Anorexia nervosa has a genetic basis

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Anorexia nervosa often occurs in combination with other psychiatric and metabolic disorders . Credit: Medical University of Vienna

A large-scale, international whole-genome analysis has now revealed for the first time that anorexia nervosa is associated with genetic anomalies on chromosome 12. This finding might lead to new, interdisciplinary approaches to its treatment. The study was led by the University of

North Carolina and has been published in the prestigious *American Journal of Psychiatry*. Child and adolescent psychiatrist Andreas Karwautz from MedUni Vienna's Department of Child and Adolescent Psychiatry was responsible for the Austrian contribution.

There are currently around 7,500 adolescents in Austria suffering from anorexia nervosa. Girls make up around 95% of those suffering from this serious and protracted disease, which leads to serious health problems due to excessive weight loss. The disease is currently curable in 80% of cases but is still associated with an annual mortality rate of 0.5%. At the present time, the Department of Child and Adolescent Psychiatry at MedUni Vienna is treating around 70 seriously ill adolescents, both as in-patients and out-patients.

Although we already knew from genetic tests on monozygotic twins that genes are approximately 60% responsible for the development of anorexia nervosa, we did not know with any certainty which gene loci were involved. A study initiated by the US University of North Carolina has now been conducted worldwide, involving 220 researchers in international medical centres analysing the genetic material of 3,500 anorexics. It was found that, compared with the control group of 11,000 people, anorexics had a significant locus on chromosome 12 that contributes towards an elevated risk of developing anorexia nervosa.

The researchers also explored whether there was any correlation with other disorders. This revealed that the significant locus lies on chromosome 12, in a region associated with Type I diabetes and autoimmune disorders, as well as insulin metabolism. Moreover, genetic correlations were found between anorexia nervosa, neuroticism and schizophrenia, supporting the idea that anorexia is a psychiatric illness.

Child and adolescent psychiatrist Karwautz regards the findings of this study as significant proof that, in addition to the psychosocial

component, biological factors also play an extremely important role in the onset of anorexia nervosa. This has huge implications in terms of improving treatment. Says Karwautz: "Such studies form a basis for providing patients and their relatives with a logical and realistic explanation for this persistent disorder, which is the third commonest disorder in this adolescent age group. Prevention programmes will also benefit from these new findings."

The team headed up by Prof. C. Bulik from the University of North Carolina and the Karolinska Institute, who led the project, are world leaders in the field of psychiatric genetics. The new finding is the result of a huge international effort – to which MedUni Vienna also contributed.

More information: Laramie Duncan et al. Significant Locus and Metabolic Genetic Correlations Revealed in Genome-Wide Association Study of Anorexia Nervosa, *American Journal of Psychiatry* (2017). DOI: 10.1176/appi.ajp.2017.16121402

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