28. During this period of two weeks in your life, did you think a lot about death – either your own, someone else's, or death in general?

- ☐1 Yes
☐0 No

For the next question, please think about the periods of at least two weeks in your life when you when you felt sad, empty or depressed or lost interest in things.

29. Did any period lasting two weeks or longer seriously interfere with your ability to do your job, take care of your house or family, or take care of yourself?

- ☐1 Yes
☐0 No

INFO ON SKIPS: < If positive screener for current MDD (question 8, 10 or 12 are answered with option 1): continue with question 13 >*

< If no positive screener for current MDD: go to question 30 >



You indicated that you also felt sad, empty or depressed or lost interest in thing during a period of at least two weeks during the past month. Now we will repeat the previous questions, but now about the period during the past month.

People who have periods in which they feel sad, empty or depressed or lose interest, often have other problems at the same time. During the period in the past month of at least two weeks when you felt sad, empty or depressed or lost interest in things:

13*. ... did you lack energy or feel tired more than usual?

☐1 Yes

☐0 No

14*. ... did you have less appetite than usual almost every day?

☐1 Yes

☐0 No

15*. ... did you lose weight without trying to, as much as a kilo a week for several weeks?

☐1 Yes

☐0 No ► go to question 17*

16*. About how much weight did you lose in these weeks during the past month?

.... kg

During this period in the past month of at least two weeks when you felt sad, empty or depressed or lost interest in things:

17*. did you have a much larger appetite than usual almost every day for two weeks or more?

☐2 Yes

☐1 Yes, only because of pregnancy or a growth spurt

☐0 No

18*. ... did your eating increase so much that you gained weight, as much as a kilo a week for several weeks?

☐1 Yes

☐0 No ► go to question 20*

19*. About how much weight did you gain in these weeks during the past month?

.... kg

During this period in the past month of at least two weeks when you felt sad, empty or depressed or lost interest in things:

20*. did you have trouble sleeping almost every night, either trouble falling asleep, waking in the middle of the night, or waking up too early?

☐1 Yes

☐0 No ► go to question 22*

21*. did you wake up at least two hours before you wanted to, every day for at least two weeks?

☐1 Yes

☐0 No

22*. were you sleeping too much almost every day?

☐1 Yes

☐0 No

During this period in the past month of at least two weeks when you felt sad, empty or depressed or lost interest in things:

23*. did you talk or move more slowly than is normal for you almost every day, in a way that other people have noticed?

☐2 Yes, I talked or moved more slowly and other people did notice

☐1 Yes, I talked or moved more slowly but other people did not notice

☐0 No

24*. ... did you have to be moving all the time, that is, you couldn't sit still and paced up and down or couldn't keep your hands still when sitting, in a way that other people noticed?

☐2 Yes, I had to be moving all the time and other people did notice

☐1 Yes, I had to be moving all the time but other people did not notice

☐0 No

25*. During this period in the past month of two weeks, did you have a lot more trouble concentrating than usual?

☐1 Yes

☐0 No

26*. During this period, were you able to make up your mind about things you ordinarily had no trouble deciding about?

☐1 Yes

☐0 No

27*. People sometimes feel down on themselves, no good, or worthless. During this period of two weeks in the past month, did you feel guilty or worthless?

☐1 Yes

☐0 No

28*. During this period of two weeks in the past month, did you think a lot about death – either your own, someone else's, or death in general?

☐1 Yes

☐0 No

For the next question, please think about the periods of at least two weeks in the past month when you when you felt sad, empty or depressed or lost interest in things.



29*. Did any period lasting two weeks or longer seriously interfere with your ability to do your job, take care of your house or family, or take care of yourself?

- ☐1 Yes
☐0 No

INFO FOR SKIPS: <Following questions only once, for positive screener lifetime MDD: >

During your life, you may have had one or more periods when you when you felt sad, empty or depressed or lost interest in things.

30. About how long did the longest of periods like this last? You may give an estimate.
.... weeks

31. How many periods like this did you have in your life?

- ☐1 1
☐2 2 or more

32. Did you have a period like this in the last 12 months?

- ☐1 Yes
☐0 No

33. About how old were you the first time you had a period like this? (whether or not you received any help for it)
..... years

34. Did you ever tell a professional about these problems (for example a medical doctor, psychologist, social worker, nurse, or other helping professional)?

- ☐1 Yes
☐0 No

< Following questions only once, for everyone, independent of positive/negative screener lifetime MDD. These can be used to select 'pure' controls, i.e. participants without lifetime psychopathology, and the 35-37 are to additionally screen for lifetime MDD >

<35 and 36 can be excluded if family history questionnaire is included (this also asks about lifetime psychiatric history)>

35. Please tick those disorders that you have been diagnosed with by a professional or medical doctor. You can tick more than one answer.

Ever diagnosed by a professional/medical doctor:

- | | |
|--|---|
| <input type="checkbox"/> a Depression | <input type="checkbox"/> h Post-traumatic stress disorder |
| <input type="checkbox"/> b Bipolar disorder (manic depression) | <input type="checkbox"/> i Phobia |
| <input type="checkbox"/> c Schizophrenia or psychosis | <input type="checkbox"/> j ADD/ADHD |
| <input type="checkbox"/> d Eating disorder | <input type="checkbox"/> k Personality disorder |
| <input type="checkbox"/> e Anxiety disorder | <input type="checkbox"/> l Alcohol addiction |
| <input type="checkbox"/> f Panic disorder | <input type="checkbox"/> m Drug addiction |
| <input type="checkbox"/> g Obsessive compulsive disorder | <input type="checkbox"/> n Other, namely: |
| <input type="checkbox"/> o None of these disorders ▶ go to question 37 | |

36. Please tick the disorders that you have ever received treatment for by a professional or medical doctor. You can tick more than one answer.

Ever received treatment by a professional/medical doctor:

- | | |
|--|--|
| <input type="checkbox"/> a Depression | <input type="checkbox"/> i Phobia |
| <input type="checkbox"/> b Bipolar disorder (manic depression) | <input type="checkbox"/> j ADD/ADHD |
| <input type="checkbox"/> c Schizophrenia or psychosis | <input type="checkbox"/> k Personality disorder |
| <input type="checkbox"/> d Eating disorder | <input type="checkbox"/> l Alcohol addiction |
| <input type="checkbox"/> e Anxiety disorder | <input type="checkbox"/> m Drug addiction |
| <input type="checkbox"/> f Panic disorder | <input type="checkbox"/> n Other, namely: |
| <input type="checkbox"/> g Obsessive compulsive disorder | <input type="checkbox"/> o None of these disorders |
| <input type="checkbox"/> h Post-traumatic stress disorder | |

37. Did you ever have the following treatments? You can tick multiple answers.

- ☐a Antidepressants
- ☐b Psychotherapy (for example cognitive behavioral therapy, interpersonal therapy or other consultations with a psychologist or psychotherapist)
- ☐c Online help program or e-health intervention
- ☐d Running therapy or physical activity
- ☐e Light therapy
- ☐f Hospitalization in psychiatric hospital
- ☐g Electroconvulsive therapy (ECT)
- ☐h Other, namely:
- ☐i None of these treatments

Family Health History

Trait/state: missing for UiO, PD, WAHA, UCAM, medical health in HUBU

1. How would you rate your own health in general?

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Very poor

2. Overall, how satisfied are you with your life nowadays?

Please respond on a scale of 1 to 10, where 1 is “not at all” and 10 is “completely”.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10

< for family health questions, please design a set-up that fits with local online or paper questioning possibilities>

We want to ask you some questions concerning your health and that of your direct family members. By 'direct family' we mean your parents, brothers and sisters, and any children you may have.

2. Please indicate for which family members you have health information:

- ☐ Biological father
- ☐ Biological mother
- ☐ Sister(s), (indicate how many)
- ☐ Brother(s), (indicate how many)
- ☐ Child(ren), (indicate how many)

< Online: Use a primary question to identify family members that will be investigated further (with interactive online forms the follow-up can be shaped based on these answers.

On paper: let people fill in the column titles themselves. >

3. a. Please indicate if you have ever been diagnosed by a healthcare professional or a medical doctor with a severe or chronic illness or psychiatric disorder. And if so, did you ever receive treatment for this by a healthcare professional or medical doctor?

- | | | |
|---|------------------------------------|------------------------------------|
| <input type="radio"/> Diabetes | <input type="checkbox"/> diagnosis | <input type="checkbox"/> treatment |
| <input type="radio"/> Stroke | <input type="checkbox"/> diagnosis | <input type="checkbox"/> treatment |
| <input type="radio"/> Heart disease / heart infarct | <input type="checkbox"/> diagnosis | <input type="checkbox"/> treatment |
| <input type="radio"/> High blood pressure | <input type="checkbox"/> diagnosis | <input type="checkbox"/> treatment |
| <input type="radio"/> Cancer | <input type="checkbox"/> diagnosis | <input type="checkbox"/> treatment |
| <input type="radio"/> Dementia | <input type="checkbox"/> diagnosis | <input type="checkbox"/> treatment |

- ☐ Depressive disorder ☐ diagnosis ☐ treatment
- ☐ Anxiety disorder ☐ diagnosis ☐ treatment
- ☐ Alcohol or drug abuse ☐ diagnosis ☐ treatment
- ☐ Attention Deficit Disorder or Attention Deficit-Hyperactivity Disorder (ADD, ADHD) ☐ diagnosis ☐ treatment
- ☐ Schizophrenia ☐ diagnosis ☐ treatment
- ☐ Other, specify ☐ diagnosis ☐ treatment
- ☐ None of these disorders

4. a. Has your biological father ever been diagnosed by a healthcare professional or a medical doctor with a severe or chronic illness or psychiatric disorder. And if so, did he ever receive treatment for this by a healthcare professional or medical doctor?

- ☐ Diabetes ☐ diagnosis ☐ treatment
- ☐ Stroke ☐ diagnosis ☐ treatment
- ☐ Heart disease / heart infarct ☐ diagnosis ☐ treatment
- ☐ High blood pressure ☐ diagnosis ☐ treatment
- ☐ Cancer ☐ diagnosis ☐ treatment
- ☐ Dementia ☐ diagnosis ☐ treatment
- ☐ Depressive disorder ☐ diagnosis ☐ treatment
- ☐ Anxiety disorder ☐ diagnosis ☐ treatment
- ☐ Alcohol or drug abuse ☐ diagnosis ☐ treatment
- ☐ Attention Deficit Disorder or Attention Deficit-Hyperactivity Disorder (ADD, ADHD) ☐ diagnosis ☐ treatment
- ☐ Schizophrenia ☐ diagnosis ☐ treatment
- ☐ Other, specify ☐ diagnosis ☐ treatment
- ☐ None of these disorders
- ☐ I don't know

5. a. Has your biological mother ever been diagnosed by a healthcare professional or a medical doctor with a severe or chronic illness or psychiatric disorder. And if so, did she ever receive treatment for this by a healthcare professional or medical doctor?

- ☐ Diabetes ☐ diagnosis ☐ treatment
- ☐ Stroke ☐ diagnosis ☐ treatment
- ☐ Heart disease / heart infarct ☐ diagnosis ☐ treatment
- ☐ High blood pressure ☐ diagnosis ☐ treatment
- ☐ Cancer ☐ diagnosis ☐ treatment
- ☐ Dementia ☐ diagnosis ☐ treatment
- ☐ Depressive disorder ☐ diagnosis ☐ treatment
- ☐ Anxiety disorder ☐ diagnosis ☐ treatment
- ☐ Alcohol or drug abuse ☐ diagnosis ☐ treatment
- ☐ Attention Deficit Disorder or Attention Deficit-Hyperactivity Disorder (ADD, ADHD) ☐ diagnosis ☐ treatment
- ☐ Schizophrenia ☐ diagnosis ☐ treatment
- ☐ Other, specify ☐ diagnosis ☐ treatment
- ☐ None of these disorders
- ☐ I don't know

< etc. For each of the family members indicated above >

Depending on the system you use or if you use paper questionnaires, you can also put the family health questionnaire in table form, e.g.:

	you	biological mother	biological father
Diabetes	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment
Stroke	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment
Heart disease or heart infarct	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment
High blood pressure	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment
Cancer	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment
Dementia	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment
Depressive disorder	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment
Anxiety disorder	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment
Alcohol or drug abuse	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment
ADD or ADHD	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment
Schizophrenia	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment
Other ...	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment
Other ...	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment
Other ...	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment	<input type="checkbox"/> diagnosis <input type="checkbox"/> treatment
None of these disorders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I don't know		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



STATE LIFESTYLE & HEALTH

OPTIONAL to repeat: State of lifestyle variables (BMI, smoking, alcohol, sleep, PA) = available for all at earlier timepoints, potentially repeat cohort-specific questions for current info on, or use the basic versions as below

Weight & height

What is your height in cm? Please round your answer to the nearest whole number.

.... cm

What is your weight in kg? Please round your answer to the nearest whole number.

.... kg

Smoking

most sites have info on smoking status and nr of cigarettes per day, so preferable that you have that in your cohort at at least 1 timepoint

Do you smoke?

- ☐ No, I have never smoked
- ☐ No, but I have smoked in the past
- ☐ Yes, on average cigarettes per day

<or add Fagerstrom on nicotine dependence, 6 questions >

https://cde.drugabuse.gov/sites/nida_cde/files/FagerstromTest_2014Mar24.pdf

Alcohol

most sites have info on nr. of alcoholic units per week, , so preferable that you have that in your cohort at least 1 timepoint

How often do you have a drink containing alcohol?

- ☐ never
- ☐ monthly or less
- ☐ 2-4 times a month
- ☐ 2-3 times a week
- ☐ 4 or more times a week



How many drinks containing alcohol do you have on a typical day when you are drinking?

- ☐ 1 or 2
- ☐ 3 or 4
- ☐ 5 or 6
- ☐ 7 to 9
- ☐ 10 or more

< or use full AUDIT, 10 questions, <http://auditscreen.org/page.php?Download-2> >

Physical activity

most sites have info on MET/min per week (such as IPAQ), so preferable that you have that in your cohort for at least 1 timepoint

< short IPAQ below, or use full IPAQ, see https://sites.google.com/site/theipaq/questionnaire_links for versions and translations, available in Dutch, Danish, German, Norwegian, Spanish >

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the last 7 days. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the vigorous activities that you did in the last 7 days. Vigorous physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

1. During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling?
_____ days per week
 - ☐ No vigorous physical activities --> Skip to question 3
2. How much time did you usually spend doing vigorous physical activities on one of those days?
_____ hours per day
_____ minutes per day
 - ☐ Don't know/Not sure

Think about all the moderate activities that you did in the last 7 days. Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

3. During the last 7 days, on how many days did you do moderate physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

_____ days per week

- ☐ No moderate physical activities --> Skip to question 5

4. How much time did you usually spend doing moderate physical activity on one of those days?

_____ hours per day

_____ minutes per day

- ☐ Don't know/Not sure

Think about the time you spent walking in the last 7 days. This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise, or leisure.

5. During the last 7 days, on how many days did you walk for at least 10 minutes at a time?

_____ days per week

- ☐ No walking --> Skip to question 7

6. How much time did you usually spend walking on one of those days?

_____ hours per day

_____ minutes per day

- ☐ Don't know/Not sure

The last question is about the time you spent sitting on weekdays during the last 7 days. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

7. During the last 7 days, how much time did you spend sitting on a week day?

_____ hours per day

_____ minutes per day



- Don't know/Not sure

SLEEP

Sleep quality = State, available at all sites, repeat cohort-specific questions or PSQI

Pittsburgh Sleep Quality Inventory

[< https://www.opapc.com/uploads/documents/PSQI.pdf >](https://www.opapc.com/uploads/documents/PSQI.pdf)

Instructions: The following questions relate to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for the majority of days and nights in the past month.

Please answer all questions.

During the past month,

1. When have you usually gone to bed at night?
_____:
2. How long (in minutes) has it taken you to fall asleep each night?
_____ minutes
3. When have you usually gotten up in the morning?
_____:
4. How many hours of actual sleep did you get at night? (This may be different than the number of hours you spend in bed)
_____ hours of sleep per night

5.

During the past month, how often have you had trouble sleeping because you...	Not during the past month (0)	Less than once a week (1)	Once or twice a week (2)	Three or more times a week (3)
a. Cannot get to sleep within 30 minutes				
b. Wake up in the middle of the night or early morning				
c. Have to get up				

to use the bathroom				
d. Cannot breathe comfortably				
e. Cough or snore loudly				
f. Feel too cold				
g. Feel too hot				
h. Have bad dreams				
i. Have pain				
j. Other reason(s), please describe, including how often you have had trouble sleeping because of this reason(s):				

6. During the past month, how would you rate your sleep quality overall?
 - ☐ Very good
 - ☐ Fairly good
 - ☐ Fairly bad
 - ☐ Very bad

7. During the past month, how often have you taken medicine (prescribed or “over the counter”) to help you sleep?
 - ☐ Not during the past month
 - ☐ Less than once a week
 - ☐ Once or twice a week
 - ☐ Three or more times a week

8. During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?
 - ☐ Not during the past month
 - ☐ Less than once a week
 - ☐ Once or twice a week
 - ☐ Three or more times a week

9. During the past month, how much of a problem has it been for you to keep up enthusiasm to get things done?
 - ☐ No problem at all
 - ☐ Only a very slight problem
 - ☐ Somewhat of a problem
 - ☐ A very big problem



OPTIONAL ADDITIONS

Other suggestions that may be of interest for Lifebrain, but not prioritized for enrichment

URBANISATION

1. Which of these three categories best describes the area you live in CURRENTLY?
 - ☐ City with more than 100,000 inhabitants
 - ☐ Town with more than 10,000
 - ☐ Rural area
2. Up until the age of 15 how many years have you spent living in towns/cities with more than 100,000 inhabitants?
_____ years.
3. Up until the age of 15, how many years have you spent living in towns with more than 10,000 inhabitants?
_____ years.
4. Up until the age of 15, how many years have you spent living in rural areas?
_____ years.

SAFETY AND BASIC RESOURCES

< include if these make sense in your cohort, e.g. elderly that may have been through war, poor/immigrant populations >

1.
 - a) Was there ever a period in your life when you felt unsafe?
 - ☐ no (continue to question X)
 - ☐ yes
 - b) When was this period?
 - ☐ When I was around ... years until ... years old.
 - c) Can you indicate the reason you felt unsafe?
 - ☐ War / civil unrest
 - ☐ Unsafe neighborhood environment
 - ☐ Unsafe home environment
 - ☐ Other, ...



Healthy minds from 0-100 years: Optimising the use of European brain imaging cohorts

2.

- a) Was there ever a period in your life when you did not have access to basic resources (e.g. due to famine, war, poverty)?
 - ☐ no (continue to question X)
 - ☐ yes
- b) When was this period?
 - ☐ When I was around ... years until ... years old.
- c) Can you indicate the reason you did not have access to basic resources?
 - ☐ War / civil unrest
 - ☐ Famine
 - ☐ Poverty
 - ☐ Unsafe neighborhood environment
 - ☐ Unsafe home environment
 - ☐ Other, ...

WOMEN'S HEALTH

< Only in relevant cohort populations (i.e. including middle-aged / elderly women) >

State, missing for UiO, HUBU (not relevant), PD, WAHA (already started enrichment)

- 1. Have you had your menopause (that is, have your periods stopped)?
 - ☐ Yes
 - ☐ No (go to next question)
 - ☐ Not sure - had a hysterectomy (go to next question)
 - ☐ Not sure - other reason (go to next question)
- b. How old were you when your periods stopped?
_____ years old
 - ☐ I do not know
- c. Have you ever been on hormone replacement therapy due to menopause?
 - ☐ Yes
 - ☐ No

LONELINESS

3 item loneliness scale

< Hughes et al 2008, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2394670/>, based on UCLA loneliness scale, Russel et al >

- 1. How often do you feel that you lack companionship?
 - Hardly ever
 - Some of the time
 - Often

2. How often do you feel left out?

- Hardly ever
- Some of the time
- Often

3. How often do you feel isolated from others?

- Hardly ever
- Some of the time
- Often

SOCIAL ACTIVITIES

Based on Cam-CAN list

1. How often do you see any of your relatives to speak to?
 - No relatives (continue to question 4)
 - Never
 - Daily
 - 2-3 times a week
 - At least weekly
 - At least monthly
 - Less often
2. How often do you speak to your relatives over the phone?
 - Never
 - Daily
 - 2-3 times a week
 - At least weekly
 - At least monthly
 - Less often
3. How often do you text/email your relatives?
 - Never
 - Daily
 - 2-3 times a week
 - At least weekly
 - At least monthly
 - Less often
4. How often do you see any of your friends to speak to?
 - No friends (continue to question 7)
 - Never
 - Daily



Healthy minds from 0-100 years: Optimising the use of European brain imaging cohorts

- ☐ 2-3 times a week
- ☐ At least weekly
- ☐ At least monthly
- ☐ Less often

5. How often do you speak to your friends over the phone?

- ☐ Never
- ☐ Daily
- ☐ 2-3 times a week
- ☐ At least weekly
- ☐ At least monthly
- ☐ Less often

6. How often do you text/email your friends?

- ☐ Never
- ☐ Daily
- ☐ 2-3 times a week
- ☐ At least weekly
- ☐ At least monthly
- ☐ Less often

7. Do you attend meetings of any community, religious or social groups? (YOU MAY ANSWER MORE THAN ONE)

EACH BOX TICKED WILL BE FOLLOWED BY HOW OFTEN RATING

- ☐ No clubs
- ☐ Political parties
- ☐ Trade unions (including student union)
- ☐ Environmental groups
- ☐ Tenants, residents group or neighbourhood watch
- ☐ Evening classes / Adult learning
- ☐ Arts, music or singing group
- ☐ Charity, volunteer or community group
- ☐ Group for the elderly
- ☐ Youth group (guides, scouts, youth club)
- ☐ Women's Institute
- ☐ Social club (rotary, working men's)
- ☐ Sports club, gym, exercise group
- ☐ Religious group
- ☐ Other group or organisation

How often?

- ☐ Daily
- ☐ 2-3 times a week
- ☐ At least weekly



Healthy minds from 0-100 years: Optimising the use of European brain imaging cohorts

- ☐ At least monthly
 - ☐ Less than monthly
 - ☐ Less than yearly
- 8. Do you have friends in these communities?
 - ☐ No
 - ☐ Yes
- 9. How often do you see any of your neighbours to have a chat or do something with?
 - ☐ No neighbours
 - ☐ Never
 - ☐ Daily
 - ☐ 2-3 times a week
 - ☐ At least weekly
 - ☐ At least monthly
 - ☐ Less often

CHRONOTYPE (morning/evening person, Munich chronotype questionnaire)

< Roenneberg et al, 2003, <https://www.thewep.org/documentations/mctq>.

More stable sleep-trait, also related to health outcomes >

1. I have a regular work schedule (this includes being, for example, a housewife or househusband):
 - a) Yes, I work ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 day(s) per week.
 - b) No

Is your answer "Yes, on 7 days" or "No", please consider if your sleep times may nonetheless differ between regular 'workdays' and 'weekend days' and fill out the following questions in this respect.

2. **On workdays:**
 - a) I wake up at o'clock
3. **On evenings before workdays:**
 - b) I go to bed at o'clock
 - c) I need minutes to fall asleep
4. **On free days:**
 - a) I would like to sleep until o'clock
 - b) I usually wake up at o'clock
5. **On evenings before free days:**
 - a) I go to bed at o'clock
 - b) I need minutes to fall asleep



After you have answered the preceding questions, you should have a feeling to which chronotype (time-of-day-type) you belong to. If for example, you like (and manage) to sleep quite a bit longer on free days than on workdays, or if you cannot get out of bed on Monday mornings, even without a Sunday-night-party, then you are more a late type. If, however, you regularly wake up and feel perky once you jump out of bed, and if you would rather go to bed early than to an evening concert then you are an early type. In the following question, you should categorise yourself.

6. I am an:

- ☐ extreme early type
- ☐ moderate early type
- ☐ slight early type
- ☐ normal type
- ☐ slight late type
- ☐ moderate late type
- ☐ extreme late type

COGNITIVE STIMULATING ACTIVITIES (WILSON)

Wilson 2003 <https://www.ncbi.nlm.nih.gov/pubmed/12815501>

< Included questions will depend on age-range of local cohort >

In order to learn how experiences early in life affect health later in life, we are asking questions about experiences at different points in your life.

Childhood - Age 6

My first questions are about when you were 6 years old, or thereabouts. I know it may be hard to remember that far back; I just want your best recollection.

1. When you were 6, how often did you play games like tic-tac-toe, checkers, or other board games, cards, or word games? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- ☐ 1 Every day or almost every day
- ☐ 2 Several times a week
- ☐ 3 Several times a month
- ☐ 4 Several times a year
- ☐ 5 Once a year or less

2. How often did someone in your home read to you when you were 6? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- ☐ 1 Every day or almost every day



Healthy minds from 0-100 years: Optimising the use of European brain imaging cohorts

- ☐ 2 Several times a week
- ☐ 3 Several times a month
- ☐ 4 Several times a year
- ☐ 5 Once a year or less

3. How often did someone in your home tell you stories when you were 6? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- ☐ 1 Every day or almost every day
- ☐ 2 Several times a week
- ☐ 3 Several times a month
- ☐ 4 Several times a year
- ☐ 5 Once a year or less

Teens - Age 12

Now I have some questions about when you were 12 years old, or thereabouts.

4. When you were 12, how often did you visit a library? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- ☐ 1 Every day or almost every day
- ☐ 2 Several times a week
- ☐ 3 Several times a month
- ☐ 4 Several times a year
- ☐ 5 Once a year or less

5. When you were 12, how often did you read newspapers? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- ☐ 1 Every day or almost every day
- ☐ 2 Several times a week
- ☐ 3 Several times a month
- ☐ 4 Several times a year
- ☐ 5 Once a year or less

6. When you were 12, how often did you read magazines? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- ☐ 1 Every day or almost every day
- ☐ 2 Several times a week
- ☐ 3 Several times a month



- 4 Several times a year
- 5 Once a year or less

7. When you were 12, how often did you read books? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- 1 Every day or almost every day
- 2 Several times a week
- 3 Several times a month
- 4 Several times a year
- 5 Once a year or less

8. When you were 12, how often did you write letters? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

Note: You may include writing emails (if applicable) that are of a letter length, when answering this question.

- 1 Every day or almost every day
- 2 Several times a week
- 3 Several times a month
- 4 Several times a year
- 5 Once a year or less

Teens - Age 18

Now, I have some questions about when you were 18 years old, or thereabouts.

10. When you were 18, how often did you visit a library? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- 1 Every day or almost every day
- 2 Several times a week
- 3 Several times a month
- 4 Several times a year
- 5 Once a year or less

11. When you were 18, how often did you read newspapers? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- 1 Every day or almost every day
- 2 Several times a week
- 3 Several times a month

- 4 Several times a year
- 5 Once a year or less

12. When you were 18, how often did you read magazines? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- 1 Every day or almost every day
- 2 Several times a week
- 3 Several times a month
- 4 Several times a year
- 5 Once a year or less

13. When you were 18, how often did you read books? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- 1 Every day or almost every day
- 2 Several times a week
- 3 Several times a month
- 4 Several times a year
- 5 Once a year or less

14. When you were 18, how often did you write letters? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

Note: You may include writing emails (if applicable) that are of a letter length, when answering this question.

- 1 Every day or almost every day
- 2 Several times a week
- 3 Several times a month
- 4 Several times a year
- 5 Once a year or less

15. When you were 18, how often did play games like checkers or other board games, cards, puzzles, word games, mind teasers, or any other similar games? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- 1 Every day or almost every day
- 2 Several times a week
- 3 Several times a month
- 4 Several times a year
- 5 Once a year or less

Adulthood - Age 40

16. When you were 40, how often did you read newspapers? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- ☐ 1 Every day or almost every day
- ☐ 2 Several times a week
- ☐ 3 Several times a month
- ☐ 4 Several times a year
- ☐ 5 Once a year or less

17. When you were 40, how often did you read magazines? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- ☐ 1 Every day or almost every day
- ☐ 2 Several times a week
- ☐ 3 Several times a month
- ☐ 4 Several times a year
- ☐ 5 Once a year or less

18. When you were 40, how often did you read books? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- ☐ 1 Every day or almost every day
- ☐ 2 Several times a week
- ☐ 3 Several times a month
- ☐ 4 Several times a year
- ☐ 5 Once a year or less

19. When you were 40, how often did you write letters? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

Note: You may include writing emails (if applicable) that are of a letter length, when answering this question.

- ☐ 1 Every day or almost every day
- ☐ 2 Several times a week
- ☐ 3 Several times a month
- ☐ 4 Several times a year
- ☐ 5 Once a year or less

20. When you were 40, how often did you play games like checkers or other board games, cards, puzzles, word games, mind teasers, or any other similar games? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- ☐ 1 Every day or almost every day
- ☐ 2 Several times a week
- ☐ 3 Several times a month
- ☐ 4 Several times a year
- ☐ 5 Once a year or less

Present Time

Now I have some questions about the present time.

21. How often do you read newspapers? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- ☐ 1 Every day or almost every day
- ☐ 2 Several times a week
- ☐ 3 Several times a month
- ☐ 4 Several times a year
- ☐ 5 Once a year or less

22. How often do you read magazines? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- ☐ 1 Every day or almost every day
- ☐ 2 Several times a week
- ☐ 3 Several times a month
- ☐ 4 Several times a year
- ☐ 5 Once a year or less

23. How often do you read books? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- ☐ 1 Every day or almost every day
- ☐ 2 Several times a week
- ☐ 3 Several times a month
- ☐ 4 Several times a year
- ☐ 5 Once a year or less

24. How often do you write letters? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?



Note: You may include writing emails (if applicable) that are of a letter length, when answering this question.

- ☐ 1 Every day or almost every day
- ☐ 2 Several times a week
- ☐ 3 Several times a month
- ☐ 4 Several times a year
- ☐ 5 Once a year or less

25. How often do you play games like checkers or other board games, cards, puzzles, word games, mind teasers, or any other similar games? Would you say every day or almost every day, several times a week, several times a month, several times a year, or once a year or less?

- ☐ 1 Every day or almost every day
- ☐ 2 Several times a week
- ☐ 3 Several times a month
- ☐ 4 Several times a year
- ☐ 5 Once a year or less