

NOCSAE Proposed Chest Protector Standard for Commotio Cordis

At the NOCSAE standards meeting in January 2016, NOCSAE officially proposed the world's first performance standard for chest protectors for commotio cordis.

About Commotio Cordis

Commotio cordis, a heart rhythm disruption caused by a blow to the chest, is one of the leading causes of sudden cardiac death in athletes. The condition is an episode of ventricular fibrillation induced by a direct blow to the chest over the heart during a specific portion of the heart's electrical cycle. This can be caused by a direct hit from an object such as a baseball or lacrosse ball, a lacrosse stick or even a collision with another player. The impact doesn't have to be hard or high velocity. Approximately five to 15 athletes die every year from this syndrome. Most of these deaths are males under the age of 14, some of whom were wearing a form of chest protection.

NOCSAE's Role

In conjunction with research efforts by the [Louis J. Acompora Memorial Foundation](#), NOCSAE has funded more than \$1.1 million in research to advance the scientific understanding of commotio cordis and determine how to prevent it. Through a series of studies, scientists were able to pinpoint the precise cause of commotio cordis, including the critical moment of occurrence in the cardiac cycle and the required impact threshold to prevent the injury. As a result of this significant scientific breakthrough, NOCSAE developed the world's first chest protector standard for commotio cordis, which is expected to significantly reduce the risk of injury and death.

The new standard applies to baseball or lacrosse, where catchers and goalies are typically the most vulnerable to commotio cordis.

Next Steps

The proposed NOCSAE chest protector standard for commotio cordis will remain open for public comment until January 2017, at which time it will be eligible for voting as a final standard unless modifications are recommended. There is much left to be done, including the production of additional mechanical surrogate testing forms, but NOCSAE is committed to moving this forward to a final standard.

Prevention

Coaches, parents, players and bystanders should recognize the danger if an athlete is struck in the chest and collapses. Without immediate efforts to resuscitate the victim with an automated external defibrillator (AED), death can occur within just a few minutes. Commotio cordis can be fatal even when an athlete is wearing chest protection, and it is not related to an existing heart condition. Younger athletes, typically males 14 and under, are more vulnerable to commotio cordis. Coaches, parents and athletes who have training in CPR and access to an AED can prevent tragic outcomes from commotio cordis. When an AED is used within three minutes of a collapse, survival rates are as high as 89 percent.

Resources for Commotio Cordis

- [Louis J. Acompora Memorial Foundation](#)
- [American Heart Association, Dr. Mark S. Link: Commotio Cordis](#)
- [American Heart Association/American College of Cardiology Scientific Statement](#)
- [Korey Stringer Institute](#)