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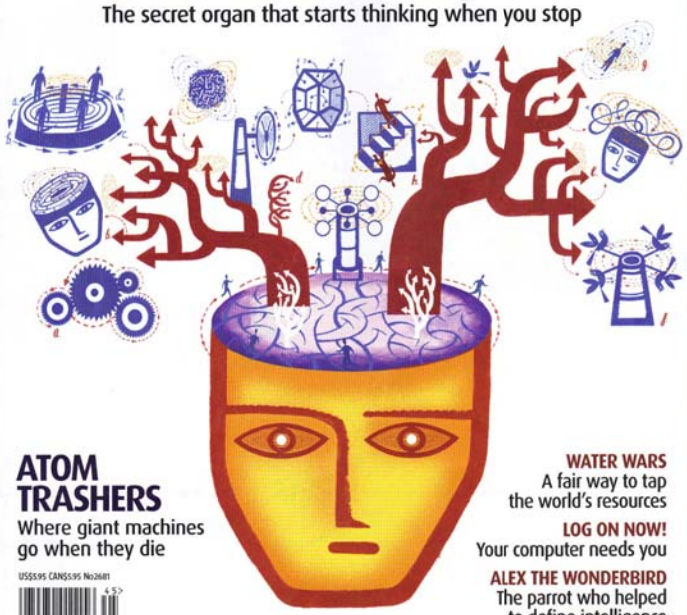
Vacant mind, busy brain

The secret organ that starts thinking when you stop



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The e-Doctor will see you now

Online therapies can reach millions and sometimes get better results than conventional treatments

I'm listening

RACHEL NOWAK, MELBOURNE

IF YOU want to stamp out nicotine addiction, shut all the quit-smoking clinics, argued an article in *The Lancet* in 1985. The rationale wasn't that clinics were ineffective, just too expensive to reach enough people. But perhaps there's another way to save money and reach the many thousands affected by smoking-related diseases: make use of the internet.

HealthMedia in Ann Arbor, Michigan is doing just that, with impressive results. The latest version of its Breathe program – when used with a nicotine patch – is getting quit rates to rival those of group therapy.

Breathe is one of a rapidly expanding stable of so-called e-health programs that use internet technology to change the way patients think or behave. Say your 7-year-old is soiling his underwear, a program called U-Can-Poop-Too is in clinical trials to see if it can help children with this condition, which affects up to 7 per cent of children under 12.

Need to better manage your diabetes? Your doctor may soon prescribe blood glucose awareness training using BGAThome. Depressed? Try MoodGym, an open-access site with 250,000 users from 203 countries, and a dedicated portal for the US air force. Also in development are programs to treat more serious mental health problems such as bipolar disorder (see "Wishing you good mental health"). Most e-health programs borrow heavily from cognitive behaviour therapy, which encourages people to change their emotions and behaviour by altering the way they think.

"Fifty per cent of disease management is behavioural," says Victor Strecher, director of the Center for Health Communications Research at the University of Michigan in Ann Arbor, and founder of HealthMedia. E-health raises the possibility of delivering $500 courses for 25 cents per person, and "knowing that you can reach millions", he says.

All that's needed is access to a computer with high-speed internet. Typically, after logging on for the first time, users will be screened via a questionnaire. The program may deem them unlikely to benefit from the treatment on offer, or in need of emergency care, and suggest they see a doctor face-to-face.

Those accepted work through a series of educational modules and exercises tailored to their individual needs. Users will be asked to fill in questionnaires to gauge their progress, and receive personalised feedback and instructions. For example, Shuti, a program for insomnia, recommends specific sleep times based on information users log in their sleep journal.

In some cases, patients may enter their test results. BGAThome asks users to log abnormally high and low blood glucose levels, for example. The records are used to help patients better recognise signs of abnormal blood glucose such as sweatiness.

Sometimes users can join online support groups or view videos of discussions between physicians and other people with a particular disorder.

To give patients time to digest and act on what they have learned, programs eke out content over weeks or months. U-Can-Poop-Too rewards children who have completed a segment of the program with educational computer games, including one in which they get to "shoot" attacking faeces.

The level of medical involvement varies from none at all, to the doctor or psychologist being in frequent email or phone contact. Doctor-heavy courses are necessarily more expensive and time-consuming. "The minute you introduce a human, you dramatically reduce the amount of people you can disseminate the treatment to," says clinical psychologist Lee Ritterband of the University of Virginia in Charlottesville, whose team has developed Shuti, U-Can-Poop-Too and BGAThome.

> **"E-health raises the possibility of delivering $500 courses for 25 cents per person"**

Governments and health insurance companies are waking up to programs as a cost-effective approach to public health. Two years ago, the UK's National Institute for Health and Clinical Excellence became the first regulatory body to endorse e-health when it approved FearFighter, a program to treat panic and phobia, and Beating the Blues, for mild to moderate depression. Beating the Blues was approved after clinical trials revealed that patients who completed the program over eight computer sessions at their doctor's office (it is now available at home) suffered significantly less depression, whether or not they were also taking antidepressants.

There's now enough evidence to show that e-health programs work, but it's still important to validate each programme in clinical trials," says research psychologist Judith Proudfoot of the Black Dog Institute in Sydney, Australia, who led the development of Beating the Blues.

The computerised nature of e-health lends itself well to research, which developers are using to refine their treatments. One discovery is that users don't like overly complicated programs that bombard them with options. "There's been a tendency to do things just because we can. The feedback we get is 'Stop making me choose things. I want help, not choices'," says David Austin, co-director of the eTherapy unit at Swinburne University of Technology in Melbourne, Australia. Tailoring the response of programs to individuals is also crucial. "When we extracted the most information from the assessment, and used it to create the most highly tailored program, we got quit rates of 38 per cent in patients who used nicotine patches," says Strecher. "Not even group therapy can achieve that."

As for the future, several teams are investigating ways to use the internet to identify mental health problems. One example is the recently launched E-couch, an experimental program designed to recognise certain mental health disorders prior to treatment. "We say it seems that you have the symptoms of, say, depression. E-couch then directs you to a choice of five different therapies, including exercise therapy or cognitive behaviour therapy," says Helen Christensen, director of the Centre for Mental Health Research at the Australian National University in Canberra, and one of the developers of MoodGym.

Plans are also afoot to integrate e-health programs with electronic medical records, text message alerts and monitoring devices. "Data from continuous blood glucose monitors could be captured and fed into a program like BGAThome," says Ritterband.

Whether e-health programs ever become a routine part of medical care remains to be seen. But the programs can be protected by copyright, raising the potential for financial pay-offs that have caught the eye of big pharma. Just last week Johnson & Johnson bought HealthMedia.

Austin for one is convinced it will take off. "E-health has a huge future. It will be commonplace in 10 to 15 years, and rivalling big pharma within 50." ●

WISHING YOU GOOD MENTAL HEALTH

Many mental health problems are proving easy to treat over the internet with minimal medical support.

But the assumption has been that more complicated disorders, such as post-traumatic stress disorder or panic disorder with agoraphobia, would be a more difficult to crack. At the very least, psychiatrists believed, patients would also require hours of contact with a therapist to develop the "therapeutic alliance" that is thought to be essential for a successful outcome.

But two studies about to be published from a team led by Britt Klein and David Austin of the eTherapy Unit at Swinburne University of Technology in Melbourne suggest this may not be the case. In one study, 86 patients with panic disorder with or without agoraphobia were randomly assigned cognitive behaviour therapy, either face-to-face with a therapist, or with a program called Panic Online, which includes regular email contact with a therapist. The emails are designed to motivate patients, tailor the content of the program to their needs, or help them to solve problems. "We found that emails and Panic Online were just as effective as face-to-face therapy, and it took a lot less time," says Klein.

A second study found that there was no difference in outcome whether patients received one email a week or many.

Klein and Austin are also part of a team led by Michael Berk of the University of Melbourne that is looking at whether serious psychotic disorders such as bipolar disorder can be treated over the net. Patients with psychotic disorders are not always in contact with reality, says Austin. "You can't assume that the person on the other end of the email is rational, so people assume that you need to engage face-to-face with these patients. But that's conjecture."

That conjecture is now being tested in an international trial of MoodSwings, an e-therapy program to treat bipolar disorder. Patients with bipolar disorder are usually prescribed mood-stabilising drugs and one-on-one therapy. MoodSwings includes a psychologist-moderated chatroom, and is intended as an alternative to one-on-one therapy.