

# The Brain....The Body...and You

## From Prevention to Life After Stroke

Presented by:  
Delanya Podgers, NP, MN, CRE



# Overview & Objectives

- Review
  - definition of a stroke
  - types of strokes
  - signs and symptoms of stroke
  - risk factors for stroke
  - medical care and management
- Discuss common complications and deficits
- Discuss effects of stroke on the survivor & family

# YOUR ROLE AS PART OF THE STROKE CARE TEAM

Each member of the care team  
contributes  
to the recovery journey

You can make the difference in  
the quality of life  
of someone who has had a  
stroke



# A LITTLE ABOUT YOU...

# Stroke Facts

- Stroke occurs every 9 minutes in Canada
- Stroke is the 3rd leading cause of death and leading cause of adult disability in Canada
- Stroke is the leading cause of disability and LTC institutionalization

# Stroke Facts

- Approximately 100,000 Ontarians are living in the community with effects of stroke
- More females than males die from stroke
- Risk of stroke doubles every 10 years after age 55
- Predicted: Stroke rates among 24 and 64 years of age will double in next 15 years

# Stroke Today

- Today we can...
  - Treat stroke
  - Decrease risk
  - Improve outcomes for survivors
  - Avoid disability
- Despite this, 60 % of Stroke Survivors are left with a moderate to severe disability

# WHAT CHALLENGES DO YOU FACE IN CARING FOR STROKE SURVIVORS?

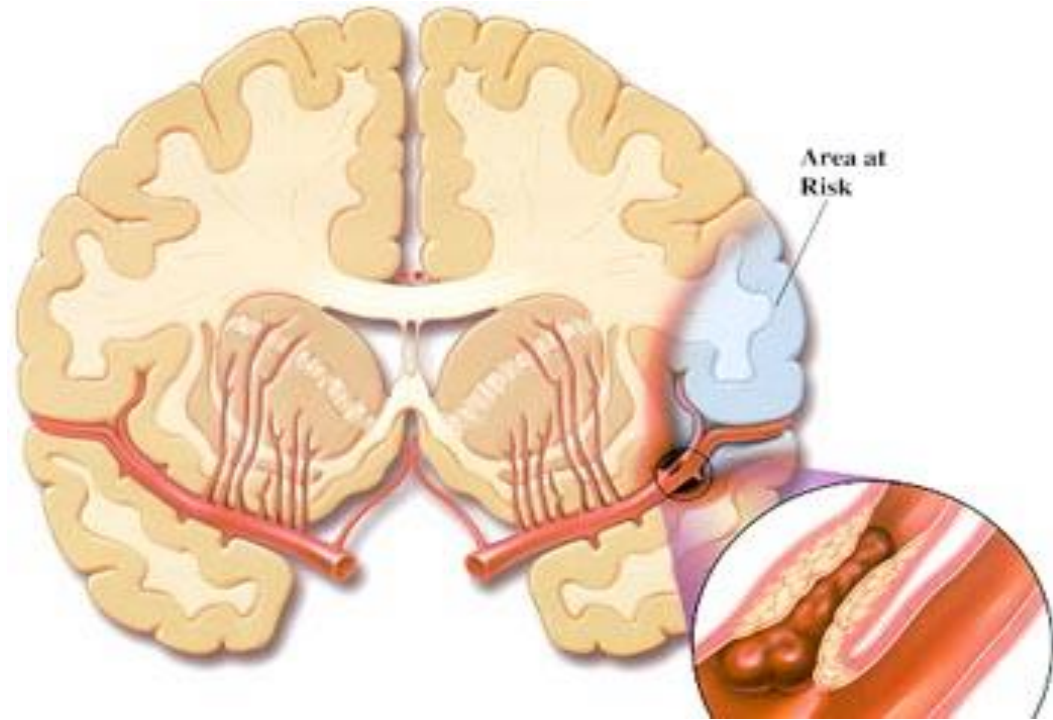


# What is a Stroke?

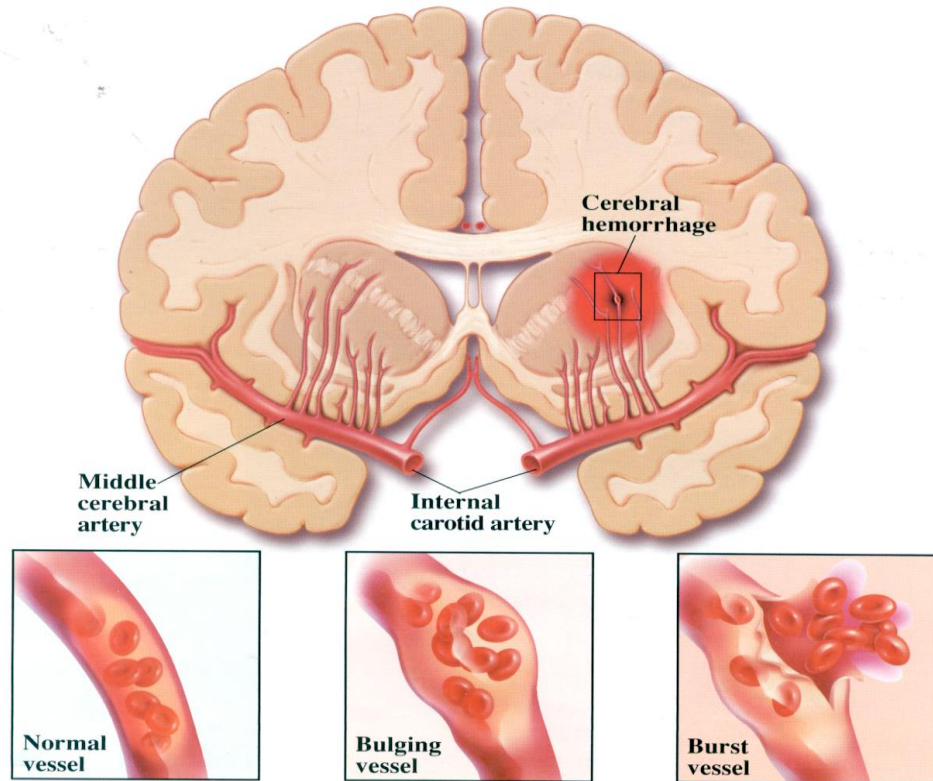
- An interruption in the blood supply to the brain causing injury to that part of the brain

# Ischemic Stroke

Sudden injury to a part of the brain caused by an occluded or blocked blood vessel

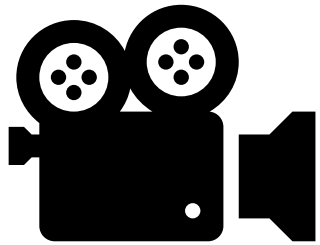


# Hemorrhagic Stroke

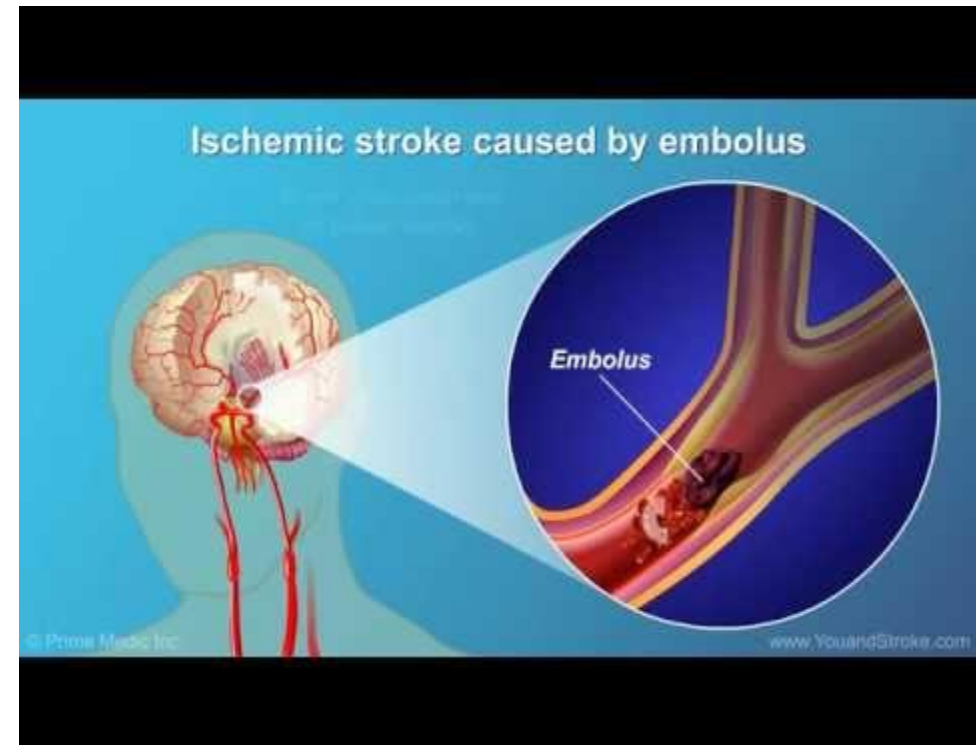


Sudden injury to a part of the brain caused by the rupture of a blood vessel

# Ischemic and Hemorrhagic Stroke



<https://www.youtube.com/watch?v=BDk9wRbW4oQ>





# SIGNS AND SYMPTOMS OF STROKE

# WHAT ARE THE SIGNS AND SYMPTOMS OF A STROKE?



**F**ACE is it drooping?  
**A**RM**S** can you raise both?  
**S**PEECH is it slurred or jumbled?  
**T**IME to call 9-1-1 right away.

ACT **F A S T** BECAUSE THE QUICKER YOU ACT,  
THE MORE OF THE PERSON YOU SAVE.

© Heart And Stroke Foundation of Canada, 2014

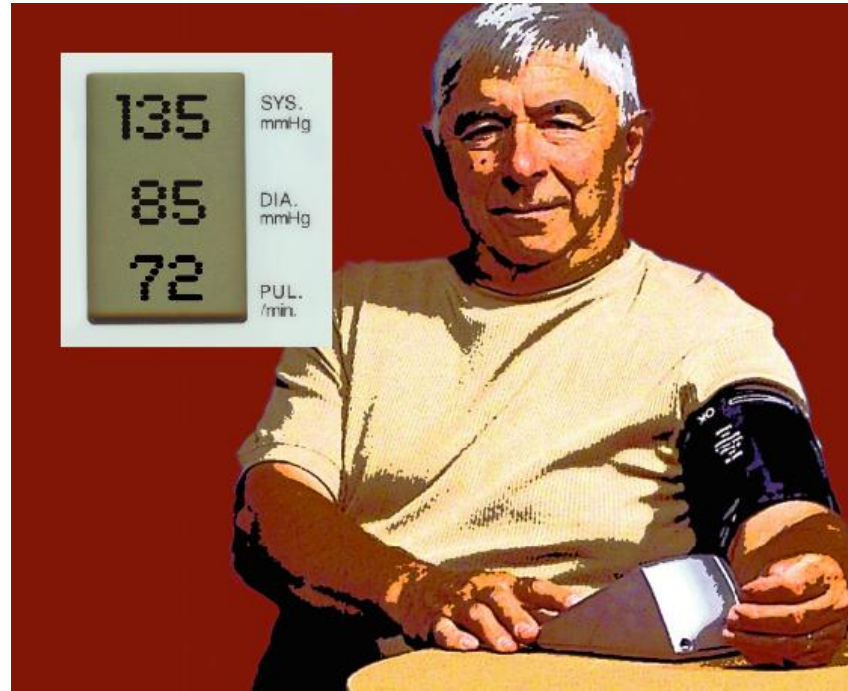
ALSO  
CONSIDER:  
DIZZINESS,  
VISION  
PROBLEMS,  
SWALLOWING  
PROBLEMS,  
HEADACHE, LEG  
WEAKNESS

# Stroke is a Medical Emergency

- 86% of individuals experiencing stroke symptoms did not feel they were serious enough to call 911
- For every minute delay in treating a stroke, the average patient loses 1.9 million brain cells







# RISK FACTORS FOR STROKE

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# Non-Modifiable Risk Factors

## Age

- Increased risk after 55 years of age

## Gender

- After menopause women have a higher risk than men

## Genetic factors

- Parent or sibling had a stroke before age 65

## Ethnicity

- Increased risk for people of
  - African or South Asian background
  - Indigenous heritage

## Prior stroke or TIA

# Modifiable Stroke Risk Factors

## Lifestyle

- Diet
  - Salt intake
  - “Heart healthy”
- Smoking
- Obesity
- Sedentary lifestyle
- Excess alcohol intake
- Recreational drug use
- Stress

## Disease

- High blood pressure
- Diabetes
- High cholesterol
- Heart disease / arrhythmias
- Coagulation disorders
- Vascular disease
- Sleep apnea
- Taking birth control or hormone replacement

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“You’ve got the blood pressure of a teenager – who lives on junk food, TV and the computer.”

# How to Modify Your Risk

- Control high blood pressure
- Exercise 5 times a week
- Eat a healthy, balanced diet (high in fruit/vegetables, low in sodium)
- Reduce your cholesterol
- Maintain a healthy BMI or waist to hip ratio
- Stop smoking and avoid second-hand exposure
- Reduce alcohol intake
- Identify and treat atrial fibrillation
- Reduce risk from diabetes
- Get educated about stroke
- Other modifiable risk factors:
  - Birth control & hormone replacement therapy risks
  - Avoid recreational drug use
  - Manage high stress levels

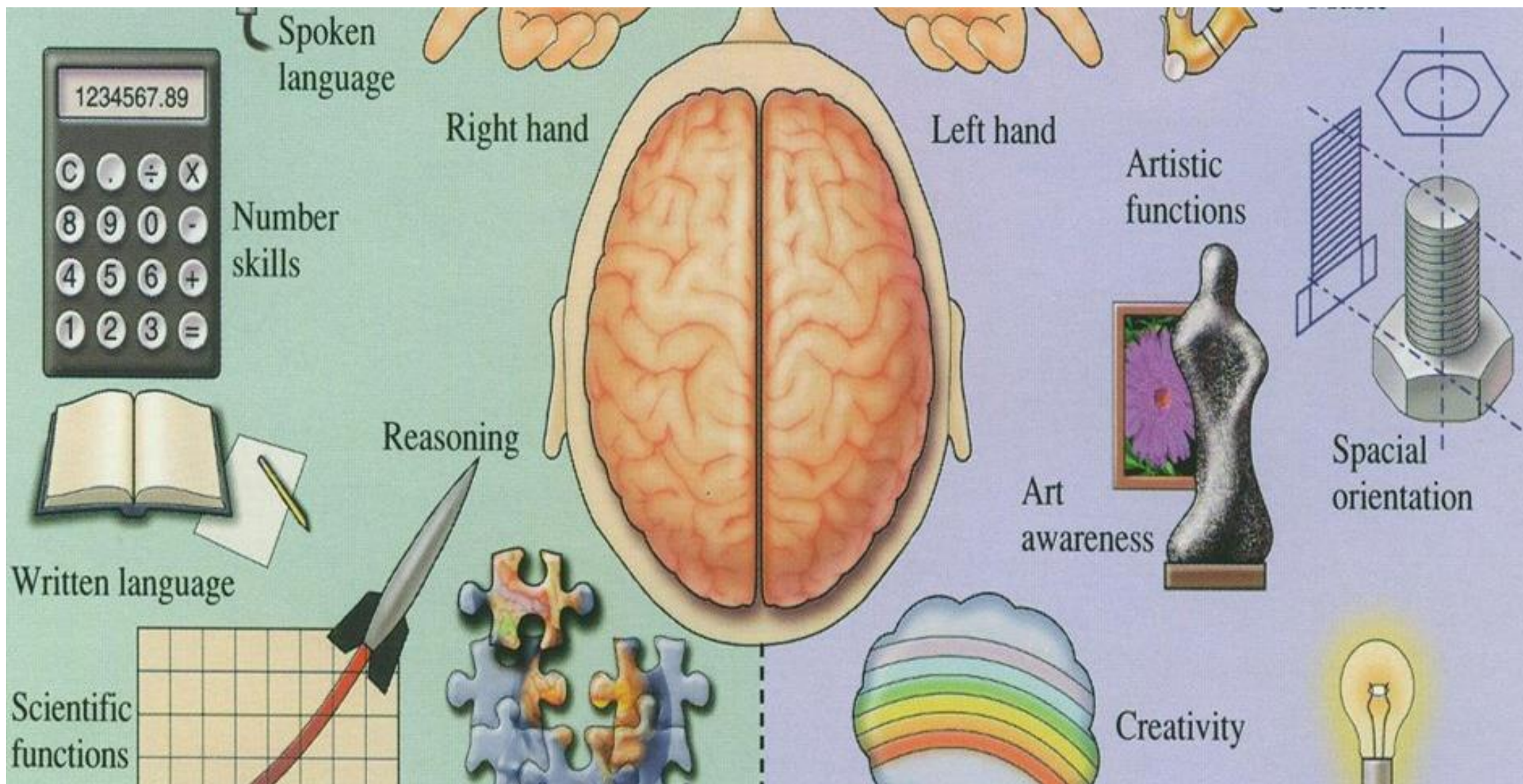
Up to **90%** of strokes are linked to 10 avoidable risks

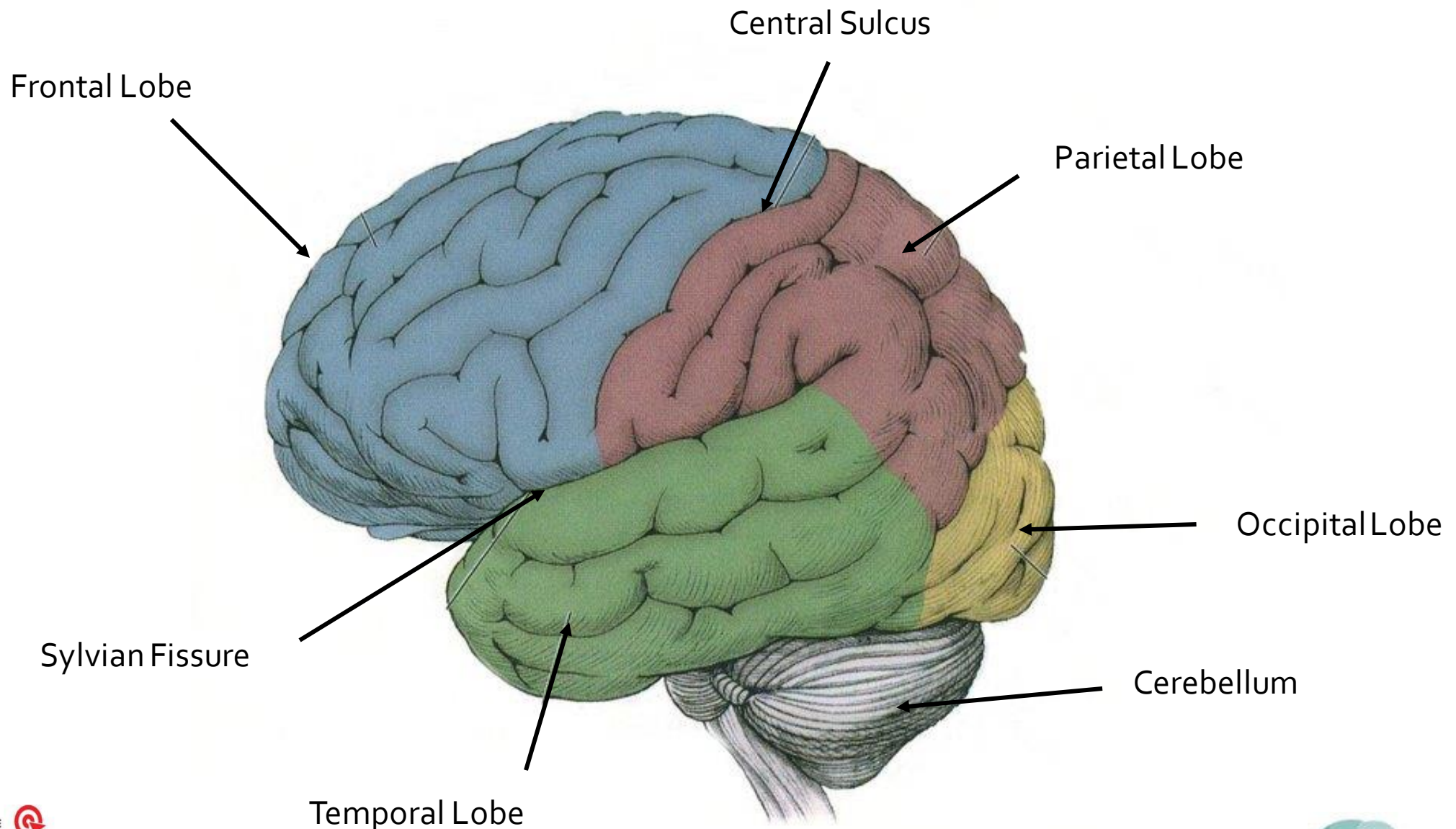


# A LITTLE ANATOMY

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# Stroke Signs and Symptoms

- <https://www.youtube.com/watch?v=AZdISAO4bdw>
- Left Hemisphere stroke-Watch from 4:00-7:36
- Right Hemisphere stroke- Watch from 7:36-12:12

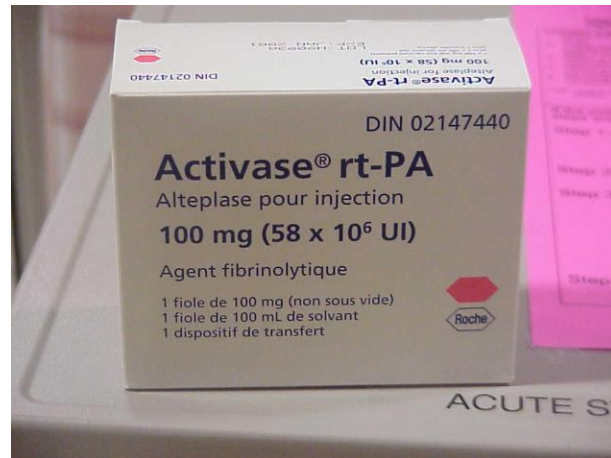


# STROKE MANAGEMENT

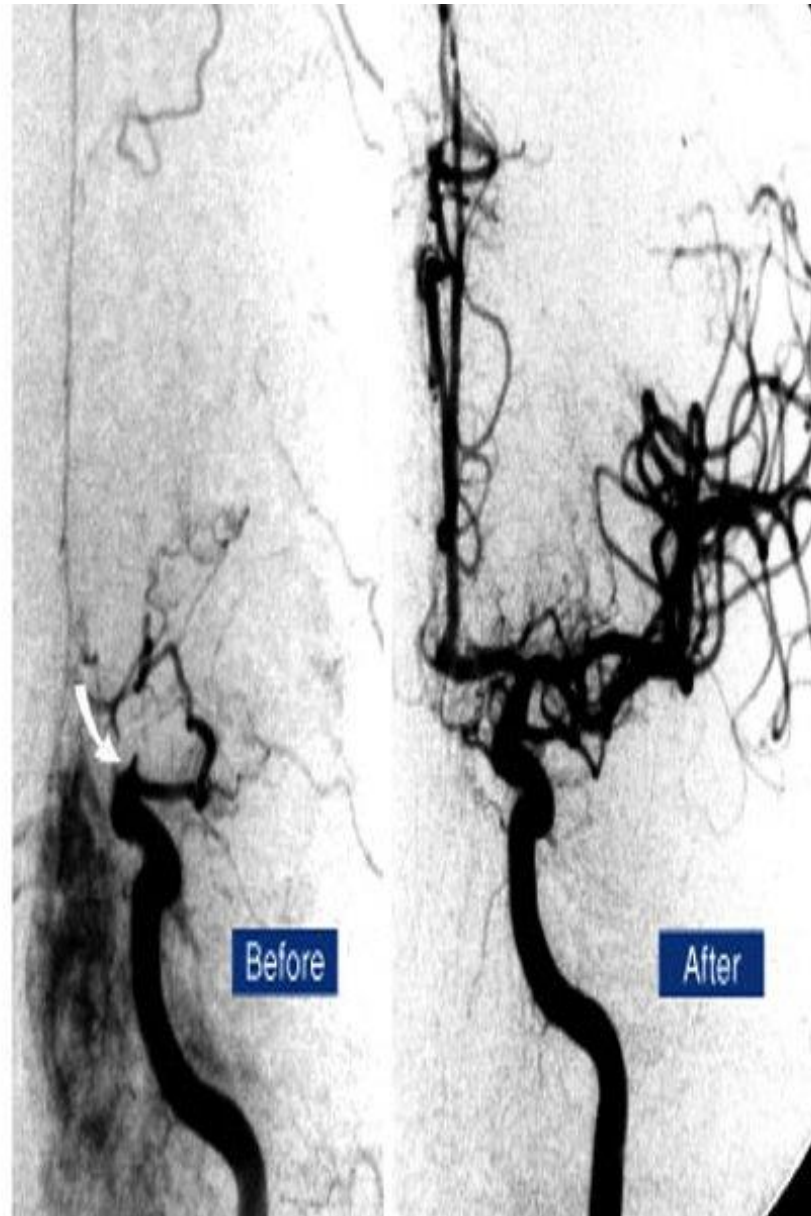
# Ischemic Stroke

- Obstruction of blood vessel initiates the ischemic cascade
- Cells can not survive without oxygen, and irreversible brain damage occurs at 4-6 minutes without oxygen
- Cells in the core will die but the penumbra, or surrounding area, is potentially viable and this region can *potentially* be salvaged

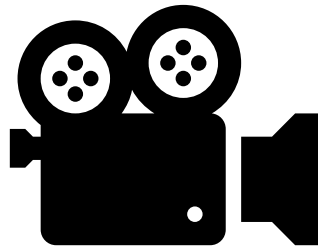
# Thrombolytic Therapy



- rt PA must be initiated within 4.5 hours of the onset of a stroke or from the time the person was “last seen well”



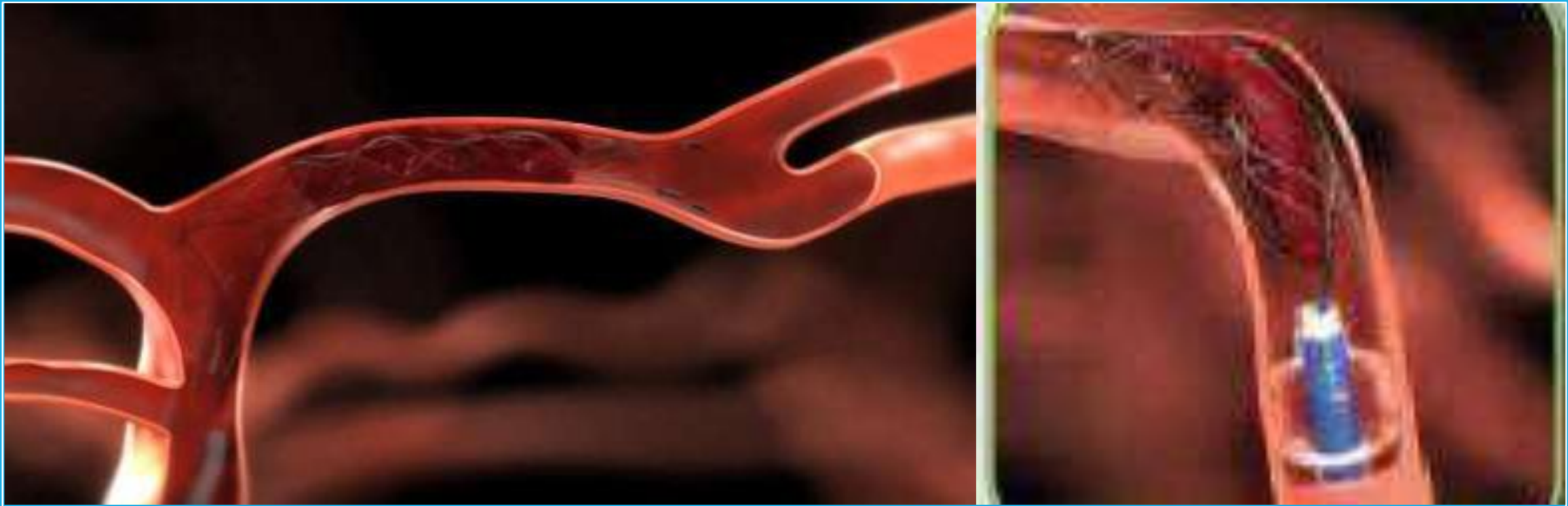
# Althea's Story



<https://www.youtube.com/watch?v=JwuaQbgC4ao>







# ENDOVASCULAR THROMBECTOMY

# Hemorrhagic Stroke

Bleeding into the brain tissue results in:

Increased pressure within the skull (increased intracranial pressure)

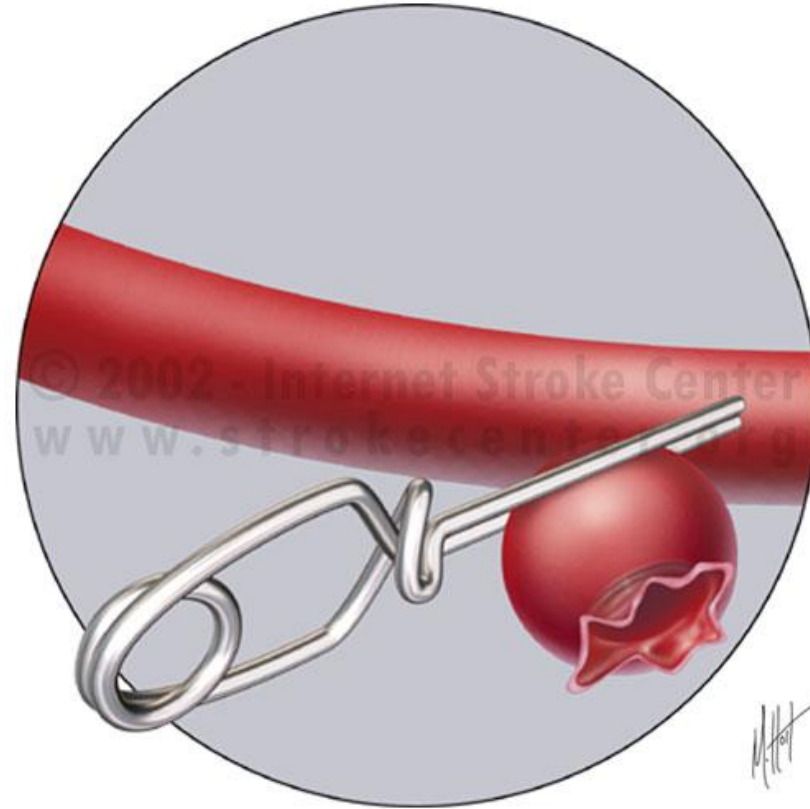
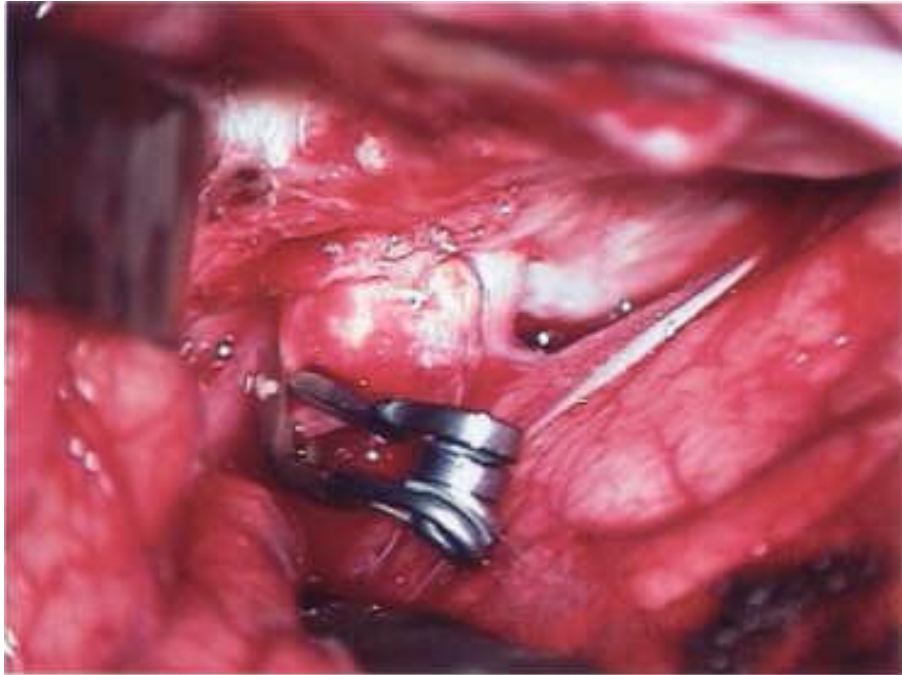
Decreased blood supply to cerebral tissues

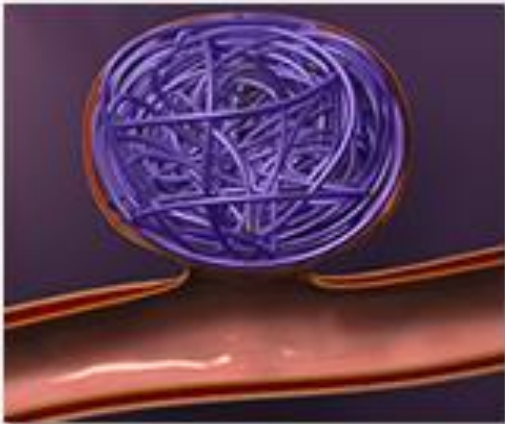
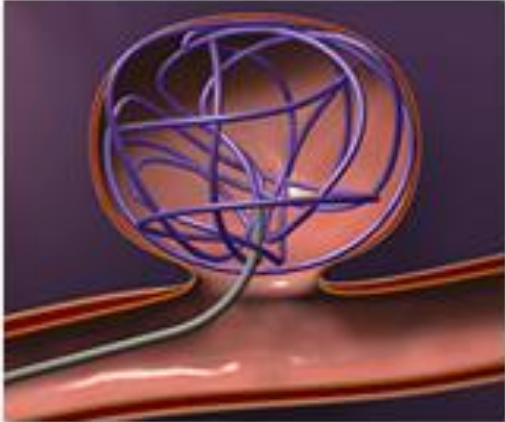
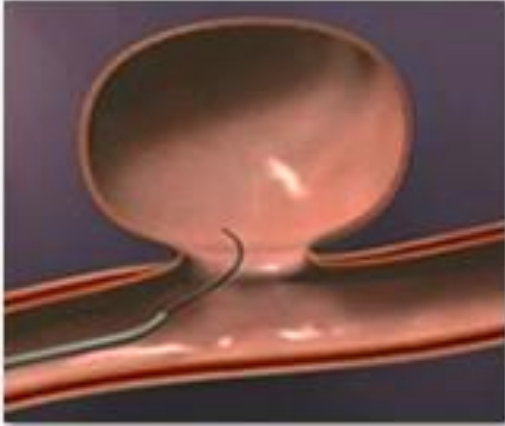


# Causes of Hemorrhagic Stroke

- Aneurysm
- Arteriovenous malformation
- Hypertension
- Arterial Dissection
- Subarachnoid hemorrhage
- Hemorrhagic transformation of an ischemic stroke

# Clipping

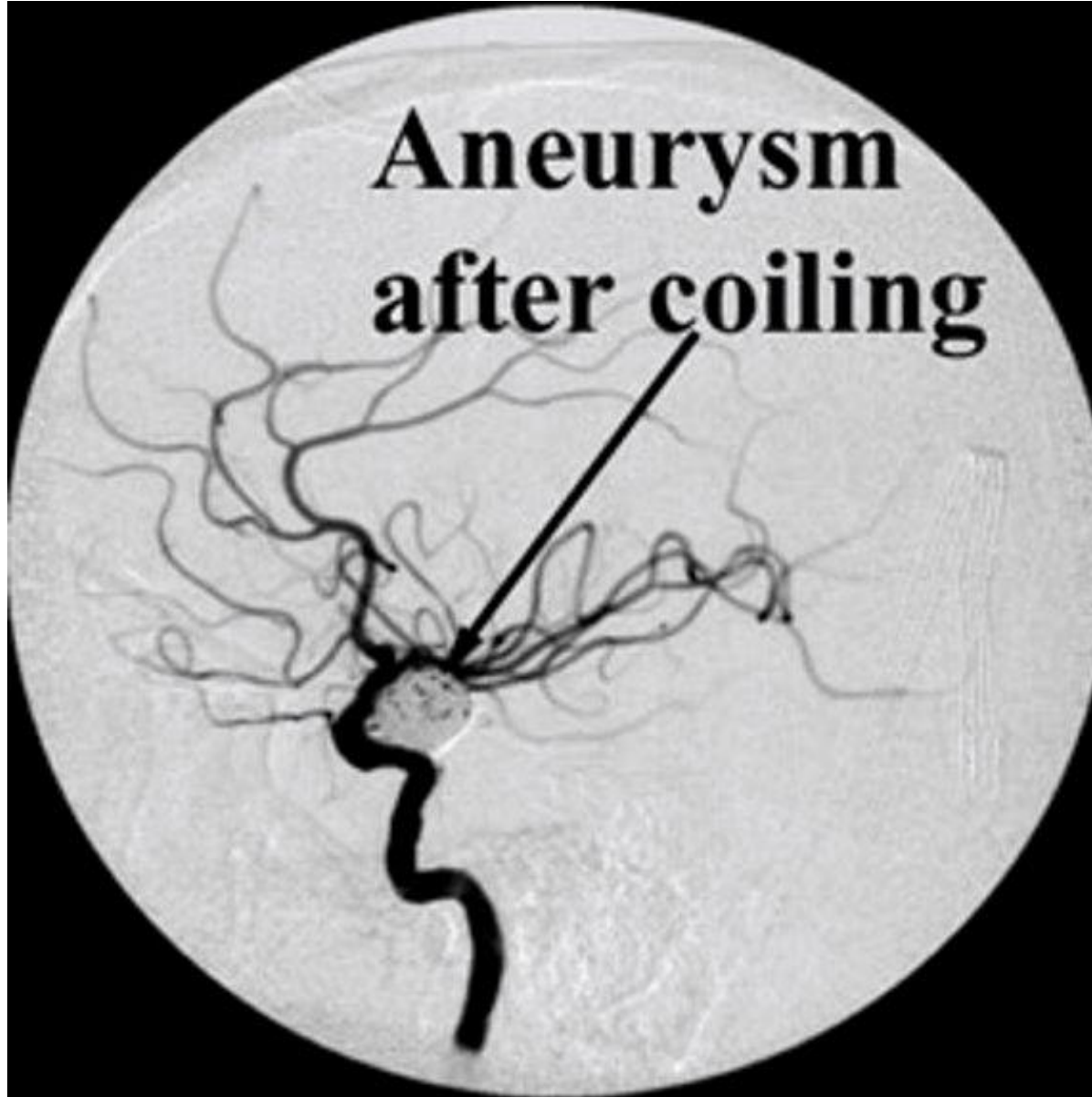




# Coiling

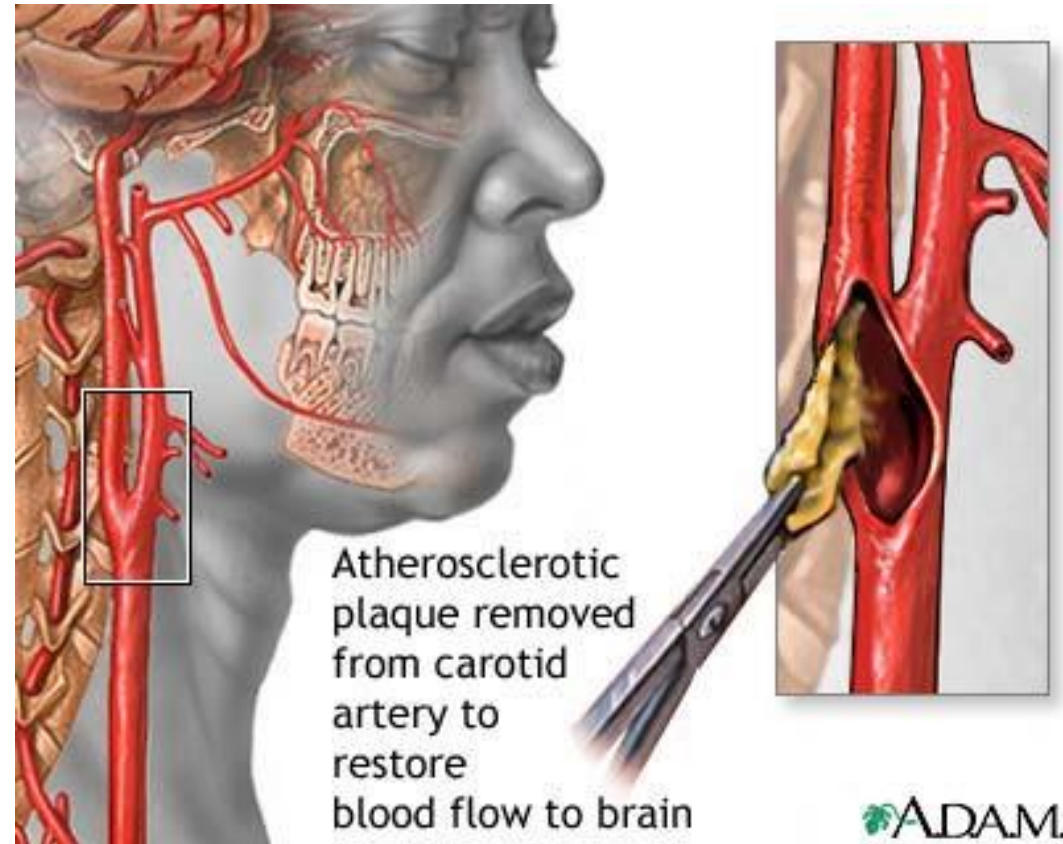
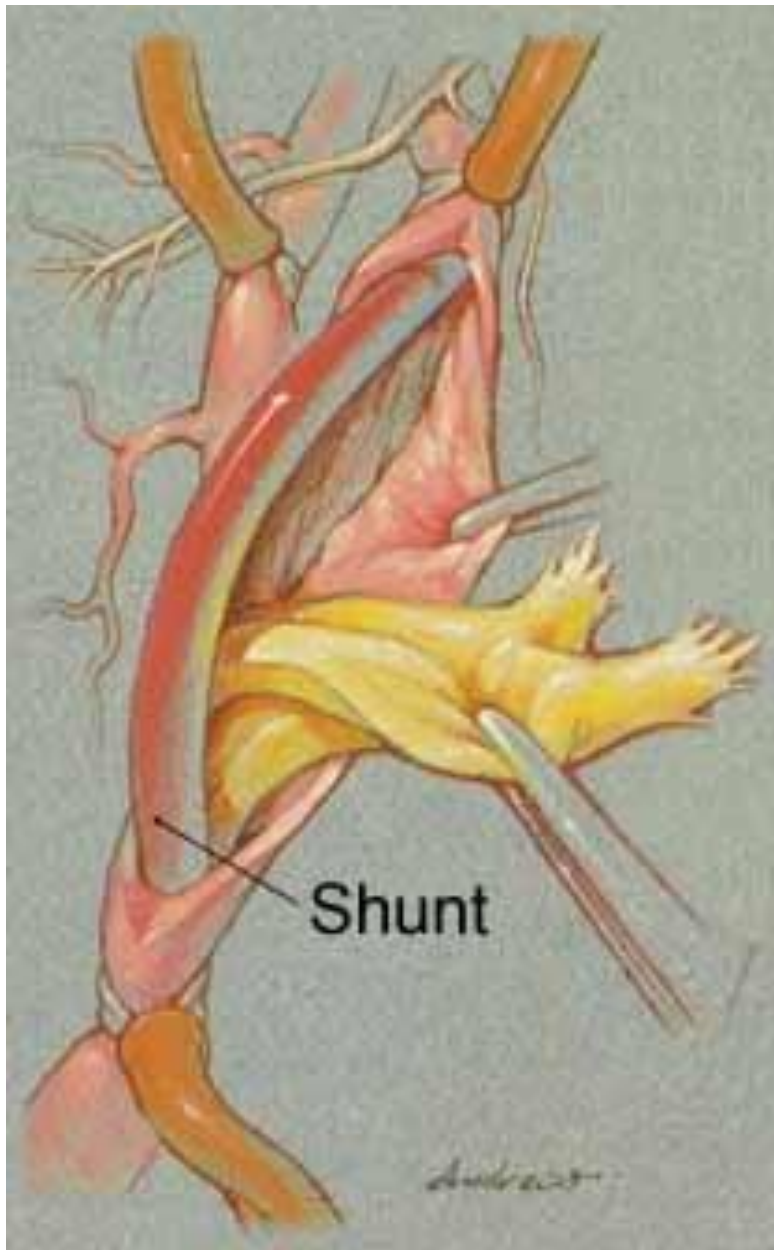
- Neurointerventional procedure
- Suitable for those with high grade or high risk aneurysms, elderly, posterior circulation aneurysm, patients with comorbid conditions

# Aneurysm after coiling

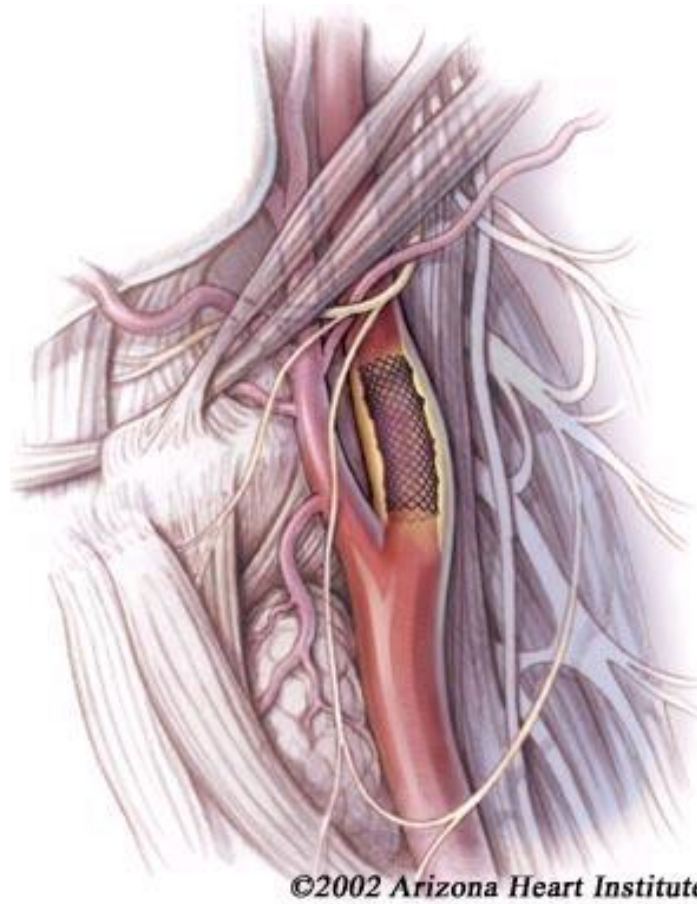




# Endarterectomy



# Carotid Stent



- What are some concepts or pieces of information that you will take with you today?

## Session 1 Takeaways

# Questions?

See you next week for session two!



- **From Prevention to**
- **Life After Stroke**
- Presented by:
- Delanya Podgers, NP, MN, CRE

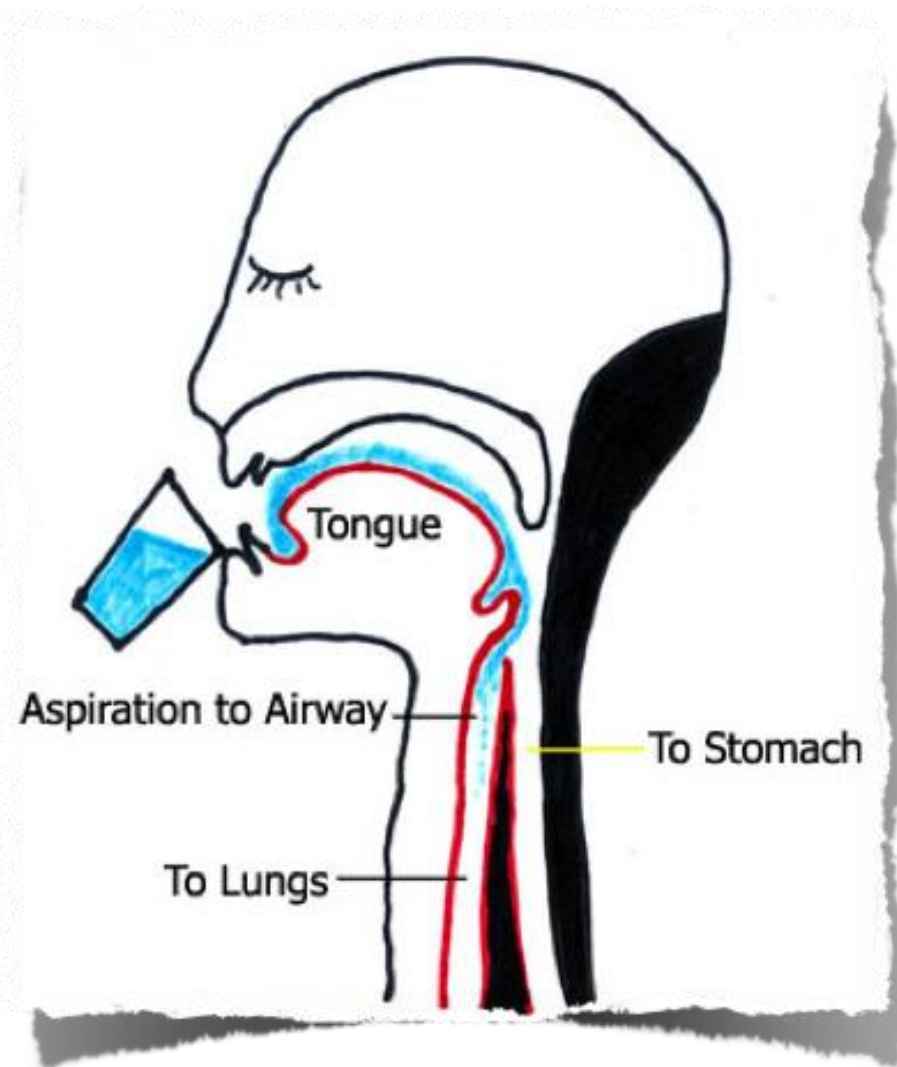


# The Brain....The Body...and You

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- Discuss common complications and deficits
- Discuss effects of stroke on the survivor & family

# LET'S REVIEW!



# COMMON STROKE DEFICITS & COMPLICATIONS

# WHAT ARE SOME COMMON DEFICIT YOU SEE IN YOUR STROKE SURVIVORS?

# Motor and Sensory Deficits

## Motor deficits

- Strength
  - Can range from weakness to paralysis of the face, arm, leg, torso
- Muscle tone
  - Flaccidity
  - Spasticity

## Balance

- Due to a combination of motor, sensory, visual changes

## Sensory deficits

- Can range from numbness to loss of sensation of the face, arm, leg, torso



# How you can help

## Positioning

- Optimizing sitting position
- Consider the affected shoulder

## Assist with mobilizing and repositioning

- From bed to chair
- Within the bed

## Use of assistive devices and aides

- Appropriate and as recommended

Use good body mechanics

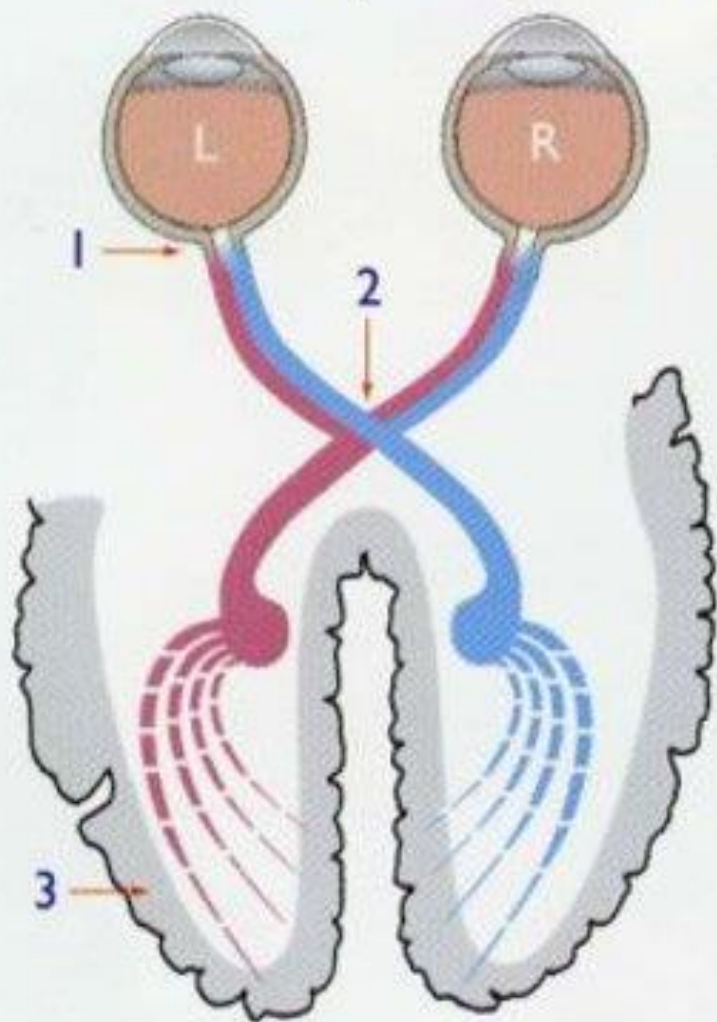
Communicate clearly

Mobilize to help limit complications

# Visual Deficits

- Visual neglect
  - Decreased awareness of the environment on the affected side
- Visual field loss
  - Inability to see the space around them
- Double vision
  - Inability to put the image from each eye together
- Loss of visual acuity
  - Object do not appear sharp and clear
- Loss of ocular motility
  - Inability of eyes to move in a coordinated manner

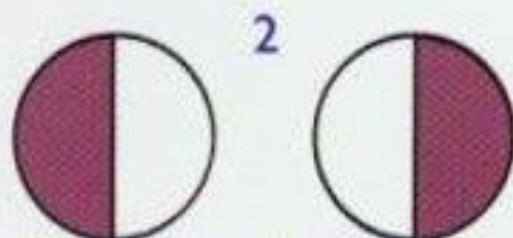
## Visual pathway



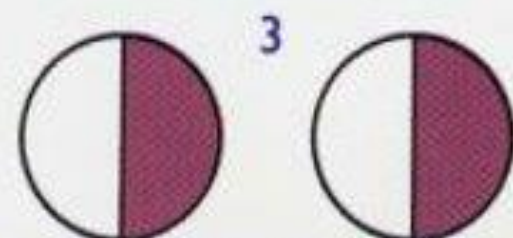
## Visual field defects



Unilateral field loss



Bitemporal hemianopia



Homonymous hemianopia

## Example of lesion

Left optic nerve compression

Chiasmal compression from pituitary tumour

Left cerebrovascular event



View of Paris for someone  
with Homonymous  
Hemianopsia



View of Paris for someone  
with normal vision.

### What It's Like



This is how a street scene  
looks with normal vision.



Example of a Hemianopia.

# HOMONYMOUS HEMIANOPSIA

# How you can help

Use	Reduce	Ensure	Supervise	Encourage	Eye
Use ruler or coloured guide for reading	Reduce clutter	Ensure good lighting	Supervise when ambulating	Encourage patient to scan environment	Eye patching if prescribed

# Communication Impairments

- Dysarthria
  - Slurred speech
- Aphasia
  - Difficulty understanding or using language
- Cognitive communication impairments
  - Problems organizing thoughts and communicating clearly



# How you can help

Establish a  
communication  
partnership

Be respectful

Acknowledge  
the time  
commitment

Consider verbal  
and non-verbal  
communication

Consider the  
environment

Use clear,  
simple  
messages

Utilize aides

Be patient and  
persistent

Be honest



0	1	2	3	4	5	6	7	8	9
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IT STARTS WITH...	NEW WORD	I'D LIKE TO ASK YOU SOMETHING	I'M NOT SURE	I MADE A MISTAKE. I'LL START AGAIN	THANK YOU	YES	NO
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A	B	C	D	E	F	G
H	I	J	K	L	M	N
O	P	Q	R	S	T	U
V	W	X	Y	Z	?	

Yes 	No 
--	---

G23 Labels by Indicating yes/no

 yes	 no
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© Cindy Dwyer 2004

## Sleeping



# Dysphagia

- Dysphagia
  - 50% of stroke survivors have difficulty with swallowing
  - 20% will die within the first year related to aspiration pneumonia
- Stroke survivor may experience coughing, delayed swallowing, altered voice quality, pocketing

# Effects of Dysphagia

- Dehydration
- Malnutrition
- Aspiration
- Impaired quality of life
- Nutritional issues
  - Can be pre-existing and compounded by dysphagia motor deficits, cognitive impairment, visual deficits, mood, etc



# Dehydration and Malnutrition

## Who is at risk? Stroke Survivors who:

- Cannot swallow thin fluids / eat a regular diet
- Refuse fluids / food
- Need assistance to eat and drink
- Lack the feeling of thirst
- Have communication deficits
- Have memory deficits
- Are ill
- Have a fear of incontinence

# WHAT ARE SOME SIGNS AND SYMPTOMS OF DEHYDRATION? MALNUTRITION?



# Dehydration

- Signs and symptoms
  - Decreased urine output
  - Dark, concentrated urine
  - Frequent urinary tract infections
  - Thick or stringy saliva
  - Dry mucous membranes
  - Constipation
  - Confusion
  - Rapid weight loss
  - Fever
  - Decreased skin elasticity

# Malnutrition

- Signs and symptoms
  - Weight loss (more gradual)
  - Decreased energy
  - Decreased vitality
  - Skin breakdown
  - Impaired wound healing
  - Decreased resistance to infection

# How you can help

Identify  
problems

Proper  
positioning

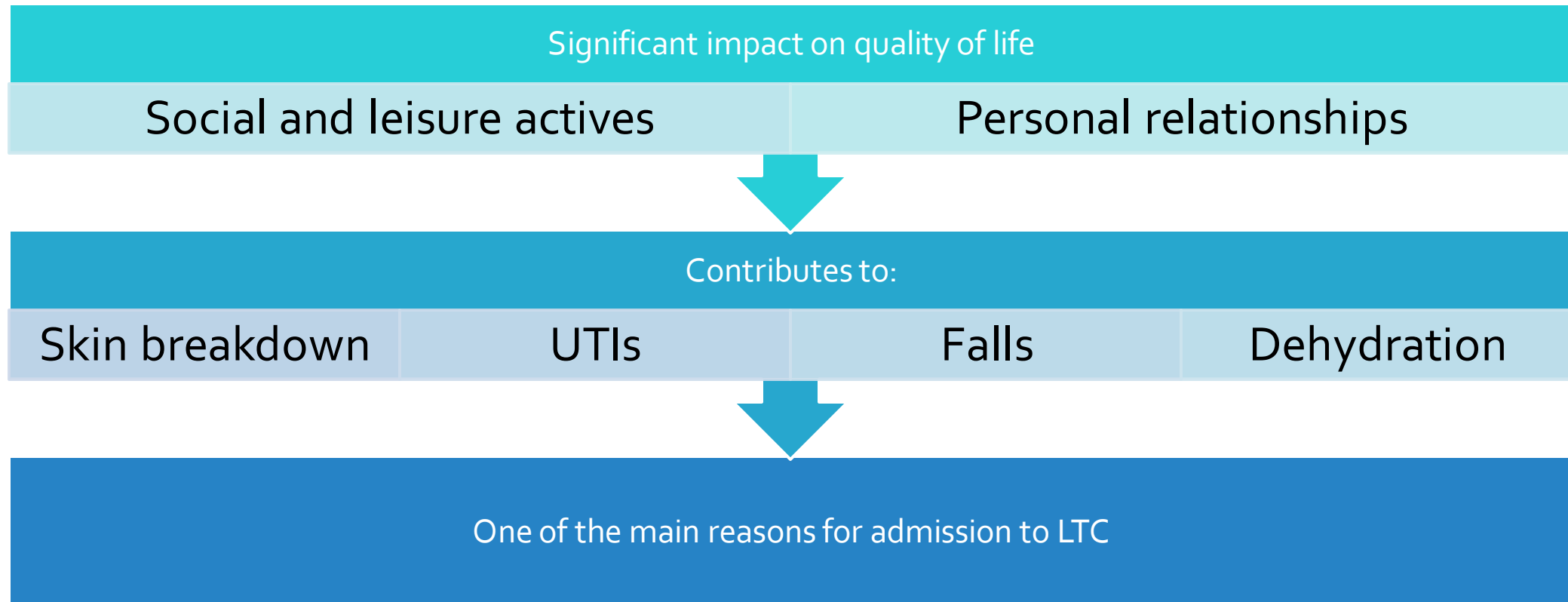
Reduce  
distractions

Monitor  
eating and  
intake

Assist with  
feeding

Adaptive  
equipment as  
needed

# Incontinence



# Incontinence

Up to 80 % of stroke patients have incontinence or continence issues during their acute admission

Urinary incontinence at 24 hours post stroke is a predictor of functional outcome

Incidence decreases to 20 % by 6 months post stroke

Stroke survivors may:

- Often experience urgency to void but have difficulty or be unable to control the urgency
- Have diminished ability to feel bladder fullness and have bladder control
- Pre-stroke issues will likely persist

# Normal Bladder Function

- Normal adult bladder holds 500-600mL urine
- Aging bladder
  - holds 250-300mL urine so more frequent voiding
  - Thinning of the bladder wall
    - more frequent, less controlled voiding
  - Inability to empty the bladder completely
    - results in urinary retention



# Urinary Issues

- Urge Incontinence
- Functional incontinence
- Stress incontinence
- Retention with overflow

# How you can help

## Develop a strategy

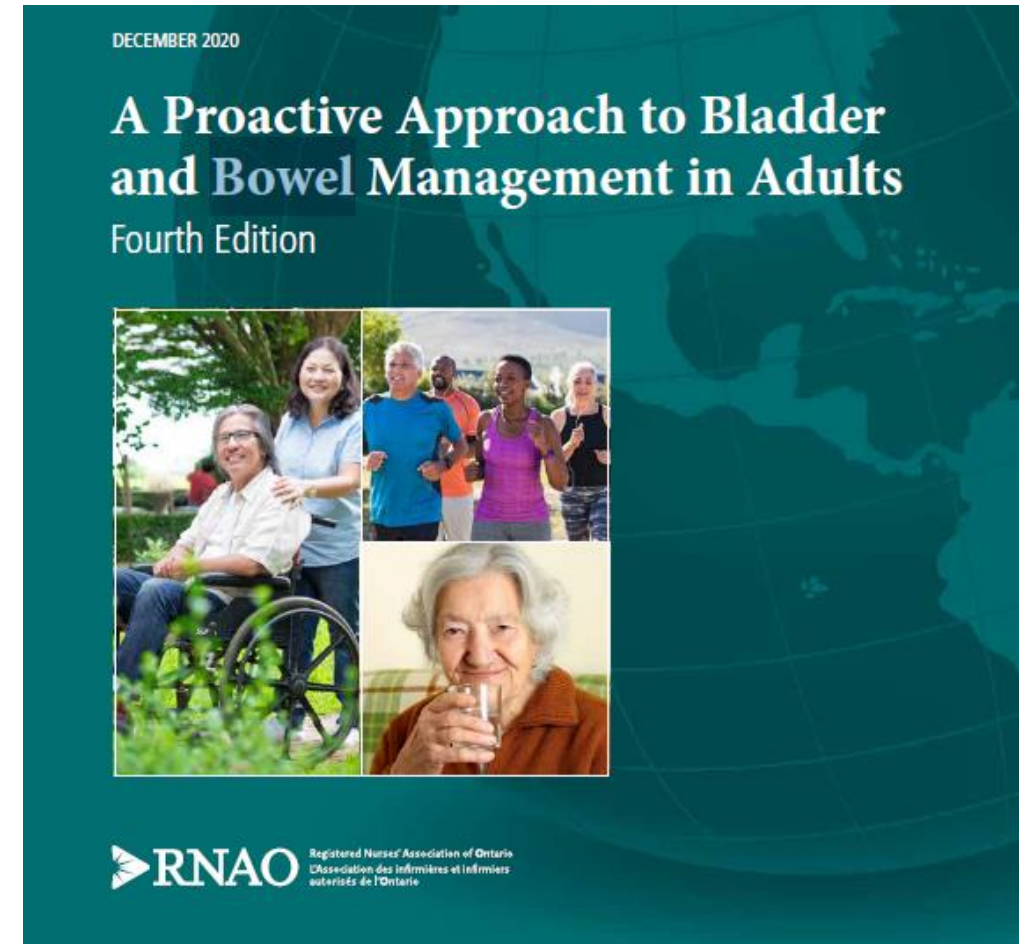
- Prompted voiding
  - Monitoring
  - Prompting
  - Praising
- Timed voiding

## Considerations

- Age
- Cognitive Awareness
- Mobility Issues
- Swallowing and Nutrition Issues
- Voiding Patterns

# How you can help

- Develop a strategy
  - Prompted voiding
    - Monitoring
    - Prompting
    - Praising
  - Timed voiding
- Considerations
  - Age
  - Cognitive Awareness
  - Mobility Issues
  - Swallowing and Nutrition Issues
  - Voiding Patterns



# How you can help

## Understand the use and role of assistive devices

- Urinals, bedpans
- Commode chairs
- Mechanical lifts
- Catheters and other products

## Incontinence Products

- Best use practices

## Medications

- Beneficial effects
- Adverse Effects

# How you can help

- Complete an incontinence history, including pre-stroke baseline
- Intake amounts and time
- Bowel function
- Medical history and medications
- Psychosocial factors
- Functional assessment
- Physical assessment
- Product Use

# UTI

- Watch for symptoms of urinary tract infections (UTI)
  - Increase in frequency of voiding or incontinent episodes
  - Complaints of increased urgency
  - Burning or pain when voiding
  - Cloudy, strong smelling urine
  - Changes in behavior, especially increased agitation when unable to communicate symptoms



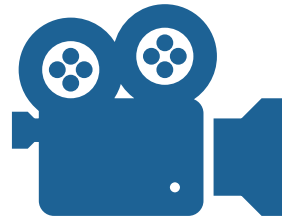
# How you can help

- Ensure adequate fluid intake
- Encourage an increase in fluids (where appropriate) when the survivor experiences burning during urination
- Restrict caffeine intake to 2 cups a day or less
- If excessive night voiding is a problem, adjust the timing of the fluid intake (not the amount per day) so more is taken earlier in the day and only 1 cup is taken after 7 p.m.
- Report any change in bladder function to prompt for further investigation

# Depression

- Depression is a chronic, overwhelming sense of sadness, loss of interest, and despair that interferes with a person's ability to function
- Up to 60% of stroke survivors may be affected
  - Caregivers can also experience depression
  - Onset may be immediate or years later
- Medical illness resulting from chemical changes in brain; will not go away without treatment
- Can be mistaken for effects of stroke or aging
- Can be overlooked if individual has difficulty speaking (aphasia) or thinking

# Don's Experience



<https://vimeo.com/231014569>



# Depression Signs and Symptoms

## Physical

- Changes in sleeping/eating
- Unexplained aches and pains
- Fatigue
- Tearfulness

## Attitudes

- Loss of interest, "Gloom and Doom"
- Self-focus and self-loathing
- Difficulty connecting with others

## Emotions

- Hopelessness, worthlessness, and guilt
- Anxiety, irritability or anger
- Thoughts of death and suicide

## Mental function

- Difficulty concentrating or making decisions
- Confusion; sense of living in a fog

# How you can help

## Build a connection with the survivor

- See changes that may signal depression
- Actively listen, care and be non-judgmental

## Offer support

- Reminders that depression is medical illness
- Provide resources for person/family
- Provide hope; depression can be treated
- Get permission to share concerns with team

## Encourage activity

- Find enjoyable activities
- Encourage friends / family to visit

## Pharmacologic support may be required

# Cognition



Attention

Being able to concentrate



Orientation

Awareness of time, place, self



Memory

Recall experience, information and skills



Insight

Understanding limitations and abilities



Judgment

Making good decisions



Sequencing

Performing actions in the right order



Problem solving

Identifying a problem and finding a solution



# Cognitive Deficits

- Limitations that are difficult to see
  - Can result in abilities to be overestimated
- Can be subtle in nature
- Affect safety

# How you can help

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Reduce distraction

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Provide short, clear instruction

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Help survivor focus on one thing at a time

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Go slow

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Repetition

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Use memory aides and cues

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Keep to a regular schedule of activities

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Break tasks into steps

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Encourage independence

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## Leisure and Social

- Physical and cognitive impairments can make it challenging to participate in leisure and social activities
- Without meaningful activities, hobbies and pastimes, days can feel long and empty resulting in social isolation and depression

*"I used to be an outgoing person. After my stroke I withdrew and didn't go out or talk to people as much"*

# Why participating in activities can be challenging after a stroke:

- Physical weakness
- Aphasia
- Decreased mobility
- Lack of confidence
- Depression and / or anxiety
- Difficulty thinking and understanding
- Difficulty navigating environment
- Memory problems
- Activities not adapted
- Feeling worthless or helpless
- Unaware of community resources
- Unsure of leisure interests
- Limited finances
- Lack of transportation

# How you can help

## Ask questions

- What do you like to?
- Who do you enjoy doing things with?
- What makes it hard to do your favorite activities now?
- How can I help you to prepare for and participate in activities?

## What you can do to help

- Assist with choosing meaningful activities
- Encourage a return to activities previously enjoyed
- Ensure the individual is prepared to participate in the activity (hearing aids, glasses, mobility devices, etc.)
- Have necessary assistive devices ready (e.g., card holder)
- Find others with similar interests
- Support activity initiation

# YOUR ROLE AS PART OF THE STROKE CARE TEAM

Each member of the care team contributes to the recovery journey.



You can make a big difference in the quality of life of someone who has had a stroke

# Meet Frank



- Frank had a stroke that left him with aphasia and right sided hemiplegia. He understands all conversation and uses yes & no reliably. He has been on a pureed diet. He uses a wheelchair for mobility and is a one person standing pivot transfer. He has experienced some increased urinary continence issues recently.
- Frank has been a resident in your Long-Term Care home for 2 years. He is less eager to participate in his care, is taking less interest in events that are happening in the home, and at times refuses to answer questions or participate in care.



# Think about Frank...

- What issues are putting Frank at risk?
- What are you observing for and what interventions might you implement for Frank?
- What challenges are there to determining the cause of Frank's reluctance to attend events & participate in his care?
- What support services / professionals would assist you in this situation? Who is part of Frank's care team?

## STROKE RESOURCES

This chart is divided into two sections:

1. Resources for stroke survivors and their caregivers/families
2. Resources for health care providers.

CLIENT/FAMILY RESOURCES		
RESOURCE	DESCRIPTION	WHERE TO ACCESS
Amy's Speech & Language Therapy Inc.	A website that provides free downloads of aphasia resources.	Amy's Speech & Language Therapy Inc <a href="http://www.amyspeechlanguagetherapy.com/communication-boards.html">http://www.amyspeechlanguagetherapy.com/communication-boards.html</a>
Aphasia Institute (Toronto) Aphasia Centre (Ottawa)	Web-based resource providing information and tools to support adults with aphasia and their families. To access free downloadable resources from The Aphasia Institute, go to <a href="https://www.aphasia.ca/shop/">https://www.aphasia.ca/shop/</a> and navigate to box. If you work or live in Ontario you may be eligible for free downloads of our products. Complete the form and instructions will be emailed.	The Aphasia Institute at <a href="http://www.aphasia.ca/">http://www.aphasia.ca/</a> The Aphasia Centre <a href="http://aphasiaottawa.org/">http://aphasiaottawa.org/</a>
Aphasia Group	Belleville program for persons living with the effects of stroke in the community who are experiencing aphasia. Groups are facilitated by a speech-language pathologist.	Community Care for South Hastings (613) 969-0130
Community-Based Exercise	Brochure designed for persons living with the effects of stroke and families who are living in the community to assist them in determining if a community-based	Stroke Network of Southeastern Ontario website under Best Practice & Education at

# RESOURCES

