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A starving brain or psychology - what triggers an eating disorder?

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Does an eating disorder stem from a complex mix of biological, social and psychological influences – or is the real cause simply a problem triggered by brain changes caused by restricting food?

These questions are at the heart of a debate on the cause and treatment of eating disorders such as anorexia and bulimia. As Phillipa Hay, editor in chief of the *Journal of Eating Disorders*, explains, eating disorders are thought to result when personality traits such as perfectionism and compulsivity collide with other risk factors.

"These can include growing up in an environment where there's a focus on body shape and dieting, having low self-esteem or experiencing some stressful event or trauma including sexual or physical abuse. Both anorexia nervosa and bulimia share a lot of risk factors, but in the case of anorexia, being naturally thin seems to be another risk," says Professor Hay from the University of Western Sydney's School of Medicine and Centre for Health Research. "Genes and family history also play a part in eating disorders."

But a group of scientists from Sweden's respected Karolinska Institute see it differently. They say the psychological problems that go with eating disorders are the consequence, not the cause, of these disorders and that the real cause is the kilojoule restriction that comes from dieting and high levels of exercise – and which can lead to raised levels of the feel-good chemical dopamine. This rewards the dieting behaviour and keeps it going.

As for treatment, the researchers say the answer is a computerised system called a Mandometer that teaches patients to eat healthy amounts of food, restoring the brain to normal.

It works like this: the patient eats from a plate resting on a scale attached to a small computer that provides feedback on how much and how quickly the person is eating, explains Iva Iafeta, practice manager at a Melbourne clinic which is one of a handful of clinics worldwide that use this approach.

"With the help of the feedback, the patients learn to visualise what normal portions of food look like and how to eat at a normal rate rather than eating either very slowly, which is what people with anorexia tend to do to drag the process out - or eating rapidly which people with bulimia do.

"It also teaches them how to be in touch with the body's satiety signals. As their weight goes up the brain starts to work better," she says. "Warmth is also part of the treatment – after eating, patients rest in a warm room for 30 minutes. Warmth has a calming effect and helps to reduce the anxiety about eating that people with anorexia feel."

The Swedish scientists, led by neuroscientist Professor Per Sodersten, claim this approach is more effective than the focus on psychotherapy which is part of the standard treatment of eating disorders. The success rate with the Mandometer method is higher according to a 2013 study of 1428 patients at six Mandometer Clinics worldwide, including the one in Melbourne: a remission rate of 75 per cent with a relapse rate of 10 per cent over a five-year follow-up period. But unlike Sweden where the cost of treatment with the Mandometer is free, there's no Medicare rebate for the treatment in Australia – and not all private health funds contribute to treatment costs, which can start from $34,000.

With standard treatment for eating disorders, the success rate for anorexia is around 50 per cent within two to five years, says Professor Hay.

"Another 10 per cent will remain unwell while the rest will have a partial recovery with improved weight and eating as

well as improved quality of life. With bulimia and binge eating disorder, most people make a good recovery," she says.

But, says Phillipa Hay, the evidence isn't clear cut. A 2012 Dutch study comparing the Mandometer method with standard treatment for anorexia found that both approaches had similar success rates.

"In many ways the two approaches are similar – both use psychotherapy, family therapy and support for refeeding – but although everyone agrees that starvation perpetuates eating disorders and affects a person's ability to recognise when they're full, starvation doesn't start the eating disorder," she stresses. "I think the Mandometer method underestimates the importance of psychological approaches such as cognitive behaviour therapy. I don't think the use of the Mandometer is essential – although it's useful for providing feedback to the person eating and those supporting them. "

Eating disorders don't have a single identifiable cause, and treatment options generally tackle a combination of issues that may contribute to the problem, adds Jennifer Beveridge, CEO of Eating Disorders Victoria.

"What works for one person might be very different to what works for another – but addressing the underlying psychological factors such as anxiety, low self-esteem, poor coping strategies or experiences of trauma is generally an important part of the treatment process," she says. "For people with anorexia, weight restoration is also critical.

"Eating disorders are treatable and early intervention is crucial to improving recovery. The important thing is to understand that there are many different treatment approaches and that a good care team consisting of a GP, psychologist and dietitian is an excellent start."