

ThisLife



HEALTH
by Margo White

Mind over matter

A process for assessing stroke patients' recovery prospects will help tailor their treatment.

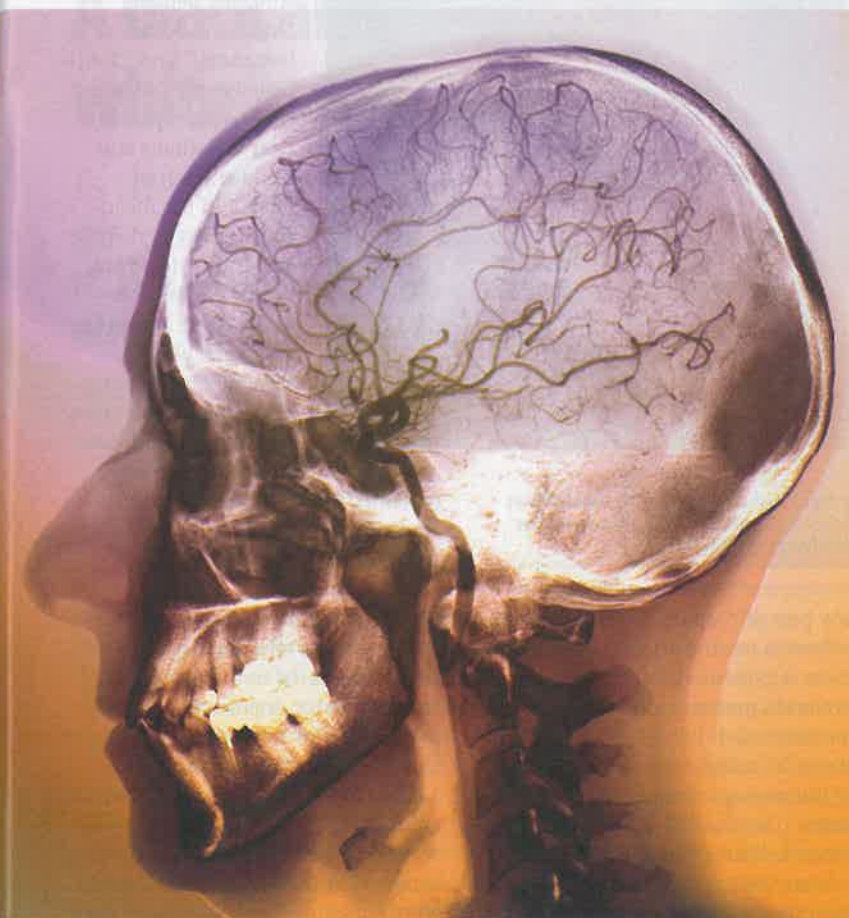
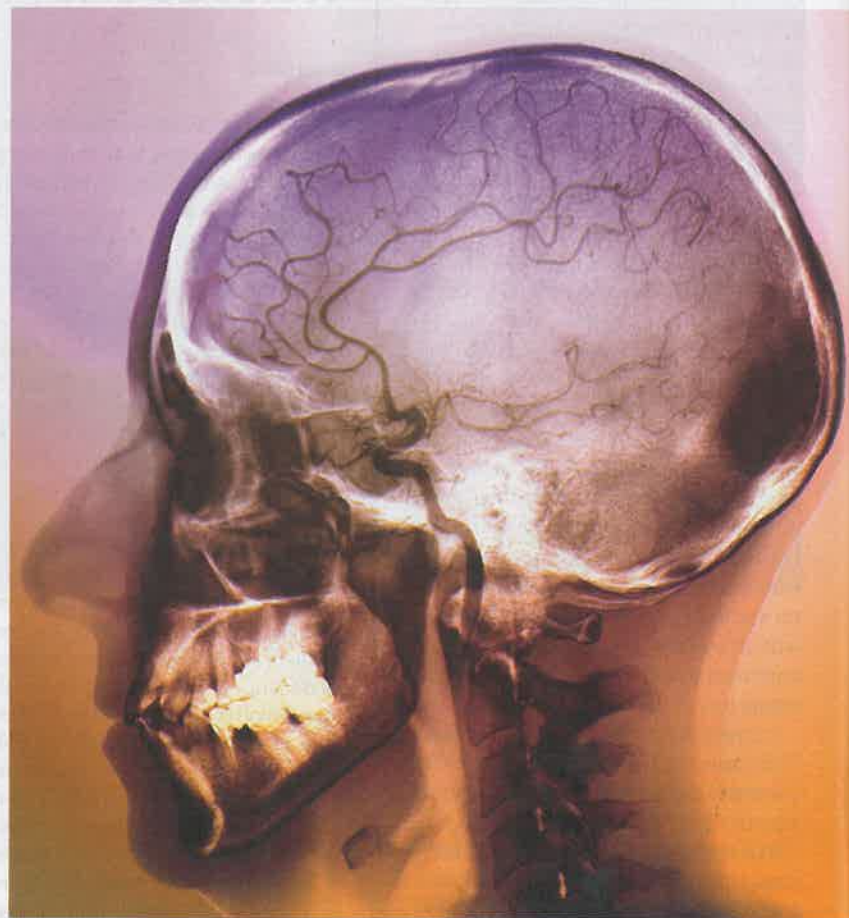
Therapy for stroke recovery is often focused on helping patients regain lost motor function – the arm that can't be lifted, the leg that won't take a step. But it's not the limb that needs rehabilitation, it's the brain. "It's easy to get focused on the fact that you are working with a weak arm or a weak leg and forget

that there is nothing wrong with the arm or the leg," says Cathy Stinear, a movement neuroscientist and research director of the Brain Recovery Clinic at the University of Auckland. "It's the brain that has been injured."

It's also the brain, or the extent of the injury it has incurred, that will largely determine a person's chances of recovery. However, therapists have traditionally assessed this by testing the outward manifestations of a stroke – how well people can move their shoulders or their fingers, for instance. This has proven to be a woefully inaccurate predictor. "The stroke has happened in the brain, so to predict recovery we might need to know something about the brain."

Which is why Stinear and colleagues have spent several years developing an algorithm to predict a person's ability to recover the use of his or her upper limb. It combines information about a patient's ability to move the limb with data about the extent of brain injury from transcranial magnetic stimulation (TMS) and/or MRI scans.

"Only when you know where the damage has



Pathfinding: angiograms show blood vessels in a 48-year-old stroke patient's brain before (left) and after treatment.

occurred in the brain, and how much capacity there is within the brain for that function to recover, will you have useful prognostic information," says co-researcher Professor Winston Byblow, director of the university's Movement Neuroscience Laboratory.

Trials over the past 18 months have shown the algorithm works. This month the researchers are putting it

into clinical practice in a trial with 200 stroke sufferers at Auckland City Hospital. The algorithm will allow them to tell patients how well they are likely to recover, and will help guide therapists in the rehabilitation techniques that are likely to benefit their patients.

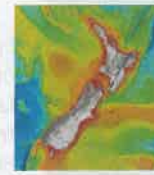
This is not about rationing therapy, but tailoring it. "You might have a



Eighty per cent of stroke recovery happens in the first three months.

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HEALTH BRIEFS

HERBAL DIABETES HOPE

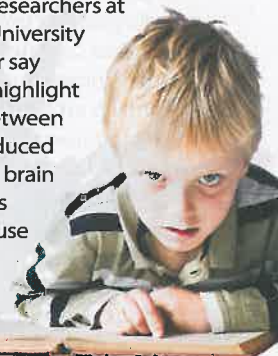
Chinese herbs might help reduce the risk of pre-diabetes becoming diabetes, according to research from the University of Chicago. At the end of a year-long study with almost 400 participants taking either a Tianqi capsule containing 10 Chinese herbal medicines or a placebo, 36 of the Tianqi takers and 56 of the placebo group had developed diabetes. The researchers say the overall reduction in risk was comparable to that found in studies of conventional diabetes medications such as acarbose and metformin. Tianqi includes several herbs that have been shown to lower blood glucose levels.

DRUG REWRITES MEMORY

Neuroscientists at Massachusetts Institute of Technology have identified a type of drug that could effectively treat post-traumatic stress disorder (PTSD) – at least in mice. They've shown they can extinguish well-established traumatic memories in rodents by giving them an HDAC2 inhibitor, which makes memories more malleable and increases the brain's ability to override older fearful memories with new, better ones.

CHICKEN OR EGG PUZZLE

Although it has been assumed dyslexic children have difficulty reading because of differences in the brain, new research suggests it is the other way around: the anatomical differences are the result of poor reading experiences. Researchers at Georgetown University Medical Center say their findings highlight the fine line between experience-induced changes in the brain and differences that are the cause of cognitive impairment.



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