

Lifebrain



What motivates people to look after their brain health?

Insights from the Global Brain Health Survey



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Introduction

In Europe, approximately one-third of the total disease burden relates to brain disorders, with vast personal, societal, and economic consequences. Brain diseases include conditions like dementia, stroke, Parkinson's disease, brain cancer, migraine, and mental illnesses such as depression, anxiety, and schizophrenia. Recent studies suggest that certain lifestyles such as being physical active, eating a healthy diet, getting sufficient sleep, reducing and/or limiting negative stress, refraining from substance use such as alcohol, smoking or illicit drugs, are associated with lower risk of developing brain disease. In other words, people can potentially improve or look after their own brain health.

Brain health is a relatively new concept encompassing mental and cognitive health. Good brain health involves both mental wellbeing and normal brain function, in the absence of brain disease. Surveys from the United States and the United Kingdom report relatively high public interest in brain health and awareness of the possible impact of lifestyle choices on brain disease risk. Broadly, people are receptive to the idea that brain health is modifiable, which is a crucial first step for making lifestyle changes to improve brain health.

Studies also indicate limited initiative or actual action to maintain a healthy brain. Addressing this apparent discrepancy,

the current report provides insight into the factors that motivate the public to look after their brain. It also explores what people are willing to do for their brain health and identifies the groups of people most and least motivated to make any lifestyle changes for their brain health. Finally, the report highlights some potential action steps to promote brain health.

This report draws upon the results from the Global Brain Health Survey (GBHS), an international survey about citizens' perceptions of, and motivation for, maintaining their brain health. A total of 27,590 respondents in 81 countries answered the survey. In this report, we present the results of survey questions about activities people purposefully do for their brain health, lifestyle changes they are motivated to undertake to potentially reduce their risk of developing a brain disease, and motivations or barriers for lifestyle changes.

The report is authored by scientists within the Lifebrain consortium in collaboration with key stakeholders, including national brain councils, research groups, brain foundations and brain registries. The report is highly relevant for health-care professionals, policymakers, and caregivers seeking to motivate patients and members of the public to look after their brain health.

Methods

The online survey was available in 14 languages, including French, Spanish, Dutch, Hungarian, German, Italian, and Scandinavian languages, between June 2019 and August 2020. It was disseminated through the networks of brain councils and brain research centres within Europe, in addition to mass and social media. People above 18 years could take part. Respondents were predominantly from Europe (over 98%), the majority from the UK (37%), the Netherlands (25%) or Norway (13%). Most respondents were women (71%), middle aged or older (66% were between 40-70 years), with higher education (70% attended graduate school). Whilst the sample was not representative of the general population, the survey is to our knowledge the largest study to date to investigate public perceptions of brain health and motivations for change.

Respondents were asked how they perceived their own mental and cognitive health. In the survey, we described cognitive health as the ability to think, remember, and learn, and mental health as the ability to balance one's mood and emotional well-being. In this report, respondents who rated their own cognitive or mental health as below average, or very poor, are referred to as having "poor cognitive health" and "poor mental health", whereas those who reported

average, above average or excellent cognitive or mental health, are referred to as having "good cognitive health" and "good mental health". These characteristics reflect the respondents' self-perception of cognitive and/or mental state rather than diagnostic criteria.

The survey questions used in this report are found in the Appendix. The respondents also filled in demographic information including their age, country of residence, gender, and education. For simplicity, when reporting the results we have pooled the upper and lower age groups into two categories (over 60 years and below 40), and the upper and lower education groups into two categories (higher and lower education). The data were processed in software for statistical computing, R version 4.0.3 (2020-10-10), for descriptive analysis. Portions of the free-text responses within the three largest response categories (English, Dutch and Norwegian), were analysed qualitatively by generating categories based on an in-depth reading of the free-text data. Additional quotes from the other languages have also been included to show breadth. For visualization, the free-text responses in English were also applied to generate word-clouds, using NVivo 12.6.1, with larger font sizes reflecting more frequent responses.

Key findings

People are willing to change their lifestyle for their brain health

Respondents engaged in various activities for their brain health and were willing to do even more to maintain or improve their brain health.

Respondents were most likely to increase exercise, adopt relaxation activities, eat healthily, engage in intellectual activities that stimulate the brain, and improve sleeping habits.

Respondents were less willing to avoid alcohol consumption.

Symptoms and knowledge are key motivators to look after the brain

The prospect of experiencing symptoms of cognitive or mental decline was a key motivation to undertake lifestyle changes, even more so than having been diagnosed with a brain disorder.

Another central motivation was knowing whether lifestyle changes are beneficial.

The main factors preventing people from making lifestyle changes for their brain health were lacking knowledge about what they can do and not knowing whether potential changes would have a positive effect.

Younger people are more willing to make lifestyle changes

The younger respondents (below 40 years) were more willing to change lifestyle habits than older respondents (above 60 years), but would more likely be prevented by lack of time and motivation, or if the changes were expensive.

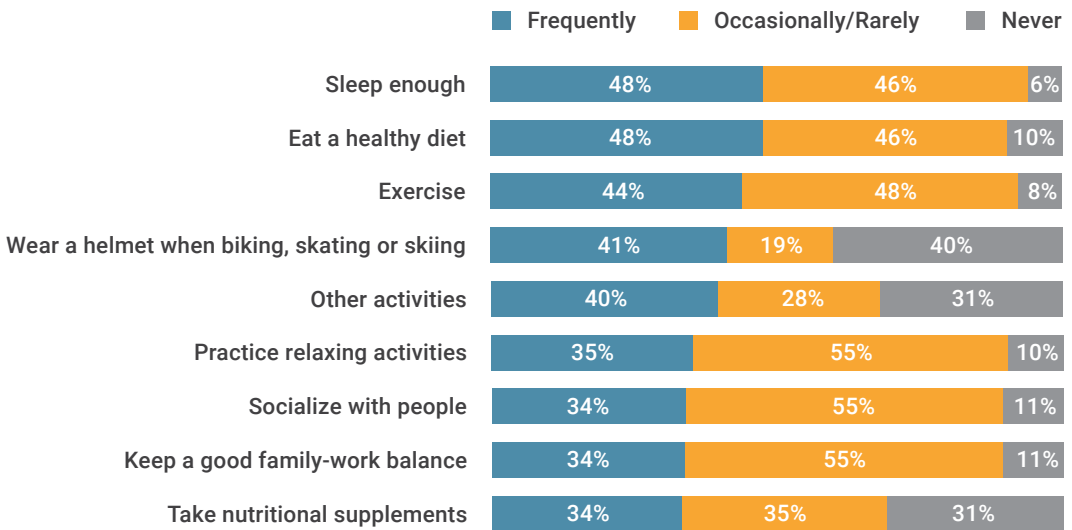


What do people do for their brain health?

Survey respondents were asked how often they engaged in various activities purposefully for their brain health. The top three activities

that respondents reported doing frequently were: getting sufficient sleep (48%), eating a healthy diet (48%), and exercising (44%).

FIGURE 1:
Which of the following activities do you do purposefully for your brain health?



Only one in three purposefully relax, keep a good family-work balance or socialize for their brain health



Group differences in what people do for their brain health

Older respondents (over 60) more often did activities purposefully for their brain health, such as eating healthily (58%) and exercising (52%), compared to younger respondents (below 40 years, <29%). In contrast, older respondents were less likely to frequently wear a helmet (33%) when cycling, skating, or skiing, compared to younger respondents (48%).

Interestingly, there were large differences between countries in the intentional use of helmets to protect the brain. Notably, less than 20 % of respondents in the Netherlands frequently wear a helmet when cycling,

skating, or skiing compared to 67 % in Norway. These results were valid also when controlling for age, gender, and education.

Women more frequently got enough sleep (50%), practiced relaxation activities (38%), and took nutritional supplements (37%) than men (46%, 29% and 26% respectively).

Respondents with poor mental health less frequently conducted activities purposefully for their brain health compared to other respondents. For example, 33% of respondents with poor mental health frequently ate healthily for their brain health, compared to 50% of those with good mental health.

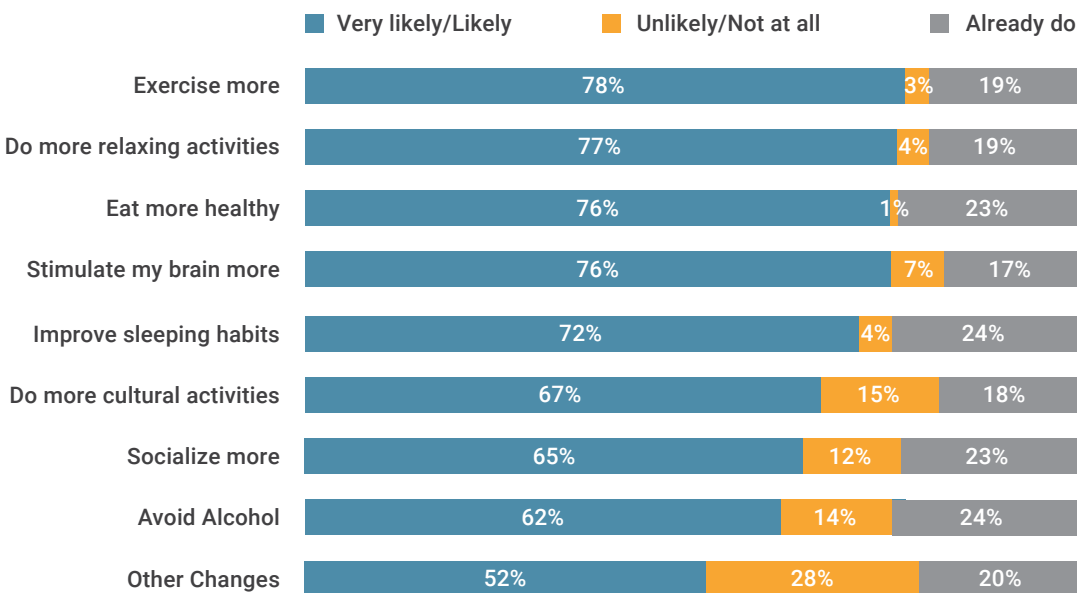
Which lifestyle changes are people most willing to undertake for their brain health?

Presented with the hypothetical scenario that their doctor told them they could reduce their risk of developing brain disease by changing their lifestyle, survey respondents were asked to indicate how likely they were to do various activities, listed in Figure 2. Most respondents said they were very likely or likely to exercise more (78%), perform more

relaxing activities (77%), eat more healthily (76%), stimulate their brain more intellectually (76%), improve sleep habits (72%) and engage in more cultural activities (67%). Fewer respondents (62%) were willing to avoid alcohol, although this might be due to the prospect of avoidance rather than reducing alcohol intake.

FIGURE 2:

Your doctor tells you that you can reduce your risk of developing a brain disease by changing your lifestyle. How likely are you to do any of the following? Think about what you would realistically do.



To get a better understanding of which “other” activities the respondents would like to do, we read through a proportion of the free-text responses in English (n=1,339), Norwegian (n=428) and Dutch (n=996). We categorized them under the following themes¹:

- Engage in intellectually brain-stimulating activities
- Engage in mental relaxation activities
- Seek professional help
- Seek information
- Seek social support
- Nothing except enjoy life

¹ Quotes are provided for illustrative purposes



If I had learned from a trusted physician that my lifestyle contributes to the development of brain disease, I would do my best to change it. I probably would have done some research myself online, read a bit and consulted different people about what is recommended in addition, I would not follow the advice of just one person.

- Norwegian respondent



I would join specific organizations that are likely to offer support that may be needed if I developed brain disease.

- UK respondent



Do new activities, take walks in new places, read more and learn new things.

- Norwegian respondent respondent



Be more in nature.

- Norwegian respondent respondent

I want to enjoy what I still can and stay positive.

- Dutch respondent

Group differences in willingness to undertake lifestyle changes

Older respondents were generally less willing than younger respondents to change their behaviour to reduce their risk of developing brain disease. For example, 69% of older respondents

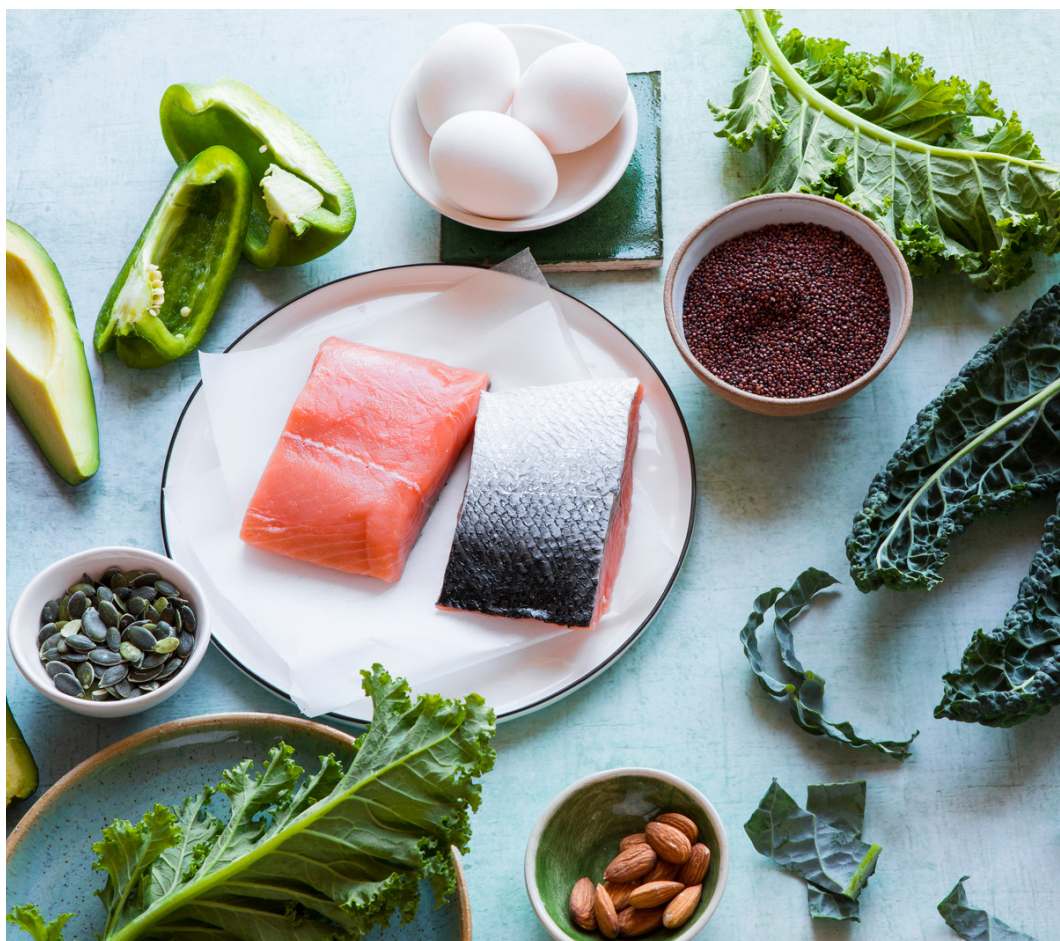
were likely or very likely to eat more healthily, compared to 87% of younger respondents.

There were few differences across education levels and gender in terms of relative willingness to reduce risk of brain disease through lifestyle changes.

69%



of older respondents were likely or very likely to eat more healthily, compared to 87% of younger respondents



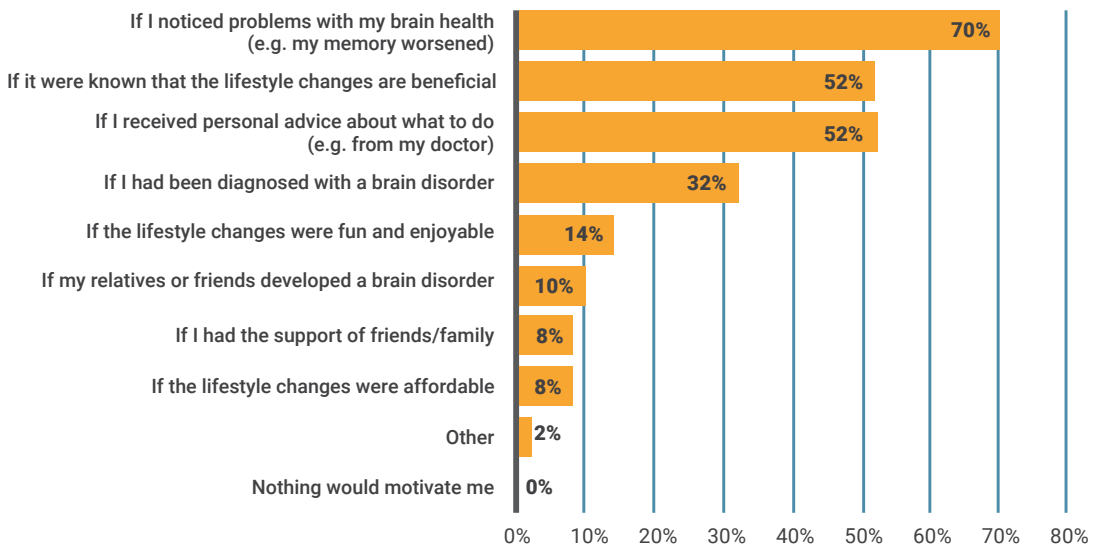
Main motivations for changing lifestyle for brain health

Respondents were asked to select the three most important reasons that would motivate them to change their lifestyle to improve their brain health. The three most central motivations for changing behaviour were noticing

problems with their brain health (70%), knowing changes would be beneficial (52%), and receiving personal advice on what to do (52%). Only 32% would be motivated by a diagnosis of brain disorder.

FIGURE 3:

What would motivate you to change lifestyle to improve brain health?



7 out of 10 would be motivated to change their lifestyle if they noticed problems with their brain health



Only 3 out of 10 would be motivated to change their lifestyle if they had been diagnosed with a brain disorder.



Respondents could suggest additional motivational factors in free-text. Notably, respondents suggested two main additional motivations for undertaking lifestyle change:

1. Family history of brain disease

Several respondents highlighted how knowing that they are at risk, for example by having close family members with brain disease, was a motivating factor to alter lifestyle.



I am already very motivated to remain aware of good brain health due to my family history of dementia i.e., my father, aunt, grandma.

- UK respondent

2. Practical opportunities to succeed

Some respondents also highlighted the importance of activities being practically feasible and easy to fit in to their everyday lives.



I have had two concussions in one year and on my own initiative I reduced my working hours to be able to rest more, I have completely changed my diet and started exercising with my dogs.

- Swedish respondent

Group differences in motivations

Older respondents were more motivated by receiving personal advice (58%) and by having knowledge about the effect of lifestyle changes (56%) than younger respondents (46% and 42%, respectively). For younger respondents, support from family and friends (13%) was more important than for older respondents (6%).

Respondents with good cognitive

health were more motivated to change behaviour after noticing problems with their brain health (70%) compared to those with poor cognitive health (64%). Similarly, respondents with good mental health were more motivated to change lifestyle by noticing problems with their brain health (70%) compared to those with poor mental health (63%).



Main barriers to changing lifestyle for brain health

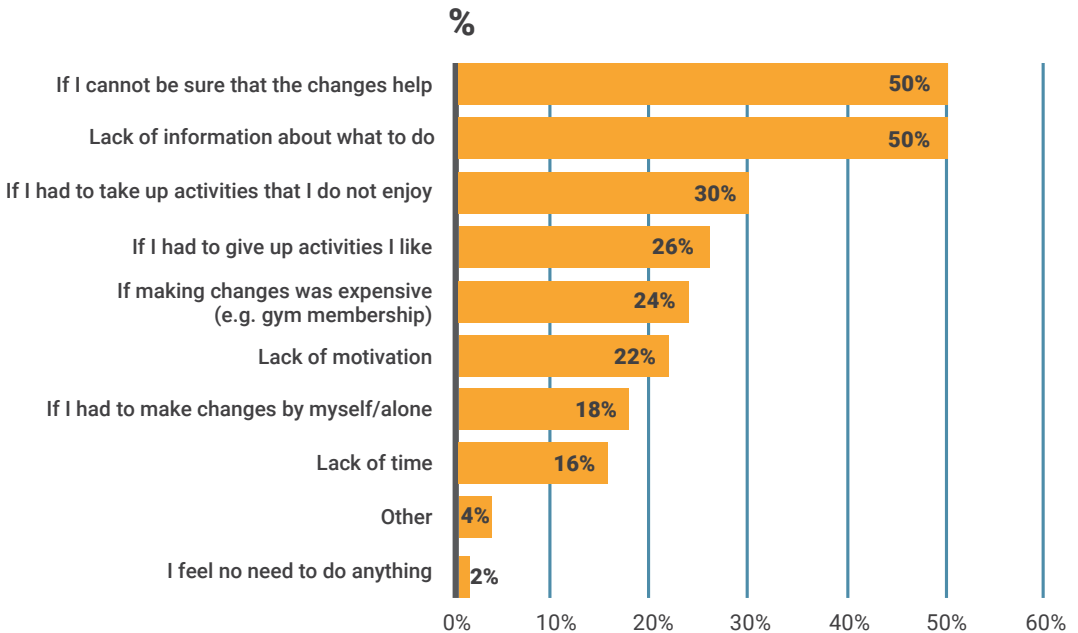
Survey respondents were asked to select up to three most important factors that would prevent them from changing their lifestyle to improve their brain health (Figure 4).

Key barriers for making lifestyle changes were lacking information

about what to do (50%) and not being sure the changes would help (50%). Respondents were also hesitant to taking up activities they would not enjoy (30%), or that were expensive (24%). One in four (26%) would not want to give up activities they enjoy.

FIGURE 4:

What would prevent you from changing your lifestyle for your brain health?



Respondents could suggest additional barriers to behavioural change in free-text. Main barriers were lacking time and energy, existing health conditions, having to care for close family members, or difficulties succeeding with changes. A few respondents claimed that nothing would prevent them from improving their brain health.

Group differences in barriers to changing behaviour

Older respondents were more demotivated to change their lifestyle if they could not be sure whether changes would improve their brain health (54%), than younger respondents (41%). Younger respondents would more likely be prevented from making lifestyle changes if they lacked time (38%), motivation (35%), or if changes were expensive (33%), compared to older respondents (< 20%).



I would be demotivated if a great deal of discipline was required to make a change.

- German respondent

Respondents with poor cognitive health would more likely be prevented from changing their behaviour if they lacked motivation (30%) and if making any changes was expensive (33%), compared to those with good cognitive health (<24%). This was similar for those with poor and good mental health.

Respondents with good cognitive health were more demotivated if they could not be sure the changes would work (50%) compared to those with poor cognitive health (40%). This was similar for those with good and poor mental health (50% vs 41%).



Conclusion

What motivates people to look after their brain health?

Motivation to alter behaviour (or not) was closely linked to having knowledge about what to do and being sure that changes help. Consequently, the results confirm previous findings on the need for public information on brain health and lifestyle interventions.^{4,5,8}

Experiencing symptoms of cognitive or mental decline was also a key motivation to undertake lifestyle changes, more so than being diagnosed with a brain disorder. Our observation that only one in three respondents were motivated to make lifestyle changes if confronted with a brain disease diagnosis, suggests that people might perceive lifestyle factors as inconsequential after a diagnosis is set. In line with current scientific evidence, preventative measures should start before the onset of ^{3,10}symptoms. Health authorities and professionals should therefore encourage people to adopt healthy behaviours as early as possible and along the lifespan.

Our survey found high public interest in improving brain health. Respondents were open to the idea that modifying

brain health is possible and were willing to act for their brain health. Around half of respondents already frequently engaged in favourable behaviours for their brain health such as getting enough sleep, eating a healthy diet and exercising.

Respondents were willing to do more for their brain health than they are currently doing. Over three in four were willing to exercise more, relax more, eat more healthily, and engage in more brain stimulating activities.

Motivations to make lifestyle changes varied across sociodemographic and individual characteristics. Our results suggest that it may be harder to convince older people to change habits than younger people. Also, in line with a report from the United States⁴, we found that engagement in brain-friendly behaviours and the impact of information may depend on a person's relative state of cognitive and mental well-being. Those respondents with poorer mental and cognitive health engaged less in healthy activities and may thus need more support and encouragement to make lifestyle changes than people with better mental and cognitive health.

Action steps

Based on our results and the feedback from our survey co-organisers and collaborators, we recommend some action steps for health professionals and policymakers to motivate people to take care of their brain:

- **Encourage healthy habits before problems arise.** Be proactive rather than reactive. Start early with brain health awareness, for example by integrating knowledge about the brain and brain health in schools and universities.
- **Tailor interventions and information on brain health to specific groups.** For example, to people of different ages. Provide personalised advice to meet individual differences in motivations and cognitive and /or mental health status.
- **Link brain health to other aspects of health –** for example, what is good for the heart is also good for the brain. Link public initiatives and information on brain health to existing programmes focused on other health conditions, such as cardiovascular health.
- **Provide evidence-based information** about how lifestyle affects brain health throughout life, and on how targeted interventions affect brain health and brain disease risk.
- **Be aware of factors that can demotivate people to adopt brain-friendly behaviours, and address them –** such as lack of knowledge about what works. Health professionals can address informational barriers by explaining to patients the effect of interventions in a manner they will understand.



Learn more

The Global Brain Health Survey (GBHS) was conducted by the Lifebrain Horizon 2020 consortium (2017-2022): “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 seven countries. A key objective 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, The National University of Ostroh Academy in Ukraine, Join Dementia Research UK, Hersenonderzoek Nederland

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Appendix

6. Now, think about your brain. Which of the following activities do you do purposefully for your brain health?

Select all those that apply.

	Frequently	Occasionally	Rarely	Never
Have a healthy diet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exercise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sleep enough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Practice relaxing activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strike a balance between professional and family life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wear a helmet when cycling, skating or skiing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take nutritional supplements such as omega 3/ vitamin D)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Socialise with people (e.g. friends)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Please specify anything else you do for your brain health:				

11. Your doctor tells that you can reduce your risk of developing a brain disease by changing your lifestyle. How likely are you to do any of the following? Think about what you would realistically do.

	Very likely	Somewhat likely	I already do that	Somewhat unlikely	Very unlikely
Eat more healthy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exercise more	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improve sleeping habits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do more relaxing activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stimulate my brain more (e.g. learn a new language)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avoid alcohol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Avoid smoking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Socialise more	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do more cultural activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify):					

12. What would motivate you to change lifestyle to improve brain health?

Select up to 3 alternatives you consider most important. You have to select at least one option.

- If I noticed problems with my brain health (e.g. my memory worsened)
- If I had been diagnosed with a brain disorder
- If the lifestyle changes were fun and enjoyable
- If the lifestyle changes were affordable
- If my relatives or friends developed a brain disorder
- If I received personal advice about what to do (e.g. from my doctor)
- If I had the support of friends/family
- If it were known that the lifestyle changes are beneficial
- Nothing would motivate me

Other (please specify): _____

13. What would prevent you from changing your lifestyle for your brain health?

Select up to 3 alternatives you consider most important. You have to select at least one option.

- Lack of time
- Lack of motivation
- Lack of information about what to do
- If I had to give up activities I like
- If I had to take up activities that I do not enjoy
- If I had to make changes by myself/alone
- If making changes was expensive (e.g. gym membership)
- If I cannot be sure that the changes help
- I feel no need to do anything

Other (please specify): _____





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