

Vitamin D Council

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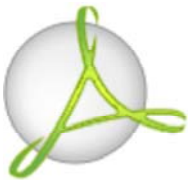


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- Autism

Autism Patient friendly summary



- Increasing UVB light and vitamin D may reduce the risk and symptoms of autism.
- Vitamin D deficiency may be a risk factor for autism.

The autism spectrum disorder (ASD) is a group of developmental disabilities. Autism is just one disorder on the spectrum. It affects both the brain and body of young children. These children have atypical development in socialization, communication, and behavior.

In 2006, approximately 1% of all children or one child in every 110 was classified as having an ASD.

Risk factors

Risk factors for autism include:

- Environmental toxins (exposure to chemicals and heavy metals)
- Environmental conditions leading to vitamin D deficiency
- Genetics

Environmental risk factors may lead to DNA mutations and increased risk for autism. Vitamin D protects against DNA damage. Vitamin D also repairs the damage once it occurs.

Sunlight exposure and autism risk



Autism is more prevalent in regions that receive less sunlight.

Dr. John Cannell of the Vitamin D Council has studied the link between autism and lower levels of sunlight. There is increased prevalence of autism in regions of greater cloud cover and rainfall.

According to many studies, more children with autism are born during the spring. March is the time of lowest vitamin D levels in northern mid-latitudes. These areas are further from the sun and get less light. This corresponds to brain damage around the sixth month of pregnancy.

Vitamin D and Autism

Vitamin D levels

Several findings suggest that low vitamin D levels (in mothers during pregnancy and in infants) may affect the risk of autism:

- Dark skin is a risk factor for development of autism. Those with dark skin produce less vitamin D from sunlight.
- Low maternal vitamin D level is a risk factor for premature delivery. The risk of autism increases with each week a baby is born early.
- Maternal seafood consumption during pregnancy may lower the baby's risk of autism. Cold water ocean fish are a good source of vitamin D and omega-3 fatty acids. Both are important for brain health.

These and other findings do not prove that vitamin D reduces the risk of autism. However, the theory is strong enough that Dr. Cannell states, "*[The possibility] deserves immediate attempts to disprove it.*"

How vitamin D works

Every cell in the brain has vitamin D receptors. The receptors control gene expression or how genetic material is used. Therefore, vitamin D may have many beneficial effects for the brain.

Dr. Cannell pointed out that infection during pregnancy could increase the risk of autism. Some adverse birth outcomes, such as schizophrenia, are associated with maternal influenza during pregnancy. Influenza during pregnancy raises the maternal body temperature. This can have adverse effects on the developing fetus. High levels of vitamin D may lower the risk for influenza.

One of the hallmarks of autism is oxidative stress. This leads to early cell death. There are many papers in the literature reporting that vitamin D reduces oxidative stress.

Prevention

The risk of autism could be lowered significantly by women using vitamin D supplements before conception, during pregnancy, and after birth. Research suggests that pregnant and nursing women require 6000 IU (150 mcg)/day of vitamin D3 (cholecalciferol) during pregnancy and lactation for best pregnancy outcomes and in order to give the infant sufficient vitamin D3 during nursing.

Treatment

There are no peer-reviewed papers reporting the use of vitamin D to treat children with autism. However, some of Dr. Cannell's newsletters report improvement in autism after increasing vitamin D blood levels.

Find out more...

Do you want to find out more and see the research upon which this summary is based? [Read our detailed evidence summary on autism.](#)

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