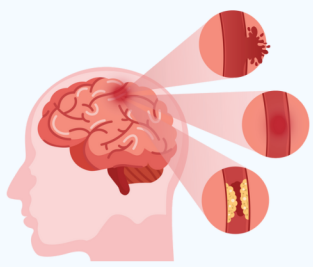
VASCULAR COGNITIVE IMPAIRMENT AND GENETICS EXPLAINED

WHAT IS VASCULAR COGNITIVE IMPAIRMENT ?

Your brain, like the rest of your body, is kept alive by a network of **blood vessels**.

- Blood vessels bring nutrients and oxygen to the brain and get rid of the cells' waste.
- **Blood vessels can get damaged**. This phenomenon is called **cerebrovascular disease**.



Cerebrovascular disease can cause **brain injury**.

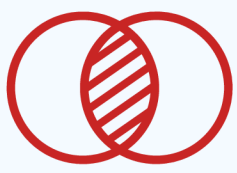
- Brain injury can lead to **cognitive impairment**. For example, memory, language and attention can be affected.
- Vascular cognitive impairment can happen after a **stroke, but not always**. Strokes are **not the only** cause of vascular cognitive impairment.

Among others, increasing age, hypertension, smoking, high cholesterol, diabetes, heart failure, atrial fibrillation and heart valve disease are **risk factors** for vascular cognitive impairment.

Vascular **dementia** represents **15 to 20%** of the overall causes of dementia (the most severe form of cognitive impairment).

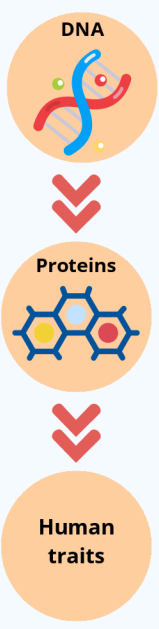
- Therefore, it is the **second most common** cause of dementia, after **Alzheimer's disease**.

Vascular cognitive impairment **is not the same condition as Alzheimer's.**



- However, these two conditions can **overlap** in several aspects, including symptoms.
- They also can be **present at the same time**.

GENETICS BRIEFLY EXPLAINED



Every cell in your body contains an essential molecule called **DNA**.

- Your DNA code carries all the information needed to **build proteins** .

Proteins are the **building blocks of tissues** and are essential for **life functions**.

Your DNA code also influences your unique **human traits**. These traits can be as evident as your eye colour, and as subtle as your genetic risk to have a stroke.

The DNA code varies from one person to another. Positions where there are differences are called DNA **variants**.

- Variants can be inherited from your parents.
- Variants can be acquired spontaneously.

IS THERE A LINK BETWEEN GENETICS AND VASCULAR COGNITIVE IMPAIRMENT?

Yes, genetics contribute **in part** to the development of vascular cognitive impairment!

Studies have shown that some DNA variants **increase the risk** of having this condition.

- Certain variants can **directly** cause vascular cognitive impairment (for example, variants in the *NOTCH3* gene).
- While other variants can **influence** the risk without being solely responsible (for example, variants in the *APOE* gene).

WHAT CAN YOU DO?

Ask your doctor how you can reduce your **risk** of vascular cognitive impairment.

Consult these free resources to learn more about:

- **Vascular cognitive impairment**
  - Alzheimer Society of Canada (alzheimer.ca)
  - Heart and Stroke Foundation of Canada (heartandstroke.ca)
- **Genetics**
  - Your genome (yourgenome.org)
  - National Human Genome Research Institute (genome.gov)

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