Brain Clues

Trace brain changes to symptoms in three conditions

HAP.6.8 "Research and analyze the causes and effects of various pathological conditions (e.g., addiction, depression, schizophrenia, Alzheimer's, sports-related chronic traumatic encephalopathy [CTE], dementia, chronic migraine, stroke..."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Number the three conditions 1 to 3. For each one, underline a cause or brain process and circle two possible effects so you can trace how a brain change may shape symptoms.

Three Students, Different Brain Conditions

1. At a school concert, a student suddenly cannot lift her right arm or form clear words. A stroke is one possible cause, and it is a medical emergency. In an ischemic stroke, a blood vessel supplying part of the brain becomes blocked, often by a clot. In a hemorrhagic stroke, a vessel breaks and bleeding damages nearby tissue. Both disrupt normal brain function; the effects depend on which area is injured. A stroke may cause weakness, speech trouble, or sudden vision loss. Symptoms that appear suddenly require emergency help, not a wait to see whether they fade.

2. At another concert, a student briefly stares, does not respond, and then seems confused. Epilepsy involves a tendency to have repeated, unprovoked seizures caused by bursts of abnormal electrical activity in the brain. A seizure can produce staring, muscle jerks, or loss of awareness, depending on the brain circuits involved. Epilepsy can have several causes, including genetic differences or a past brain injury; sometimes its cause remains unknown. A single seizure does not by itself establish epilepsy. Some seizures stop within minutes, but a seizure lasting more than five minutes requires emergency care. Repeated episodes should be assessed by a clinician.

3. A third student has frequent severe headaches. Chronic migraine means headache on at least 15 days per month for more than three months, with migraine features on at least eight days per month. Migraine involves altered activity in pain pathways; genes can increase susceptibility. Sleep disruption or stress may trigger an attack but is not the same as its underlying cause. Effects can include throbbing pain, nausea, and sensitivity to light. Some people also have an aura, such as flashing lights or temporary vision changes. Because vision changes can occur in more than one condition, timing and other symptoms matter; sudden changes with weakness need emergency evaluation.

2 ANSWER WITH EVIDENCE

Use the passage

1. How do the two types of stroke begin differently, and what effect can either type have?

2. What brain activity causes a seizure, and how can the brain circuits involved affect what a person experiences?

3. For chronic migraine, distinguish an underlying factor, a possible trigger, and an effect.

4. Both stroke and migraine can affect vision. How do the passage's other clues help you compare them, and which situation requires emergency evaluation?

3 YOUR TURN

Your own words

Invent a four-sentence case about a person with possible epilepsy or chronic migraine. Describe two effects, connect them to a possible brain process or cause, contrast the case with the other condition, and give a safe next step without claiming a diagnosis.

Brain Clues

PART 1 · READ AND MARK

Number the three conditions 1 to 3. For each one, underline a cause or brain process and circle two possible effects so you can trace how a brain change may shape symptoms. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How do the two types of stroke begin differently, and what effect can either type have?	**An ischemic stroke begins with a blocked blood vessel; a hemorrhagic stroke begins when a vessel breaks and bleeds. Either can disrupt brain function and cause weakness, speech trouble, or sudden vision loss.**
2	What brain activity causes a seizure, and how can the brain circuits involved affect what a person experiences?	**A seizure results from a burst of abnormal electrical activity. The circuits involved affect whether a person stares, has muscle jerks, or loses awareness.**
3	For chronic migraine, distinguish an underlying factor, a possible trigger, and an effect.	**Genes can increase susceptibility, sleep disruption or stress may trigger an attack, and an effect may be throbbing pain, nausea, or sensitivity to light.**
4	Both stroke and migraine can affect vision. How do the passage's other clues help you compare them, and which situation requires emergency evaluation?	**Migraine aura may cause flashing lights or temporary vision changes. Sudden vision changes with weakness may signal a stroke and require emergency evaluation.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

During rehearsal, Maya twice stared without responding and seemed confused afterward. Bursts of abnormal electrical activity in the brain could explain her staring and confusion. Chronic migraine may cause vision changes, but it involves frequent headache days rather than these repeated spells. Maya should be assessed by a clinician instead of being labeled with epilepsy from this description alone.

Accept accurate cause-and-effect links and comparisons supported by the passage. The invented case should remain tentative, since symptoms alone do not establish a diagnosis.