

## Heat-related deaths in high school football players dip, but all are preventable

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You could say two is a small number. But that's still two too many for Frederick O. Mueller, Ph.D., professor of exercise and sports science in the College of Arts and Sciences at the University of North Carolina at Chapel Hill.

The figure represents the number of reported cases of heat stroke deaths among high school level football players in 2007. To Mueller, it also represents two young lives unnecessarily lost: one was 17-years-old; the other, just 16.

"There's no excuse for any number of heat stroke deaths, since they are all preventable with the proper precautions," said Mueller, the author of the Annual Survey of Football Injuries, a long-running compilation of statistics that tracks major injuries and deaths in 1.8 million football players on middle school, high school, college, sandlot (organized, non-school affiliated) and professional teams. The report is produced by the UNC-based National Center for Catastrophic Sports Injury Research, of which Mueller is director.

The figures take to 33 the total number of football players who have died from heat stroke since 1995 (25 high school, 5 college, 2 professional and one sandlot).

With summer now in full swing and football training sessions kicking into gear, the latest annual report serves as a stark reminder of the precautions that coaches – and players – need to take when practicing

and playing in the heat.

Mueller's report offers the following advice for helping prevent heat-related deaths:

- Require each athlete to have a physical and know if an athlete has a history of heat-related illness; such players are more susceptible to heat stroke. Overweight players are also at higher risk.
- Acclimatize players to the heat slowly; North Carolina mandates that the first three days of practice be done without uniforms.
- Alter practice schedules to avoid long workouts in high-humidity.
- Provide cold water before, during and after practice in unlimited quantities.
- Provide shaded rest areas with circulating air; remove helmets and loosen or remove jerseys; some schools have plastic outdoor pools filled with ice for cool-downs after practice.
- Athletes should weigh in each day before and after practice and their weight charts should be checked in order to treat any who lose excessive weight each day. Generally, a three percent loss in body weight through sweating is safe; five percent is in the danger zone.
- Know the symptoms of heat illness: nausea, incoherence, fatigue, weakness, vomiting, muscle cramps, weak rapid pulse and visual disturbance. Contrary to popular belief, heat stroke victims may sweat profusely.
- Have an emergency plan in place; parents should inquire about emergency plans for their children's teams.

Along with the two confirmed fatal cases last year, there was one other death of a high school player that might have been due to heat stroke, but no autopsy was performed. This compares to five heat stroke deaths in 2006. In the past decade, there have been only two years when no such deaths were recorded: 2002 and 2003.

In all, the 2007 football season saw 13 fatalities among the estimated 1.8 million players. Including the three high school deaths mentioned above, there were nine "indirect" fatalities (e.g. heat stroke, heart related, etc), as well as four "direct" deaths, which are defined as fatalities resulting directly from participation in the fundamental skills of football, such as tackling and blocking.

Of the indirect deaths, six were high school players, one was a college athlete, one was a sandlot player, and one semi-professional. Along with 2003, last year was the only time since 1999 that the total number of indirect fatal injuries has been in the single figures.

Among the four direct fatalities, three were in high school football and one was at the professional level in the World Indoor Football League. Two fatalities resulted from injuries to the brain, one to the spinal cord and one to internal injuries.

Source: University of North Carolina at Chapel Hill

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