

#1 Complete the following Questions:

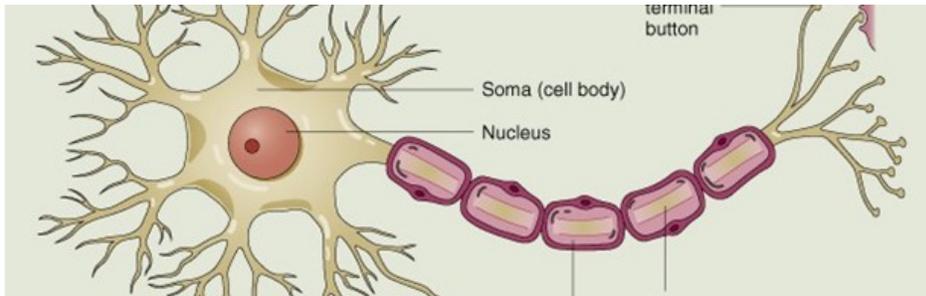
1. Abnormal flexion posturing term decortication.
2. Abnormal extension posturing term decerebration.
3. Which one of the above is worse and why?  
Decerebrate is more severe. It may indicate damage to the brain stem.
4. Which of the following parts of a neuron transmits impulses away from the cell body?
  - a. Dendrite
  - b. Axon**
  - c. Neurolemma
  - d. Synapse
5. Which part of the brain controls breathing?
  - a. Medulla**
  - b. Cerebellum
  - c. Cerebrum
  - d. Thalamus
6. When caring for a patient who has just undergone a lumbar puncture, which of the following nursing actions takes the highest priority?
  - a. Have the patient lie flat for 6-8 hours**
  - b. Keep the patient NPO for 4 hours
  - c. Monitor the patient's pedal pulses every 4 hours
  - d. Encourage the patient to cough and deep breathe
7. What type of diuretic is Mannitol? Osmotic
8. Which of the following blood pressure changes alerts the nurse to increasing ICP, and should be reported immediately?
  - a. Gradual increase
  - b. Rapid drop followed by gradual increase
  - c. Widening pulse pressure**
  - d. Rapid fluctuations

Nucleus – responsible for cell function and regulation

Soma – houses the nucleus, support chemical processing of the neuron

Terminal button – sends signals on to other neurons

9. Label 3 structures on the neuron (image) and the functions of each



Matching

- |              |            |   |
|--------------|------------|---|
| 10. <b>E</b> | Aphasia    | A. Paralyzed on one side of the body          |
| 11. <b>C</b> | Dysphagia  | B. Double vision                              |
| 12. <b>A</b> | Hemiplegia | C. Difficulty swallowing                      |
| 13. <b>B</b> | Diplopia   | D. Imbalanced, staggering gait                |
| 14. <b>D</b> | Ataxia     | E. In ability to speak or understand language |

#2 Complete each table:

Early Signs and Symptoms of Increased ICP	Late Signs and Symptoms of Increased ICP
Disorientation, restlessness	LOC continues to deteriorate until the patient is comatose
Mental confusion	Pulse rate and respiratory rate decrease or become erratic
Increased respiratory effort	Altered respiratory pattern develops
Purposeless movements	Cheyne-Stokes breathing
Pupillary changes	Ataxic breathing
Impaired extraocular movements	Projectile vomiting
Weakness in one extremity or on one side of the body	Hemiplegia or decorticate or decerebrate posturing
Headache that is constant, increasing in intensity	Loss of brain stem reflexes including pupillary, corneal, gag, and swallowing reflexes, is an ominous sign of approaching death

Nursing Interventions to help decrease or at least not increase ICP	Thing to avoid with a patient who has increased ICP
Elevate bed 30° if not contraindicated	The Valsalva maneuver
Change patient position q2h	Extreme rotation and flexion of the neck (compression or distortion of jugular vein increases ICP)_
Neurologic check every 15-60 minutes	Extreme hip flexion
Keep neck in neutral position	Suctioning longer than 15 seconds
Monitor temperature	Emotional stress
Apply cold compress over eyes to reduce edema	Frequent arousal from sleep
Fluid restriction	Environmental stimuli

#3 Utilize the powerpoint notes, <https://nurse.org/articles/glasgow-coma-scale/> or <https://www.brainline.org/article/what-glasgow-coma-scale> to complete following practice problems.

Patient Description	GCS score
Adult, spontaneously looks around. When you speak to the patient, they can tell you who they are, where they are and why, and the date, and obey simple commands.	15
Adult, opens eyes and extends left elbow when you put pressure on left nail bed. No response on the right. Makes no sounds, and opens eyes in response to nail bed pressure.	5
Adult, can obey simple commands and opens their eyes when they hear you speak. They can talk to you in sentences and seem a little confused and unsure of where they are.	13
Adult, opens their eyes when they hear you shouting for help. They groan and make sounds which you cannot recognise as words. They do not respond to pain.	6
Adult, moves hand towards head when you apply pressure above the eye socket. They are disoriented but able to form sentences. They open their eyes in response to speech.	11
Adult, unable to speak or open eyes, and has no response to pain.	3
Adult, flexes their elbow and wrist when you put pressure on the nail bed. They do not open their eyes at all. They make grunting noises but no words.	7
Infant, extends its elbows in response to pain, is inconsistently inconsolable and moans, and opens its eyes in response to pain.	6
Adult, extends their elbow when you put pressure on the nail bed. They can talk in sentences and are disorientated. They are unable to open their eyes.	7
Adult, moves their hand away when you apply	10

pressure to the nail bed. The patient can make words but not form sentences. They open their eyes to pain, but not to speech.	
Adult, opens their eyes when you say their name, and speaks to you in words that make no sense. When you apply pressure on their nail bed, they move their arm away.	11
Adult, opens eyes when you speak to them, and can hold a conversation, though seems disorientated. Patient flexes elbow and wrist when you put pressure on the nail bed.	11

What is the worse GCS score a person can have? 3

What score do we usually need intubate as they cannot protect their airway anymore? 8

A score of 5 or greater is good prognosis for recovery.

#### #4 CVA

Two types:

Ischemic stroke: caused by thrombotic or embolic blockage of blood flow to brain (83%)

Hemorrhagic: bleeding into brain tissues (17%)

Right CVA will have left sided paralysis and defects of the left visual field.

Left-sided CVA will have right sided visual field loss and hemiparesis occurs on the right side.

Discuss the 3 causes of CVA:

1. High blood pressure damages arteries
2. Tobacco contributes to arthersclerosis and arterial damage
3. Heart disease – progressive blocking of blood vessels

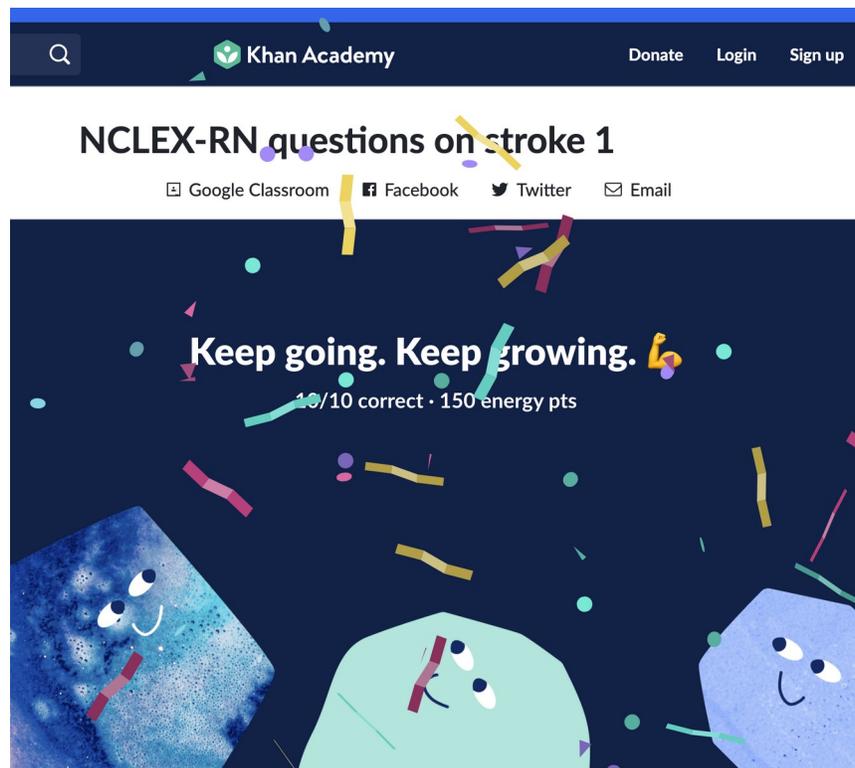
Warning signs of a stroke:

Facial drooping, arm weakness, speech difficulties, trouble with blaance, and blurred or total loss of vision

## CVA Management: Medical, Surgical and Nursing

	Type: Ischemic	Type: Hemorrhagic
Medical	Platelet-inhibiting medications, including aspirin, extended-release dipyridamole plus aspirin, and clopidogrel decrease the incidence of cerebral infarction.	Bed rest with sedation to prevent agitation and stress, management of vasospasm.
Surgical	CEA – removal of an atherosclerotic plaque or thrombus from the carotid artery. Carotid artery stenting (CAS)	Unruptured aneurysm possible, objective is to isolate the aneurysm from its circulation or by strengthening the arterial wall.
Nursing	Provide physical care (foster recovery), remind the patient to exercise the unaffected side at intervals throughout the day	Maintain neurologic flow record, provide nonstimulating environment

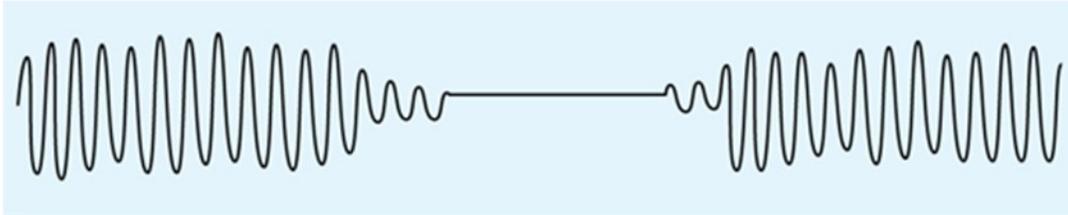
Go to this website and complete the 10 questions on Stroke – once you achieve an 80% or higher – take a screenshot and paste it below



#5 Answer the following questions:

1. What substances does the brain allow to cross the blood brain barrier?  
Water, certain gases, and lipid soluble substances
2. What substances does the brain not allow to cross the blood brain barrier?  
Large molecules such as recombinant proteins, therapeutic antibodies, or nucleic acid drugs
3. Pattern of breathing noted below – when and why might you see this  
Cheyne-Stokes are altered respiration patterns that can be seen in later signs of increasing ICP. Increased pressure on the frontal lobes or deep midline structures may result in Cheyne-Stokes respirations.

Airflow



4. 3 Signs of skull Fracture that you may see in a patient?
  - 1) Persistent, localized pain
  - 2) Hemorrhage from the nose, pharynx, or ears, and blood may appear under the conjunctiva
  - 3) Battle sign – an area of ecchymosis may be seen over the mastoid.

5. What is a positive Babinski sign and is it normal or abnormal?

A positive Babinski sign is a reflex action of the toes when the lateral aspect of the sole of the foot is stroked. A positive sign is abnormal and indicative of an underlying issue in the CNS. A positive reaction is dorsiflexion of the big toe and fanning of the other toes. A negative Babinski is normal; the foot will plantar flexion.

6. This is the “worst headache of my life”, it comes on severe and sudden could indicate what kind of hematoma?

Subarachnoid hemorrhage

7. Will a lumbar or cervical spinal cord injury have more damage to the patient? Why?  
Cervical spinal cord injury can have more damage because it is closer to the brain and affects a larger portion of the body.

8. What is the most critical assessment and earliest indicator of changes for neurological patients?

Glasgow coma scale

9. What is Cushing's Triad? When will you see this?

Cushing's Triad a grave sign of increasing ICP characterized by bradycardia, bradypnea, and hypertension.