

# Biting deep

Genes play a significant role in whether people develop an eating disorder.



**E**ating disorders were previously thought to be caused by sociocultural factors but in the past couple of decades, science has been busting that and other myths. Studies with twins were the first to show there is a significant genetic influence, and now researchers are working to identify exactly which genes affect a person's chance of developing disordered eating.

Cynthia Bulik is at the forefront of this work. The professor of eating disorders at the University of North Carolina leads research teams both there and in Sweden. Her work is reshaping how we think about this illness.

For instance, in 2018, the Anorexia Nervosa Genetics Initiative (ANGI) found an overlap with psychiatric conditions such as obsessive compulsive disorder,

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Cynthia Bulik.



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depression, anxiety and schizophrenia. Perhaps more unexpectedly, it also identified that some of the same genes that raised the risk of developing type 2 diabetes actually lowered the risk of anorexia nervosa.

“The big take-home message from that study was that this isn't only psychiatric; it's metabolic,” says Bulik.

ANGI was philanthropically funded and narrow in its focus. Bulik is now working on a follow-up study, the Eating Disorders Genetic Initiative (EDGI), that will include 3500 New Zealanders and tell us a lot

more about conditions estimated to affect 9% of the world's population, or 700 million people.

Anorexia is the most visible of the eating disorders as people starve themselves and over-exercise until they are very gaunt. It is also considered the most deadly and severe. However, binge-eating disorder is three times as common and more people also have bulimia nervosa – the condition that Diana, Princess of Wales, suffered from, where people eat large amounts of food then purge to get rid of the surplus calories. Both can damage health.

EDGI will include participants with all three of those eating disorders, although it won't extend to a fourth, avoidant restrictive food intake disorder, a form of extreme picky eating that can lead to malnourishment.

The other myth about eating disorders is that they mainly affect young, white, affluent women. In fact, this complex illness affects people of all genders, ages, ethnicities, body shapes, weights and socioeconomic status.

Some cultures may use different terms and language to describe it, and the signs and behaviours can vary. Women are more likely to make themselves vomit or use laxatives, for example, whereas men tend to exercise excessively and take anabolic steroids or supplements to reduce fat and build muscle, but eating disorders don't discriminate.

EDGI is casting its net as widely as possible, says Bulik, who was recently in New Zealand, where the University of Otago's Christchurch campus has almost finished recruiting for the trial. “There might be different

genetic factors in people from different ancestries, cultures and races,” she says. “So we're really trying to cover the world.”

**T**here are hundreds, maybe thousands, of genes that affect a person's risk of an eating disorder, and environment also plays its part.

“Let's say I'm at fairly high risk genetically for anorexia,” says Bulik. “I go on my first diet and that experience of being in negative energy balance, consuming less than I'm expending, might be the environmental trigger that activates

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my genetic predisposition. On the other hand, someone with lower genetic risk for anorexia may need a whole bunch of those environmental factors. They might be teased and body-shamed, they might begin a sport or profession that values thinness, they might go on a diet, and those cumulative factors tip them over to express their underlying genetic risk.”

The hope is that greater understanding of the genes involved will lead researchers to identify potential targets for medication. That is likely to take a while, but in the meantime, Bulik says, it will be possible to develop a polygenic risk score – someone's full genetic disposition for a disorder – which would give doctors more idea of who is likely to develop severe illness and the potential to tailor treatments to match any genetic underpinning.

“Right now, it's one-size-fits-all,” explains Bulik. “Everybody gets the same treatment.”

Early intervention is important, because the longer an eating disorder goes on, the harder it is to treat. Bulik advises parents, schools, workplaces and doctors to look out for the signs.

“If you're concerned that someone is losing weight or covering themselves with layers of clothes even when it's warm out, or they're saying they had a big lunch or ate with friends and they start avoiding family meals, or you find food disappearing, don't just blow it off. Confront them firmly but with compassion, and help them get evaluated by a professional.” ■

## HEALTH BRIEFS

**VAX TO PROTECT BABIES**

Vaccinating pregnant women for group B streptococcus – strep B – could prevent more than 31,000 infant deaths and 23,000 stillbirths, say researchers from the London School of Hygiene and Tropical Medicine. Their analysis used a computer model to estimate the health benefit and cost-effectiveness of strep B vaccines in pregnant women in 183 countries. They also found the programme could avert 127,000 early-onset and 87,300 late-onset infant cases of strep B, and almost 18,000 cases of moderate and severe neurodevelopmental impairment. The authors conclude that a global maternal strep B vaccine is likely to be a cost-effective intervention.

**LONG COVID RISK**

The Omicron variant is much less likely to lead to long Covid than the variant circulating at the start of the pandemic, according to new research being presented at the European Congress of Clinical Microbiology & Infectious Diseases in Copenhagen. The Swiss study found healthcare workers infected with the original virus were up to 67% more likely to report symptoms of long Covid than those who hadn't had Covid. But healthcare workers whose first infection was Omicron were no more likely to report long Covid symptoms than those who'd never had Covid-19.

**BEND AND STRETCH**

Yoga could be used to help prevent frailty in older adults, say researchers from Brigham and Women's Hospital in Boston who conducted a systematic review of 33 randomised controlled trials. The research encompassed data from 2384 people aged 65 or older, and found that yoga improved walking speed and lower body strength and endurance.

