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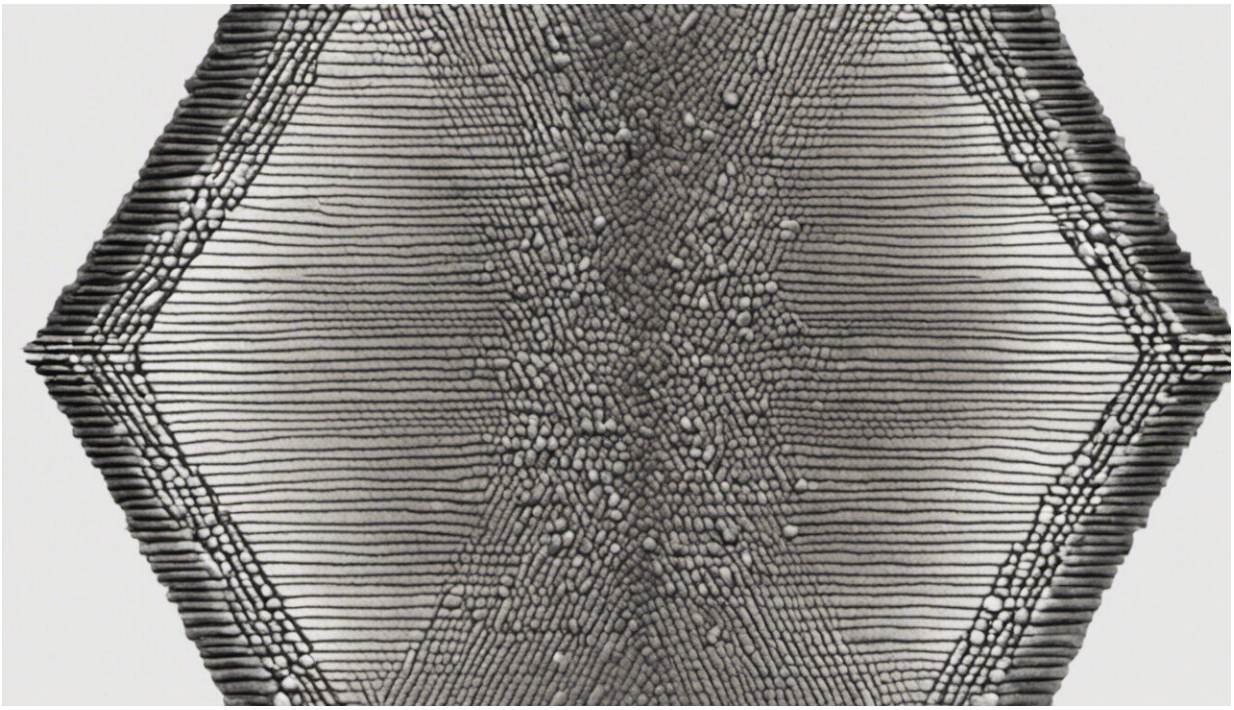
Better heart research to combat number one killer

June 2 2016, by Rueben Hale, Sciencenetwork Wa



Credit: AI-generated image (disclaimer)

With Heart Week shining a spotlight on Australia's heart health ealier this month leading cardiologist Professor Peter Thompson calls for urgent heart research to help understand the cause of heart disease better.

Prof Thompson says work by people like biomedical engineer and UWA senior lecturer Barry Doyle was critical for developing a greater understanding of heart disease causes by linking problems with blood vessels to bioengineering.

Dr Doyle and his team in the Vascular Engineering laboratory are combining a range of talents to develop heart and blood vessel modelling technology that could help predict disease before it occurs.

Dr Doyle says the aims of these techniques are, for example, to develop an understanding of where and why aneurysms develop in some arteries and not in others.

And if we can understand why this occurs it will enable us to design devices that will be more effective in treating the conditions.

Currently when a patient comes into the hospital with a suspected heart problem their heart is imaged with a variety of imaging modalities, Dr Doyle says.

"Typically these modes are computed tomography (CT) and magnetic resonance imaging (MRI)," he says.

"[While] more recently, a cutting edge invasive technique called intravascular optical coherence tomography (OCT) where an imaging device is inserted into the coronary artery on a wire to look from the inside out with exquisite detail."

The Vascular Engineering Laboratory (VascLab) team from the University of Western Australia and the Harry Perkins Institute of Medical Research. Credit: Rueben Hale

"What we're excited about is our development of new image registration techniques that allows the merging of different imaging techniques to get a better understanding of the patient's actual blood vessel, he says.

"This allows us to make better computer models and ultimately make better predictions."

Prof Thompson says the intellectual brains trust of heart disease treatment needs to be maintained in WA.

"This is a massive area of expansive research and engineering design for the medical industry and what Dr Doyle and his team do are unique

because they merge different imaging together to obtain a more sophisticated model, Prof Thompson says.

"We need the continued support of the community to keep our best heart scientists and doctors here in WA if we want to ensure that we find the answers and at the same time have access to the latest clinical trials," he says.

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