Vitamin B12

This sheet is about exposure to vitamin B12 in pregnancy and while breastfeeding. This information is based on published research studies. It should not take the place of medical care and advice from your healthcare provider.

What is vitamin B12?

Vitamin B12 is an essential vitamin that is used by the body to keep your nerve and blood cells healthy and to help make DNA (genetic material created in your body). Essential vitamins are nutrients that the body cannot make, so people need to get them from other sources. Vitamin B12 can be found in animal products including meat, seafood, eggs, and dairy products. Cereals and nutritional yeast have vitamin B12 added to them. Vitamin B12 is also available as a dietary supplement, or as a prescription medication in the form of an injection (shot) or nasal spray. Vitamin B12 has also been called cobalamin.

Vitamin B12 deficiency (not having enough vitamin B12 in the body) can cause fatigue (feeling very tired), muscle weakness, pale or ashy skin, a racing heart, loss of appetite, weight loss, and numbness or tingling in the hands and feet. Not all people with a vitamin B12 deficiency will have symptoms. Sometimes, other health conditions or taking medications that interact with how vitamin B12 is absorbed can increase the chance of having symptoms.

If your healthcare provider has recommended taking vitamin B12, talk with them before making changes to how you take this supplement Your healthcare providers can talk with you about the benefits of maintaining your nutrient levels and the risks of low vitamin B12 during pregnancy.

Talk with your healthcare providers about all of the supplements and vitamins that you take. Have the bottles or photos of the labels with you so that all reported ingredients and their amounts can be reviewed.

How much vitamin B12 is needed in pregnancy?

The Recommended Dietary Allowance (RDA) is the average daily level of intake that is enough to meet the nutrient needs for most people. The Tolerable Upper Intake Level (UL) is the dose that people can start to have side effects. It is not recommended to take more than the RDA of vitamin B12 unless you are doing so under the care of your healthcare provider to treat a condition. There is currently no UL for vitamin B12, because vitamin B12 is not stored in the body in excess (extra) amounts. The RDA for females who are pregnant is 2.6 mcg of vitamin B12 a day.

Most people get enough vitamin B12 from their diet. When adding up how much vitamin B12 you are getting, remember to count amounts from foods, drinks, and from any supplements you are taking. There are resources available online that list amounts of vitamin B12 typically found in foods, such as the United States Department of Agriculture (USDA) National Nutrient Database, found here: https://www.nal.usda.gov/sites/default/files/page-files/Vitamin%20B-12.pdf. Diet, medications, and certain medical conditions can cause someone to have low levels of vitamin B12. Some people might need to take a vitamin B12 supplement. Be sure to talk with your healthcare providers about your specific nutritional needs before, during, and after pregnancy.

Can vitamin B12 make it harder for me to get pregnant?

Taking vitamin B12 at the RDA is not expected to make it harder to get pregnant. It is not known if having a vitamin B12 deficiency can make it harder to get pregnant.

Does vitamin B12 increase the chance of miscarriage?

Miscarriage is common and can occur in any pregnancy for many different reasons. Taking vitamin B12 at the RDA is not expected to increase the chance of miscarriage. Some studies reported that having low levels of vitamin B12 (less than 200-300 pg/mL in blood) was associated with an increased chance of miscarriage. Some of these studies combined multiple factors together, including other vitamins. As there can be many causes of miscarriage, it is hard to know if vitamin levels, health conditions, or other factors are the cause of a miscarriage.

Does vitamin B12 increase the chance of birth defects?

Birth defects can happen in any pregnancy for different reasons. Out of all babies born each year, about 3 out of 100

(3%) will have a birth defect. We look at research studies to try to understand if an exposure, like vitamin B12, might increase the chance of birth defects in a pregnancy. Taking vitamin B12 at the RDA is not expected to increase the chance of birth defects.

It is not known if having too little vitamin B12 can increase the chance of birth defects. Some studies report that having too little vitamin B12, or having lower metabolism (the body's processing) of vitamin B12 can increase the chance of neural tube defects (an opening in the spine or skull). Other studies have not reported the same results. Two studies have reported an increased chance of cleft lip and/or palate (an opening in the upper lip or the roof of the mouth) in babies born to women who were deficient in B12 during pregnancy.

Does vitamin B12 increase the chance of other pregnancy-related problems?

Taking vitamin B12 at the RDA is not expected to increase the chance of other pregnancy-related problems such as preterm delivery (birth before week 37) or low birth weight (weighing less than 5 pounds, 8 ounces [2500 grams] at birth).

Having a vitamin B12 deficiency (B12 levels below 148mol/L) or low vitamin B12 has been associated with preterm delivery. One study did not report an association between low or deficient vitamin B12 levels and birth weight.

Does vitamin B12 affect future behavior or learning for the child?

Taking vitamin B12 at the RDA is not expected to affect future behavior or learning for the child. It is not known if having a vitamin B deficiency can affect future behavior or learning for the child.

Breastfeeding and vitamin B12:

Vitamin B12 is a typical part of breast milk. If you are breastfeeding, continue to get the daily recommended daily allowance of vitamin B12 unless otherwise directed by a healthcare provider. The RDA for females who are breastfeeding is 2.8 mcg of vitamin B12 a day.

If a person who is breastfeeding is deficient in vitamin B12, the child may have an increased chance of having vitamin B12 deficiency if they are exclusively breastfed. Infants who are vitamin B12 deficient might experience low muscle tone, uncontrolled movements (tremors), anemia, and changes in skin and hair development.

Getting enough vitamin B12 while breastfeeding can help a child get enough vitamin B12. See the chart above to find the RDA for vitamin B12 for women who are breastfeeding. Also, talk to your healthcare provider and your baby's pediatrician about your specific nutritional needs before, during, and after breastfeeding. Be sure to talk to your healthcare provider about all your breastfeeding questions.

Does vitamin B12 affect fertility or increase the chance of birth defects?

Taking vitamin B12 at the RDA is not expected to affect men's fertility (ability to get a partner pregnant) or increase the chance of birth defects. Studies have not been done in humans to see if a vitamin B12 deficiency could affect men's fertility or increase the chance of birth defects. In general, exposures that fathers or sperm donors have are unlikely to increase risks to a pregnancy. For more information, please see the MotherToBaby fact sheet Paternal Exposures at https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/.

Please click here for references.