

Eating gluten during pregnancy may raise your child's risk of adult schizophrenia

Think whole wheat makes for a healthy pregnancy? If so, think again. A newer study shows that a gluten sensitivity may more than double your child's risk of developing schizophrenia later in life.¹ Gluten is the protein found in wheat, spelt, rye, barley, kamut, and triticale (unless designated gluten-free, oats are contaminated by wheat gluten).

The study analyzed blood samples of almost 800 subjects born in Sweden between 1975 and 1985. Researchers found that compared to their peers, subjects with schizophrenia had high levels of gluten antibodies in their blood at birth, signifying a gluten sensitivity passed to them from their mothers.

A mother's immune antibodies pass through the placenta to the fetus to prepare it for life outside the womb. However, she also passes on immune abnormalities, such as food sensitivities, inflammation, and autoimmunity, a condition in which the immune system attacks the body. These immune imbalances profoundly impact fetal brain development.

This helps explain why infections and inflammatory disorders during pregnancy are linked to a greater risk for psychosis, autism, and other brain disorders in the offspring, although this is the first study that points to food sensitivity as a culprit.

Why pregnant women need to know about gluten sensitivity

You may have noticed an increasing number of gluten-free items popping up on grocery store shelves, and more restaurants offering gluten-free options. Awareness is growing as rates of celiac disease, an intestinal autoimmune disease caused by gluten, have quadrupled in the last 50 years.² The numbers could be much higher; it's estimated that 95 percent of those with celiac disease go undiagnosed.^{3 4}

Researchers also estimate the numbers of people with gluten sensitivity—a non-celiac inflammatory reaction to gluten—range from 10 to 30 percent of the population.

Why a gluten sensitivity can cause schizophrenia and other brain disorders

The Swedish blood sample study is hardly the first to show a link between gluten sensitivity and schizophrenia; researchers have been exploring the connection since the 1950s, when a WWII Army researcher observed wheat-poor diets during food rationing led to notably fewer hospital admissions for schizophrenia.⁵

Studies have since shown gluten sensitivity destroys brain and nervous tissue more than any other tissue in the body and is linked to a number of other neurological disorders.⁶

How a mother's gluten sensitivity affects her baby's brain

Beginning before birth, the left and right hemispheres of the brain develop in stages according to a sophisticated schedule. Each hemisphere depends on the other to meet its developmental goals within a precise window of time. While in utero and in early childhood, viruses, infection, and inflammation, such as from gluten sensitivity, can throw a wrench in this intricate timing and hinder proper brain development. This sets the stage for a wide range of neurological disorders, attention-deficit/hyperactivity disorder (ADHD) autism, Tourette's syndrome, depression, Tourette's syndrome, anxiety, and other childhood brain disorders. Childhood mental disorders now affect one in five children and the rates are increasing.⁷

If you look at the current explosion in inflammatory disorders today, the rise of these brain-based disorders is less of a mystery. Immune-activated mothers are giving birth to immune-activated babies.

Don't wait until you're pregnant: Why every woman needs to consider a screen for gluten sensitivity

The message from this paper is that all pregnant women, even better, all women who want to have babies, should be checked for anti-gliadin antibodies and, if that test comes back positive, go on a gluten-free diet before pregnancy. We don't know at which point during pregnancy a mother's gluten sensitivity impacts the fetal brain, but we do know the baby's brain and nervous system begin developing in the first trimester. Although the association between a mother's gluten sensitivity and the babies increased risk of

psychosis as an adult is not yet fully understood, it makes sense to err on the side of caution.

Also, being free of gut symptoms doesn't necessarily mean you're in the clear, as everyone reacts differently to a gluten sensitivity. One person can have chronic skin rashes, another joint pain, and a third brain fog. In fact, research suggests the majority of people with gluten sensitivity have no gastrointestinal symptoms whatsoever.⁸ For every person with gut symptoms caused by gluten, there will be eight who have none, despite a gluten sensitivity.

Gluten sensitivity not a guarantee of schizophrenia and other brain disorders

Undiagnosed gluten sensitivity or celiac disease in pregnancy in no way guarantees your child will develop schizophrenia or other brain disorders. “This is an association,” says the study’s lead investigator Håkan Karlsson, M.D. Ph.D., a neuroscientist at Karolinska Institutet and former neuro-virology fellow at Johns Hopkins. “We do not know if there is a causal relation between maternal anti-gluten antibodies and psychosis in the offspring. However, many women—and men—may be better off on a gluten-free diet even though they do not have celiac disease.”

¹ Blomström A, Karlsson H, Wicks S, Yang S, Yolken RH, Dalman C. Maternal antibodies to infectious agents and risk for non-affective psychoses in the offspring--a matched case-control study. *Schizophr Res*. 2012 Sep;140(1-3):25-30. doi: 10.1016/j.schres.2012.06.035. Epub 2012 Jul 21. PubMed PMID: 22819777.

² Rubio-Tapia A, Murray JA. Celiac disease. *Curr Opin Gastroenterol*. 2010 Mar;26(2):116-22.

³ <http://consensus.nih.gov/2004/2004CeliacDisease118html.htm>

⁴ Murray J. The widening spectrum of Celiac Disease. *Am J Clin Nutr*, 1999;69:354–365.

⁵ *Am J Clin Nutr January 1966 vol. 18 no. 1 7-10*

⁶ Kharrazian, Datis. *Why Isn't My Brain Working?* Elephant Press Books. June 2013.

⁷ Centers for Disease Control and Prevention. Mental health surveillance among children — United States 2005–2011. *MMWR* 2013;62 (Suppl; May 16, 2013):1-35. The report is available at www.cdc.gov/mmwr

⁸ Hadjivassiliou M, Grünewald RA, Davies-Jones GA. Gluten sensitivity as a neurological illness. *J Neurol Neurosurg Psychiatry*. 2002 May;72(5):560-3. Review. PubMed PMID: 11971034; PubMed Central PMCID: PMC1737870.