Rehab robots to treat gun victims

JULY 12, 2005

A REHABILITATION conference in Chicago last week showed how robots are moving into medicine and getting a favourable reaction.

They help physicians diagnose and treat patients through teleconferencing or by collecting home therapy session data.

They are helping people with severe injuries or illnesses gain greater control over their movements - people such as Gernard Fulton, who had a damaged spine and no feeling in her legs after being shot in the shoulder in October 2004. Doctors were worried the 35-year-old mother of two wouldn’t walk again.

Fulton was nervous doing muscle strengthening exercises with the physical therapists, who would hold her up and move her legs to teach them how to walk.

Then she used a Lokomat, a Swiss-designed machine that suspended her in a harness while straps moved her legs in a normal walking pattern.

At first, the machine did all the work, but as Fulton recovered she pushed herself to move with the machine while a monitor showed her how well she was doing.

"I knew I'd recover one day, but I didn't expect to recover so quickly," she said as she stepped shakily across a conference room.

Aside from reducing the number of clinicians needed for treatment, the machine allows patients to exercise for longer periods. Traditional treatment sessions generally last no more than 10 minutes because they put intense physical demands on therapists.

A virtual reality robotic system designed to help people with brain injuries, such as strokes, develop new neural pathways, will go to clinical trials soon.

"This is really a game," says James Patton, who is developing the technology at the Rehabilitation Institute of Chicago.

"Patients want to come back because it's fun. It's very flashy."

Patton and his team uploaded a popular computer game, Doom, into the virtual reality machine and had patients play, to practice grasping objects.

They found in early studies that the repetitive motions used in virtual reality therapies allowed patients to more easily adapt to life after a stroke.

One important discovery was that patients learned faster when they played games that distorted reality and made them reach farther for an object.

/Agence France-Presse/

*This report appears on australianIT.com.au.*