

New tool in Australia enables early intervention for diabetes related foot ulcers

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A collaborative project between the University of Melbourne and RMIT in Australia has developed a thermal imaging artificial intelligence (AI) tool called THERMUL to prevent diabetes related foot ulcer hospitalisations and amputations by improving early intervention rates.

Diabetes affects over 500 million people globally and up to 34 per cent of people with the condition will develop a foot ulcer during their lifetime. Diabetes-related foot ulcers can lead to infection, hospitalisation, lower limb amputation and early death if not managed appropriately.

The key outcome of the collaboration is a smartphone-based tool that uses thermal imaging and AI to predict whether a diabetes related foot ulcer is likely to heal within 12 weeks. The technology analyses patterns within thermal images of wounds that may indicate whether an ulcer is healing as expected or is at risk of delayed healing.

Current clinical guidelines often assess healing progress over the first four weeks of treatment to determine whether a diabetes related foot ulcer is healing as expected. However, regular access to specialist support can be difficult for many people living in regional, rural and remote communities.

This project initially received seed funding from ACADI, which enabled the research team to develop the project to the prototype stage.

The research team recently secured \$490,539 in grant funding through Australia's Economic Accelerator programme and \$50,000 from the University of Melbourne's Proof of Concept Fund to expand validation of the technology across a wider range of healthcare settings, including metropolitan, regional and remote services, and to further improve the predictive model using data from more diverse population groups.

THERMUL is currently progressing through additional validation and development activities required to support future translation into clinical practice.