

A Synopsis of the Risk Factors Predisposing Athletes in the Southeastern United States to Lightning Deaths and Injuries and the Most Reliable Ways to Protect Them

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Context: Due to a unique combination of factors, outdoor athletes in the Southeastern United States are at high risk of lightning deaths and injuries. Lightning detection methods are available to minimize lightning strike victims. **Objective:** Becoming aware of the risk factors that predispose athletes to lightning strikes and determining the most reliable detection method against hazardous weather will enable Certified Athletic Trainers to develop protocols that protect athletes from injury. **Data Sources:** A comprehensive literature review of Medline and Pubmed using key words: lightning, lightning risk factors, lightning safety, lightning detection, and athletic trainers and lightning was completed. **Data Synthesis:** Factors predisposing athletes to lightning death or injury include: time of year, time of day, the athlete's age, geographical location, physical location, sex, perspiration level, and lack of education and preparedness by athletes and staff. Although handheld lightning detectors have become widely accessible to detect lightning strikes, their performance has not been independently or objectively confirmed. There is evidence that these detectors inaccurately detect strike locations by recording false strikes and not recording actual strikes. **Conclusions:** Lightning education and preparation are two factors that can be controlled. Measures need to be taken by Certified Athletic Trainers to ensure the safety of athletes during outdoor athletics. It is critical for athletic trainers and supervising staff members to become fully aware of the risks of lightning strikes in order to most effectively protect everyone under their supervision. Even though lightning detectors have been manufactured in an attempt to minimize death and injuries due to lightning strikes, none of the detectors have been proven to be 100% effective. Educating coaches, athletes, and parents on the risks of lightning and the detection methods available, while implementing an emergency action plan for lightning safety, is crucial to ensure the well being of the student-athlete population. **Key words:** Certified Athletic Trainer, lightning detectors