European Heart Journal: “One change a day makes 365 changes in a year”

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Adherence to a workplace cardiovascular health-promotion program improves lifestyle and risk factors in healthy individuals

Many cardiovascular disorders can be prevented by taking action to reduce risk factors. Making even small behavioral changes and sticking with them over the long term can help to preserve cardiovascular health. This is the conclusion of a study conducted at the Centro Nacional de Investigaciones Cardiovasculares (CNIC) and published in the European Heart Journal. The study also demonstrates that the workplace is an ideal setting for programs promoting the adoption of heart-healthy habits and producing major health benefits.

Cardiovascular disease is the number 1 cause of death in the world and represents one of the greatest economic challenges for health systems. The development of cardiovascular disease is strongly influenced by features of modern unhealthy lifestyles such as physical inactivity, poor diet, and alcohol and tobacco consumption.

A few years ago, CNIC General Director Dr. Valentín Fuster launched the TANSNIP project, an international initiative that includes partners in the United States (Icahn School of Medicine at Mount Sinai Hospital in New York and the Framingham study) and Europe (the CNIC and Amsterdam UMC). **The goal of TANSNIP is to develop tools for lifestyle improvement based on the use of imaging techniques to detect the presence of atherosclerosis in its early stages**, before the appearance of symptoms and events such as heart attack or stroke.

In 2015, the TANSNIP project launched a major intervention to promote a heart-healthy lifestyle in 1000 individuals from the PESA-CNIC-Santander cohort in Madrid.

The original goal of the PESA-CNIC-Santander study was to detect atherosclerosis long before the appearance of symptoms and thus to gain an understanding of the factors that trigger its development and progression.

“**After months of work with our partners at Amsterdam UMC and with Banco Santander’s medical services, we designed a lifestyle intervention for participants who are part of the PESA-CNIC-Santander cohort**,” explained **Dr. Inés García-Lunar**, a cardiologist at the CNIC and first author of the study.

The intervention consisted of a program of 12 motivational sessions distributed over 3 years in which an expert psychologist provided participants with the tools to introduce heart-healthy changes into their lifestyle. Participants also were given a physical activity bracelet to monitor the number of steps per day and a sit-stand desktop that allowed them to alternate sitting and standing during working hours, thus reducing sedentary time.

“**More than 1000 PESA-CNIC-Santander study participants at Banco Santander were randomly assigned to follow the intervention during their working hours or to continue with their normal routines**,” said Borja Ibáñez, CNIC Scientific Director and a cardiologist at Fundación Jiménez Díaz University Hospital.

“We found that individuals assigned to the intervention increased their level of physical activity, improved their diet, and reduced their sedentary time. And as a consequence of these behavioral changes, these participants’ blood pressure and cholesterol also decreased,” explained **Dr. José María Castellano**, a cardiologist at the CNIC and Scientific Director of the HM Hospitales Research Foundation.

“A very important result is that the effect of the intervention decreases over time, which suggests that programs of this type need even more frequent reinforcement to achieve sustained changes,” noted Dr. Ines Garcia-Lunar.

“The study represents a major finding, due to the complexity of implementing a program of these characteristics in a work environment, and this has been possible thanks to the hard work and commitment of all those involved, including the willing engagement of the participants,” explained Dr. Valentín Fuster, who is the principal investigator on the study.

Dr. Fuster has dedicated his professional career to cardiovascular research at the highest level and has led innumerable studies throughout the world aimed at promoting cardiovascular health at

different stages of life, from childhood to adulthood. He concluded that “the results of this study send an optimistic message: A change to a more heart-healthy lifestyle is possible, even in adulthood, but needs subsequent reinterventions.”

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- Ines Garcia-Lunar, Hidde P van der Ploeg, Juan Miguel Fernández Alvira, Femke van Nassau, Jose Maria Castellano Vázquez, Allard J van der Beek, Xavier Rossello, Antonio Fernández-Ortiz, Jennifer Coffeng, Johanna M van Dongen et al (2022). European Heart Journal, https://doi.org/10.1093/eurheartj/ehac378

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