Website address:
https://www.gesundheitsindustrie-bw.de/en/article/press-release/digital-assistance-system-designed-prevent-recurrent-heart-disease

Digital Assistance System Designed to Prevent Recurrent Heart Disease

Frauen haben nach einem Schlaganfall oder Herzinfarkt ein höheres Sterberisiko als Männer. Fraunhofer-Forschende möchten die geschlechtsspezifische Nachsorge mit einem maßgeschneiderten Assistenzsystem verbessern – und so weiteren Herzerkrankungen vorbeugen.

If a woman suffers a heart attack or stroke, her prognosis is worse than that for a man, as women are at a higher risk of mortality after heart disease than men. This is because women continue to be underrepresented in clinical trials, gender-specific risk factors have not yet been sufficiently taken into account and protective hormones are no longer produced after menopause. Efficient aftercare is therefore essential.

Better prognosis for women

A team of Fraunhofer researchers is working on this. "In the GenderHeart project, we are developing an interactive assistance system focused on improving gender-specific early detection after a stroke or heart attack, thus also improving the prognosis for women," explains Paula Röttig, engineer and research scientist in the Biomedical Sensors section at the Fraunhofer Institute for Manufacturing Engineering and Automation IPA in Mannheim.

To achieve this, the researchers are establishing a digital medical history recording process that specifically asks patients about cardiovascular diseases. The system uses the TEDIAS digital recording station, which Fraunhofer IPA researchers developed in advance. In this system, which is already being tested in clinical studies, a digital avatar conducts the medical history interview.

The patient sits in a chair with integrated biosensors and a monitor in front of them for the medical history interview. A digital doctor appears in the form of an avatar, guiding the patient through a series of questions and using built-in sensors to record vital signs. Blood pressure is measured automatically, respiratory rate is monitored, and an ECG is recorded. The goal of TEDIAS: faster and easier medical history recording.

"In this project, we are adapting our digital medical history to focus on heart disease," explains Paula Röttig. "We record relevant parameters even before the actual consultation with the doctor, letting us use the consultation time to focus on key medical issues."

This planned early detection system uses an AI-based algorithm that enables individual risk assessment and therapy recommendations for each patient. The system accounts for questions such as the following: How do the course of heart disease aftercare and the achievement of treatment goals differ between women and men? What role does individual hormone status play? What gender-specific factors influence the success of various therapies?

In addition to the sensors implemented to date, the researchers plan to integrate a new speech analysis tool in the chair. The reason for this is that the voice can provide important clues about heart health. One of the project partners is therefore developing an app with which patients record their voice at home on a daily basis over a period of six months. The tool detects irregularities and changes in a timely manner, and the results are to be incorporated in the risk assessment during regular checks with TEDIAS.

The GenderHeart project will be launched in spring 2026 and will run for three years. In addition to Fraunhofer IPA, participants include Zana Technologies GmbH and the University Medical Centre Mannheim. Over the long term, the specialized recording station is to be used in the emergency room, reducing the day-to-day hospital workload.

Paula Röttig is confident: "Women's health has often been neglected and is under-researched. I think it is essential to account for gender-specific differences to enable women to finally have better prognoses for their treatment."

Press release

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Further information

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