# No fear: the New Zealand virtual reality app helping conquer phobias

A study has found that virtual reality therapy can significantly reduce phobias.

In the days leading up to an injection, Julie Raine’s mind would fog over with fear – she was convinced the needle would harm her.

On the day of the injection, after a sleepless night, she would try to calm herself with sugary drinks, music, and soothing words. As the needle went in, she would turn away panic-stricken; and when it was over she would crumple in tears and take a full day to recover. Most of the time, she would skip her appointment altogether.

The New Zealander has battled with trypanophobia– a phobia of needles – for as long as she can remember.

It stopped Raine getting blood tests, prevented her from being vaccinated against Covid-19 and caused her to flee the room where her teenage daughter was about to have a procedure.

Had someone told her that she would be able to get a Covid-19 vaccine without fear and without support, she would have never believed them. But confronting her phobia using virtual reality has transformed her life.

A six-week clinical trial of a phone-based app called oVRcome, which is designed to treat phobias using a combination of mindfulness modules and virtual reality exposure therapy, has been successful, researchers at the University of Otago report in a paper published in the [Australian and New Zealand Journal of Psychiatry](https://journals.sagepub.com/doi/full/10.1177/00048674221110779).

Tech entrepreneur Adam Hutchinson came up with the app idea in 2020 after discovering there was a treatment gap for anxiety disorders and other mental health problems – just 15-25% of disorders are treated globally in low-middle income countries, while up to 50-65% are treated in high income countries, according to the [World Health Organization](https://www.who.int/en/news-room/fact-sheets/detail/mental-disorders).

Meanwhile, New Zealand’s mental health system [is in crisis](https://www.theguardian.com/world/2021/apr/01/new-zealand-mental-health-crisis-has-worsened-under-labour-data-shows) due to understaffing and a lack of resources, and its youth suicide rates are the highest in the developed world.

“There is a two to three times higher chance of someone developing a more serious condition like depression, alcoholism or even suicide as a result of leaving an anxiety disorder untreated,” Hutchinson said.

“If we can provide an effective, low-cost solution that people can use in the privacy of their own home earlier on in the evolution of their mental health treatment, we can potentially reduce the chance of more serious conditions popping up.”

## ‘Something quite remarkable happened’

Hutchinson consulted clinical psychologists, put together a prototype and began testing between May and October 2021. The app relies on the behavioural treatment exposure therapy – a treatment that safely exposes a patient to a situation that would usually cause them anxiety, or that they would try to avoid.

There were 109 participants in the six-week trial, which treated five common phobias – the fear of needles, spiders, flying, heights and dogs.

A core part of the trial required participants to use a virtual reality headset to come face-to-face with their worst fears. The videos – which are filmed in the real world – start off lightly and gradually develop into more anxiety-inducing situations.

The participants must record their levels of anxiety before, during and after watching the videos, and can only move on to the next level once their anxiety falls below a certain threshold.

For Raine, it meant first entering a virtual medical room and watching a nurse prepare an injection – not administering one – but merely unwrapping a needle from the plastic, or setting up a metal tray with supplies.

“It took me 15 tries to get through this video” she said.

“And then something quite remarkable happened – my whole mindset changed and I couldn’t wait to watch the VR.” Raine had realised she had never actually watched the whole procedure and in doing so, she was able to think of an injection in a new way.

“When I think about needles now, my mind instantly goes to: ‘this is helpful’ and ‘the nurses are here to help me’.”

Raine decided to participate in the trial because she wanted to take her children to be vaccinated against Covid-19.

“I wanted to be a good mum, to be able to at least sit with them in the room without running out,” she said, adding that since the trial she has not only been able to sit with her children during their vaccinations, but receive the jab herself.

Dr Cameron Lacey – an associate psychology professor at the University of Otago and lead investigator on the trial – said the app was hugely successful.

“There was a very clear, positive signal that the use of the oVRrcome app significantly reduced [a person’s] level of specific phobia symptoms,” Lacey said.

That was indicated in the way people reported the severity of their phobia both immediately after the program concluded, and again another six weeks later. At the beginning of the trial participants averaged 26 out of 40 on the scale, indicating a moderate to severe phobia. After the program, that number reduced to seven and stayed there.

After the trial’s success, the app, which is now commercially available, has included new phobias and will expand into a new program for social anxiety disorders, panic disorders, addiction and depression. People in New Zealand can [register their interest](https://www.ovrcome.io/research-registration) in participating in the new trials.

Part of the program’s success is that it is accessible, Lacey said.

“With virtual reality, you can be in your own home, be transported to an environment which has those feared stimuli – be it heights or spiders – in a predictable way, at your convenience.”