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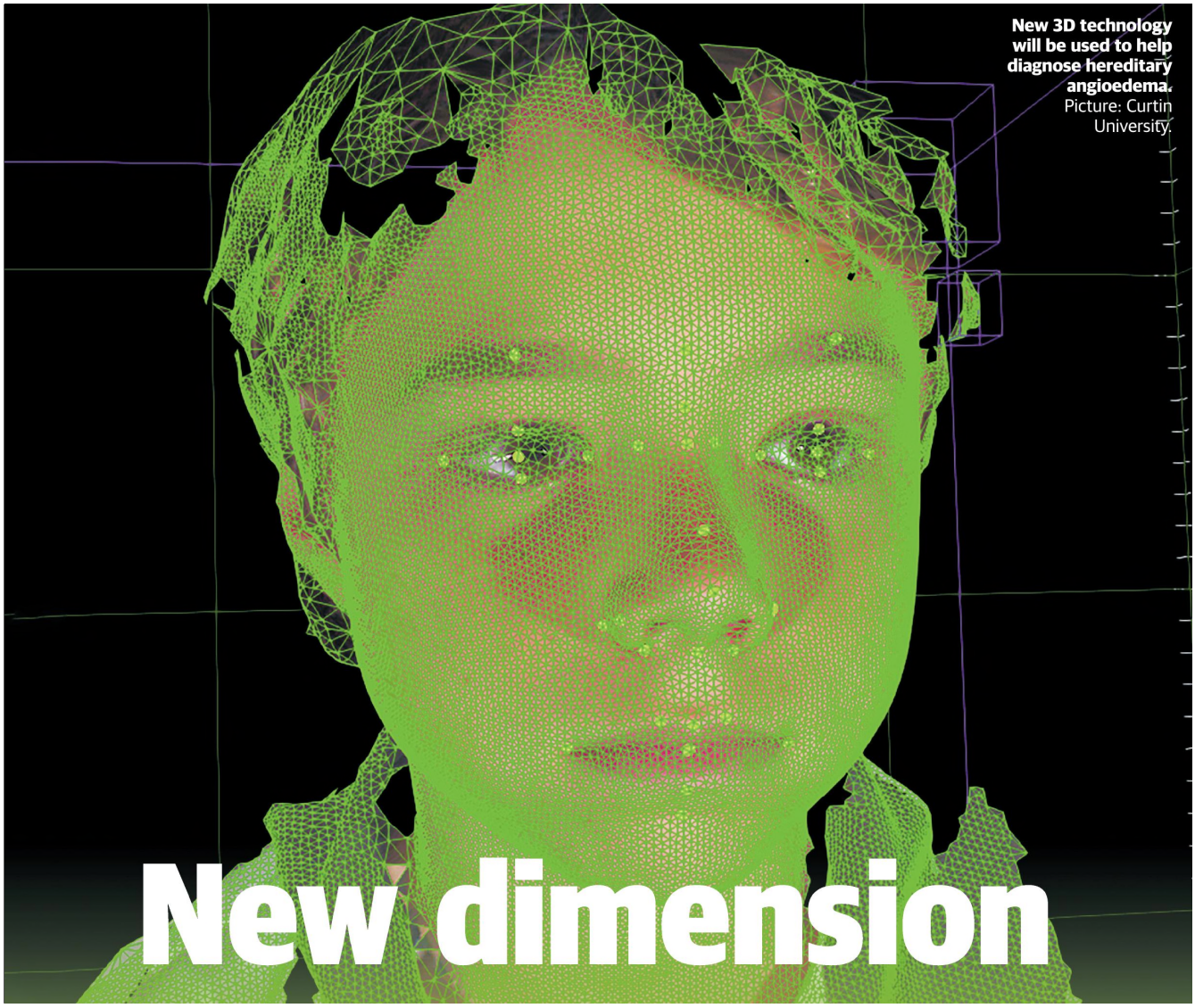

New 3D technology will be used to help diagnose hereditary angioedema. Picture: Curtin University.

New dimension

JAKE DIETSCH

A Wembley nurse hopes 3D technology will give hope to the "next generation" of patients with a rare genetic disorder.

Twenty-three-year-old nurse Emily Wheeler, pictured, was diagnosed with hereditary angioedema in 2020 after two years of symptoms.

Ms Wheeler is one of 50,000 people living with disease, which is characterised by severe and, at times, life-threatening episodic swelling of the face and upper torso.

She is taking part in a research project at Curtin University that will use 3D facial analysis technology to help understand and eventually guide treatment of the disorder.

Researchers will analyse the facial features of those living with HAE across Singapore and WA.

Clinicians at SingHealth — a collection of Singaporean healthcare institutions — will be trained to capture and analyse 3D facial images using Curtin's Cliniface software platform.

Curtin computer scientist Richard Palmer developed the technology and said the 3D facial images of 900 people would be processed to extract more than 50 facial measurements from each image.

"The resulting de-identified data will be transmitted from SingHealth to the Cliniface team at Curtin University for analysis, allowing us to generate modelling that outlines facial features specific to the Singapore population," Dr Palmer said.

"By working together, we will expand our understanding of the facial features of this rare genetic disorder, with the ultimate aim of potentially making it easier for clinicians to treat patients and ultimately improve the lives of people living with HAE."

Ms Wheeler said her journey to diagnosis was "really hard" and hoped the study would make life easier for future patients.

"I was going from doctor to doctor who were telling me it wasn't worth coming in because they didn't know what to do," she said.

"Some thought I was making it up or said I just needed to learn to live with it."

After losing part of her bowel, her condition was finally taken seriously.

"I was referred to a gastro doctor who had heard by chance of HAE," Ms Wheeler said.

"This technology will be able to identify other factors associated with the disease and hopefully lead to the development of new medications.

"It will do wonders and make diagnosis so much easier.

"For future generations and for people who have symptoms but don't have answers, this is definitely a game-changer."