Preventing Vehicular Hyperthermia Using Electronic Sensors and Bluetooth Technology

Patwardhan, Mihir

Every year, an average of 37 children dies from hyperthermia (heat), when left unattended in the car. The objective of this experiment was to find an effective way to detect when the baby is at a risk of developing hyperthermia so an alert can be sent. To determine if the baby is present in the car seat, the device used a series of sensors (independent variable) that sends a signal to cell phones in the vicinity via Bluetooth (dependent variable). In addition, a stepper motor moved, to signify the windows being lowered. An alarm was also sent to catch the attention of those passing by the car. The circuit design was created by connecting the sensors to a microcontroller called Arduino Uno. It was programmed to send a Bluetooth signal to cell phones in the nearby vicinity signaling them that the baby is in danger and needs immediate help. The prototype was tested by manually controlling the sensors. This included the temperature sensor, which was changed by putting a hand over the sensor to signify the temperature increase, and the motion sensor which was controlled by moving your hands so that the criteria was met. The data gathered and results analyzed from the experiment show that by using motion, pressure, and temperature sensors, one is able to correctly identify the presence of a baby in distress and take the appropriate actions necessary to ensure its safety.

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