Virtual reality

Male journalist: There is nothing more real than extreme pain, but now scientists are using virtual reality to help ease pain. People who have lost an arm or a leg often still feel pain from the amputated limb. But an amazing new system being developed at Manchester University could make a real difference to their lives.

Our health correspondent, Fiona Throp, reports.

Female journalist: Peter King from Cheshire has not slept properly for over 20 years, the pain is too much. Somebody dived on him in a swimming-pool and shattered his collarbone. Even though his arm is amputated, the pain from the nerve endings makes it feel like it’s still there.

Peter King: I feel as if I’d like to go and cut it off again. That’s how bad the pain gets, you know, I’d like to cut it out!

Female journalist: But *this* has dramatically changed Peter’s life.

Peter: I’m looking around to see where the next one is coming from.

Female journalist: It’s a virtual reality computer program designed by scientists at Manchester University. His mind is being tricked into thinking he’s moving the arm he doesn’t have. The exercise relieves the pressure on his nerve endings.

Peter: On a scale--pain on a scale, and the scale is 0 to 10--my pain was up about 7, and I’ve just been doing this for 2 or 3 minutes, and I can feel my pain actually decreasing, and down to, sort of, 4.5 (four and a half) to 5 right now…

Female journalist: Peter’s mind is being distracted, and it’s a technique which could also be used for able-bodied people.

Craig Murray (psychologist): It could work in perhaps a different way for people who have migraine: it could work as a distractor for them. But we envisage that it could also work in a similar way as it does now in our experiment for people with other disabilities such as strokes, or that experience extreme pain in their limbs as well.

Female journalist: The whole system costs around 15,000 pounds. The University is now applying for a grant so they could be installed in Disablement Service~~s~~ centers across the region.

Fiona Throp, North West Tonight, Manchester.

Grenada reports

Female journalist: But now, moving onto the virtual treatment that’s transforming the lives of people who have lost a limb. When someone has an arm or a leg amputated, they can suffer from crippling pain because their brain believes that’s it’s still attached.

Male journalist: Scientists at Manchester University are using computers to give back patients their arms or legs, albeit inside a virtual world and train their minds to stop the pain.

Claire Ashforth, went to find out more.

Claire: It’s 14 years since Peter Smith’s arm was amputated, yet today, like many other amputees, he can still feel crippling phantom pains in his missing arm.

Peter: As far as I’m concerned right now, I still got--or perhaps I feel I still got-- a forearm, and a wrist, and fingers, and they are not there, but my brain is telling me that they are, and they are trying to move my fingers, trying to move my wrist, and my wrist feels as if it’s got a strap really tight around it that causes my fingers to swell.

Claire: Known as “phantom limb syndrome”, this is a common condition for up to 80% of amputees. But in order to deal with the phantom symptom, experts have turned to a virtual solution. By putting on a set of glasses like these, scientists have been able to create a virtual limb that amputees like Peter cannot only *see*, but can also *move*. The results are astounding.

Peter: As I’m looking through those…, through that visor, it’s my left arm that’s moving, but it’s actually my right arm that’s touching. It’s making my arm think that’s it’s actually working and doing something.

Steve Pettifer: What we do is track the position of the remaining physical limb and mirror the movement of that onto the virtual limb: you move the hand to the right, and your other hand goes to the left.

Craig Murray: What we are trying to do is to induce sensations of movements, and there’s some evidence to suggest that visual therapy such as this reduces phantom limb pain.

Peter: This is my left arm on the screen that is actually doing this, and this is giving me …, I guess that it is taxing my brain a little bit, getting my brain to think about what to do.

Claire: And whilst this might be a *virtual* treatment, the results are *clearly* very real!

Claire Ashforth, Grenada Reports, from Manchester University.