Autoimmune-Encephalitis and Eating Disorders

Content Warning: Eating Disorders

Eating disorders impact the lives of millions of people around the world, with negative effects on the physical and mental health of people with these disorders as well as their families and friends. In 2018, the estimated prevalence of eating disorders in the United States was 4.6%. Caretakers of relatives with eating disorders also report impaired mental health with feelings of anxiety, powerlessness, sadness, and desperation. In the US, eating disorders cost an estimated $64.7 billion, or $11,808 per affected person between 2018 and 2019. Public awareness of these disorders is essential as early identification and treatment can be one of the best predictors of successful outcomes.

Eating disorders are typically characterized by disturbances in eating behavior and body weight that impact a person’s mental and physical health. There are three common eating disorders: anorexia nervosa, bulimia nervosa, and binge-eating disorder. Anorexia nervosa is characterized by restricted eating and a fixation on thinness. Bulimia nervosa involves episodes of overeating followed by behaviors that compensate such as vomiting, fasting, or excessive exercising. Binge-eating disorder is the most common eating disorder in the United States and is characterized by periods of uncontrolled overeating. Eating disorders not only have negative impacts on physical health, but have been associated with several other disorders including depression.

Two well-established risk factors for eating disorders are age and sex. Prevalence is much higher in women than men, with 8.4% of women experiencing an eating disorder in their lifetime compared to 2.2% of men, although eating disorders in men are likely underdiagnosed. Age is also an important risk factor, with peak onset between the ages of 15 and 25.

While risk factors like age and sex are well established, recent work has pointed to autoimmune disorders as an additional risk factor for developing an eating disorder. Autoimmune diseases have already been linked to several psychiatric disorders, and several recent case studies have reported that some patients suffering from a type of autoimmune disease called anti-NMDAR encephalitis first presented with eating disorders. Four such cases involved teenage girls who were first admitted to eating disorder clinics with diagnoses of anorexia nervosa. All four patients eventually developed seizures and other symptoms that led to a diagnosis of autoimmune encephalitis. Following treatment of their autoimmune encephalitis, the patients returned to pre-illness eating patterns.

One possibility for how autoimmune encephalitis and eating disorders are linked has to do with a receptor in the brain called an NMDA (N-methyl-D-aspartate) receptor. Anti-NMDAR encephalitis causes patients to have fewer NMDA receptors than healthy people. NMDA receptors have many functions in the human brain, and studies in rats have shown that they...

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play an important role in feeding behavior\textsuperscript{14,15}. Researchers have been able to both increase\textsuperscript{16} and decrease\textsuperscript{17} an animal’s eating by modulating activity of NMDA receptors in the brain. Cases of anti-NMDAR encephalitis that present as eating disorders provide compelling evidence that NMDA receptors also play an important role in eating behavior in humans.

The growing evidence that autoimmune encephalitis cases can present first as eating disorders highlights the importance of recognizing diagnoses of eating disorders as possible early signs of autoimmune encephalitis. This is especially important given that both autoimmune encephalitis and eating disorders are often diagnosed in the same populations of people. The average onset of anti-NMDAR autoimmune encephalitis is 21 years\textsuperscript{11}, which coincides with the peak onset of eating disorders between 15 and 25 years of age\textsuperscript{8}. Similarly, both autoimmune encephalitis and eating disorders are more prevalent in women than in men\textsuperscript{1,13}. Awareness of the relationship between these two diagnoses can help lead to earlier diagnosis and treatment of autoimmune encephalitis\textsuperscript{11} which hopefully leads to better outcomes.

If you think that you or someone you know may be dealing with an eating disorder, these resources are available to help: National Eating Disorders Association, Mayo Clinic

References


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