

# Healthy lifestyle smartphone app slows artery aging

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Using a healthy lifestyle smartphone application (app) helps to slow artery ageing, according to results from the EVIDENT II trial presented today at EuroHeartCare 2018, the European Society of Cardiology's annual nursing congress.

Arteries harden with age, increasing the risk of atherosclerosis and subsequent cardiovascular disease. Good eating habits, smoking cessation and physical exercise are known to prevent atherosclerosis. The current study aimed to assess the impact of using modern technology to promote healthy living habits, compared to traditional modification strategies. The EVIDENT II trial tested whether using a smartphone app could slow artery ageing by improving compliance with a Mediterranean diet and physical activity equivalent to at least 10,000 steps a day.

Dr. Jose Ignacio Recio-Rodriguez, study author and assistant professor, University of Salamanca, Spain, said: "We found that a healthy lifestyle smartphone app, added to brief advice on diet and exercise, improved a marker of arterial hardness, indicating delayed arterial ageing and a lower risk for atherosclerosis."

Specifically, after using the app for three months, users had a significant improvement in the peripheral augmentation index which was maintained at one year. This index got worse in participants who received diet and exercise advice only.

At three months, although neither group had improved their physical activity level using an objective method (accelerometer), the app group improved their physical activity level using a self-report method (seven-day physical activity recall questionnaire). Both groups improved their adherence to a Mediterranean diet.<sup>2</sup> However, better results were achieved by the app group in modifying the usual diet composition, with a higher percentage of carbohydrates, and lower percentages of total fat and saturated fat. Intake of trans fats and processed meats were also reduced.

The design of the trial has been previously published. Briefly, the trial included 833 adults without heart disease aged 70 years or under who were recruited from six primary care centres in Spain. Participants were randomised to the app plus counselling, or counselling alone, for three months. Follow up visits were conducted at three months and one year.

In both groups, counselling consisted of two 15 minute sessions—one on physical activity and one on the Mediterranean diet—each explaining the benefits and providing specific advice. Attendees received an information leaflet after each session.

Each day, app users entered their food intake, the app's accelerometer recorded the number of steps, and users entered activities performed without the smartphone such as swimming. At the end of each day, the app reported a summary of food intake and physical activity, the number of calories consumed and expended, and a recommended plan to improve eating habits and increase physical activity.

For the current study, artery ageing/hardening was assessed in 597 participants using three indices: the peripheral augmentation index, evaluated by tonometry, and the cardio-ankle vascular index and pulse wave velocity measured by oscillometry. There were no differences between the app and counselling only groups in any of the indices at the

start of the study.

Dr. Recio concluded: "Healthy lifestyle apps could be a powerful weapon against arterial ageing. But studies are still needed to demonstrate their ability to reduce heart attacks and death from cardiovascular disease."

**More information:** The abstract 'Combined use of a healthy lifestyle smartphone application and usual primary care counseling to improve arterial stiffness: A Randomized Controlled Trial (EVIDENT II Study).' will be presented during the [Oral abstract session: PPCI](#), risk factors and prevention which takes place on 9 June from 14:00 to 15:30 CEST in the Davis Theatre.

Provided by European Society of Cardiology

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