
Keeping High School Athletes Safe

Article

STORRS, Connecticut (Achieve3000, October 25, 2017). Sports are a given in high schools across the nation. In fact, more than 7.8 million high school students participate in school sports annually. But are these students safe? Perhaps not, according to a study regarding safety practices in U.S. high school sports. It found that many individual states are not fully implementing key safety policies to protect athletes from potentially life-threatening conditions, including heatstroke.

The study was conducted by the Korey Stringer Institute (KSI), a sports safety research and advocacy organization located at the University of Connecticut. It noted that between 1982 and 2015, 735 high school students died as a result of sports participation. Of those deaths, 185 were caused by direct trauma (contact with objects or other athletes), while the other 550 had indirect causes, such as exertional heatstroke (EHS), sudden cardiac arrest, or asthma.

Some of those deaths, according to KSI, might have been avoided had the schools followed better health and safety policies. As part of the study, KSI released a state-by-state survey on school safety policies, based on guidelines that were published in the *Journal of Athletic Training* in 2013. KSI scored the states on their responses regarding health safety practices in four areas. These corresponded to the four major causes of sudden death for that age group: cardiac arrest, traumatic head injuries, EHS, and exertional sickling. (Exertional sickling can occur in athletes carrying the sickle cell trait. During extreme exertion, red blood cells can change from round shapes to quarter-moon "sickle" shapes and build up, obstructing blood flow. This can lead to muscle breakdown, tissue death, and organ failure.) The report found that North Carolina, with a score of almost 80 points out of 100, has the most comprehensive health and safety policies, and Colorado has the least.

"The bottom line is that many simple policy changes can have a massive impact when a life is saved," said Dr. Douglas Casa of KSI. "That is the goal of KSI in releasing these rankings: to prevent needless deaths in high school sports. We have had countless conversations with loved ones who have lost a child, sibling, [or] grandchild athlete. If these rankings can get more kids home for dinner instead of to a hospital..., then we have succeeded."

Casa's passion in the field of EHS is a result of his experience back in 1985. Casa, just 16 years old at the time, collapsed due to EHS while running a race. That experience continues to motivate his work, he says. It includes heading the Korey Stringer Institute, which is named for the former Minnesota Vikings football star who died from EHS in 2001.

Preventing death from EHS comes down to a number of important steps, according to the 2013 guidelines. One part is *prevention*: acclimatizing to the heat, including phasing in the use of equipment; modifying work/rest ratios based on environmental conditions; maintaining proper hydration; and doing weigh-ins to gauge loss of body mass. A second part of preventing death from EHS is *recognition*: being aware of the signs and acting quickly to treat them. *Treatment*, a third part, includes cooling the victim with water before transporting him or her to a hospital or other medical facility.



Credit for photo and all related images: Ted S. Warren/AP

A professional athlete is being attended to by a trainer, while another is making sure to stay hydrated. High schools are being urged to improve the safety of student athletes.

Casa noted that the states that have adopted and faithfully followed these guidelines have not had a death due to EHS. And he stressed that the guidelines are not difficult to adopt. Still, progress is slow because most states make a change only after a tragedy.

"At least one state has adopted each individual item, and for many items, more than half of the states have the policy in place," he explained. "So this tells us it is feasible [to maximize protection]. Now we need to collectively get states to learn from [one another] and adapt these [programs] in their own state. Our top state is at about 80 percent, showing that, with effort, these policies can be implemented."

Casa adds that the financial cost of reaching the desired preventive measures is not high.

"To be honest, you could get to 90 percent implementation with very little cost and effort. Spending probably less than \$5,000 per school could get you close to 90 points [on the survey]," he said. "It is a matter of convincing people that these issues are important and that they need attention."

The Associated Press contributed to this story.

Dictionary

acclimatize (*verb*) to become accustomed to

comprehensive (*adjective*) thorough; complete

exertional heatstroke (*noun*) a condition in which the body overheats because of working hard in hot temperatures

feasible (*adjective*) practical; possible

sudden cardiac arrest (*noun*) a condition in which the heart unexpectedly stops beating

Activity

PART 1

Question 1

What is a cause and effect relationship that takes place in the Article?

- (A) Because many states are making policy changes based on guidelines from the *Journal of Athletic Training*, KSI conducted a study to determine if the guidelines are effective.
- (B) The Korey Stringer Institute conducted a study on exertional sickling because a Minnesota Vikings football star died from the condition in 2001.
- (C) Because of his own experience with exertional heatstroke at age 16, Dr. Douglas Casa is passionate about efforts to prevent deaths from this condition.
- (D) The *Journal of Athletic Training* published guidelines regarding safety practices for high school athletes because it found that many students are not protected from direct-trauma injuries.

Question 2

Which of these should **not** be included in a summary of this Article?

- (A) The Korey Stringer Institute surveyed states on school safety policies, based on guidelines published in the *Journal of Athletic Training*.
- (B) KSI found that between 1982 and 2015, 735 high school students died as a result of sports participation.
- (C) Sixteen-year-old Douglas Casa collapsed due to exertional heatstroke while running a race.
- (D) A study found that many states are not fully implementing key safety policies to protect young athletes from potentially life-threatening conditions.

Question 3

Which is the closest **antonym** for the word *comprehensive*, as it is used in the Article?

- (A) Reliable
- (B) Limited
- (C) Broad
- (D) Unpredictable

Question 4

Suppose Zeena wants to find out about the signs of exertional heatstroke. She would find **most** of her information _____.

- (A) By reading about the leadership of the Korey Stringer Institute on the organization's website
- (B) By looking up the term "exertional sickling" in a medical dictionary
- (C) By looking at a medical website under the heading "Exertional Heatstroke: Symptoms and Causes"
- (D) By checking the index of a course catalog for the University of Connecticut School of Medicine

Question 5

The reader can infer from the Article that _____.

- (A) The state of Colorado probably directs more than \$5,000 to each school in the state for the implementation of policies to protect athletes from traumatic head injuries.
- (B) The state of North Carolina may have suffered a high school sports-related tragedy before implementing such comprehensive safety policies.
- (C) The state of Connecticut probably employs Dr. Douglas Casa as the head of the medical team that assists public schools across the state.
- (D) The state of Minnesota, home of the Vikings football team, may have received a score of more than 80 points on the survey conducted by the Korey Stringer Institute.

Question 6

The Article states:

Exertional sickling can occur in athletes carrying the sickle cell trait. During extreme exertion, red blood cells can change from round shapes to quarter-moon "sickle" shapes and build up, *obstructing* blood flow. This can lead to muscle breakdown, tissue death, and organ failure.

Which would be the closest **synonym** for the word *obstructing*, as it is used above?

- (A) Exposing
- (B) Concealing
- (C) Promoting
- (D) Restricting

Question 7

Which quote from the Article best supports the idea that while serious, exertional heatstroke need not be a fatal condition?

- (A) Of those deaths, 185 were caused by direct trauma (contact with objects or other athletes), while the other 550 had indirect causes, such as exertional heatstroke (EHS), sudden cardiac arrest, or asthma.
- (B) KSI scored the states on their responses regarding health safety practices in four areas. These corresponded to the four major causes of sudden death for that age group: cardiac arrest, traumatic head injuries, EHS, and exertional sickling.
- (C) Casa noted that the states that have adopted and faithfully followed these guidelines have not had a death due to EHS.
- (D) Sports are a given in high schools across the nation. In fact, more than 7.8 million high school students participate in school sports annually.

Question 8

Based on the Article, the reader can predict that _____.

- Ⓐ The Korey Stringer Institute will work with states to improve health safety practices in high schools aimed at protecting athletes from potentially life-threatening conditions.
- Ⓑ The state of North Carolina will lower its standards related to health safety in high school sports to be more in-line with other states in the nation.
- Ⓒ The *Journal of Athletic Training* will challenge the Korey Stringer Institute's use of its 2013 sports safety guidelines for a study.
- Ⓓ The Korey Stringer Institute will disclaim any association with Dr. Douglas Casa because of his acknowledgement of an experience with exertional heatstroke as a teen.