

# Vitamins and Minerals in Pregnancy and Breastfeeding

MotherSafe - Royal Hospital for Women

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*Information in this leaflet is general in nature and should not take the place of advice from your health care provider. With every pregnancy there is a 3 to 5% risk of having a baby with a birth defect or developmental problem.*

**It is important to have a healthy diet during pregnancy and lactation to ensure your baby grows and develops well. The best way to meet your and your baby's nutritional needs is to eat a wide variety of nutritious foods. The vitamins and minerals discussed in this factsheet are of particular importance in pregnancy and lactation.**

## **Folic acid**

Folic acid (or folate) is a B vitamin. It is used to make new cells. The need for folic acid is higher when cell turnover is increased, such as in fetal development. If a woman has enough folic acid in her body before she is pregnant, it can help prevent major birth defects in her baby's brain and spine. These birth defects are called neural tube defects (NTDs). Folic acid can help reduce the risk of spina bifida by up to 70%<sup>1</sup> and may also reduce the risk of cleft lip and palate.

In Australia, all wheat flour used for making bread has been fortified with folic acid since September 2009. One standard slice of bread will supply approximately 40 micrograms (mcg) of folic acid. Green leafy vegetables, whole grains and fruit are also good sources of folic acid.

Women capable of, or planning pregnancy should consume at least 400 mcg per day of folic acid as a supplement for at least one month before and three months after conception, in addition to consuming folate from a varied diet.<sup>2</sup> In Australia, supplementation is usually with at least 500mcg (0.5mg) per day of folic acid, as this is the tablet strength available on the market. Multivitamin preparations formulated specifically for pregnant women will also contain sufficient folic acid.

A higher 5mg daily dose of folic acid should be used when there is an increased risk of neural tube defects<sup>3</sup> (for example, women who had a neural tube defect themselves, family history of neural tube defects in the father or mother, women taking some anticonvulsant or antipsychotic medications, or with pre-pregnancy diabetes mellitus).

For women at increased risk of folate deficiency (for example multiple pregnancies, haemolytic anaemia, overweight (with a BMI >30), malabsorption syndrome, inflammatory bowel disease), taking 5mg of folic acid throughout the pregnancy should be considered. Discuss with your doctor whether you need to take a higher dose.<sup>3</sup>

## **Iron**

In the second and third trimester of pregnancy, there are increasing iron demands due to an expanded red cell volume and demands of the developing fetus and placenta. Iron supplementation is not necessary in every pregnancy. Discuss with your doctor whether you are at risk of iron deficiency and need additional supplementation.<sup>3</sup>

Iron supplementation may be necessary after the birth, and is safe in breastfeeding mothers, as iron passes very poorly into the breastmilk.

### Calcium

Calcium is important in pregnancy and in breastfeeding for fetal growth and breastmilk production. Despite increased requirements, there is no need for extra calcium supplementation beyond the normal recommended dietary intake, while pregnant or breastfeeding. This is because the mother during this period adapts to make more efficient use of her own calcium.<sup>4</sup> Sources of calcium include dairy foods or calcium-fortified soy milk. (250mL of milk contains 285 mg of calcium, 200g tub of yoghurt contains 340mg of calcium).

### Vitamin D

Vitamin D is needed for the body to absorb and use calcium. Vitamin D deficiency is now common in Australia, affecting over 30% of adults.<sup>5</sup> Some women may be at increased risk of vitamin D deficiency including those with reduced sun exposure (dark-skinned and veiled women may be at particular risk), inadequate dietary intake or gastrointestinal disease. Adverse health outcomes have been linked to low vitamin D levels during pregnancy and infancy. Discuss with your doctor whether you are at risk of vitamin D deficiency and need additional supplementation.<sup>3</sup> **For further information see “Vitamin D” MotherSafe factsheet.**

### Iodine

Iodine deficiency in the community is thought to be increasing due to reduced intake.<sup>3</sup> To address this problem, most bread in Australia contains added iodine.<sup>6</sup> Recommended iodine intake in pregnancy is 220mcg per day, unless thyroid disease is present.<sup>2</sup> The increased intake can be achieved by use of a pregnancy and lactation vitamin supplement containing iodine. If your doctor is concerned about iodine deficiency, thyroid function tests may be requested. Urine tests for iodine do not provide useful information. If iodine deficiency is diagnosed, supplementation of iodine of up to 500 mcg per day may be required.

### Vitamin A

Vitamin A is an essential fat-soluble nutrient. Supplements usually provide vitamin A as retinyl esters, which are readily converted to retinol. **Care should be taken to ensure there is not excessive intake of vitamin A in this form (retinol), as this may increase the risk of birth defects in pregnancy.** However, beta-carotene is the plant form of vitamin A and is not associated with birth defects. The best way to get adequate vitamin A in pregnancy is from food such as meat, fish, leafy vegetables and dairy products. Retinol in skin care products is poorly absorbed through the skin and is not anticipated to be a concern in pregnancy.<sup>7</sup>

### Vitamin B12

Vitamin B12 is generally obtained from animal foods in the diet, Vegetarian and vegan mothers (as well as those with malabsorption) should be supplemented with Vitamin B12 while pregnant and breastfeeding.<sup>2,3</sup>

### Multivitamins

Multivitamin preparations designed for pregnancy and lactation will cover the majority of vitamin needs. Formulations vary so check the label to ensure you will be getting adequate intake. Not all formulations contain iodine and the amount of iron also varies.

### **NHMRC RECOMMENDED Dietary Intake (RDI) <sup>2</sup>**

	Pregnancy (RDI)	Lactation(RDI)
folic acid	600micrograms/day	500micrograms/day
iron	27mg/day	9mg/day
calcium	1000mg/day	1000mg/day
vitamin D	5micrograms/day = 200IU	5micrograms/day = 200IU
iodine	220micrograms/day	270micrograms/day
vitamin A ( retinol equivalents)	800micrograms/day ( 750micrograms = 2500IU)	800micrograms/day ( 750micrograms = 2500IU)

### **What does recommended dietary intake (RDI) mean?**<sup>2</sup>

The Recommended Dietary Intake (RDI) is defined as the average healthy dietary intake that is sufficient to meet the nutrient requirements of nearly all (97-98%) healthy individuals in a particular life stage or gender group.

**Consider consulting a dietitian for further advice if you have specific issues you wish to discuss or any additional concerns.**

### **References:**

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### **Additional Information**

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*NSW Medications in Pregnancy & Breastfeeding Service*

*For more information call MotherSafe: NSW Medications in Pregnancy and Breastfeeding Service on 9382 6539 (Sydney Metropolitan Area) or 1800 647 848 (Non-Metropolitan Area) Monday -Friday 9am-5pm (excluding public holidays)*