

Brain training and dementia

Brain training can improve memory and thinking, but its effect on dementia has not been proven.

Does brain training reduce dementia risk?

There is no strong evidence that brain training activities will reduce a person's risk of developing dementia.

Brain training involves activities that challenge your brain to keep your thinking sharp. Many people do brain training activities in the hope that keeping their brains active will maintain or improve their thinking skills as they get older. This follows the 'use it or lose it' idea that the more you challenge your brain, the less likely you are to lose your thinking abilities or ability to remember or learn things.

The theory is based on the belief that people who push themselves mentally throughout their lives appear to have lower rates of dementia. They may have complex jobs or participate in activities such as crosswords, puzzles or learning new hobbies.

People who regularly do intellectual activities throughout life have stronger thinking abilities. This may give them a reserve of thinking skills, which may protect them against losses that can occur through ageing and disease.

Brain training can make you better at specific tasks, but does not improve thinking in general. However, people who follow brain training programmes do say that it helps with daily activities.

How to reduce the risk of dementia

A lifelong approach to good health is the best way to lower your risk of dementia.

There are some lifestyle behaviours with enough evidence to show that changing them will reduce your risk of dementia.

Commercial brain training games and dementia risk

There are many commercial brain training games and apps available. Some have been tested in research studies, but the majority have not. It is not possible to apply the results of studies that test a particular training package to all brain training games. This is because they may be designed to challenge a different kind of brain function.

People should be cautious if they find commercial packages that claim they can prevent or delay cognitive decline. The evidence for this is currently lacking. One of the leading providers of commercial brain training games was fined for making false claims about the benefits of their product.

Research on brain training and dementia risk

Some studies have looked into whether brain training improves some types of memory and thinking, particularly in middle-aged or older people. Some evidence does show that brain training may help older people to manage their daily tasks better. But longer-term studies are needed to understand what effect these activities may have on a person's likelihood of developing dementia.

So far, there is very little evidence that brain training prevents dementia. One study found that training to improve thinking speed, but not memory or reasoning training, may slightly reduce dementia risk. However, this is a relatively new area of research. Most studies have been too small or too short to effectively test the effect of brain training on the development of dementia.

Whilst it's unclear if brain training affects dementia risk, there has been lots of research into the effects of brain training on memory and thinking skills in the general population. These studies are carried out in one of two ways: observational studies and interventional studies.

Observational studies on brain training and dementia

Observational studies collect data about a group of people and look for an association between two or more factors.

The results from several observational studies show that people who do mentally stimulating activities may have a lower risk of cognitive decline and dementia. This is the case for people who do the activities in both middle age and later life.

However, this type of study cannot tell us that brain training activities are directly responsible for lower rates of dementia.

Interventional studies on brain training and dementia

Interventional studies, sometimes called clinical trials, give groups of people an intervention and follow them over time to see the effects. In this case, the intervention would be brain training activities and the study would check thinking abilities.

Some studies of this type have tested computer brain training games. Most of these studies were small or only followed participants over a short time. So, there is a lack of robust evidence to show that brain training games can bring long-term cognitive benefits in older people over several years.

A recent study combined the results of 51 interventional studies. It showed that three sessions of at least 30 minutes of brain training a week were enough to lead to a small improvement in thinking and memory. However, the analysis also found that memory and thinking were not improved in people who did the brain training unsupervised at home.

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Alzheimer's Society research into brain training

We have funded two large interventional studies looking into the benefits of brain training.

The first tested the benefits of a six-week online brain training programme on nearly 12,000 people. It was designed to improve reasoning, memory, planning, visual skills and attention.

The researchers found that while participants improved at many of the tasks that were trained, the improvement was very task specific. This meant that the improvement didn't translate over to any tasks that weren't involved in the training, even if they were similar to the trained tasks.

The other study tested computer-based brain training in almost 7,000 people over the age of 50. The study compared the results of problem-solving and reasoning tests in people who did brain training for six months compared to those who didn't.

The study showed that the brain training package improved participants' reasoning and remembering words after six months. The more the exercises were done, the more likely participants were to see improvements in thinking abilities. People over 60 who participated in this study also said that they could also get on with their daily activities better. This included managing money, preparing meals, shopping and navigating public transport.

Further reading

Mild cognitive impairment (MCI) >

Learn about mild cognitive impairment, including symptoms, causes and treatments.

<https://www.alzheimers.org.uk/about-dementia/types-dementia/mild-cognitive-impairment-mci>

The growing popularity of brain training >

Find out how computer games can help improve thinking skills.

<https://www.alzheimers.org.uk/Care-and-cure-magazine/spring-17/growing-popularity-brain-training>

Study claims 'brain training' reduces dementia risk >

We respond to a study about a type of brain training and dementia risk.

<https://www.alzheimers.org.uk/news/2018-05-02/study-claims-computerised-brain-training-reduces-dementia-risk-alzheimers-society>

Alzheimer's Society dementia support line

Call 0333 150 3456.

If you are affected by dementia, worried about a diagnosis or a carer, trained staff are ready to give you the support you need.
Opening hours (excluding bank holidays): Mon to Weds: 9am – 8pm, Thurs and Fri: 9am – 5pm, Sat and Sun: 10am – 4pm.

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