

# Module 2: Stroke Education



## Life After Stroke Education Series



**Stroke Network**  
Southwestern Ontario

# Disclaimer

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- SWOSN has created the following PowerPoint to support the delivery of stroke education for providers working in the Life After Stroke Programs. SWOSN would like to acknowledge the Community Stroke Rehab Teams for providing the initial iteration of this resource.
- Every effort has been made to ensure that the following information provided is accurate, up-to-date, and complete, but no guarantee is made to that effect. This is a reference resource designed as a supplement to, and not a substitute for, the expertise, skill, knowledge, and judgment of healthcare practitioners. For the most current recommendations always refer to the Canadian Best Practice Recommendations for Stroke Care at: [www.strokebestpractices.ca](http://www.strokebestpractices.ca)
- Images used in this presentation are for educational purposes only and are not to be duplicated

# Outline

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- Introduction to Stroke Care
- Overview of Brain Anatomy and Physiology
- Stroke Pathophysiology
- Stroke Prevention
- Transitions and Community Integration

# Ontario Stroke System (OSS)

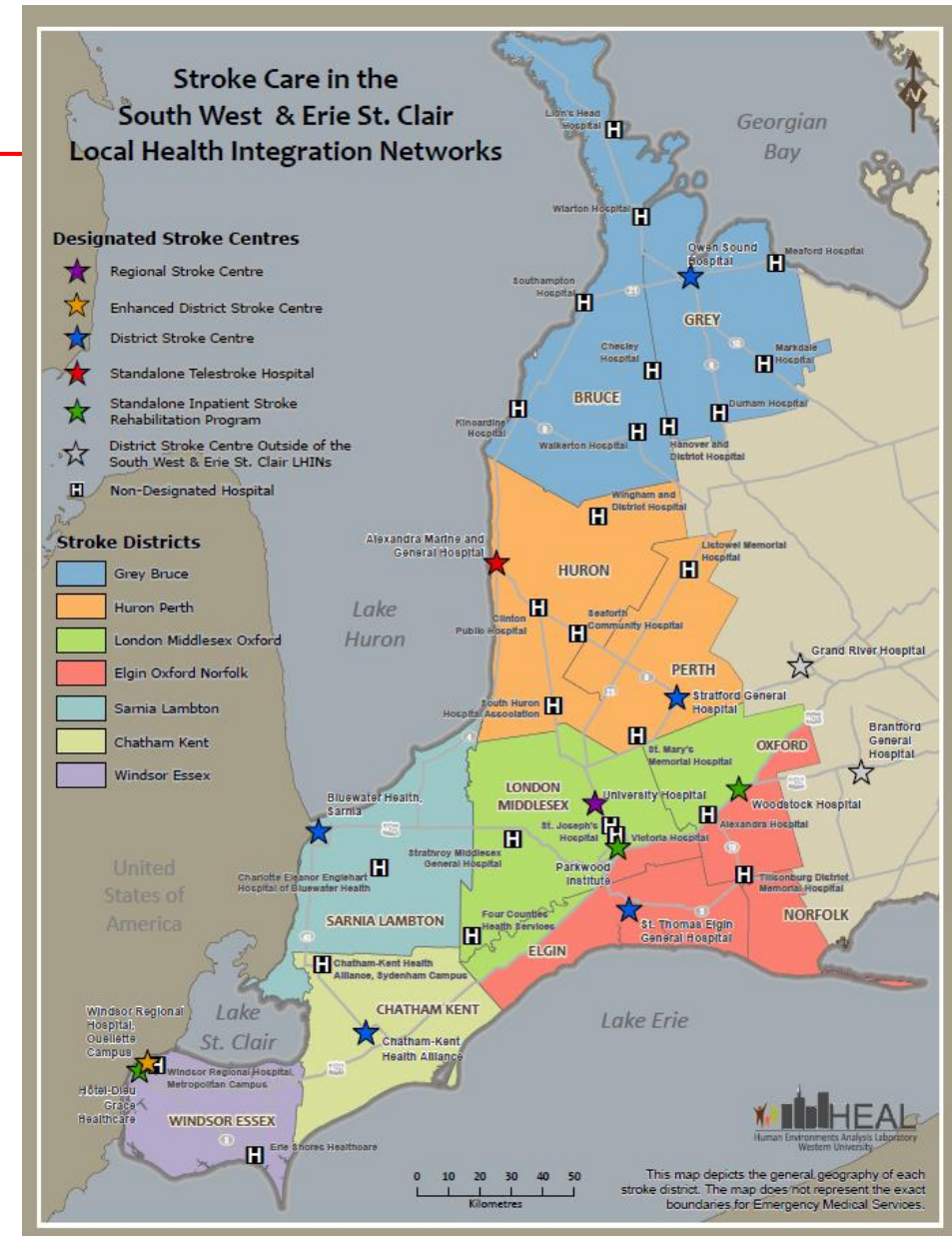
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- The OSS is a comprehensive approach to organizing stroke care
- In 2016, the Cardiac Care Network of Ontario and the Ontario Stroke Network merged. In June 2017, after a year of transition, the new entity became **CorHealth Ontario**. CorHealth Ontario, is now part of Ontario Health, an agency created by the Government of Ontario with a mandate to connect and coordinate our provinces health care system to ensure that Ontarians receive best possible care.
- There are 11 regional stroke systems across the province. The **Southwestern Ontario Stroke Network** being one of them.



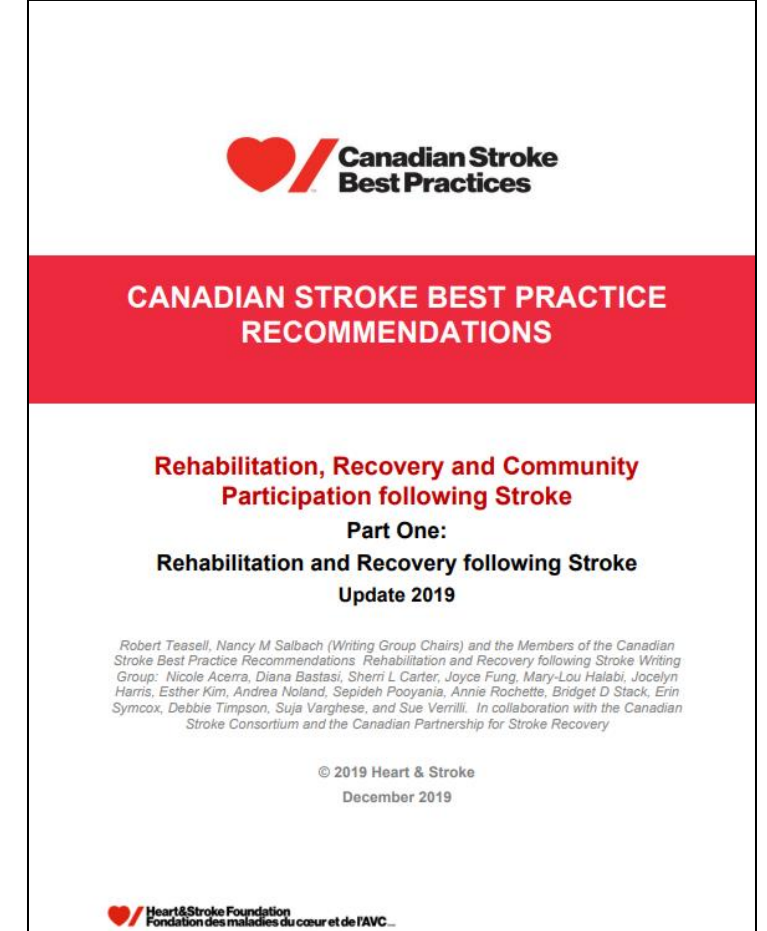
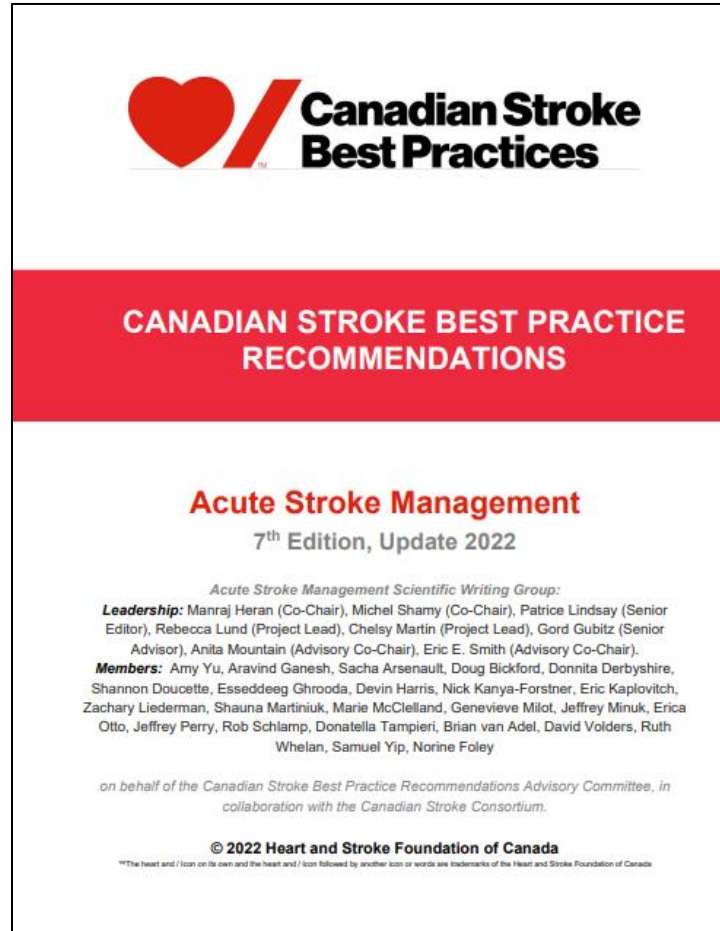
# Southwestern Ontario Stroke Network (SWOSN)

- Spans a diverse geography with a population of 1.8 million people.
- Provides support & leadership to regional providers working along the continuum of stroke care.
- There are 7 stroke districts in our region that are differentiated by the colours on the map →



# Canadian Stroke Best Practice Recommendations

The **CSBPR** are under the leadership of the Heart and Stroke Foundation, Canada. They are intended to provide up to date evidence-based guidelines for the prevention and management of stroke. The CSBPR **should always** be integrated into your clinical practices.

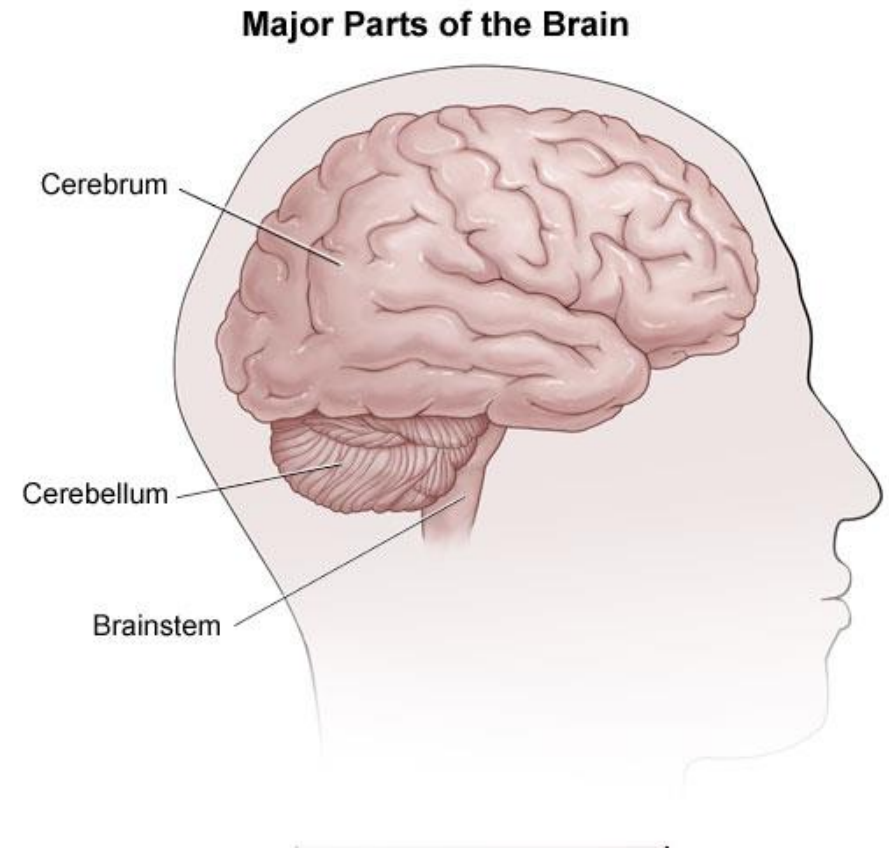


# The Brain

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The brain is divided into **3 main areas:**

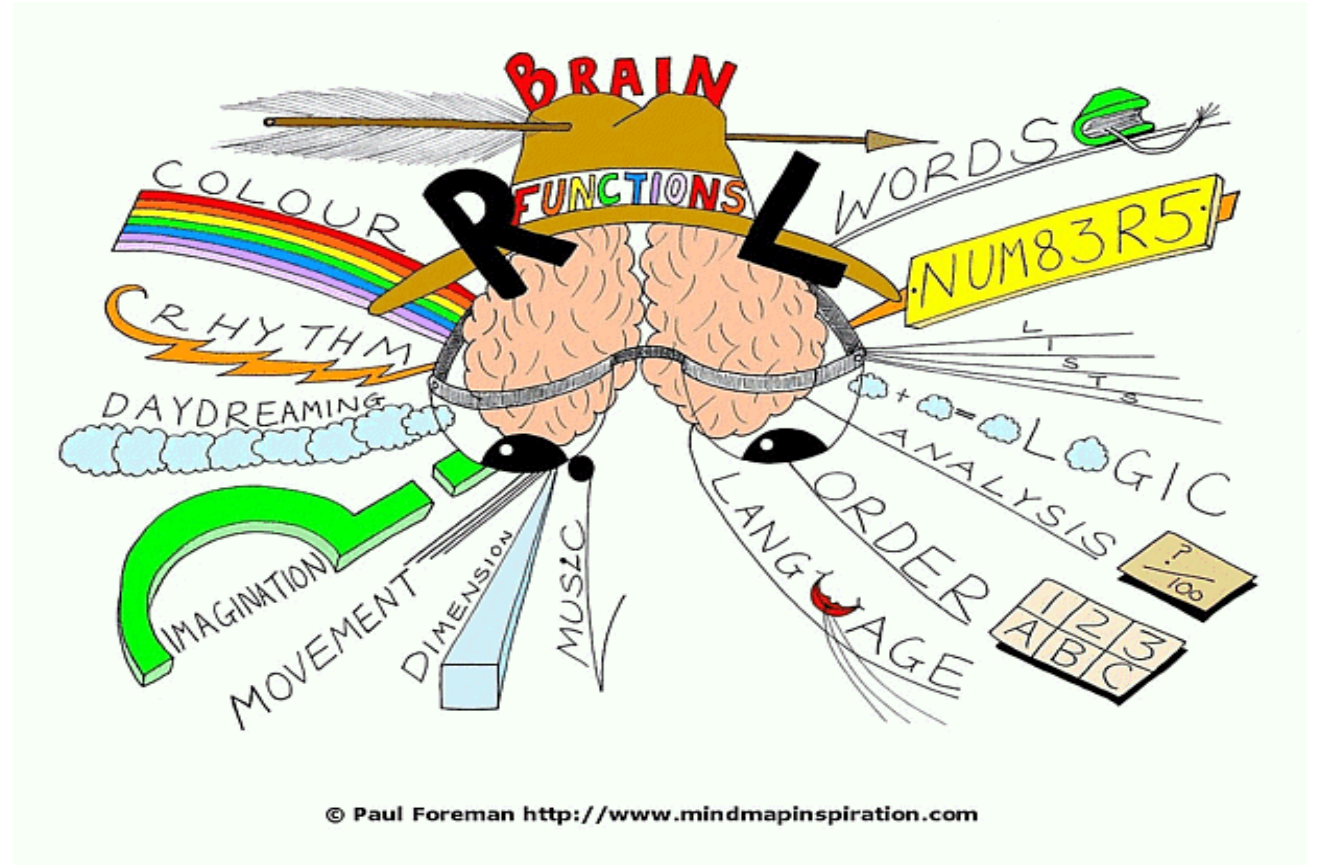
- Cerebrum (right and left sides or hemispheres)
- Cerebellum (back of the brain)
- Brainstem (base of the brain)





# The Brain

**Cerebrum:** Largest portion of the brain and contains two hemispheres. Each hemisphere controls the function of the opposite side of the body. The two hemispheres are joined by the **corpus callosum**.





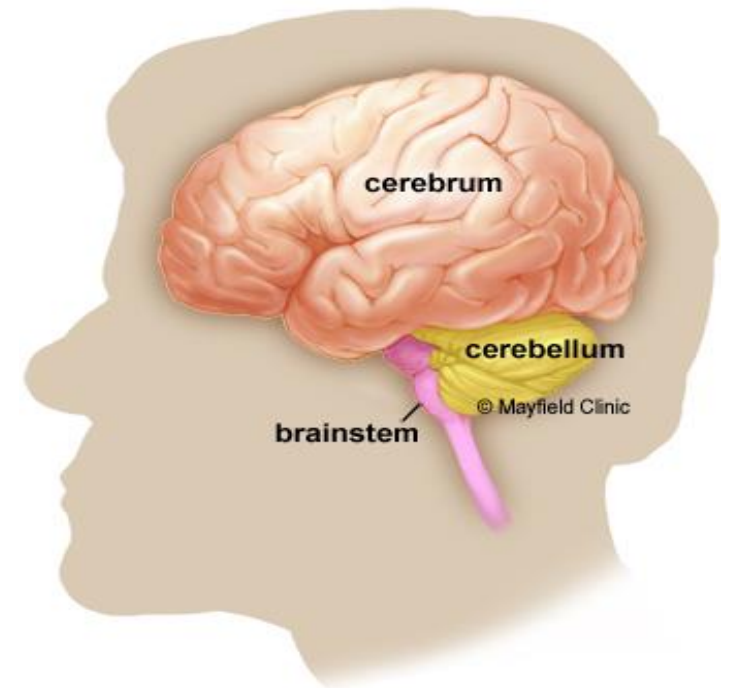
# The Brain

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**Cerebellum:** Located at the back of the brain. Its major functions are control of fine motor movement, coordination of muscle groups and maintaining balance and equilibrium.

**Brain Stem:** Connects the cerebrum with the spinal cord and is divided into 3 major sections:

- Midbrain
- Pons
- Medulla



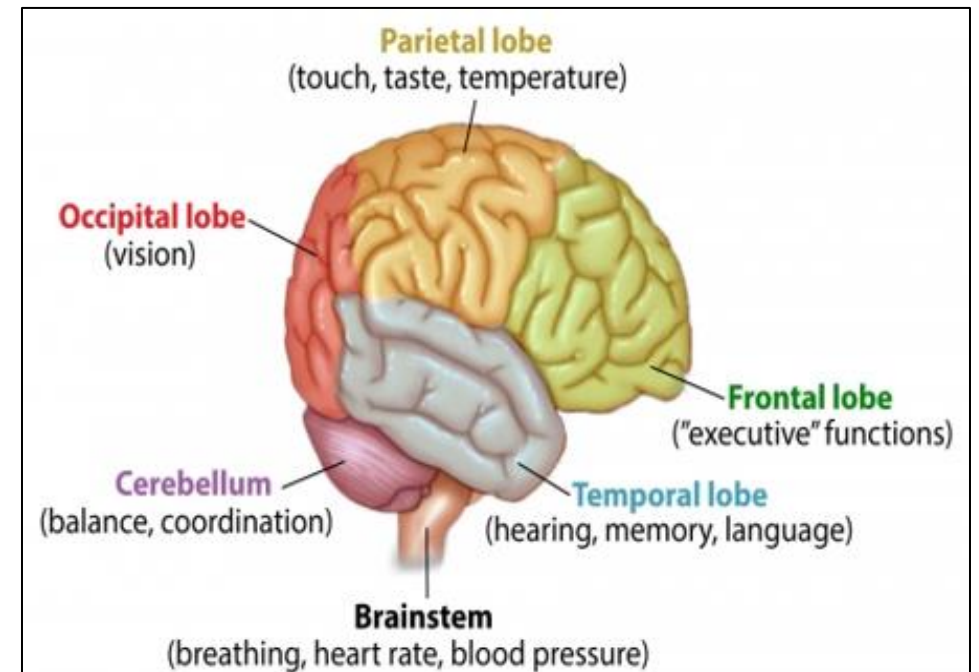
# The Brain

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**Cerebral Cortex:** The outer portion. It is divided into six main regions with 4 specialized lobes:

- Frontal
- Parietal
- Temporal
- Occipital

The brain is comprised of specialized cells, called **neurons**



# Neuroplasticity

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**Neuroplasticity** is the brain's ability to restructure itself when it recognizes the need for adaptation. This process allows healthy parts of the brain to take over functions damaged by stroke.

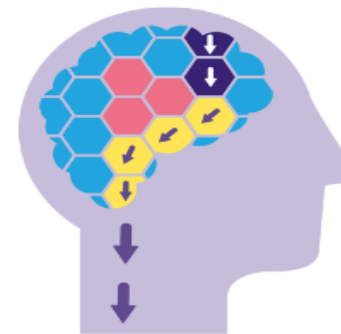
- **Rewiring:** The brain makes use of existing pathways for a new purpose.
- **Remapping:** The brain creates new pathways to communicate with the body.



1. Signals go from one cell to another forming a connection in the brain.



2. When a stroke kills brain cells, it damages the connection.



3. Brain cells can sometimes form new connections, and start sending signals again.

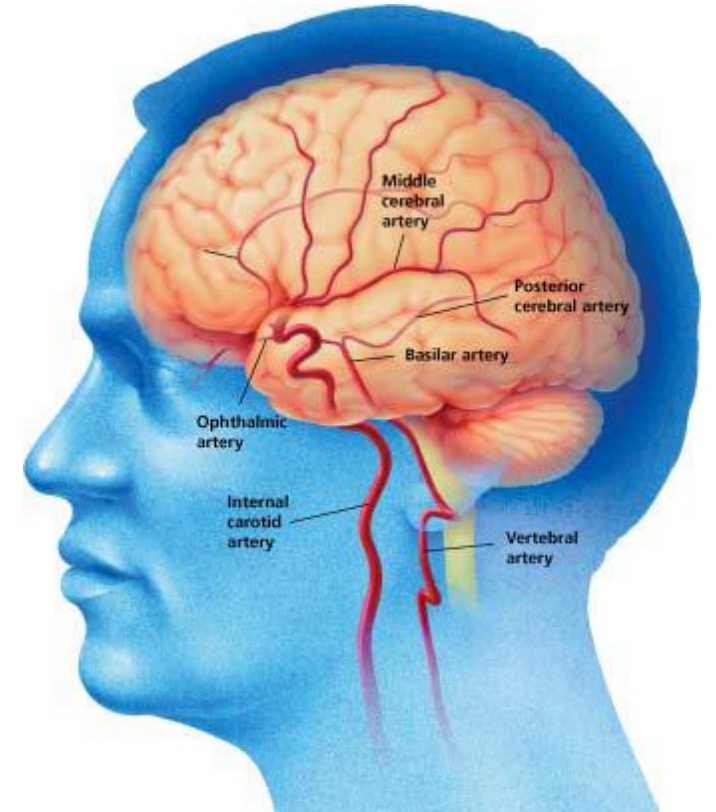
# What is a Stroke?

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A stroke happens when blood stops flowing to any part of your brain, damaging brain cells.

Blood stops flowing for two reasons:

- The artery is blocked (ISCHEMIC STROKE)
- The artery bursts (HEMORRHAGIC STROKE)



# Types of Strokes

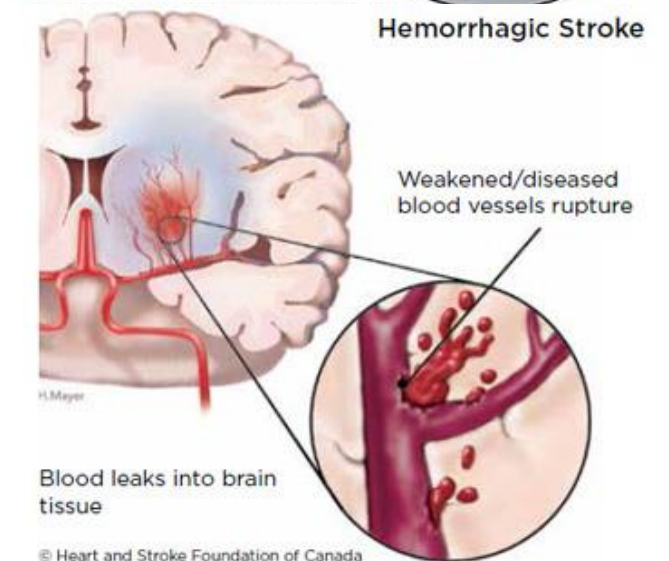
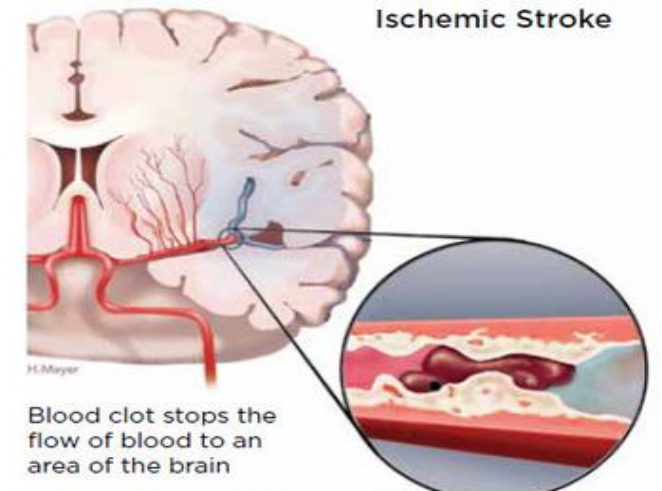
**Ischemic Stroke:** A blockage in a blood vessel in your brain.

**Embolic** is caused by a blood clot or plaque debris that develops elsewhere in the body and then travels to an artery in the brain.

**Thrombotic** is caused by a blood clot that develops in the walls of an artery in the brain.

**Hemorrhagic Stroke:** A blood vessel in the brain breaks open.

**Transient Ischemic Attack (TIA):** A small clot **briefly** blocks an artery. TIA symptoms fully resolve within 24 hours (usually within one hour).

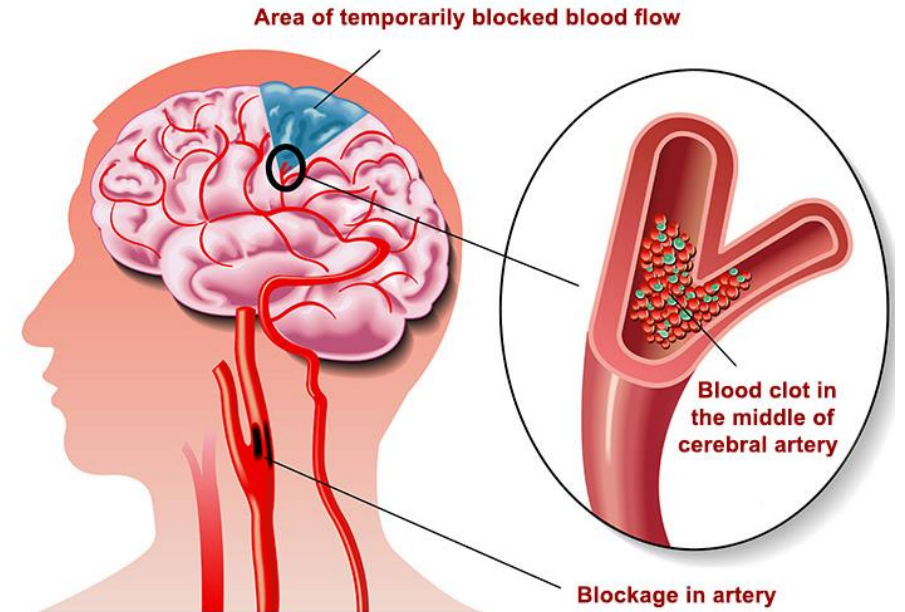


# Transient Ischemic Attack

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The signs of TIA are the same as those for stroke except that they resolve within a short time frame.

Rapid specialized assessment and development of a prevention plan is an important part of TIA management.





# Early Stroke Recognition

**FAST** signs are the most common signs of stroke.

- Face, Arms, Speech and Time

Additional signs of stroke may include:

- Vision changes
- Unilateral numbness
- Balance disturbances

Common symptoms of hemorrhagic stroke include:

- Altered Level of Consciousness
- Nausea/Vomiting
- Sudden Severe Headache
- Seizures



# React Immediately

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**Call 9-1-1**



# Stroke Prevention

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**Primary Prevention:** Targets individuals with modifiable risk factors to prevent the **initial occurrence** of a disease.

**Secondary Prevention:** Individually based clinical approach aimed at reducing the risk of a recurrent vascular event in individuals who have already experienced a stroke or TIA.



# Stroke Prevention

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Almost 80% of premature stroke can be prevented through healthy behaviors.

**Non-Modifiable:** Individual has no control  
(i.e. Age, race/ethnicity, family history, gender etc.)

**Modifiable:** Individual has some control, can modify in order to reduce the risk of stroke  
(i.e. Blood pressure, lifestyle, nutrition, alcohol intake etc.)



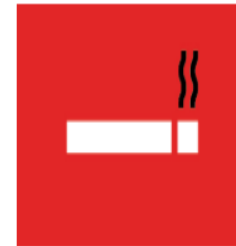
Unhealthy diet



Physical inactivity



Unhealthy weight



Smoking



Stress



Excessive alcohol & drug abuse

# Non-Modifiable Risk Factors

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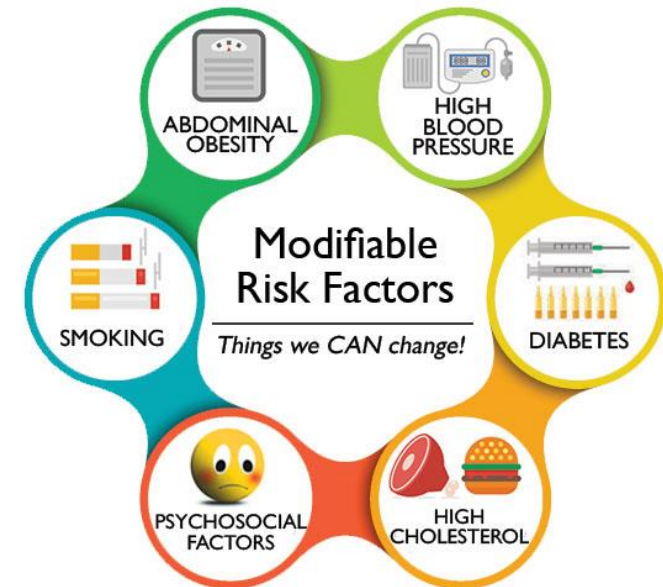
These are some of the risk factors that we **do not** have control over  
*“we cannot change”*:

- Age
- Sex
- Ethnicity
- Family History
- Prior TIA or stroke

# Modifiable Risk Factors

These are some of the risk factors that we **do** have control over “*we can change*”:

- High blood cholesterol
- High blood pressure (hypertension)
- Atrial fibrillation/irregular heart beat
- Blocked carotid arteries
- Diabetes
- Being overweight
- Low physical activity levels
- Drinking too much alcohol
- Recreational drug use
- Smoking
- Sleep apnea
- Stress
- Poor diet
- Heart Disease





# Healthy Lifestyle Behaviors

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- Know and control your blood pressure
- Manage diabetes
- Be smoke-free
- Maintain a healthy body weight
- Be physically active
- Eat a healthy diet
- Monitor sodium intake
- Avoid excessive alcohol consumption
- Lipid management
- Take medications as prescribed
- Reduce Stress

# Community Resources

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People with stroke should be provided with information and/or referrals to community-based resources for engagement and self-management. Popular resources may include:

- Adult Day Programs
  - New Beginnings, Dale Brain Injury
- Community Health Centers Programs
- Peer Support Groups
- Self- Management Checklist
  - [csbpr-enabling-self-management-following-stroke-checklist-jan2021-final.ashx \(heartandstroke.ca\)](#)
- Home Exercise Programs
  - March of Dimes [Online Exercise Programs | March of Dimes Canada](#)
- Caregiver Support
  - [Ontario Caregiver - Ontario Caregiver Organization](#)
  - [The power of community | Heart and Stroke Foundation](#)

# Resources to Support Transitions

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For **specialized services that provide support, treatment and/or rehabilitation** patients should be directed to the Healthline Website:

- [Stroke Strategy Southwestern Ontario - A Partner in the Ontario Stroke System - southwesthealthline.ca](http://southwesthealthline.ca)
- [Stroke Resources - Landing Page - eriestclairhealthline.ca](http://eriestclairhealthline.ca)

The Healthline categorizes services by geography and topics and is updated frequently. It is a great **one stop shop!**

**SouthWesthealthline.ca**

**ErieStClairhealthline.ca**

# Resources

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**Communication Resource ParticiPics:** A searchable database of pictographic images designed to facilitated conversations

- [ParticiPics – Aphasia Institute](#)

## **Return to Driving Resource**

- [SA Fillable PDF.pdf \(swostroke.ca\)](#)
- [Driving Assessment Programs at Parkwood institute - Patient Resources | St. Joseph's Health Care London](#)

## **Southwestern Ontario Stroke Network**

- [Popular Resources - SW Stroke Network - www.swostroke.ca](#)

## **Exercise Resource:**

- [FAME@Home – FAME – Fitness and Mobility Exercise Program \(fameexercise.com\)](#)
- [Online Exercise Programs | March of Dimes Canada](#)

# Resources

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## Peer Support:

- [Online Support Programs | March of Dimes Canada](#)

## Heart & Stroke

- [What is stroke? | Heart and Stroke Foundation](#)

## Nutrition

- [fact-fiche-eng.pdf \(canada.ca\)](#)
- [Canada's Food Guide](#)

## Blood Pressure Management

- [HTC\\_BloodPressureLog\\_ENG\\_PREVIEW-1.pdf \(hypertension.ca\)](#)

# Thank You

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- You have now completed **Module 2: Stroke Education**. For any questions, please contact [SWOSN@lhsc.on.ca](mailto:SWOSN@lhsc.on.ca) and/or contact your designated Community Stroke Rehabilitation Team Representative.



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