Heat Screen: A Novel Approach to Monitoring Heat Stress

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Heat exhaustion is not just the leading cause of death in student-athletes it is quickly becoming the leading cause of weather-related deaths in the U.S. One of the keyways to help prevent heat exhaustion is through early detection. If detected early, heat exposure can be easily treated using the recommendations by the CDC. This project proposes that by creating a system for both athlete monitoring as well as self-monitoring, the occurrences of death due to heat exposure can be dramatically reduced. The system uses a temperature sensor and processor attached to a chest strap that can be worn under clothing. A web-based graphical interface is used to monitor athletes, while a smartphone application is used by individuals to self-monitor. The system will monitor individuals and create alerts when those individuals are experiencing higher than normal body temperatures. The system was tested for accuracy, comfort, and durability by using human test subjects during their normal practice activities. The test showed that the system is as accurate as an infrared forehead thermometer. Data also showed that the system had a high level of comfort as well as durability. These findings are important because they demonstrate the Heat Screen system is a viable tool in helping prevent unnecessary deaths.

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