



Folic Acid and Methylfolate

June 2024

Supplementation before conception reduces the risk of Spina Bifida.

Many factors can affect a pregnancy, including family genes and other circumstances. Though taking folic acid daily will not guarantee having a healthy pregnancy, doing so can lower the risk of it being affected by a neural tube defect such as Spina Bifida. Since many pregnancies are not planned, women can be prepared by making it a practice to take folic acid every day.

What is folic acid?

Folic acid is a B vitamin. When taken before pregnancy, it helps a woman's body produce healthy red blood cells so the baby's neural tube can grow completely during pregnancy. The neural tube will become a baby's brain and spinal cord. When a woman is pregnant, she needs more folic acid than usual so her baby can develop normally. Spina Bifida often occurs before a woman even knows she is pregnant. Research has shown that if all women who could become pregnant were to take a multivitamin with folic acid, the risk of neural tube defects like Spina Bifida could be reduced by up to 70 percent.

How much folic acid do I need?

Women who could become pregnant should take 400 mcg (0.4 mg) of folic acid through a vitamin. Women who have a child or had a pregnancy affected by Spina Bifida or have Spina Bifida themselves should take 4000 mcg (4.0 mg) of folic acid for one to three months before pregnancy. This amount of folic acid is higher than what is sold in stores and can only be obtained with a doctor's prescription.

Are folate and folic acid the same thing?

The terms "folate" and "folic acid" are often used interchangeably, even though they are different. Folate is a general term to describe many different types of naturally-occurring vitamin B9.

Types of folates can include:

- Dihydrofolate (DHF)
- Tetrahydrofolate (THF)
- 5, 10-methylenetetrahydrofolate (5, 10-Methylene-THF)
- 5-methyltetrahydrofolate (5-Methyl-THF or 5-MTHF/methylfolate)



Folic Acid and Methylfolate

June 2024

On the other hand, folic acid is a specific, synthetic vitamin B9 supplement. Appropriate scientific studies of other folate supplements have not been conducted to show if they are able to prevent neural tube defects. Only folic acid has been shown to prevent neural tube defects.

Where can I get folic acid?

Folate is in foods like green vegetables, fruits, and juices. Some foods like cereal and bread have folic acid added to them. Since most people do not get enough folate through food alone, the best way to get the right amount is to take a vitamin with folic acid every day.

Folic acid and the MTHFR gene

Women with the MTHFR variant can metabolize folic acid, but they process folate and folic acid more slowly. Thus, for women with the MTHFR variant, it may take longer to increase blood folate levels compared to those without the variant.

The two most important factors that determine whether a woman has a blood folate concentration that is high enough to help prevent neural tube defects are the amount of folic acid consumed each day and the length of time it is consumed before pregnancy.

We do not know all of the causes of Spina Bifida

Not all neural tube defects can be prevented by taking folic acid. Some women who take the daily recommended amount of folic acid might still have a baby with a neural tube defect. Although the majority of neural tube defects can be prevented by consuming 400 micrograms (mcg) of folic acid every day, other factors such as chromosomal abnormalities or medical conditions such as diabetes might contribute to a pregnancy affected by a neural tube defect.

If you have had a baby affected by a neural tube defect, be sure to discuss your risk of having another pregnancy affected with a neural tube defect and specific recurrence prevention steps with your doctor and a genetic counselor.

The National Center on Birth Defects and Developmental Disabilities (NCBDDD) of the Centers for Disease Control and Prevention provides additional information about folic acid. Please visit their website at: <https://www.cdc.gov/ncbddd/folicacid/index.html>



Folic Acid and Methylfolate

June 2024

Additional information about the MTHFR gene and folic acid can be found at:

- [CDC: MTHFR Gene and Folic Acid / https://www.cdc.gov/folic-acid/data-research/mthfr/](https://www.cdc.gov/folic-acid/data-research/mthfr/)
- [General Information About NTDs, Folic Acid, and Folate / https://www.cdc.gov/folic-acid/about/](https://www.cdc.gov/folic-acid/about/)

Revised by the Centers for Disease Control and Prevention, the National Center on Birth Defects and Developmental Disabilities.

This information does not constitute medical advice for any individual. As specific cases may vary from the general information presented here, SBA advises readers to consult a qualified medical or other professional on an individual basis.