Low maternal B12 levels may increase risk of defects in babies

Women with low blood levels of vitamin B12 are at increased risk of having a child with neural tube defects, according to the findings of a new study.

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The risk of neural tube defects was found to be five times higher amongst women with the lowest levels of vitamin B12, compared to women with the highest B12 levels, report researchers from the US National Institutes of Health, and Ireland’s Trinity College Dublin, and the Health Research Board of Ireland.

The importance of B vitamins, particularly folate, in fetal development is well established. Currently, supplementation with folate and folic acid - the synthetic, bioavailable form of folate - is recommended to all women of child-bearing age since most neural tube defects (NTDs), including spina bifida and anencephaly, occur within the first 22 to 28 days of pregnancy, when the mother-to-be is not aware she is even pregnant. Folic acid supplements after this time are too late to prevent neural tube defects and therefore fail to benefit women with unplanned pregnancies - more than half of all pregnancies in the US.

This connection between folate deficiency in early pregnancy and an increased risk of NTDs led to the 1998 introduction of public health measures in the US and Canada, where all grain products are fortified with folic acid. While preliminary evidence indicates that the measure is having an effect with a reported 15 to 50% reduction in NTD incidence, parallel measures in European countries, including the UK and Ireland, are still on the table.

The new study indicates that women of child-bearing age should also be ensuring adequate intakes of vitamin B12, a vitamin that may be lacking for women following a vegetarian or vegan diet.

Study details

The researchers looked at blood levels of vitamin B12 among 278 women in Ireland between 1983 and 1990. During that time, pregnant women in Ireland rarely took vitamin supplements. The women included 171 women who were pregnant with a child having a neural tube defect at the time the blood was taken, and a second group of 107 women who had previously given birth to a child with a neural tube defect but whose current pregnancy was not affected.

After accounting for folate levels, a known risk factor for NTDs, the researchers, calculated that women with low B12 concentrations (estimated at less than 250 nanograms per litre before pregnancy) had 2.5 to 3 times the risk. Furthermore, women with B12 deficiency (blood levels between 0 and 149 ng/L) had 5 times the risk of having a child with a NTD compared to those with higher levels.

The researchers called for additional studies among other populations of women to confirm their observations.

Source: www.nutraingredients.com