

## Anorexia Nervosa Research - Exciting News!

Anorexia nervosa is a complex heritable phenotype for which this study has uncovered the first genome-wide significant locus.

A new study from the Eating Disorders Working group of the Psychiatric Genomics Consortium has just been published reporting an exciting new finding in the search to understand the genetics of anorexia nervosa (1). This study is the most powerful genetic study of anorexia nervosa to date, conducting genome-wide analysis of DNA from 3,495 individuals with anorexia nervosa and 10,982 unaffected individuals.

This is the first genome-wide study to identify a significant locus for anorexia nervosa in an area on chromosome 12, previously reported to be associated with type 1 diabetes and autoimmune disorder. This site is close to several genes which may be relevant to the disease biology. Several other promising loci were also identified, although these did not meet formal statistical significance. In addition, the analysis identified significant negative genetic associations between anorexia nervosa and body mass index, insulin, glucose, and lipid phenotypes. Significant positive genetic correlations were found between anorexia nervosa and schizophrenia and neuroticism (the tendency to anxious and/or low mood). These findings confirm that anorexia nervosa is a condition with both psychiatric and metabolic components.

The study illustrates the global collaboration needed to recruit enough people to achieve the large samples sizes necessary for this research. Over 200 clinicians and researchers from around the world are listed as authors on this paper, including Professor Martin Kennedy and Dr Jenny Jordan from the University of Otago, Christchurch, as well as Professor Cynthia Bulik from the University of North Carolina and Karolinska Institutet (Stockholm) who leads this work. This first hit marks the beginning of genomic discovery in anorexia nervosa and more hits will be found as samples are added into the analyses.

*Larger study currently underway which includes New Zealand samples*

We are expecting the results of analyses of a much larger sample, including all of the ANGI study participants later this year. Our University of Otago, Christchurch team recruited over 500 New Zealand participants to add to the Australian ANGI site, and samples from our New Zealand participants will be included in the bigger sample currently being analysed.

*First paper reporting on ANGI collection in Australasia*

The first paper reporting on the recruitment of the Australasian samples for the ANGI project has also been published this year (2). That study analyses the survey data for 3414 Australians and 543 New Zealanders with lifetime anorexia nervosa. This is the largest sample of individuals with anorexia nervosa ever recruited across Australasia. The patterns of results for both countries was similar for demographics and eating disorder data. Most were female (97%) and the average age of participants was 34 years but the age range in New Zealand was 14-79 years, with 21% of our sample meeting current criteria for anorexia nervosa. Social media was most the most effective recruitment method for younger people (18-24 age group) while print and broadcast media were more effective for those aged 40 plus.

For further information, please contact Jenny Jordan [jenny.jordan@otago.ac.nz](mailto:jenny.jordan@otago.ac.nz) on 03 3726700

References

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2. (2) Kirk, K. M., Martin, F. C., Mao, A., Parker, R., Maguire, S., Thornton, L. M., ... & Madden, S. (2017). The Anorexia Nervosa Genetics Initiative: Study description and sample characteristics of the Australian and New Zealand arm. *Australian & New Zealand Journal of Psychiatry*, 0004867417700731