

## **Innovative Artificial Intelligence tool pioneered by Australian scientists to increase success rates in IVF pregnancies gains international interest**

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International medical and scientific community interest is growing in the innovative Australian technology which uses artificial intelligence to predict the likelihood of an individual IVF embryo leading to a viable pregnancy, with publication of early findings in the world's leading peer-reviewed journal for fertility health, [Human Reproduction](#).

"It is becoming increasingly clear that Artificial Intelligence technology will, in future, be the dominant embryo selection method used in IVF," said A/Prof Peter Illingworth, Medical Director IVFAustralia, Virtus Health, where Ivy AI was pioneered in collaboration with Harrison.AI.

Evaluation of the technology was conducted in Virtus Health clinics on data obtained from 10,638 embryos. These data were based on embryos cultured in time-lapse incubators from eight different IVF clinics, across four different countries, between January 2014 and December 2018. The findings were originally presented in October 2018 at the American Society of Reproductive Medicine Annual Conference and a manuscript published in Human Reproduction today.

"Now with the **Ivy** AI technology we can take advantage of the ability of AI to process an enormous amount of data, too much for a human to process, to more accurately and objectively predict the best embryo to select for transfer, based on the presence of a fetal heart," said A/Prof Illingworth.

Previous forms of this technology have shown a good correlation with a skilled embryologist but Ivy is the first Artificial Intelligence system to actually predict fetal heart rate outcomes solely from study of the embryonic development.

"The next step is to carry out clinical studies, including a planned randomised trial to better understand the clinical role of this powerful technology and, in particular to find out what contribution, if any, it can make to improving success rates in IVF. This technology has the potential to contribute to IVF medicine by shortening the time to a successful pregnancy and increasing IVF pregnancy rates and while we believe that Ivy AI is the most advanced tool of its kind in human embryology, this still needs further evaluation through a randomised controlled trial." said A/Prof Peter Illingworth.

"**Ivy** is a self-improving AI tool that continuously learns from embryos that it analyses. The AI iteratively retrains on powerful supercomputers and has been shown to consistently improve on previous versions of itself in identifying the embryo with the highest potential for a successful pregnancy" said Aengus Tran, Medical AI Director at Harrison.AI. "As with many other areas of medicine, this is a demonstration of the potential for artificial intelligence to make an enormous contribution to human health."

In April, Virtus Health and Harrison.AI announced a collaboration with the Swedish company, Vitrolife, the world's leader in time lapse incubation systems, to further develop the pioneering system.

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### **Further information:**

If you are interested in an interview, please contact:

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## About Virtus Health Limited

Virtus Health Limited (ASX:VRT) brings together leading clinicians, scientists, researchers and support staff to provide the very best in fertility care and related specialised diagnostic and day hospital services. We have developed one of the most successful medical collaborations in the world. With 125 of the world's leading fertility specialists supported by over 1200 professional staff, we are the largest network and provider of fertility services in Australia and Ireland, with a growing presence in Singapore, UK and Denmark. Our combined expertise creates a unique and powerful body of knowledge which when combined with the collegial team approach of our specialists and scientists, means we are able to find new and advanced solutions for achieving success for our patients.

### **Virtus Health fertility network includes:**

AUSTRALIA: IVFAustralia, Queensland Fertility Group, Melbourne IVF, Hunter IVF, TasIVF and The Fertility Centre

IRELAND: Sims IVF; Rotunda IVF

DENMARK: Aagaard Fertility Clinic, Trianglen Fertility Clinic

UK: Complete Fertility Centre

SINGAPORE: Virtus Fertility Centre

### **About Harrison-AI**

Harrison-AI brings the latest Artificial Intelligence breakthroughs to clinical application. Harrison-AI is a Sydney-based healthcare artificial intelligence start-up. Bridging the gap between clinical medicine and computer science, Harrison-AI leverages deep learning to solve the biggest challenges in healthcare such as infertility and eye diseases in Australia's ageing population, and tuberculosis epidemic in developing countries. Taking the implementation path, Harrison-AI seeks to make healthcare better, cheaper, and faster for all.

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