



## C-Obs 25

# Vitamin and Mineral Supplementation in Pregnancy

Although, in the general population, a healthy balanced diet should largely obviate the need for vitamin and mineral supplementation, pregnancy and lactation create extra nutritional demands that, for some individuals, may make supplementation advisable. For a comprehensive guide to supplementation in pregnancy the reader is referred to the references at the end of this statement.

## ***Vitamins***

### ***Folate***

All women should ensure adequate preconceptual folic acid to aid in the prevention of neural tube defects (NTD). Where there is an increased risk of NTD (e.g. anticonvulsant medication, prepregnancy diabetes mellitus), a 5mg daily dose should be used in place of the usual 0.5mg.

Women at increased risk of folate deficiency (e.g. multiple pregnancies, haemolytic anaemia) should take 5mg of folic acid throughout the pregnancy.

### ***Vitamin B12***

Vegetarians and vegans should be supplemented with Vitamin B12 in pregnancy and lactation. Untreated maternal B12 deficiency has been reported to cause neurological sequelae in exclusively breast fed infants (RDI 6 mcg/ day ).

### ***Composite B-group Vitamins***

Hyperhomocysteinaemia is the commonest of the thrombophilias with approximately 1.5% of the population being homozygous for the MTHFR mutation and 25% heterozygous. The thrombophilic tendency is minimised by an adequacy of folate, riboflavin, B6 and B12. In the absence of any screening for this condition, some clinicians advise that all women should ensure an adequate intake of these vitamins.

### ***Vitamin D***

Studies of pregnant women attending antenatal clinics in Australia and New Zealand have found a disturbing frequency of Vitamin D deficiency. Women at increased risk include those with reduced sunlight skin exposure e.g. veiled women, those who use sunscreen on a regular basis and dark-skinned women. Vitamin D deficiency is known to be an important risk factor for the **development** of osteoporosis in later life. In these circumstances, testing should be performed and adequate supplementation instituted where needed.

### ***Vitamin K***

Vitamin K should be administered in late pregnancy to women with proven cholestasis of pregnancy, due to reduced Vitamin K absorption. It is also recommended for women on anticonvulsant medication, although recent evidence casts doubt on the need for this.

## ***Other Vitamin Supplementation***

There is little evidence to support “routine” supplementation of other vitamins in pregnancy such as Vitamin A, C & E and, not unexpectedly, excessive quantities of fat soluble vitamins may be harmful.

## **Minerals**

### ***Iron***

The iron demands of pregnancy and lactation are particularly pronounced due to the expanded red cell volume, blood loss around the time of delivery and the demands of the developing fetus and placenta. Iron supplementation will generally be recommended for women at particular risk of iron deficiency. This includes vegetarians and women with a multiple pregnancy. All women should have their haemoglobin level checked at the first antenatal visit and again at approximately 28 weeks’ gestation and any anaemia investigated and treated. Routine Iron supplementation is not recommended in every pregnancy

### ***Calcium***

Providing there is no Vitamin D deficiency, a balanced diet will have sufficient calcium for pregnancy and lactation. If the woman avoids dairy in her usual diet (e.g. lactose intolerant) and does not consume alternative high calcium food (e.g. calcium enriched soya milk), calcium supplementation is advisable (RDI 1200 mg/day).

### ***Iodine***

Iodine deficiency appears to be increasing in frequency. This may in part be related to a reduction in salt intake (hence reduced iodised salt intake) and concerns about excessive mercury with consumption of deep-sea fish. Recent research suggests that even subclinical hypothyroidism may have clinical sequelae, making it imperative to avoid iodine deficiency in pregnancy. Iodine supplementation is mandatory in areas of regional deficiency. In other areas, some clinicians will prefer to recommend pregnancy & lactation supplements that contain iodine.

### ***Other Minerals***

There is little evidence to support “routine” supplementation of other minerals in pregnancy such as magnesium, fluoride, zinc or rare minerals.

### ***Other Nutritional Supplements***

There is a deficiency of high quality evidence that would support the use of other nutritional supplements in pregnancy e.g. omega-3 fatty acids. In the absence of such evidence, the best advice would be to avoid such supplements, particularly in the first trimester of pregnancy where any unanticipated adverse effect would be most likely to occur.

## **Summary**

Most proprietary pregnancy and lactation multivitamin preparations are adequate for the majority of pregnancies. The commonest exceptions will be the vegetarian/vegan needing additional iron and women for who high dose (5 mg) of folic acid or pharmacological doses of Vitamin D are recommended.

## **Links to other related College Statements**

[C-Obs 3 Antenatal screening tests](#)

## References

1. Nelen WL. Hyperhomocysteinaemia and human reproduction. Clin Chem Lab Med. 2001 Aug;39(8):758-63.
2. Bodnar LM, Catov JM, Simhan HN, Holick MF, Powers RW, Roberts JM. Maternal Vit D deficiency Increases Risk Of Pre eclampsia is Journal Of Clinical Endocrinology & Metabolism 2007 Vol 92, No9 3517-3522
3. Edward Stanley Emery, et al. Vitamin B12 Deficiency: A cause of Abnormal Movement in Infants. Journal of Pediatrics Vol.99 No.2, 1997, PP255
4. Munns C, Zacharin MR, Rodda CP, Batch JA, Morley R, Cranswick NE, Craig ME, Cutfield WS, Hofman PL, Taylor BJ, Grover SR, Pasco JA, Burgner D, Cowell CT. Prevention and treatment of infant and childhood vitamin D deficiency in Australia and New Zealand: a consensus statement. Med J Aust. 2006 Sep 4;185(5):268-72.
5. Choulika S, Grabowski E, Holmes LB. Is antenatal vitamin K prophylaxis needed for pregnant women taking anticonvulsants? Am J Obstet Gynecol. 2004 Apr;190(4):882-3.

### Disclaimer

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