

# Life signs will be heard from the top of the world

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In these days when information can travel across the world in a heartbeat, a pulse will travel across the world just as quickly.

A new tele-health device designed and developed at the University of Alberta will make sure that researchers in Edmonton can monitor climber Martin Lebeuf's every heartbeat as he climbs Mount Kilimanjaro. Lebeuf, an employee with the Canadian Space Agency, will be tackling the 4,600-metre mountain in November for an Arthritis Society fundraising. He's excited about the possibilities posed by the watch-sized contraption.

"I think if we could prove that this will work, it will open the door for many applications. I've been in Nunavut several times, and I see a lot of applications for that, for remote communities," said Lebeuf. "There might be some application for people with medical conditions who want to do some outdoor activities but are scared of being away from home. Also, I can foresee interesting implications in space. You never know."

The device, a wireless wearable physiological monitor (WWPM), can be used to track and transmit a patient's vital signs to his or her physician or other health-care provider over the Internet. Using leading-edge sensor technology it can provide information about the wearer's physical state, such as blood pressure and pulse. It will also alert health-care providers when intervention is needed or to prompt patients to take necessary actions (i.e. reminder to take medications).

Dr. Masako Miyazaki, principal investigator on the WWPM from the U of A Faculty of Rehabilitation Medicine, said developers are especially proud of the gadget's simplicity.

"Capital Health was very helpful in creating a system that is user-friendly, without too many wires, so elderly patients can use it and stay the rest of their lives in their own homes and communities," she said.

"The fact that it's designed like a watch, means it's wearable. It's something even patients with dementia will not remove - anything that feels different, like a ring or necklace, they try to remove it."

Preliminary testing with patients has received positive feedback, said Miyazaki.

"Users are very happy that it's not intrusive, and they get peace of mind. We're very, very proud that, behind this simplistic device a lot of sophisticated technology has been embedded. This is just the beginning. This is going to continue to become smaller and sophisticated."

Development of the WWPM was a model of interdisciplinary work, said Miyazaki, with help from U of A computer sciences and electrical engineering experts, Capital Health and Japan's Sapporo Medical University.

Lebeuf will also carry with him a wireless station, which will collect data from the wristwatch monitor, and a satellite telephone, which will send the data back to Edmonton.

"This is the only tele-health device, to my knowledge, that allows a hospital to communicate with a patient in a remote location," he said. "I think it's absolutely incredible to have this kind of technology developed here in Canada."

Source: University of Alberta

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