

Chapter 14: Human Brain Damage

Objectives

At the end of the first module, your students should be able to describe common causes of brain damage, including:

1. Tumors
2. Cerebrovascular Disorders
3. Head Injuries
4. Infections
5. Neurotoxins

At the end of the second module, your students should be able to describe the etiology of several neurological and psychiatric diseases, including:

1. The Epilepsies
2. Multiple Sclerosis and Amyotrophic
3. Lateralizing Sclerosis
4. Schizophrenia

Key Terms

Amyotrophic lateral sclerosis (Lou Gehrig's disease)

Aneurysm

Arteriovenous malformation

Astrocytomas

Atherosclerosis

Bacterial meningitis

Benign

Bifurcation

Catamenial epilepsy

Cerebral ischemia

Cerebrovascular accident

Cerebrovascular disorder

Clonic phase

Closed head injury

Congenital

Contre-coup

Coup

Domoic acid

Embolism

Encapsulated	Negative symptoms
Epilepsies	Neurotropic
Focus	Partial-complex seizures
Fossae	Partial seizures
Generalized seizures	Positive symptoms
Glioblastoma	Schizophrenia
Gliomas	Simple metastatic tumors
Hemorrhage	Space-occupying lesions
Hypertension	Spasticity
Infarct	Status epilepticus
Infiltrate	Subarachnoid hemorrhage
Intracerebral hemorrhage	Thrombosis
Malignant	Tonic phase
Medulloblastoma	Traumatic brain injury
Meningiomas	Tumor (neoplasm)
Metastatic tumors	Viral meningitis
Multiple sclerosis	

Lecture launchers (and possible essay questions)

Module 14.1

1. “Humpty Dumpty sat on a wall. Humpty Dumpty had a great fall.

All the king’s horses and all the king’s men

Couldn’t put Humpty together again.”

—MOTHER GOOSE

Is this quote applicable to the brain? How?

2. List the ways in which the brain is vulnerable to damage.

3. How do you tell a subarachnoid hemorrhage from a migraine?

Module 14.2

1. What causes epilepsy, and how can it be treated?

2. What causes schizophrenia, and how can it be treated?
3. What are the pros and cons of animal research?

Multiple-Choice Questions

1. _____ tumors are not likely to recur; _____ tumors are more likely to recur.

- a) benign; malignant
- b) malignant; benign
- c) infiltrated; encapsulated
- d) encapsulated; infiltrated
- e) superficial; cancerous

Answer: A

2. Which of the following is a type of glioma tumor?

- a) astrocytomas
- b) medulloblastoma
- c) mioblasta
- d) metastatic
- e) all of the above
- f) a, b, and c
- g) a and b

Answer: G

3. Metastatic tumors that form in the _____ can lead to apraxia.

- a) left temporal lobe
- b) frontal lobe
- c) pituitary gland
- d) left parietal lobe
- e) primary visual cortex

Answer: D

4. Which of the following can be used as another word for cerebrovascular disorder?

- a) heart attack
- b) hypertension
- c) myocardial infarct
- d) arteriosclerosis
- e) stroke

Answer: E

5. Which of the following statements defines *embolism*?

- a) A blood clot that remains at the point at which it was formed.
- b) A clot, bubble or piece of fat that moves along the length of a vein or artery, blocking the flow of blood.
- c) The process of splitting in two.
- d) A condition that occurs when fatty deposits build up inside the walls of blood vessels, which can constrict or completely block the blood vessel.

Answer: B

6. Which of the following defines *congenital defects*?

- a) Physical defects in the cerebral vasculature that are present at birth.
- b) An abnormality in the genitals that leads to cerebral vascular deficits.
- c) A local weakness in an artery due to a trauma.
- d) A slower than normal heart rate.

Answer: A

7. Traumatic brain injury is the leading cause of closed head injury, accounting for as many as _____ of the medically diagnosed head injuries each year.

- a) 80%
- b) 75%
- c) 50%
- d) 90%

e) 93%

Answer: D

8. It is estimated that approximately 15% of patients with mild traumatic brain injury are still disabled for _____ after the injury.

a) 2 months

b) 6 months

c) one years

d) two years

Answer: C

9. What is a fossae?

a) A bony protrusions from the skull.

b) The build up of blood and other fluids against the skull.

c) An artery that is blocked with a build up of fatty deposits.

d) A blood clot that prevents blood flow from reaching the brain.

Answer: A

10. Which of the following is true regarding bacterial meningitis?

a) This infection is potentially lethal.

b) Symptoms include high fever and stiff neck.

c) Treatment includes antibiotic medications.

d) All of the above.

Answer: D

11. Which of the following statements regarding epilepsy are *true*?

a) It is possible to have a seizure without a convulsion.

b) It is possible to have a convulsion without a seizure.

c) Seizures and convulsions always occur simultaneously.

d) It is impossible to know if one is having a seizure unless there is also a convulsion.