information sheet

Am I at risk of developing dementia?

Many people worry that they may be at risk of developing dementia, particularly if they have a close relative with the condition. This information sheet explains what we know about the risks associated with different types of dementia and gives some advice on how people can reduce their risk. Research is continuing.

What is risk?

Risk is a person's chance of getting a disease over a certain period of time. A person's risk factors make up their individual risk. For example, an 80-year-old woman is more at risk of developing dementia than a 30-year-old man. This does not mean that the older woman will definitely develop dementia (she only has a slightly higher than one in five chance) or that the younger man will not.

What is a risk factor?

A risk factor is anything that increases or reduces a person's chance of developing a condition. Some of these factors can be controlled, but not all of them.

What are the risk factors for dementia?

While there is still much to learn about the brain, researchers have highlighted some important factors that affect our risk of developing different types of dementia. Most researchers now believe that our risk of developing dementia depends upon a combination of genetic and environmental factors. We are all at some risk of developing dementia, but some of us more than others. A person who has some of the risk factors for dementia will not necessarily go on to develop the condition. And avoiding risk factors does not guarantee that you will be healthy, although it makes this more likely.

Age

Age is the most significant known risk factor for dementia. While it is possible to develop dementia early in life, the chances of developing it increase dramatically as we get older. One in 50 people between the ages of 65 and 70 has a form of dementia, compared to one in five people over the age of 80. Factors associated with ageing may be responsible for this increased risk. These factors include high blood pressure, some diseases (for example, heart disease and stroke), changes to nerve cells, DNA and cell structure, and the weakening of natural repair systems.

Gender

Women are slightly more likely to develop Alzheimer's disease than men, even if the fact that women are more likely to live longer is discounted.

A lack of the hormone oestrogen in women after the menopause has been suggested as one factor in the development of Alzheimer's disease. Controlled studies have, however, suggested that hormone replacement therapy (HRT) has no beneficial effect on the development of Alzheimer's disease and may even increase a person's risk of developing the condition. We do not recommend that women take HRT as a way to reduce their risk of developing dementia.

Vascular dementia is more common in men than women. This may be because common risk factors for vascular dementia, such as heart problems and high blood pressure, are more common in men than women.

Genetics

Scientists have been aware for some time that our genetic background – the genes we inherit from our parents – may partly determine whether we will develop specific diseases. The role of genetics in the development of dementia is still not fully understood, but researchers have made some important advances in recent years.

We do know that there are families where there is a very clear inheritance of dementia from one generation to the next. This is usually in families where the disease appears relatively early in life. Diseases which may cause dementia and may be hereditary in some cases include Huntington's disease, Alzheimer's disease and Niemann-Pick disease. In the majority of cases, however, the effect of inheritance seems to be small, such that if a parent or other relative has dementia your own chances of developing it are only a little higher than if there were no cases of dementia in the family.

Particular genes can effect a person's risk of developing Alzheimer's disease and scientists are

learning more about these. For example, a gene called apolipoprotein E (APOE) has been shown to play a part in the development of Alzheimer's disease and vascular dementia. For more information about genetics and dementia, please see the Society's information sheet *Genetics and dementia*.

Medical history

Specific medical conditions can increase a person's chances of developing dementia. These include multiple sclerosis, Huntington's disease, Down's syndrome and HIV infection. Conditions that affect the heart, arteries or blood circulation can particularly affect a person's chances of developing vascular dementia. Such conditions include high blood pressure, high blood cholesterol levels, strokes, diabetes, and heart problems such as a heart attack or irregular heart rhythms. Mid-life obesity can also increase a person's risk of developing dementia in later life.

Environment and lifestyle

Diet

Diet can affect a person's risk of developing many types of illness, including dementia. A healthy and balanced diet, which enables a person to maintain a normal body weight, is likely to reduce the likelihood of developing high blood pressure or heart disease, both of which put a person at greater risk of developing dementia.

Too much saturated fat can cause narrowing of the arteries, making heart attack or stroke more likely. Heart attacks, strokes and vascular disease increase a person's risk of developing vascular dementia. See the Society's information sheet *What is vascular dementia?* and its booklet *Understanding vascular dementia* for further information.

Fresh fruit and vegetables contain many vitamins and anti-oxidants, which may prevent heart disease and protect the brain. A number of research studies have shown that the polyunsaturated fatty acids found in oily fish might also help to protect the heart and blood vessels, and lower the risk of developing dementia.

Some research has suggested that caffeine and various spices and herbs, including curcumin, sage, lemon balm and ginkgo biloba, might have a protective effect on the brain. However, research is continuing and there is no conclusive evidence as yet. Recent studies suggest that vitamin A might be protective for the brain and that vitamin E might help to improve the symptoms of dementia.

Smoking

Smoking has an extremely harmful effect on the heart, lungs and vascular system, including the blood vessels in the brain. This increases the risk of developing dementia.

Alcohol

People who drink excessive amounts of alcohol over a long period of time increase their risk of developing a form of dementia. For more information, see the Society's information sheet *What is Korsakoff's syndrome?*

However, some research has suggested that moderate amounts of red wine, which contains anti-oxidants, might help to protect the brain against dementia and keep the heart and vascular system healthy.

Physical exercise

A good level of physical health helps to protect against many conditions, including dementia. Regular physical exercise helps to keep the heart and vascular system healthy. This helps to reduce a person's risk of developing vascular dementia, which is caused by problems with the circulation of blood to and around the brain.

Education, and social and mental activity

More highly educated people may be at a lower risk of developing dementia. It is possible that they may develop more complex connections in their brains in childhood, meaning they have extra capacity to cope with the physical changes to the brain associated with dementia. However, their lower risk could also be explained by better general performance on written tests.

Studies have suggested that people who have a wide social network and a variety of hobbies and interests may lower their risk of developing dementia. The same is true of people who remain mentally active through activities such as puzzles and crosswords.

Head injury

People who suffer severe or repeated head injuries – in a car accident, for example – are at a three- to four-fold increased risk of developing dementia. It is possible that deposits that form in the brain as a result of the injury may be linked to the onset of dementia. Professional boxers sometimes develop a form of dementia known as 'punch drunk syndrome'.

Aluminium
Trace levels of many metals are present in the brain.

Aluminium is the metal that has been most often studied and that has received the most publicity. Aluminium is extremely common in the environment and exists in many different chemical forms. Exposure is extremely difficult to measure.

Although we know that aluminium is toxic and effects the nervous system, most scientists do not believe that there is a causal link between aluminium and Alzheimer's disease.

Other metals, such as copper and zinc, may be important in the way that key proteins are processed in the brain.

Top tips for reducing risk

- Don't smoke
- Reduce your intake of saturated fat
- Take regular exercise
- Drink alcohol in moderation
- Eat a healthy diet and maintain a normal body weight
- Eat plenty of fruit and vegetables, particularly those that contain vitamin C and vitamin A
- Eat oily fish once a week
- Have a GP check your blood pressure and cholesterol levels
- Avoid head injuries (wear a helmet for cycling or motorcycling, don't box)
- Have an active social life, outside interests and hobbies.

Useful contacts

Blood Pressure Association
60 Cranmer Terrace
London SW17 0QS
Telephone 020 8772 4994
Website www.bpassoc.org.uk

British Heart Foundation
14 Fitzhardinge Street
London W1H 6DH
Telephone 020 7935 0185
Email internet@bhf.org.uk
Heart Information Line 0845 070 8070 (9am-5pm Mon, Tues, Fri, 8am-6pm Weds, Thurs)
Website www.bhf.org.uk

Diabetes UK
10 Parkway
London NW1 7AA
Telephone 0845 120 2960
Email info@diabetes.org.uk
Website www.diabetes.org.uk

Heart UK
7 North Road
Maidenhead
Berkshire SL6 1PE
Telephone 01628 628 638
Email ask@heartuk.org.uk
Website www.heartuk.org.uk

Huntington's Disease Association
Down Stream Building
1 London Bridge
London SE1 9BG
Telephone 020 7022 1950
Email info@hda.org.uk
Website www.hda.org.uk

Stroke Association
240 City Road
London EC1V 2PR
Stroke Helpline 0845 3033 100 (9am-5pm Mon-Fri)
Email info@stroke.org.uk
Website www.stroke.org.uk

Further reading

We can provide a list of further reading on request. Please contact the librarian at the Alzheimer's Society national office on 020 7306 0606 or email library@alzheimers.org.uk

We regularly review our range of publications and welcome your comments or suggestions. Please contact the information and education team at the Alzheimer's Society national office on 020 7306 0606 or email enquiries@alzheimers.org.uk

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