



Lifebrain



How to promote citizens' brain health?

Insights from the Global Brain Health Survey on citizens' perceptions on brain health interventions



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Introduction

Brain health is a relatively new concept which encompasses mental, cognitive, and physical brain function. In other words, brain health entails mental well-being and normal brain function in the absence of brain disease (see Wang et al. 2020ⁱ).

In Europe, approximately one-third of the total disease burden relates to brain disorders, with vast personal, societal and economic consequences. Poor cognitive health and dementia are furthermore expected to increase in both high and low income countries in the near future.

Recent studies suggest that several lifestyle factors are associated with lower risk of developing brain diseaseⁱⁱ. Such lifestyle factors include physical activity, a healthy diet, sufficient sleep, stress reduction and refraining from substance use, such as alcohol, smoking or illicit drugs. However, there appears to be limited public knowledge and awareness of how lifestyle factors can affect brain health, and possibly reduce brain health risksⁱⁱⁱ.

This report draws on the results from an international survey, The Global Brain Health Survey (GBHS)^{iv}. The report highlights findings from the survey about citizens' perception of brain health and citizens' views on what public health authorities can do to foster brain health.

More precisely, it describes i) what type of assistance people need to change their lifestyle for brain health improvement or maintenance, ii) what they believe public authorities should do to promote brain health, and iii) which sources they trust for brain health information. The report is particularly relevant for policy makers, public health authorities, researchers, medical professionals, patient groups, and NGOs with an interest in brain health.

The Global Brain Health Survey

The GBHS is an international study about citizens' perceptions of, and motivation for, maintaining their brain health. This report focuses solely on results related to brain health promotion. In total, 27,590 respondents within 81 countries participated in the GBHS. The survey was conducted by the Lifebrain Horizon 2020 consortium (2017-2022): *"Healthy minds 0-100 years: Optimising the use of European brain imaging cohorts (Lifebrain)"*^v. The following organisations were co-organisers or collaborating organizations of the survey: The Norwegian Brain Council, the German Brain Council, the Belgian Brain Council, the Brain Foundation Netherlands, the Swedish Brain Foundation, the Women's Brain Project, Hersenonderzoek Nederland, Join Dementia Research UK and the National University of Ostroh Academy in Ukraine.



Methods

The online survey was available in 14 languages, including French, Spanish, Dutch, Hungarian, German, Italian, and Scandinavian languages, between June 2019 - August 2020. It was disseminated through the networks of brain councils and brain research centres within Europe, in addition to mass and social media. Everyone aged 18 years and older could take part. Respondents are predominantly from Europe (over 93%), and with the majority from the UK (37%), the Netherlands (25%) or Norway (13%). The majority are women (71%), middle aged or older (66% are between 40-70 years),

and highly educated (70% attended graduate school).

While the sample is not representative, the survey is to our knowledge the largest study to date about public perceptions of brain health. Survey questions relating to brain health promotion are found in the Appendix.

The data were processed in software for statistical computing, R version 4.0.3 (2020-10-10), for descriptive analysis. The free-text responses were analyzed qualitatively by summarizing responses in different languages according to recurrent response categories.

Key Findings

The survey finds that to succeed with lifestyle changes to improve or maintain their brain health, respondents need professional support and regular monitoring or follow-up to track the effect of such changes.

The survey respondents think that public health authorities should provide reliable and easy-to-understand scientific information about brain health, and free of charge and easily accessible brain health tests, should these become available in the future.

Most also believe that public health authorities should introduce sport and relaxation activities within schools and work places, and subsidise physical activities and healthy food. About half of the respondents support increased taxes on unhealthy food. There are some differences between age groups in which interventions they support.

Of the sources people trust for accurate brain health information, brain health specialists and scientific journals receive the highest levels of support. General practitioners (GPs), official

websites and public researchers receive moderate to high trust. Age, and to some extent education, appears to influence how much certain sources are trusted. Conventional media are met with general skepticism, and the youngest respondents trust them the least. Social media are trusted the least by all respondents.

It should be noted that the relatively high level of education among respondents is likely to affect the results.

The survey results indicate several relevant action steps for policy makers and public health authorities to improve brain health. Main recommended activities include:

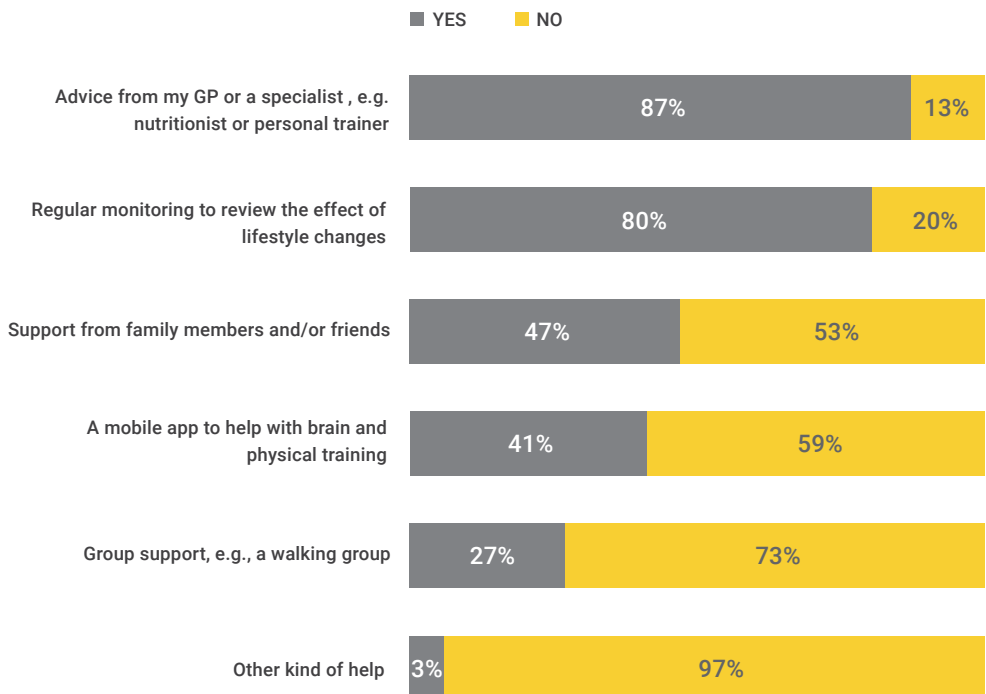
- **Communicate evidence-based information on brain health**
- **Provide professional support and follow-up on lifestyle changes for maintaining and improving brain health**
- **Subsidise beneficial activities and food for maintaining brain health**

What type of assistance do people need to make lifestyle changes?

Survey respondents were asked to select which forms of assistance they would need to make lifestyle changes for maintaining or improving their brain health. They could also suggest additional forms of assistance, examples of which are quoted below.

Figure 1. Question:

Imagine you decide to change your lifestyle to maintain or improve your brain health. What kind of assistance would you need?



Professional support and regular monitoring

Almost nine out of ten (87%) would need professional support, either from their GP or a specialist.

"I would need to have some kind of feedback that would let me know about progress and whether anything I might do was having an effect".

- UK respondent

Four out of five (80%) would also need regular monitoring to review the effect of their lifestyle changes.

Close to half of the respondents (47%) would need support from family and friends to change their lifestyle. A fourth (27%) would need group support, for instance from a walking group.

Two out of five (41%) believed they would benefit from an app.

87%

would need professional support, either from their GP or a specialist.

"It would be great if you could insert your data so that (the app) could generate a plan of the activities that would make the biggest impact for your brain health given your age, gender etc. It could start small, for instance walking a few minutes a day and ticking of the boxes of what you achieved to progress to the next level".

- UK respondent



65%

vs



46%

Younger respondents would need more support from family and friends compared to older respondents

Group differences in the assistance needed

Younger respondents (under 26 years) would need more support from family and friends (65%) compared to older respondents (46% over 40 years), whereas only 34 % of younger respondents (18-25 years) would need apps.

Reliable information, online support, and subsidies

The survey included a free-text option where respondents could suggest additional support they would need for implementing and maintaining lifestyle changes. In total, over 800 respondents provided such suggestions.



Personalized plan and follow-up to improve brain health

Several respondents highlighted the usefulness of a concrete plan that considers their personal situation, and regular follow-up to track improvements. Specific examples by respondents were:

“A plan over activities I should do, and when, and measurable improvements that should occur within a given time-period”.

- German respondent

“It would be good to have someone work out a feasible ‘health regime’ that I can stick to and that does not decrease my quality of life too much”.

- UK respondent



Online resources

Quite a few respondents requested different forms of online resources, such as information, brain-training, forums, programmes, device, support, or tests.

Peer support

Several suggested they would benefit from exchanging advice and experience with others in a similar situation, either online or in physical meetings.

Examples were:

"Seek advice from a group of others who are also affected and who seek similar change".

- German respondent

"A site where I could chat with others in the same situation, without having to meet physically, you could just read and take part in others' experiences, ask questions and get advice, maybe even from professionals".

- Swedish respondent

Practical and financial aid

Respondents suggested various forms of assistance they would need to implement lifestyle changes, such as subsidised activities or family-directed support. Several suggested subsidised gym memberships, others suggested financial assistance to implement lifestyle changes, whereas a few requested practical assistance with care tasks.

"Support from my employer to have time to carry out activities".

- Spanish respondent

"If any of the necessary changes cost money, there should be some sort of support, for example help with childcare, house cleaning, cooking".

- Norwegian respondent



Motivation

Several respondents highlighted the centrality of gaining and maintaining motivation to initiate and continue with life-style changes.

"I already see signs of brain deterioration and see me going the same way as my mother. I already pay for a brain-training app but use it very infrequently (even though it was my new year's resolution). I think I'd need 'shock treatment' to galvanize me to keep doing it. I can see the difference a week or two of training does but still hate giving it the time (and doing it as it's tiring and I'm not very good at it)".

- UK respondent

"Help to make changes fun".

- Dutch respondent

"A podcast or some other media that provides motivation"

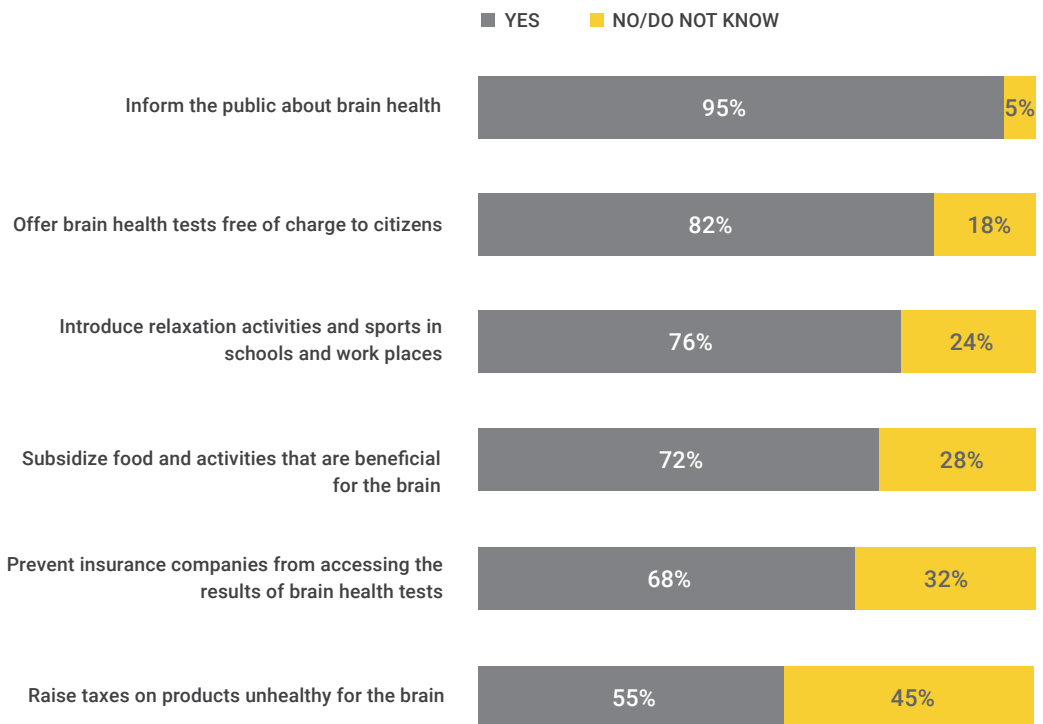
- Norwegian respondent

What should public authorities do to promote brain health?

Survey respondents were asked to choose between several activities they believed public health authorities should implement to improve citizens' brain health.

Figure 2. Question:

What should the public authorities do to promote public brain health?



Provide information, subsidies, and testing

Inform the public

Close to all (95%) think that public health authorities should provide information on brain health.

"Access to clear, understandable information, written for lay people".

- UK respondent

"There already exists lots of information on beneficial diet or lifestyle changes, but it is not always easy to know what works or how necessary they are. If there was an online database with evidence-based suggestions, advice, apps, etc., I would use it. It could for instance provide targeted information for different conditions".

- Norwegian respondent

"Inspiring advice, serious, but also light-hearted, perhaps in a TV-series or a magazine".

- Swedish respondent



4/5

think public health authorities should offer brain health test

Facilitate brain health testing

Respondents were asked to imagine a simple brain health test, in line with existing tests used for to measure the heart, that could reveal the risk of developing a brain disease. Given the existence of such a brain health test, four out of five (82%) think that it should be offered free of charge. Seven out of ten (68%) think it would be important to prevent insurance companies from accessing the results from such tests.

Provide relaxation activities and subsidise beneficial activities and healthy food

Three out of four (76%) think public health authorities should introduce relaxation activities and sports into schools and workplaces. Three out of four (72%) also think that public health authorities should subsidise healthy food and beneficial activities, whereas a little over half (55%) believe taxes should be raised on unhealthy products.

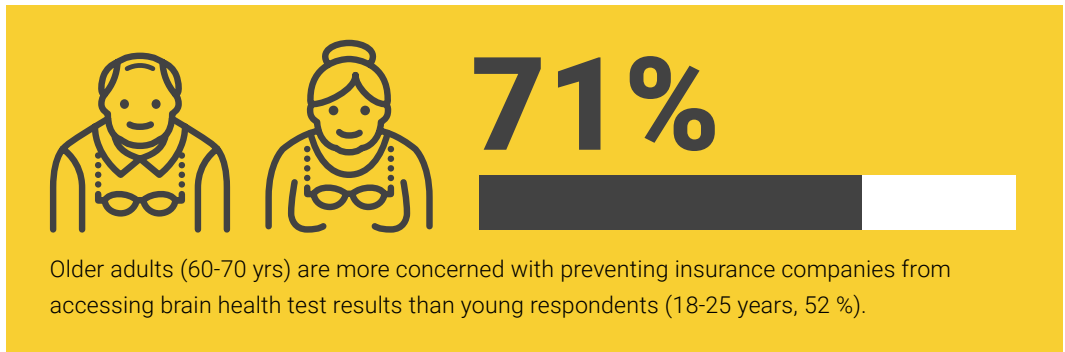
"Financial aid to implement change like the gym programme for heart health for low income families".

- UK respondent

Group differences on government interventions

Age groups differ somewhat in which interventions they support. Preventing insurance companies from accessing brain health test results is a greater concern to older adults (60-70 years,

Young and middle-aged adults are furthermore most in favour of subsidization: four out of five (80%) of respondents between 18-40 years want them. Only around half (52%)

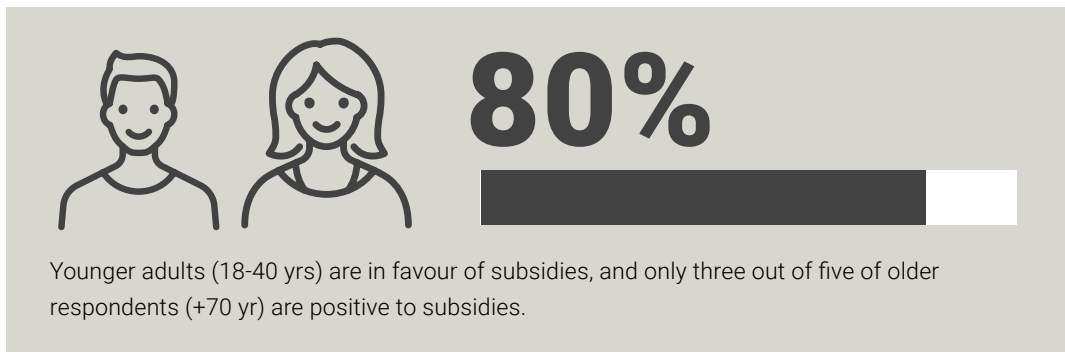


71%) than young respondents (18-25 years, 52%).

of respondents below 70 years want increased taxes on unhealthy products.

Young people are more in favour of introducing relaxation activities than older respondents (86% of those between 18-25 years compared to 73% of those between 61-70 years).

More men (60%) want higher taxes on unhealthy products in comparison to women (53%), and more women want relaxation activities than men (78% compared to 71%).

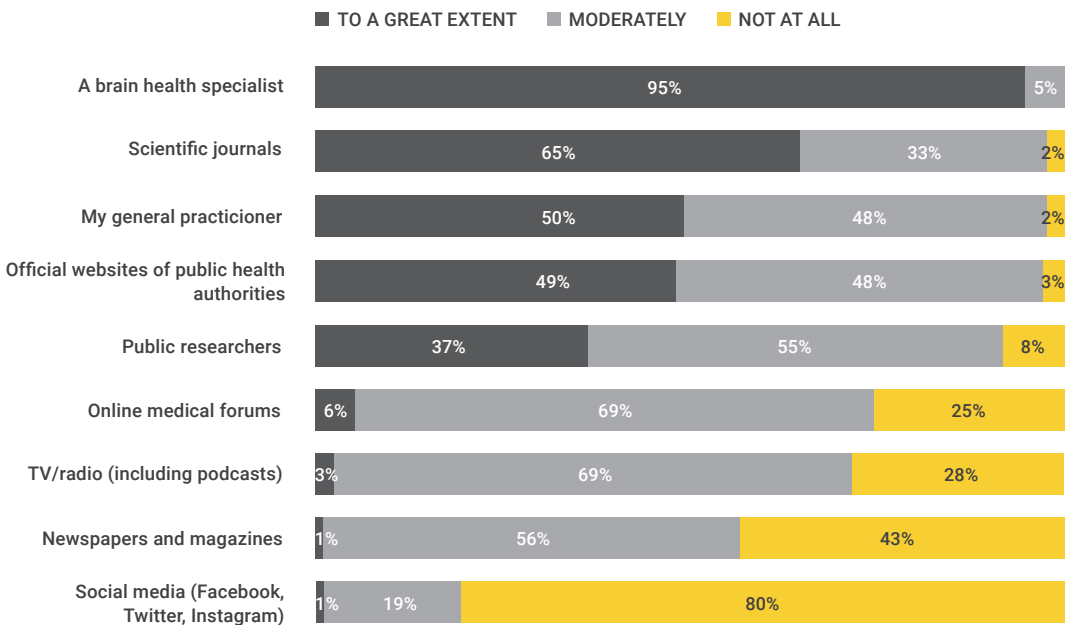


Which sources do people trust for information on brain health?

Survey respondents were asked to which extent they trust sources of information on brain health. One should bear in mind that the level of trust attributed to various sources likely reflect the relatively large proportion of respondents with higher education in the survey.

Table 3. Question:

To what extent do you trust the following sources of information



Brain health specialists and scientific journals are trusted sources for brain health information

People trust some sources more than others. Brain health specialists are trusted the most; close to all respondents (95%) trust them to a great extent, and 5% moderately. Most also trust scientific journals; over half (65%) to a great extent.

Half (50%) of respondents trust their GP to a great extent and about half (48%) trust them moderately.

Official websites by public health authorities are trusted to a great extent by about half (49%) of the respondents while about half (48%) trust them moderately. However, only about one third (37%) trust public researchers to a great extent, while about half (55%) trust them moderately, and one out of ten (8%) not at all.

Mass media are trusted relatively little for brain health information:

TV and radio (including podcasts) are trusted moderately by most (69%), and not at all by about a third (28%). Newspapers and magazines are trusted even less: about over half (56%) trust them moderately and less than half (43%) not at all.

The majority (80%) do not trust social media at all for brain health information.

Most trust online medical forums moderately (69%), while one fourth (25%) do not trust them at all.

Group differences in source trust

People with higher education trust scientific journals more than others: 70% trust such journals to a great extent, compared with 45% with primary school education. Young adult respondents also trust scientific journals the most: 74% of respondents between 26-40 years trust them to a great extent, compared to 59% of those between 71-80 years.

Public health websites are trusted the most by respondents with higher education (52% to a great extent), and by young adults; over half (56%) of those between 26-40 years trust them to a great extent. In comparison, only 34% of those with primary school education, and 40% of respondents between 71-80 years, trust them to a great extent.

Public researchers are trusted the most by young adults: over half (54%) of respondents between 26-40 years trust them to a great extent, compared to 29% of respondents over 60 years.

Conventional media are trusted the least by young respondents: over half (56%) of respondents between 18-25 years do not trust newspapers or magazines at all, compared to 41% of respondents between 40-80 years.

Online medical forums are also trusted the least by young respondents; two out of five (41% between 18-25 years) do not trust them at all, compared to 22% between 40- 60 years.



80%

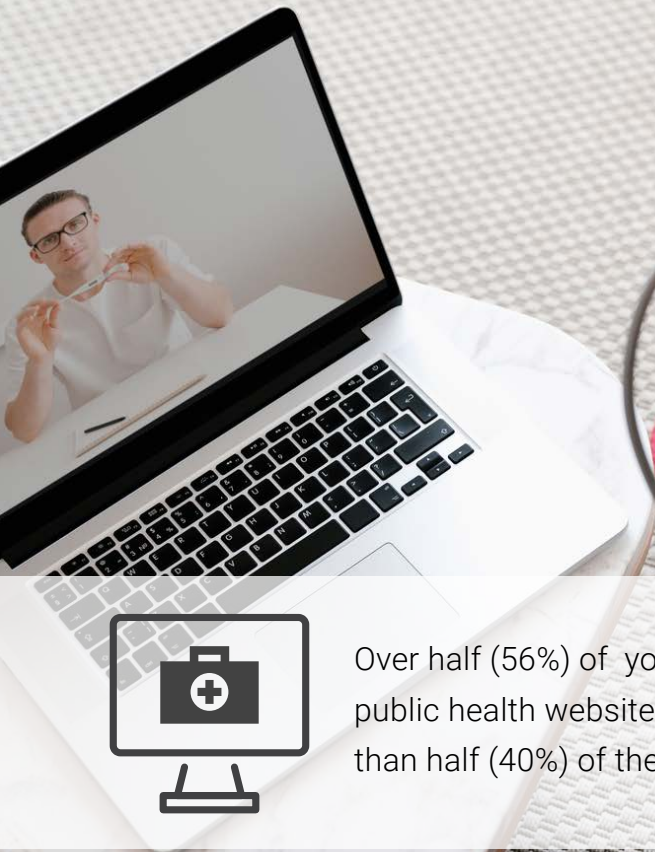
do not trust social media for
brain health information



The majority of respondents

69%

trust TV and radio
only moderately.



Over half (56%) of young and middle-aged adults trust public health websites to a great extent, compared to less than half (40%) of the elderly (over 70 years).



70%



People with higher education trust scientific journals more than others: 70% trust such journals to a great extent, compared with 45% with lower education

Action steps by health authorities to improve brain health, as recommended by survey respondents

The survey results indicate several relevant action steps for policy makers and public health institutions to improve public brain health. The main recommended activities are:

Communicate evidence-based information on brain health

Disseminate up-to-date and evidence-based information on how and which lifestyle changes improve brain health. A diversification of information sources, suited to specific audiences, can be the key to spread messages about brain health.

Provide professional support and follow-up on lifestyle changes for maintaining and improving brain health

Specialists and GPs should provide professional support and follow-up. Personalised plans for lifestyle changes and regular follow-up to track improvements are considered useful by respondents. Brain health tests are appreciated as means of follow-up.

Subsidise beneficial activities and food for maintaining brain health

Enable affordable access to sports and social and cultural activities. Introduce relaxation activities in schools and workplaces. Encourage employers to offer work-out time to employees during working hours and flexible working hours. Subsidise brain-friendly food.

Next steps

Upcoming scientific publications from the Lifebrain consortium will address risk and protective factors for brain health such as physical activity, body-mass index (BMI), sleep, loneliness and depression. More results from the Global Brain Health Survey will focus on citizens' motivations for undertaking brain health tests and implementing lifestyles changes for maintaining their brain health.



Learn more

The Global Brain Health Study (GBHS) forms part of “*Healthy minds 0-100 years: Optimising the use of European brain imaging cohorts (Lifebrain)*”. The Lifebrain Horizon 2020 consortium (2017-2022) integrates data from 5200 European research participants collected in 11 European brain-imaging studies in 7 countries. A key part of Lifebrain is to identify and integrate stakeholder perspectives. For more information about Lifebrain, please see www.lifebrain.uio.no or contact us by email: info@lifebrain.uio.no

GBHS co-organisers and collaborators:

[The Norwegian Brain Council](#)

[The German Brain Council](#)

[The Belgian Brain Council](#)

[Brain Foundation Netherlands](#)

[The Swedish Brain Foundation](#)

[The Women’s Brain Project](#)

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Appendix

Survey questions related to brain health promotion:

14. Imagine you decide to change your lifestyle to maintain or improve your brain health. What kind of assistance would you need?

Select all those that apply.

- Advice from my GP or from a specialist, e.g. a nutritionist or a personal trainer
- Support from family members and/or friends
- Group support, e.g. a walking group
- A mobile app to help with brain and physical training
- Regular monitoring to review the effect of lifestyle changes

Other kind of help (please specify):

15. The public health authorities should:

	Yes	No	Do not know
Inform the public about brain health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Raise taxes on products that are unhealthy for the brain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subsidize food and activities that are beneficial for the brain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offer brain health tests free of charge to citizens	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Introduce relaxation activities and sports in schools and work places	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prevent insurance companies from accessing the results of brain health tests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. To what extent do you trust the following sources of information on brain health?

	<u>To a great extent</u>	<u>Moderately</u>	<u>Not at all</u>
My general practitioner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A brain health specialist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Online medical forums	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Official websites of public health authorities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Newspapers, magazines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Social media (Facebook, Twitter, Instagram)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TV/radio (including pod-casts)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public researchers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scientific journals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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