

AMU Packet

#7

8th Grade



Don't forget to do journals, vocabulary,
and read for AR Points!

Name: _____ Class: _____

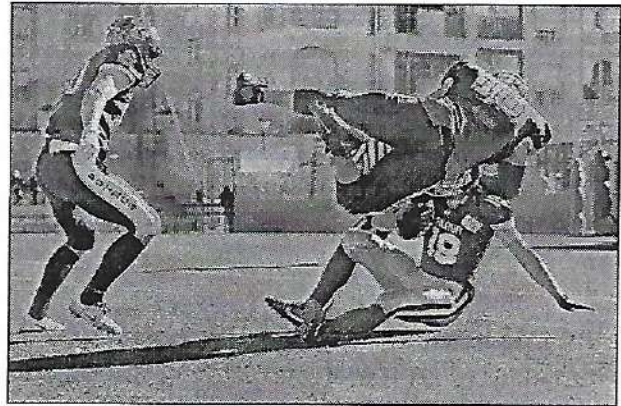
Many U.S. Football players had brain disease, data show

Severe disease showed up in 99 percent of pro players whose brains had been donated to science.

By Aimee Cunningham
2018

Watching football, it's clear that it's a rough sport and can cause serious physical injuries. But how dangerous is it to players' brains? In this informational text, Aimee Cunningham discusses a study that looks at football players' brains and the effects of repeated hits to the head. As you read, take notes on the long-term effects that hits to the head can cause football players.

- [1] American football is a very rough and tumble sport. A career of hard knocks and smashups can take a brutal toll on players' bodies. That includes their brains, a new study shows. Most football players whose brains were donated at death for research showed severe damage, according to the largest study to date.



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The finding provides more evidence linking serious brain disease with repetitive head injuries sustained during years of playing American football.

The authors caution, however, that they don't know how representative the brains were that they studied. Players and their families had offered up these brains for study. Their choosing to do so may reflect that many of these players already had major symptoms of brain damage. So these may have been a self-selected group of the most injured of players, not a representative mix of all players. Still, the study's authors find their new results worrisome.

They examined the brains of 202 former football players. Of them, 177 had CTE, short for chronic traumatic encephalopathy (En-sef-uh-LOP-ah-thee). The term means a brain has sustained long-term damage. CTE's symptoms can include mood and behavioral issues as well as problems with thinking and reasoning.

- [5] Men who had played in the National Football League donated 111 of the brains studied. And 110 of these — a whopping 99 percent — had CTE. So did three of 14 high school players and 48 of 53 college players.

Twenty-seven researchers from eight universities, hospitals and research groups took part. The team based its diagnoses on brain autopsies.¹ It also interviewed family and friends about any symptoms the players had experienced. The researchers described their disturbing findings July 25 in JAMA.

"The fact that [CTE] was so common adds to our concern about the safety of playing football," says Gil Rabinovici. As a neurologist, he studies nerve tissues and the brain at the University of California, San Francisco. He also offered an editorial accompanying the new report. The strong link between brain damage and football injuries, he says, "hovers like a dark cloud over the game at all levels." And that's true "even if the study cannot address how frequent the disease is, or who is at risk."

Growing concerns over football's risk of CTE

CTE can show up in athletes and others who've had repetitive head injuries, such as concussions.² The only way to diagnose CTE is with an autopsy. In affected brains, a protein called tau goes "bad." It inappropriately forms clumps in nerves and other brain cells. A tau buildup occurs in other brain diseases, too — such as Alzheimer's. But where it builds up is different in CTE. Here, the protein congregates³ in cells around small blood vessels.

In 2008, researchers set up a brain bank to collect tissues for study. Its goal was to probe the long-term effect of head blows sustained in sports and military service. The new study focused on brains from football players provided to that tissue bank.

- [10] Neurologist Jesse Mez of Boston University School of Medicine, in Massachusetts, and his colleagues classified CTE cases as mild or severe. Their ratings were based on how widespread the tau clumps were within a brain. The severity of disease seemed to track with how long the men had spent playing football, Mez says. Among NFL players, 95 of the 110 diagnosed cases were severe. In contrast, all three high school players' cases were mild. Among cases in college players, just over half were judged severe.

The symptoms reported by family members were not a good gauge of how bad a man's brain damage had been. Behavioral and mood problems — such as impulsivity, anxiety and depression — commonly showed up in both severe and mild cases of CTE. Cognitive⁴ symptoms, including memory loss, also were about the same in both groups. One big difference: dementia.⁵ It was more common in men with severe CTE than in those who had mild cases.

Why symptoms so poorly correlated⁶ with the severity of brain disease is puzzling, Mez says. "The question is: Is there something else going on?" such as inflammation.

There still isn't a way to diagnose CTE during life. And that's "the 800-pound gorilla in the room," says neurologist David Brody. He works at Washington University School of Medicine in St. Louis, Mo.

Yet detecting CTE in living patients will be crucial⁷ for understanding how common it is in the NFL, "let alone in the millions of people who participated in college, high school and youth football," says Rabinovici. For now, he says, "We need to focus on prevention of concussions and other head impacts at all levels of contact sports."

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1. an examination of a body after death, typically to determine cause of death
 2. a brain injury caused by a serious blow to the head that can cause dizziness, forgetfulness, and unconsciousness
 3. **Congregate** (*verb*): to gather together into a group or mass
 4. relating to mental processes of thinking and reasoning
 5. a general term for a decline in mental ability and memory loss that is severe enough to interfere with daily life
 6. to have a close connection with something
 7. **Crucial** (*adjective*): of great importance; critical

Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

1. PART A: Which statement identifies the central idea in the text?
 - A. Many football players' CTE went undiagnosed until after they died, as they weren't able to recognize the cognitive symptoms.
 - B. Studies of deceased football players' link their participation in the violent sport with the development of a serious brain disease.
 - C. CTE is a common brain disease that people experience after being hit in the head, but it is most common with military personnel and football players.
 - D. Studies of deceased football players' brains have shown that people are more at risk of developing serious brain diseases when they play at a young age.

2. PART B: Which detail from the text best supports the answer to Part A?
 - A. "Men who had played in the National Football League donated 111 of the brains studied. And 110 of these — a whopping 99 percent — had CTE." (Paragraph 5)
 - B. "In 2008, researchers set up a brain bank to collect tissues for study. Its goal was to probe the long-term effect of head blows sustained in sports and military service." (Paragraph 9)
 - C. "The symptoms reported by family members were not a good gauge of how bad a man's brain damage had been." (Paragraph 11)
 - D. "There still isn't a way to diagnose CTE during life. And that's 'the 800-pound gorilla in the room,' says neurologist David Brody." (Paragraph 13)

3. How does paragraph 3 contribute to the development of ideas in the text?
 - A. It shows how the brains selected for the study might not have been typical examples of a football player's brain.
 - B. It reveals that scientists only selected brains from players who had been showing signs of CTE before they died.
 - C. It questions whether or not the study was conducted in a fair fashion, and whether the results should be trusted.
 - D. It emphasizes that the selection of the brains for the study was done at random so as to not influence the results in any way.

4. What effect does the phrase "hovers like a dark cloud over the game at all levels" have on the passage's meaning (Paragraph 7)?
 - A. It emphasizes how there is no way for football player to avoid the effects of CTE.
 - B. It stresses how CTE can easily develop in football players without their knowledge.
 - C. It suggests that CTE is always a present risk for those who choose to play football.
 - D. It shows how the symptoms of CTE worsen over time for affected football players.

5. How does the author's discussion of CTE in players of all levels of football contribute to our understanding of the dangers involved in the sport?

for CHAPTER 25: SPELLING pages 659-60

Suffixes B

25e. Drop the final silent *e* before adding a suffix beginning with a vowel.

EXAMPLES like + able = **likable**

skate + ing = **skating**

Exception: Keep the silent *e* in words ending in *ce* and *ge* before a suffix beginning with *a* or *o*.

EXAMPLES notice + able = **noticeable**

courage + ous = **courageous**

25f. Keep the final silent *e* before adding a suffix that begins with a consonant.

EXAMPLES care + ful = **careful**

state + ly = **stately**

EXCEPTIONS argue + ment = **argument**

true + ly = **truly**

EXERCISE A For each of the following words, add the suffix given to form a new word. Write the new word on the line provided.

Example 1. share + ing = sharing

1. shake + er = _____ 6. sore + ly = _____

2. exterminate + or = _____ 7. broke + en = _____

3. sedate + ly = _____ 8. freeze + ing = _____

4. admire + able = _____ 9. retire + ment = _____

5. argue + ing = _____ 10. advantage + ous = _____

EXERCISE B Cross out each misspelled word in the following paragraph. Above the word, rewrite it correctly. Hint: Some sentences contain more than one misspelled word.

Example [1] ^{Gazing} ~~Gazeing~~ at the photos, I thought about our camping trip.

[11] The remotness of our camping site did not stop us. [12] We would not give in to a little discouragment. [13] The uniqueness of this opportunity appealed to us, and we welcomd it. [14] We had packed all the camping gear that had been stord in our basments, including tents, shovels, an inflateable mattress, and a few crates of supplies such as ropes, matches, and canned food.

[15] The trip was so amazeing, we're already planning the next camping trip.

Day 7

Show your work! Show your work! Show your work!

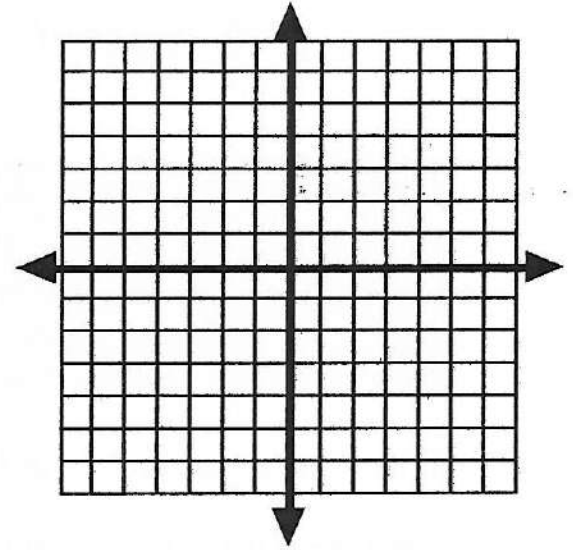
6) Graph the following lines on the coordinate plane:

a) $y = 2x + 1$

b) $y = -3x - 2$

c) $y = \frac{5}{4}x - 3$

d) $y = -\frac{1}{2}x + 5$



7) Solve for x if $y = -3$:

a) $y = -4x + 15$

b) $y = -3x - 47$

c) $y = -5x - 18$

d) $y = -2x - 54$

8) Solve for y if $x = -4$:

a) $y = -2x + 43$

b) $y = 7x - 38$

c) $y = x - 95$

d) $y = 2x - 76$

9) Find the mean, median, mode, and range of the following set of numbers: 23, 25, 27, 21, 24, 27

mean =

mode =

median =

range =

10) Write an equation that represents the points in the table.

x	y
0	5
1	8
2	11

$y =$ _____

Show your work! Show your work! Show your work!

Name: _____ Class: _____

A Nation Divided: North vs. South

By UShistory.org
2016

The American Civil War was fought within the United States from 1861 to 1865. The election of President Abraham Lincoln in 1860 increased tension between the North and South. Lincoln's political party was interested in stopping the spread of slavery, which was a central institution in the South. By May 1861, 11 Southern states had withdrawn from the U.S. and formed the Confederate States of America; the remaining Northern states were known as the Union. What followed was one of the bloodiest wars in American history. As you read, take notes on how the views of the North and South differed.

The Power of the North

- [1] Within days of the fall of Fort Sumter,¹ four more states joined the Confederacy: Virginia, North Carolina, Tennessee, and Arkansas.² The battle lines were now drawn.

On paper, the Union outweighed the Confederacy in almost every way. Nearly 21 million people lived in 23 Northern states. The South claimed just 9 million people — including 3.5 million slaves — in Confederate states. Despite the North's greater population, however, the South had an army almost equal in size during the first year of the war.



"Union soldiers before Marye's Heights, Second Fredericksburg" by Andrew J. Russell is in the public domain.

The North had an enormous industrial advantage as well. At the beginning of the war, the Confederacy had only one-ninth the industrial capacity of the Union. But that statistic was misleading. In 1860, the North manufactured 97 percent of the country's firearms, 96 percent of its railroad locomotives, 94 percent of its cloth, 93 percent of its pig iron, and over 90 percent of its boots and shoes. The North had twice the density of railroads per square mile. There was not even one rifleworks³ in the entire South.

All of the principal ingredients of gunpowder were imported.⁴ Since the North controlled the navy, the seas were in the hands of the Union. A blockade⁵ could suffocate the South. Still, the Confederacy was not without resources and willpower.

1. The Battle of Fort Sumter was the first battle of the American Civil War.
2. 11 Southern slave-states made up the Confederacy; the original seven were South Carolina, Mississippi, Florida, Alabama, Georgia, Louisiana, and Texas.
3. a factory that produces rifles
4. to bring goods or services into a country from abroad for sale
5. A "blockade" is an act or means of sealing off a place to prevent good or people from entering or leaving.

The Subtle Strength of the South

[5] The South could produce all the food it needed, though transporting it to soldiers and civilians was a major problem. The South also had a great nucleus⁶ of trained officers. Seven of the eight military colleges in the country were in the South.

The South also proved to be very resourceful. By the end of the war, it had established armories⁷ and foundries in several states. They built huge gunpowder mills and melted down thousands of church and plantation bells for bronze to build cannons.

The South's greatest strength lay in the fact that it was fighting on the defensive in its own territory. Familiar with the landscape, Southerners could harass Northern invaders.

The Uncertainties of War

The military and political objectives of the Union were much more difficult to accomplish. The Union had to invade, conquer, and occupy⁸ the South. It had to destroy the South's capacity and will to resist — a formidable⁹ challenge in any war.

Southerners enjoyed the initial advantage of morale:¹⁰ The South was fighting to maintain its way of life, whereas the North was fighting to maintain a union. Slavery did not become a moral cause of the Union effort until Lincoln announced the Emancipation Proclamation in 1863.¹¹

[10] When the war began, many key questions were still unanswered. What if the slave states of Maryland, Kentucky, Missouri, and Delaware had joined the Confederacy? What if Britain or France had come to the aid of the South? What if a few decisive early Confederate victories had turned Northern public opinion against the war?

Indeed, the North looked much better on paper. But many factors undetermined at the outbreak of war could have tilted the balance sheet toward a different outcome.

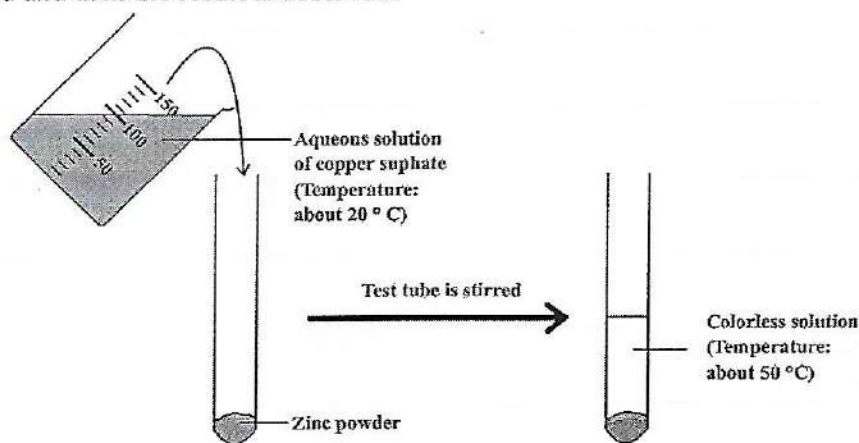
"A Nation Divided: North vs. South" by USHistory.org (2016) is licensed under CC BY 4.0.

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6. a great mass or core
 7. An "armory" is a place where weapons are kept.
 8. to take control or possession of hostile territory
 9. **Formidable** (*adjective*): causing fear or awe, often due to great size, power, or difficulty to overcome
 10. **Morale** (*noun*): the feelings of enthusiasm and loyalty that a person or group has about a task or job
 11. The Emancipation Proclamation was an Executive Order issued on September 22, 1862, which promised to begin freeing slaves in the Confederate states that remained in rebellion against the Union on January 1, 1863.

The purpose of this experiment is to study the chemical transformation between metallic zinc and a solution of copper sulphate to form a colorless solution of copper zinc sulfide.

The reaction is displayed here: $Zn + CuS \rightarrow ZnCuS$

Zinc powder is placed in a test tube. An aqueous solution of copper sulfate is poured into the test tube. The tube is stirred and then the result is observed.



Observations:

- Touching the test tube the students can feel that it is abnormally hot. A temperature measurement with a thermometer can be used to confirm that the temperature of the solution is significantly higher after mixing than before.
- The solution of copper sulphate that is initially blue becomes almost colorless.
- Zinc powder changes color: it takes on an orange color instead of its original silver

1. Reactants are substances that are chemically combined, causing a chemical reaction. What are the reactants given in this experiment? _____
2. What is the change in temperature from the beginning of the experiment to the end of the experiment?

3. Based on the students' observations, what were two things the students did to confirm a temperature change?

4. Based on the students' observations, what were the color changes observed?

5. What was placed in the test tube before pouring in the copper sulphate solution?