

Title:

Vitamin D for Nursing Mothers: What you need to know for your baby's health

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Key words:

Vitamin D, supplements, breast-feeding, breast-fed infant

Abstract:

High dose maternal vitamin D supplements, up to 4000 IU/d (10x current recommended daily intake RDI), safely increases vitamin D concentration in the blood of both mother and baby, therefore increasing the RDI of vitamin D in nursing mothers could help to prevent diseases caused by vitamin D deficiency (i.e. rickets, hypocalcemia) in the solely breast fed infant without risk of vitamin D overdose. This would effectively eliminate the need to give the infant vitamin D supplements.

This document was created by a medical student enrolled in the Primary Care Clerkship at the University of Minnesota Medical School as part of the course project. The aim of the project is to present information on a medical topic in the format of a patient education handout. It does not necessarily reflect the views of the University of Minnesota Medical School physicians and faculty. These materials are provided for informational purposes only and are in no way intended to take the place of the advice and recommendations of your personal health care provider. The information provided may no longer be up to date since it has not been reviewed since the date of creation. The information provided should not be used to diagnose a health problem or disease, or as a means of determining treatment. In the event of a medical emergency, immediately contact a doctor or call 911.

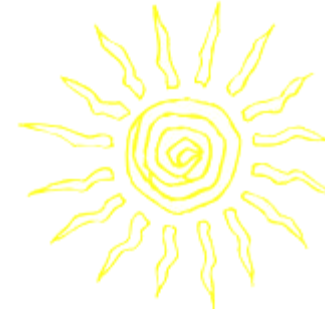
Food	IUs per serving*	Percent DV**
Cod liver oil, 1T	1,360	340
Salmon, cooked, 3 oz.	794	199
Mackerel, cooked, 3 oz.	388	97
Tuna fish, canned in water, drained, 3 oz.	154	39
Milk, fortified, 8 oz.	115-124	29-31
Orange juice, fortified, 8 oz	100	25
Yogurt, fortified, 6 oz.	80	20
Margarine, fortified, 1T	60	15
Sardines, canned in oil, drained, 2 sardines	46	12
Liver, beef, cooked, 3.5 oz.	46	12
Ready-to-eat cereal, fortified, 0.75-1 cup	40	10
Egg, 1 whole (vitamin D is found in yolk)	25	6
Cheese, Swiss, 1 oz.	6	2
*IUs = International Units.		

Hopefully you found the information in this brochure helpful. Remember to consult your doctor before changing you or your child's nutritional regimen.

FOR MORE INFORMATION:

1. <http://ods.od.nih.gov/factsheets/vitamind.asp>
2. <http://www.aap.org/parents.html>

# Vitamin D for Nursing Mothers: What you need to know for your baby's health



## Understanding Vitamin D

**What is Vitamin D?** Vitamin D is a fat-soluble vitamin that is naturally present in some foods, added to others, and available as a dietary supplement. Your skin also makes vitamin D naturally when you are exposed to sunlight.

### What is Vitamin D Good For?

Vitamin D has a variety of important actions in the body, including :

- Promotion of bone health and proper bone growth
- Promotion of absorption of calcium from the foods we eat in the gut
- Helps to maintain proper levels of calcium and phosphorus in the blood
- Helps regulate certain hormones (calcitonin and parathyroid hormone)
- Promotion of immune system function
- Prevention of cancer and cardiovascular disease
- Suggested role in prevention of other diseases and conditions (depression, diabetes, rheumatoid arthritis and more!)

**Vitamin D Deficiency** causes Rickets in children (a disease associated with stunted growth, long bone deformity), Osteomalacia in adults (bone thinning disease associated with bone fragility and muscle weakness, Hypocalcemia (low blood calcium) which can cause seizure and heart conduction problems

## Sources of Vitamin D

**Vitamin D** occurs in two forms: vitamin D<sub>2</sub> (ergocalciferol) found in plants and mushrooms, and vitamin D<sub>3</sub> (cholecalciferol) found in animals and made in human skin.

### Sunlight:

UVB rays from the sun induce the skin to produce vitamin D<sub>3</sub>. The amount of vitamin D made in the skin varies among individuals, with darker skinned persons producing significantly less than fair-skinned. At latitudes >35 degrees (MN is at 40 degrees) sunlight is inadequate during winter months for the body to produce sufficient amounts of vitamin D. These populations need to intake vitamin D through diet or with daily vitamin supplements during winter months to prevent vitamin D deficiency.

### Foods Containing vitamin D:

Some foods containing vitamin D include: salmon, mackerel, tuna, cod liver oil, beef liver, fortified food products (milk, yogurt, cereals)

\*\*see back panel for a table of foods and vitamin D content

### Nutritional Supplements:

There are various commercially available nutritional supplements containing vitamin D (e.g. multi-vitamins, infant drops)

## Vitamin D and Breast Feeding

### USDA Recommended Daily Intake (RDI) :

Age (yrs)	Vitamin D
0-1	400 IU
1-8	400 IU
9-18	400 IU
19-50	800 IU
50+	1200 IU

Countless studies have shown the many benefits of breast feeding and breast milk is well known to provide infants with excellent nutrition. **Unfortunately breast milk does not provide an adequate source of vitamin D for many infants**, especially those who are dark skinned, living in northern climates. Some very limited studies have demonstrated that maternal intake of up to 4000IU/d vitamin D (10 x current RDI) may safely provide adequate transfer of vitamin D to the infant through breast milk. Currently, however, the RDI for nursing mothers is 400 IU/d vitamin D and the American Academy of Pediatrics (AAP) recommends that **exclusively and partially breastfed infants should receive supplements of 400 IU/day of vitamin D** shortly after birth and continue to receive these supplements until they are weaned and consume  $\geq 1,000$  mL/day of vitamin D-fortified formula or whole milk .<sup>1</sup>

# Main Inside Heading

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This text should be brief and should entice the reader to want to know more about the product or service.

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