



PREVENTING EXERTIONAL HEAT STROKE (EHS) IN HIGH SCHOOL FOOTBALL LINEMEN

National Federation of State High School Associations (NFHS)
Sports Medicine Advisory Committee (SMAC) Task Force

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THE PROBLEM:

- Exertional heat stroke (EHS) is the No. 1 cause of preventable death in youth, high school and collegiate football players, with an average of nearly three deaths per season.
- 100% of high school and collegiate EHS football deaths occur during sustained, high-intensity conditioning sessions, usually within the first week of practice, with 97% of those fatalities being linemen.
- Recommended guidelines for EHS (uniform reduction, WetBulb Globe Temperature (WBGT) scales, acclimatization periods, hydration, etc.) - although still important - have been insufficient in preventing fatality, as these do not account for the intensity of exertion nor linemen at risk.
- Linemen's physiological response to exertion and environmental heat differs from other players as they heat up faster and cool down slower, contributing to their increased risk for EHS.

SOLUTIONS:

- Establish a paradigm shift on how to train and condition football linemen.
- Training and conditioning should be position-specific, with a gradual and paced progression in intensity and duration, particularly during the first week of any new conditioning or preseason program.
- Continue to implement well-established guidelines for heat acclimatization, hydration, WBGT scales with appropriate practice modifications to reduce the risk of exertional heat illness.
- Encourage preseason strength and conditioning to enhance player preparedness.
- Linemen are excluded from certain preseason performance testing, such as mile runs, serial sprints, etc., during the first few weeks of practice as several deaths have occurred in this setting. Post-practice sprinting puts linemen at greater risk for exertional heat illness.
- Exertion drills are never used as punishment as this accounts for 37% of football EHS deaths.
- A struggling athlete is immediately withdrawn from training and conditioning for evaluation and treatment.
- Coaches' written plan for training and conditioning workouts include types of drills that match how linemen play the game, with appropriate work/rest ratios, intensity and duration, with focus on skill development.
- Rehearse the EHS Emergency Action Plan (EAP) with rapid cooling protocols.
- EHS is predominantly exertional rather than environmental; therefore, control exercise intensity, particularly in linemen, to prevent EHS.

REFERENCES:

Anderson SA, et al. **Preventing Exertional Heat Stroke in Football: Time for a Paradigm Shift.** *Sports Health.* 2025 May-Jun 14;17(3):484-490. **doi: A 10.1177/19417381241260045**