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**EXCLUSIVE** Melbourne medical breakthrough leads way to predicting newborns' chance of developing health problems by using cutting-edge AI

# BABY, IT'S YOUR FUTURE

**Robyn Riley** Medical Editor

A new AI tool could help predict a baby's future health issues, such as stroke and heart disease, just from looking at the mother's placenta. Melbourne mums were central to Australia's first pilot study of the tool that was able to assess the health of the placenta from a picture captured immediately after birth on a digital device.   **FULL REPORT, PAGE 13**

# AI tool predicts a baby's health

## Mums in new pilot study

A new AI tool could help predict a baby's future health issues, such as stroke and heart disease, just from looking at the mother's placenta.

Melbourne mothers were central to Australia's first pilot study of the tool that was able to assess the health of the placenta – and any issues that arose during pregnancy – from a picture captured immediately after birth on a digital device like an iPhone or Samsung phone.

The study was led by Emily Camm from the Hudson Institute of Medical Research working with researchers from the Mercy Hospital for Women, the Murdoch Children's Research Institute and the University of Western Australia.

Dr Camm said the health of the placenta provided clues about a pregnancy and potentially a baby's future.

On the flip side, the tool may also have the potential to predict those babies who are going to be healthy or even athletic.

"The placenta plays a pivotal role in a baby's health," Dr Camm said.

"It is the organ that is really critical as it provides oxygen, nutrients, hormones and growth factors essential for foetal growth."

The team collaborated with Penn State University researchers in the US who developed the AI tool called PlacentaVision that can measure a range of morphological features, or shapes, and diagnoses from digital images.

Dr Camm said the tool was trained using an invaluable dataset of thousands of photographs of placentas along with associated pathology reports.

"Where the team wants to head eventually is to see if this AI tool could be rolled out in various healthcare settings to get an indication of what a healthy placenta looks like and what those measurements are versus one that doesn't look so healthy."

She said it could reveal if something had gone wrong during the pregnancy, but could also provide clues potentially to the baby's longer term health outcomes.

"Because there's a lot of research linking the placenta to outcomes in later life such as risk of stroke, hypertension, metabolic and heart disease," Dr Camm said.

"So its shape, size, perimeter, whether there's any bleeding or haemorrhaging or any indications of an infection.

"It gives a snapshot of the health of the placenta.

"So if we can get a snapshot of what the placenta looks like at the time of delivery, it might help us guide clinical care, not only of the mum, but also the baby." The team published the results of the study in the European Journal of Obstetrics & Gynaecology and Reproductive Biology.

Dr Camm says the results may lead to increased surveillance of a baby much earlier in life to make sure it is growing properly after birth.

Her team also confirmed placentas kept for later analysis were minimally impacted by being held in cold storage, the experience of the user taking the image or the technology used.