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HEALTH
by Margo White

Game on

Tetris-based therapy could provide the solution to the so-far intractable lazy eye.

Auckland researchers are heading an international controlled trial to see if a modified version of the popular video game Tetris can treat lazy eye, or amblyopia. If proven to work, it will be a boon for children and their parents. If it works in adults, for whom there is no treatment, it will suggest the adult brain is not as hard-wired as thought.

Amblyopia, which affects one eye, is the most common cause of visual impairment among children. It's caused by something such as a wandering eye or an untreated cataract interfering with normal vision as the brain develops. The result is that the brain doesn't learn to process visual information properly.

The most common treatment is covering the good eye with a patch, forcing the weaker eye into action. It's very effective, but only if the child is treated before age eight or nine, when the brain is developing rapidly and can adapt to new information.

It doesn't work in adults, however. It's not clear why, but the consensus is that if the brain matures without developing the neuronal network upon which vision processing depends, nothing can be done about it. However, recent research suggests that adults with amblyopia might actually have the neurons, but something is suppressing them – and one way to alleviate that is to force the eyes to co-operate.

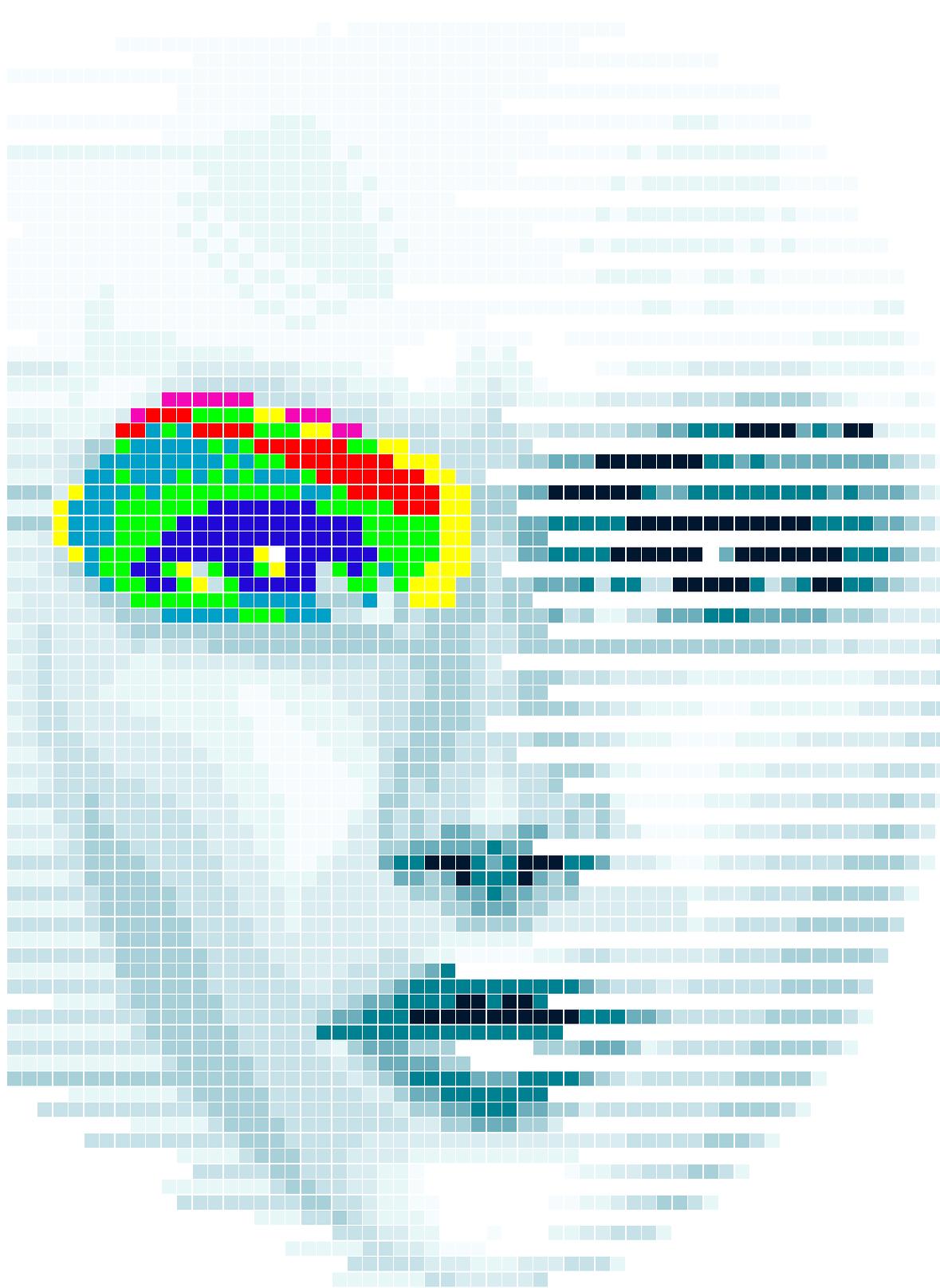
"So now we're proposing that maybe we have to think about amblyopia differently, not only as a loss of vision in one eye, but as a loss of binocular vision, which is the two eyes working together," says Ben Thompson, associate professor of optometry and vision science at the University of Auckland's Centre for Brain Research.

This is what prompted Thompson and colleagues at McGill University in Canada (where Thompson was a research fellow) to develop the Tetris-based therapy. The game, which involves fitting together falling blocks, was adapted so that when it was viewed through video goggles, one eye could see the falling blocks and the other could see those on ground, "so in order to play the game you have to use both eyes".

Eighty children and adults have so far been treated with the therapy in a number of small trials, and 80% have shown an improvement in their vision, enough to see an extra line on an eye chart. Forty per cent have been able to see an extra two lines.

The benefits have been apparent after a short period. Researchers in Glasgow found that the vision of

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children improved after they used it in their lunch break for a week.

With Health Research Council funding, Thompson is now leading a randomised control trial, collaborating with researchers in Australia and Canada. It will involve 108 participants, with half the participants getting the Tetris-based therapy and half getting something that looks like it but isn't.

"But if we show there's a difference between the two, then everyone will be given the treatment," says Thompson. "Everything that we've done so far suggests that it should work, so I'm excited to see how the trial works out."

Shuan Dai, a consultant ophthalmologist who is collaborating on the trial, is also optimistic. "My gut feeling is that it will work, but we can't really say until we have done the trials."

Part of its efficacy will come down to the fact that it's hard to persuade children to put on a patch and put up with blurry vision, because it will be good for them in the long run, but it's not hard to persuade a child to play a video game.

However, Dai still urges caution. "We don't want the parents to latch onto this new idea, and give up patching, which has already been proven to work. And we don't yet have the gadgets to give out anyway."

He is also circumspect about how well it will work in adults. Some trials have shown it does, but the studies are small. Also, no two lazy eyes are the same, "so it will depend on the type of lazy eye the person has ... it might improve vision, but we don't know how much people will improve and who will improve." ■

Ben Thompson talks about "Learning to see with a lazy eye" on Brain Day at the University of Auckland, March 29. Go to www.fmhs.auckland.ac.nz/faculty/cbr

HEALTH BRIEFS

HEADS UP ON KNEES

Yet another study looking at the effects of glucosamine, a popular supplement taken for joint pain, suggests it probably doesn't work. This is according to a double-blind, randomised trial of participants with mild to moderate knee pain, published online in *Arthritis & Rheumatology*, in which scientists used MRI scans to assess the structural benefit of glucosamine supplementation on cartilage damage compared with a placebo. After two years, they found no clinically significant benefit.

STARTING YOUNG

Brand loyalties developed when young can last for life. A study in the *Journal of Consumer Research* looked at adults' judgments of the healthiness of various products that were heavily advertised in their childhood with child-friendly characters. The results showed that those exposed to advertising that used characters before age 13 developed positive long-term feelings towards the characters that were hard to shift, even in adulthood. The authors recommended parents re-examine the nutrition labels of their favourite childhood products before giving them to their own kids.

SALT SELLERS

London children eat too much salt, and more than a third of it comes from breads and cereals, according to research published in *Hypertension*. The researchers, whose study involved 340 children, say salt consumption increases the risk of high blood pressure in children from age one; earlier studies have shown kids with high-salt diets are 40% more likely to have high blood pressure than those with lower-sodium diets.



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