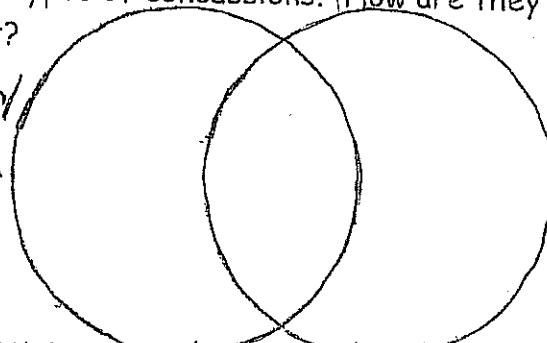


## Concussion Concerns

**\*\*Directions:** After reading the Concussion Concerns article, answer the following questions. Write your answers on a separate sheet of paper. The graphic organizers are suggestions you may want to use to gather information to answer the questions. **ALL ANSWERS SHOULD BE IN COMPLETE SENTENCES WITH CORRECT CAPITALIZATION AND PUNCTUATION!**

- 1) Compare the 2 types of concussions. How are they similar? How are they different?

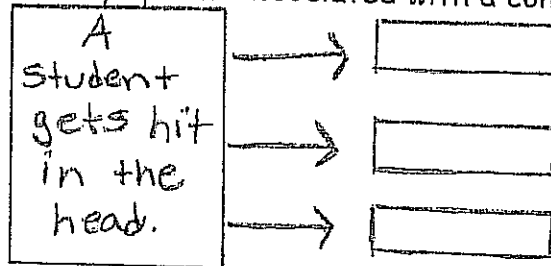
Acceleration/  
Deceleration →



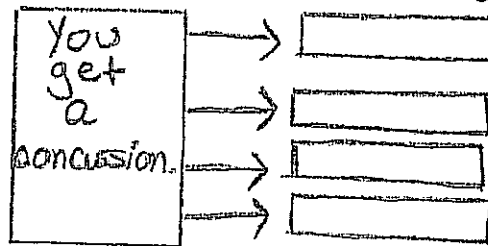
Rotational ←

Or, you can use a Double Bubble map!

- 2) What are the common symptoms associated with a concussion?

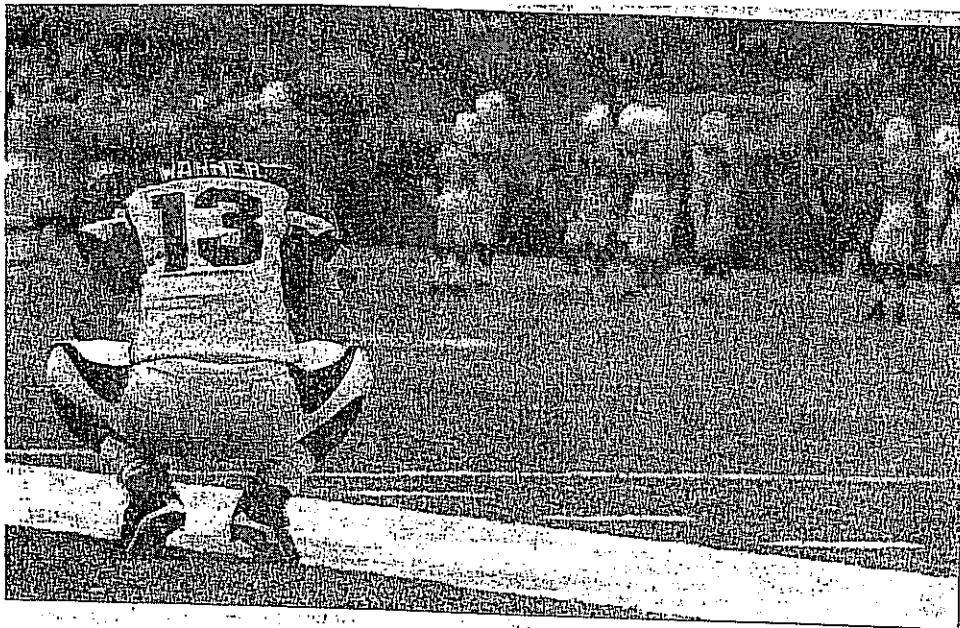


- 3) What are some of the possible long term effects of getting a concussion?



- 4) What do you think players/students can do to avoid getting a concussion?

- 5) Now that you have read the article, use the information you gathered by answering the 4 questions above and write a summary paragraph. Include a topic sentence, supporting details, and a concluding sentence.



**OUT OF THE GAME:** Arizona's Kurt Warner watches from the sideline after being knocked out of a game against the Rams last year. His history of concussions helped to prompt his retirement after last season. Jeff Curry Associated Press

## Concussion concerns

According to a survey of 1,090 former NFL players in 2000, more than 60% had suffered at least one concussion, and 26% had at least three.

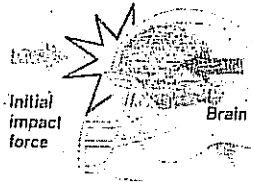
### Two types of brain injuries that occur in football

#### Acceleration/deceleration

A direct blow to the head knocks the brain against the smooth inside of the skull. Brain movement from frontal blow:

Primary brain impact

Secondary brain impact

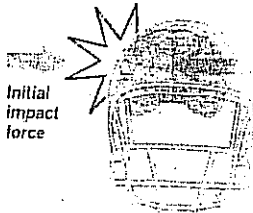


#### Rotational

A cross blow to the head or a violent hit to any part of the body can stretch the brain at its center, causing fissures. The force knocks the brain into the skull's bumpy ridges. 70% of concussions are caused by blows to the side of the head.

Primary brain impact

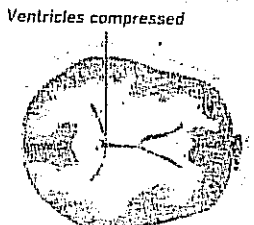
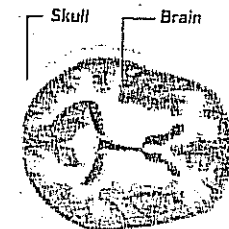
Secondary brain impact



### How the Brain Reacts to Trauma

Top view of normal brain

Severely swollen brain



**Injury related symptoms:** Headaches, dizziness, memory loss, insomnia and lethargy.

**Long term effects:** Decreased vision and balance. Other studies have shown links between brain trauma and epilepsy and Alzheimer's disease.

Sources: Dr. David Hovde, director of the UCLA Brain Injury Research Center, David Halstead, technical advisor to the National Operating Committee for Standards on Athletic Equipment, Riddell, Times reporting