

Computerized system to prevent SIDS developed by students

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A new system using video and computer software to monitor a baby that could be used to prevent Sudden Infant Death Syndrome (SIDS), as well as for telemedicine applications, has been developed by two students at Ben-Gurion University of the Negev (BGU).

The new system called "BabyBeat" was developed by students in the BGU Departments of Electrical Engineering and Computer Sciences. It uses [computer algorithms](#) to convert video footage to pulses that represent a baby's heartbeat and skin tone. In the event that the system detects an abnormal heartbeat, an alarm sounds to awaken the baby, change its breathing pattern and alert the parents.

SIDS is the unexpected, sudden death of a child under age one in which an autopsy does not show an explainable cause of death. No one knows what causes SIDS, but researchers have theorized that a dramatic drop in heart rate occurs just before death. Thousands of babies die from this phenomenon each year in the United States.

Tomer Apel and Anava Finesilver developed the program as part of their final research project. While still early in the development process, the software program will work with a basic video camera and home computer, which minimizes cost.

"Heart pulse affects the [skin tone](#)," Tomer Apel explains. "This is such a minor change that it's not visible to the [human eye](#), but it's still there. We have developed algorithms to interpret the discoloration recorded by the

camera and translate them into pulses. It's widely assumed that baby's pulses slow down before SIDS, and this system could help prevent this."

After further testing, if BabyBeat continues to perform as expected, the students will seek to commercially produce and market the innovation.

The system has other potential applications. It can monitor sleeping babies at daycare, as well as patients online in real time, providing for quality "telemedicine" when needed.

"BGU students were once referred to as 'Israel's oil wells that don't run dry' by New York Times columnist Thomas Friedman. Well, these innovative [students](#) may ultimately have a solution to saving precious lives and alleviating parents' angst about their child succumbing to this mysterious infant killer," says Doron Krakow, executive vice president of American Associates, Ben-Gurion University of the Negev. "It fills me with pride to support their efforts."

Provided by American Associates, Ben-Gurion University of the Negev

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