

# Biomarkers could spell the end of anorexia nervosa

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Researchers from the Swinburne Anorexia Nervosa (SWAN) Research

Group have discovered what is believed to be the first biomarker for anorexia nervosa. Biomarkers are typically used in the detection and treatment of physical illnesses, but never before have they been used in mental disorders.

## **The challenges of diagnosis**

Anorexia nervosa is a life-threatening eating disorder that generally begins in early adolescence. It is often secretive and associated with persistent denial of symptoms and resistance to treatment. It has the highest mortality rate of all mental illnesses and low rates of recovery. It can be hard to diagnose and even harder to treat.

Mental illnesses are diagnosed with the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) and the International Classification of Diseases. Both methods rely on patients describing symptoms and a clinician's professional expertise. The effects of this condition and the method for diagnosing it actively work against each other. In a condition as time critical as anorexia nervosa, the need for accurate diagnosis and early intervention is key. And that's where biomarkers come in.

## **What are biomarkers and why are they important?**

Biomarkers are characteristics of our bodies that can be measured. They include things like blood sugar, heart rate and bone density. They help us detect, screen, prevent and treat physical illnesses, but they're not established for use in clinical practice for any mental [illness](#). That is, until now.

## **Revolutionizing screening, detection and diagnosis**

Head of the SWAN Research Group, Dr. Andrea Phillipou, found that a

combination of a type of atypical, twitching eye movement, called "square wave jerks," together with anxiety, is a promising two-element biomarker for anorexia nervosa. Square wave jerks were observed in people currently with anorexia nervosa, people who had recovered, and sisters of people with anorexia nervosa. The finding in sisters is critical, because it reveals there is likely a genetic, inherited link.

## **New and more effective treatments**

Biomarkers also tell us about the underlying biological mechanisms involved in an illness.

"Eye movements use very specific brain regions, so when we see these types of atypical [eye movements](#), we have a pretty good idea about which brain areas are not working the way they should," says Dr. Phillipou.

"These areas are also involved in other functions related to anorexia nervosa—such as body image—so it gives us an idea of which [brain areas](#) we could target with treatments such as non-invasive brain stimulation."

## **Prevention over cure**

Biomarkers are present regardless of illness state. Think of it as genetic determinism: your body is genetically pre-programmed for various outcomes—some better than others.

"With more research, we're hoping that we'll be able to use this [biomarker](#) as a screening tool to identify people who may be at risk of developing [anorexia](#) nervosa," says Dr. Phillipou.

"If we're able to do this, we'll be able to implement things to help prevent people developing the condition in the first place."

It's a discovery that has the power to rewrite someone's life story.

This research was published in the *Australian & New Zealand Journal of Psychiatry*.

**More information:** Andrea Phillipou et al, A biomarker and endophenotype for anorexia nervosa?, *Australian & New Zealand Journal of Psychiatry* (2021). [DOI: 10.1177/00048674211047189](https://doi.org/10.1177/00048674211047189)

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