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## **MARCHING BAND MEMBERS AT RISK FOR HEAT ILLNESS** ***Athletes Aren't Only Students Schools Should Help Protect***

LAS VEGAS, June 26, 2019 – New research suggests lengthy practices that begin in the middle of the afternoon and playing on artificial turf may increase the risk of exertional heat illness (EHI) in a group of often-overlooked students: the marching band. The study – the first to measure the musicians' core temperatures throughout the season – is being presented at the [National Athletic Trainers' Association \(NATA\) 70<sup>th</sup> Clinical Symposia & AT Expo.](#)

Researchers measured the musicians' gastrointestinal temperature (Tgi) using an ingestible telemetric pill that provides information remotely. A core body temperature of more than 104 F signifies heat stroke, the most severe form of EHI and a leading cause of death among American high school athletes.

“People usually think of football players when they think of students struggling with heat issues, but high school and college marching bands also often practice in the heat of August and early September and play on the same surfaces while wearing uniforms and carrying heavy equipment,” said Dawn M. Emerson, Ph.D. “Clearly, schools need to enact measures to prevent EHI in marching band musicians, such as by moving practices to cooler parts of the day and providing breaks in the shade. Athletic trainers should help with prevention as well as management.”

Researchers recorded the Tgi of members of two college bands during rehearsals and football game performances throughout one season via the telemetric pill the students swallowed on those days. Previous research relied on musicians self-reporting any experience with heat illness after the season was over.

Researchers determined members of the second band had higher Tgi. They found:

- Average Tgi overall (including rehearsals and games) was significantly higher in the second band:
  - before activity (99.68 F for band one vs. 101.12 F for band two)
  - after activity (100.22 F for band one vs. 101.84 F for band two)
- Maximum Tgi was higher in the second band (100.58 F for band one vs. 102.74 F for band two)
- Seven members of the second band and no members of the first band experienced Tgi of higher than 104 F for more than an hour during games, although only one experienced central nervous system dysfunction, indicating exertional heat stroke.

Musicians in the second band likely experienced higher Tgi because they had longer practices (116.3 minutes for band two vs. 87.5 minutes for band one) that started earlier when the temperatures tended to be higher (3:45 p.m. for band two vs. 5 p.m. for band one), researchers say. Band two members may have started

practice with higher Tgjs because it occurred in the hotter part of the day and they may have been rushing to practice after the school day ended, researchers note. Band one stretched practices over four days, whereas band two practiced three days a week, leading to the longer practices. Band two performed during games on artificial turf (which has been shown to cause greater heat stress) while band one performed on natural grass. The temperature on game days was higher for band two than band one. Other aspects were similar between the two bands, including uniforms, band size and pre-game and half-time shows.

“Schools should use the same recommendations to prevent EHI for marching bands as they use for athletes, such as holding shorter practices the first week so musicians can acclimate to the heat, moving practice times to earlier in the morning or later in the day when heat and humidity are lowest and ensuring the musicians have rest breaks and access to water,” said Dr. Emerson. “Athletic trainers play a very important role in preventing heat illness in marching band members and ensuring appropriate care if exertional heat stroke does occur, such as immersing the student in a large cold tub of water. At some colleges, the marching band has its own athletic trainer.”

NATA offers additional information on hydration and preventing heat-related illness. Visit [atyourownrisk.org](https://atyourownrisk.org).

### **About NATA: National Athletic Trainers' Association (NATA) – Health Care for Life & Sport**

Athletic trainers are health care professionals who specialize in the prevention, diagnosis, treatment, and rehabilitation of injuries and sport-related illnesses. They prevent and treat chronic musculoskeletal injuries from sports, physical and occupational activity, and provide immediate care for acute injuries. Athletic trainers offer a continuum of care that is unparalleled in health care. The National Athletic Trainers' Association represents and supports 45,000 members of the athletic training profession. For more information, visit [www.nata.org](https://www.nata.org).

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