

Sudden Chest Blows

Sometimes Fatal

By Jane Eden



Despite chest protection, cardiac concussion may still occur.

The recent death of Cornell men's lacrosse player George Boiardi from *commotio cordis* or cardiac concussion has brought attention to bear on this rare, but deadly syndrome.

You see it in football games. Someone's head impacts another person's chest. In basketball maybe an elbow slung backward to guard the ball impacts the center of a player's torso. In martial arts, it could result from a badly timed front snap kick to the chest. Even light sparing might result in sudden death if the timing of a blow to the chest happens at just the wrong time. These dangers exist with high contact sports for sure, but even low contact sports may share a risk for significantly more than sprained wrists and ankles.

since 1998, 156 people have died from *commotio cordis*. This happens when a combination of events result in a person's heart stopping, sometimes from a sudden blow to the chest.

Not a lot is known about this syndrome. Sports experts are struggling to learn more so they can work with manufacturers to improve chest protection for individuals involved in contact sports.

Commotio cordis results when an individual receives a blunt impact to the chest during a 20-millisecond window of the heartbeat, throwing that person into cardiac arrest. Once this happens, only 15 percent of reported victims survive. The typical victims are young, male and by all standards of measure, in good health. Frequently the impact appears almost insignificant leaving no telltale marks. Sometimes it occurs despite the victim wearing chest protection. It is the timing that's critical.

While rare, the number of events is rising. Often they are recorded inaccurately as sudden death or accidental death. While Boiardi's incident took place during lacrosse, basketball provides the largest number of deaths due to *commotio cordis*. Sixty-three deaths occurred in basketball since 1998, 14 in softball and ice hockey combined, 12 in football, eight in soccer, and five in lacrosse. Boiardi did not receive an autopsy but medical authori-

ties suspect *commotio cordis* was to blame.

Sports authorities are working hard to address the issue. Currently under consideration would be to change the blocking rules in many games to make blocking shots illegal. New rules would also prohibit players from cutting off large sections of their padding because they feel it's restrictive. Unlike athletic helmets, there are no guidelines and almost no medical input for the manufacturing of chest protectors. If you read the websites of manufacturers who produce safety gear it's easy to determine they make only conservative promises about any equipment. Most chest protectors are made with primary emphasis placed on looks not function.

Many think simple awareness of the risk may decrease its occurrence. Safety officials are doing their part to advise players of the danger beforehand. Better response equipment should not be overlooked. Having a defibrillator at sporting events and using it within the first three minutes may significantly reduce the death rate. When *commotio cordis* strikes, there is not time for an ambulance.

Coaches feel the best away to prevent sudden death may be to teach players to turn away from high pitches or not come up behind batters while fielding. In lacrosse, blocking shots should be discouraged. Most of the power to reduce the number of deaths rests with coaches. *