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Australia develops bionic technology to assist people with nerve damage

October 29, 2021 | News

The unique invention was recently awarded the Major Category Prize in this year's Bionics Challenge, receiving $50,000 in prize money and an eight-week mentoring program



A shoe insole using bionic technology to help people with nerve damage maintain their balance has been designed by University of Queensland (UQ) researchers in Australia.

“One in six people will experience foot sensory loss due to numerous types of neuropathy and up to 65 per cent of people with this nerve damage will fall each year,” the researchers said.

The new bionic technology called Augmented Vibrotexture is a hybrid design combining vibration and geometric texture into an insole, which provides stimuli to the soles of the feet.

This provides feedback along major sensory nerves that carry signals about touch, vibration and position sense from the feet to the brain to help maintain balance.

The insoles are operated by a mobile app that tracks the user’s health and also allows remote health monitoring between patients and clinicians.

The research team plans to develop a wide product range that will include insoles for people with neuropathy, those with balance issues due to other medical conditions and a product that targets general health and well-being.