

Mobile device detects irregular heartbeats and helps to prevent cerebral infarctions

September 19 2016

VTT Technical Research Centre of Finland has developed a mobile app and thumb-size device that help to prevent cerebral infarctions at an early stage, during asymptomatic atrial fibrillation. The mobile device, which detects arrhythmia (irregular heartbeat) has been tested with excellent results for around two years in real-life conditions in cooperation with Turku University Central Hospital.

An irregular heartbeat tends to remain undiagnosed, if no symptoms are detected during Holter monitoring of heart activity.

"With the mobile device developed by VTT, users can register their ECG signal whenever arrhythmia or other heart symptoms occur. The device is also suitable for pre- and post-surgery monitoring of heart patients at home. There is no need for patients to visit a hospital, because the data is sent automatically from a mobile phone to medical staff via a cloud service," says Timo Varpula, Principal Scientist at VTT.

Arrhythmia notifications directly to your mobile phone

Convenient and easy to use, Beat2Phone accurately measures the user's heart rate and heart rate variability in order to detect not only an irregular heartbeat, but also overburdening and prolonged stress. A high resting [heart rate](#) and low [heart rate variability](#) are indicators of stress.

The Android-compatible app and device measure ECG signals at a very high sampling rate, identify individual heart beats and count the interval between consecutive beats. The device also includes position and activity sensors. Thanks to its flexible strap, Beat2Phone is comfortable to wear.

The mobile device has been tested by heart patients at Turku University Central Hospital, as well as by top athletes with heart conditions, who have been highly satisfied with it. Top athletes and professional sportspersons should monitor their heart activity regularly, because changes in ECG may be an indicator of myocarditis or other serious conditions.

The device has so far been tested by around 30 users, some of whom have also worn the device at night. The test users are people who have reported heart symptoms, but who have not experienced symptoms during earlier Holter monitoring.

In the tests, the device helped to detect atrial fibrillation, arrhythmia and a cardiac conduction disorder. The patients were admitted for further tests once they had shown their Beat2Phone electrocardiograms to a physician. Persons suffering from harmless irregular heartbeat have also reported improved quality of life due to the measuring device alleviating their uncertainty about their condition. The study is still ongoing.

Other potential users of the device include people suffering from sleep apnea.

The [device](#) is expected to go on sale to consumers in six months' time.

The number of potential users is growing as the share of aging persons increases. Approximately five per cent of the population suffers from [irregular heartbeat](#), affecting around 12 per cent of people over 60. The number of people engaged in endurance sports is also rising.

More information: For more information, see www.beat2phone.com

Provided by VTT Technical Research Centre of Finland

Citation: Mobile device detects irregular heartbeats and helps to prevent cerebral infarctions (2016, September 19) retrieved 25 April 2024 from <https://medicalxpress.com/news/2016-09-mobile-device-irregular-heartbeats-cerebral.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.