

Risk Factors

Alzheimer *Society*

Research

In this sheet you will find information about risk factors for dementia. You will learn about risk factors you can control including hearing loss, hypertension, obesity, smoking, depression physical activity, social isolation, diabetes and low education. You will also learn about risk factors you cannot control including age, gender and genetics.

While there is currently no cure for dementia, in this sheet you will find information about strategies and lifestyle changes that you can make to help you reduce your risk of developing dementia.

What is dementia?

Dementia is an overall term for a set of symptoms that is caused by disorders affecting the brain. Symptoms may include memory loss and difficulties with thinking, problem-solving or language, that are severe enough to reduce a person's ability to perform everyday activities. A person with dementia may also experience changes in mood or behaviour. These dementia symptoms are irreversible, which means that any loss of abilities cannot come back.

Dementia is progressive, which means the symptoms will gradually get worse as more brain cells become damaged and eventually die.

Dementia is not a single specific disease. Many diseases can cause dementia, including Alzheimer's disease, vascular dementia, Lewy Body disease, fronto-temporal dementia, Creutzfeldt-Jakob disease, Parkinson's disease, and Huntington's disease. These conditions can have similar and overlapping symptoms.

Some treatable conditions can produce symptoms similar to dementia. Examples of conditions with similar symptoms are vitamin deficiencies, alcohol misuse, thyroid disease, sleep disorders, or mental illness such as depression. It is therefore important to consult with your doctor if you notice any changes in physical or mental abilities, such as having trouble falling and staying asleep.

There is currently no cure for dementia. However, if you have dementia, know that there are treatment options and lifestyle choices that may slow it down and can lead to an improved quality-of-life.

What are risk factors?

Risk factors are characteristics of your lifestyle, environment, and genetic background that increase the likelihood of getting a disease. Risk factors, on their own, are not causes of a disease. Rather, risk factors represent an increased chance, but not a certainty, that dementia will develop.

Similarly, having little or no exposure to known risk factors does not necessarily protect a person from developing the disease. Some risk factors are modifiable, meaning that they can be changed (e.g., smoking and high blood pressure). Other risk factors are non-modifiable, meaning they cannot be changed, such as age or genetic makeup.

A healthy lifestyle can help reduce the risk of dementia. It has been estimated that up to half the cases of dementia worldwide may be the result of nine key modifiable risk factors:

- Hearing loss
- Hypertension
- Obesity
- Smoking
- Depression
- Physical inactivity
- Social isolation
- Diabetes
- Low education

Here's some good news: Recent research shows that rates of dementia are going down. We may be doing a better job managing some of these risk factors!

Modifiable risk factors

Risk factors for both dementia and cardiovascular disease

The following risk factors appear for both cardiovascular disease and dementia, particularly Alzheimer's disease and vascular dementia. These cardiovascular risk factors are more common as we age.



High blood pressure

People who have high blood pressure (hypertension) in mid-life are more likely to develop dementia compared to those with normal blood pressure. Since high blood pressure affects the heart, the arteries, and blood circulation, it can increase the risk of developing dementia, particularly vascular dementia.

How can you lower your blood pressure? Research shows that physical activity and a healthy diet can lower high blood pressure and reduce the risk of developing dementia. If lifestyle changes do not lower blood pressure, medications may help.



Smoking

Cigarette smoking is related to a wide range of diseases including many forms of cancer, cardiovascular disease and diabetes. The evidence is strong and consistent that smokers are at a 45% higher risk of developing dementia vs. non-smokers or ex-smokers.

It is never too late to quit! Smokers who quit can reduce their risk of developing dementia.



Diabetes

People with type 2 diabetes in mid-life are at increased risk of Alzheimer's disease, vascular dementia and cognitive impairment. On average, people with type 2 diabetes are twice as likely to develop dementia compared to those without diabetes.

How can you control diabetes to prevent dementia? Careful management, such as regularly monitoring glucose levels, can reduce the risk of developing cardiovascular disease and dementia.



High Cholesterol

People with high cholesterol levels in mid-life are more likely to develop dementia compared to those with normal cholesterol. High cholesterol also increases the risk of developing hypertension and diabetes.

How does someone lower their cholesterol? Research shows that people who have their high cholesterol treated with drugs called “statins” have a lower risk of developing dementia.



Obesity and lack of physical activity

Obesity and lack of physical activity increase the risk of developing diabetes and high blood pressure. As well, obesity in mid-life increases the risk of developing dementia.

Regular exercise lowers the risk of developing heart disease, stroke, diabetes and dementia. The most recommended type of exercise for reducing the risk of dementia is aerobic or cardio that increases the heart rate temporarily, such as swimming, jogging, cycling, or stationary bicycle.



Poor diet

An unhealthy diet, high in saturated fat, sugar, and salt, can increase the risk of developing many illnesses including type 2 diabetes, cardiovascular disease and dementia. The Mediterranean and the MIND diets have been shown to reduce the risk of developing dementia. The MIND diet combines the Mediterranean and the DASH (Dietary Approaches to Stop Hypertension) diets.

Both diets recommend a low intake of meat, sweets and dairy, and a high intake of fruit, vegetables, legumes, whole grains, nuts, olive oil and fish.

Other modifiable risk factors



Alcohol

Alcohol is ranked fifth among the most important risk factors for death and disability worldwide. If you drink excessively (more than 14 drinks per week for women and more than 21 drinks per week for men), you have a higher risk of developing dementia.

Low to moderate levels of drinking may reduce the risk of dementia—however, this belief remains controversial and most specialists do not recommend this as a way to reduce the risk of dementia.



Low levels of formal education

People with no high school education are at a higher risk of developing dementia. Formal education is thought to support the development of a “cognitive reserve,” the idea that people who actively use their brains throughout their life may be more protected against brain cell damage caused by dementia.

How do you build a cognitive reserve? By constantly learning new things, and challenging the brain throughout your life, you can help build your cognitive reserve. Learning a new language and taking up new hobbies are good examples of brain-challenging activities.



Depression

People who experience depression in mid- or later life have a higher risk of developing dementia. However, the relationship between depression and dementia is still unclear. Many researchers believe that depression is a risk factor for dementia, whereas others believe it may be an early symptom of the disease, or both.



Head injuries

People who experience severe or repeated head injuries are at increased risk of developing dementia. Brain injuries may, possibly trigger a process that may eventually lead to dementia. This particularly affects athletes in boxing, soccer, hockey, and football, which often have repeated head injuries.

How can you prevent a head injury while playing sports? Wearing protective head gear, such as a helmet, is important, especially in activities like skating, snowboarding, skiing and cycling.

Falls are the leading cause of traumatic brain injury and falling is especially dangerous for older adults. To reduce the risks of falls in your home, remove tripping hazards (such as a loose rug), have good lighting in all bedrooms and install railings inside and outside the house for extra support. As well, be cautious of icy sidewalks in the winter. Wear proper footwear for the weather!



Hearing loss

Mild levels of hearing loss increase the risk of cognitive decline and dementia. Though it is still unclear how exactly it affects cognitive decline, hearing loss can lead to social isolation, loss of independence, and problems with everyday activities.

How can you prevent hearing loss? Annual hearing evaluations are important. Avoid listening to music too loudly or being continually exposed to loud sounds. If hearing does become a problem, use a hearing aid.



Social isolation

Social isolation can increase the risk of hypertension, coronary heart disease, depression, and dementia.

If you are feeling isolated, remember that staying socially active may reduce the risk of dementia. Social interaction may also help slow down the progression of the disease.



Living near busy roads

It is estimated that people who live within 50 metres of a busy road are more likely to develop dementia. A busy road is defined as a highway or main road that has a constant flow of vehicles passing through it. Though the relationship between busy roads and dementia is still unclear, the impact on the brain from vehicle pollution is being studied by researchers.

Non-modifiable risk factors



Age

Dementia is not a normal part of aging, but age is the strongest known risk factor for dementia. The older you become, the higher the risk. For example, 1 in 20 Canadians over age 65 has Alzheimer's disease. After the age of 65, the risk of developing Alzheimer's disease doubles approximately every five years, with one in four Canadians over 85 having Alzheimer's disease.

Dementia can also affect people under 65. Some people in their 40s or 50s develop dementia, which is known as young onset dementia. While rare, 16,000 Canadians under the age of 65 are living with young onset dementia. To learn more about young onset dementia, visit www.alzheimer.ca/youngonset.



Gender

Women are at a higher risk of developing Alzheimer's disease than men. While the reasons for this are still unclear, some of the potential contributors include women living longer (on average) than men, changes in estrogen levels over a woman's lifetime, and presence of frailty and other health conditions (which tend to be higher among women). In addition, it seems that having a gene called ApoE4 may increase younger women's risk of developing Alzheimer's disease; however, the risk is similar for older men and women with this gene.

Men and women have the same risk of developing other types of dementia, such as fronto-temporal dementia.



Genetics

The role of genes in the development of dementia is not yet fully understood. Scientists have found over 20 genes that may increase the risk of developing Alzheimer's disease. Three of these genes directly cause Alzheimer's disease: PS1, PS2, and APP. If a person has an alteration in any of these genes they will almost certainly develop familial Alzheimer's disease, often well before the age of 65. If a parent has any of these faulty genes, their children have a 50% chance of inheriting the disease. Familial Alzheimer's disease is very rare, accounting for 2-5% of all cases of Alzheimer's disease. The other 17 genes associated with Alzheimer's disease are called "risk factor" genes, meaning that these genes increase the risk, but do not guarantee that the person will develop Alzheimer's disease.

For more information on the genetics of Alzheimer's disease, please look at the *Understanding Genetics* brochure, available in the "Risk Factors" section on the Alzheimer Society website.

Other risk factors

Other medical conditions that can increase your chances of developing dementia include Parkinson's disease, multiple sclerosis, chronic kidney disease and HIV. Down syndrome and some other developmental disabilities may also increase your risk of dementia.

For information on other forms of dementia, please visit the "Other dementias" section on the Alzheimer Society website.







For more information about brain health, visit our "Brain health" section at www.alzheimer.ca/brainhealth





How can you reduce your risk of developing dementia?

- Be physically active
- Avoid smoking and excessive alcohol consumption
- Track your numbers: keep your blood pressure, cholesterol, blood sugar and weight within recommended ranges
- Stay connected socially and interact regularly with others
- Make healthy food choices, eat a well-balanced and healthy diet rich in cereals, fish, legumes and vegetables
- Reduce stress
- Challenge your brain by trying something new, playing games, or learning a new language
- Protect your head by wearing a helmet when you engage in sporting activities
- Consider installing handrails on all stairs and grab bars in bathrooms to lower your risk of falls



Strategies for a healthy lifestyle

Risk Factor	Strategies
 High blood pressure	<ul style="list-style-type: none">• If your doctor has suggested taking hypertension medication, take it as directed• Reduce your sodium and salt intake• Follow a diet low in fat• Monitor your blood pressure regularly• Find healthy ways to manage your stress, such as participating in physical activities or listening to music
 Smoking	<p>It is recommended to completely avoid smoking. To help you quit smoking, consider:</p> <ul style="list-style-type: none">• Speaking to a healthcare professional. They will be able to provide you with useful advice on nicotine replacement therapies, stop smoking medication and can also direct you to resources in your community• Setting a quit date and create an action plan to help you quit smoking• Learning about how to prepare for possible withdrawal symptoms, such as restlessness and feeling angry• Asking for help. Call the Government of Canada toll-free quitline number 1-866-366-3667 to talk to someone and to receive support
 Diabetes	<ul style="list-style-type: none">• Maintain a healthy weight• Consider talking with a registered dietitian to learn about healthy eating• Talk to your doctor about your target glucose level• Monitor your blood glucose levels regularly
 High cholesterol	<ul style="list-style-type: none">• Limit your consumption of processed foods, such as cake and pizza• If possible, cook and eat the majority of your meals at home. This will allow you to manage the amount and type of food that you eat• Talk with a registered dietitian to learn about dietary fats and nutritional information of different food sources
 Obesity and lack of physical activity	<ul style="list-style-type: none">• Aim for at least 150 minutes of moderate-to-vigorous physical activity per week. As little as 10 minutes of activity at a time can count towards your total<ul style="list-style-type: none">- Examples of moderate-intensity physical activities include walking a dog or going for a bicycle ride- Examples of vigorous-intensity physical activities include swimming or going for a run- If possible, try to add muscle and bone strengthening activities at least two days per week, such as climbing stairs and digging in the garden• If you have reduced mobility, try to engage in activities that will help you maintain your balance and prevent falls, such as attending a gentle yoga or tai chi class
 High alcohol consumption	<ul style="list-style-type: none">• Limit alcohol consumption to:<ul style="list-style-type: none">- no more than two drinks per day, with a maximum of 10 drinks per week for women- no more than three drinks per day, with a maximum of 15 drinks per week for men• Drinking may interact with medications that you are taking or with other health related issues. Talk with your doctor about any concerns you may have• A “drink” means:<ul style="list-style-type: none">- 341 ml/ 12oz (one bottle) of beer (5% alcohol)- 142ml/5 oz wine (12% alcohol)- 43 ml/1½ oz spirit (40% alcohol)

Risk Factor	Strategies
 Low levels of formal education	<p>Be a lifelong learner! Challenge your brain by:</p> <ul style="list-style-type: none"> • Varying your routine. Try something new or do a familiar task in a new way, such as brushing your hair with your opposite hand • Taking up new hobbies • Learning a new language • Learning how to play a musical instrument or joining a choir • Playing games such as word puzzles, jigsaw and memory games
 Depression	<p>If you are feeling sad, tired, hopeless, lonely or irritable on a regular basis, you may be experiencing feelings of depression. If you are feeling this way, make an appointment to see your doctor or a mental healthcare professional. In addition to professional treatment, consider:</p> <ul style="list-style-type: none"> • Learning about depression • Maintaining an active lifestyle, such as going on daily walks • Writing your feelings, thoughts, and experiences in a journal • Talking to your friends and family about your feelings • Sticking to your treatment plan. If you are taking medications, talk to your doctor if you notice any changes in your mood or behaviour
 Head injuries	<ul style="list-style-type: none"> • Wear a helmet when engaging in sporting activities such as skating and biking • Drive safely and always wear a seat belt • Review your medications routinely to avoid medications or combinations that may affect your balance • Consider installing handrails on all stairs and grab bars in bathrooms to avoid falls
 Hearing loss	<ul style="list-style-type: none"> • Have annual hearing evaluations • Ask your doctor to check for earwax buildup. If you have buildup, your doctor will be able to help you remove it • Make sure you use hearing aids if hearing becomes a problem <ul style="list-style-type: none"> - Check batteries and fit of hearing aids regularly
 Social isolation	<p>Stay connected. Consider:</p> <ul style="list-style-type: none"> • Joining a service club, volunteering, or meeting new people who share a common interest • Visiting old friends • Making regular phone calls to stay connected with friends and family • Use email or Facebook to stay connected with friends and family. If you have difficulty using the computer, challenge your brain by learning how to create a Facebook and email account
 Poor diet	<ul style="list-style-type: none"> • Eating a Mediterranean-style diet may reduce your risk of developing dementia. Mediterranean diets are high in fruits, vegetables, legumes and cereals, with moderate consumption of oily fish and dairy • The MIND diet has also shown to reduce the risk of developing dementia. The MIND diet combines the Mediterranean and the DASH (Dietary Approaches to Stop Hypertension) diets and it is high in leafy greens, vegetables, nuts, legumes, fish and olive oil • Look at your plate. You should see a rainbow of colours • Have 7-10 servings of fruits and vegetables every day • Choose food options that are lower in added sugars, saturated fats and salt • Eat high-fibre breads, cereals, and grains and low-fat animal proteins, such as boneless chicken breast and oatmeal • Consume foods rich in omega-3 oils such as cold-water fish (e.g. trout and salmon) and walnuts • Drink plenty of water throughout the day • Less is more! Serve smaller meals and fill the majority of your plate with fruits and vegetables

The contents of this document are provided for information purposes only and do not represent advice, an endorsement or recommendation, with respect to any product, service or enterprise, and/or the claims and properties thereof, by the Alzheimer Society of Canada. This information sheet is not intended to replace clinical diagnosis by a health professional.

Alzheimer Society

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