Epigenetics may reveal insights into anorexia

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Flinders University's Professor Tracey Wade and a team of researchers at Melbourne's Murdoch Childrens Research Institute are only months from what may be an important turning point in the treatment of anorexia.

They have been comparing cheek swabs taken from 12 women who have been hospitalised for anorexia with samples from age-matched healthy women to see whether genes are being switched on or off during weight

change.

Known as epigenetics, this relatively new scientific field explores the interaction between the environment and genes – and it is providing new insights into a range of diseases.

It is a shift in research focus for Professor Wade, a psychologist who specialises in the treatment of eating disorders using therapeutic relationships. If she and her colleagues are right, their findings could pave the way for the development of medication to treat anorexia, a perplexing and deadly disease.

"There have been only two epigenetic studies into anorexia – not a lot of people are doing this sort of work," Professor Wade said.

"We already know that food is important as one of these epigenetic switches. A study of the grandchildren of people who starved during the Dutch famine of World War II have higher mortality rates – they die significantly earlier, they have more cardiovascular and related problems – than other people in their generation," she said.

"That's the interesting thing about epigenetics: not only does the gene get switched on and off, it can be inherited."

Funded by an American family whose son died of anorexia, the project aims to establish whether genes that have been switched off by starvation can be switched on again as weight is regained.

"If the genes are responding to better nutrition, part of the practical implication is that perhaps we can kick-start recovery if eventually we can develop a medication that can switch that gene on earlier," Professor Wade said.

"Anorexia is a highly relapsing condition. Perhaps we can get people better more quickly and prevent some of the relapses."

While medication is unlikely to provide a "one answer fixes everything" solution, Professor Wade said it would add another important tool to the "toolbox we're trying to develop to help anorexia".

"We're still going to need a good therapeutic relationship. At the moment, we don't have any effective medication – we've been looking at antidepressants and antipsychotics – because I think we've been looking in the wrong direction," she said.

"This research may help us to look for a medication that we hadn't thought about before or something that could be developed that would be a novel piece in the puzzle.

"It helps us think outside the box which, when you're dealing with a perplexing disease such as anorexia, you need to do."

Provided by Flinders University