

# What's New with Vitamin D?



## Vitamin D - information for WIC Staff

### What is the latest information on Vitamin D?

The newest research shows that this important nutrient is needed in greater amounts than previously thought. Many people have inadequate vitamin D levels which can have serious health consequences.

Recent studies indicate that 12-33% of women of childbearing age are Vitamin D deficient. Decreased vitamin D levels in the mother results in decreased transfer of vitamin D to the infant and reduced infant Vitamin D stores at birth. Preterm infants have less time to accumulate vitamin D stores and are more likely to be vitamin D deficient.

### Why is Vitamin D important for health?

Vitamin D is well known for the prevention of rickets and promotion of strong bones. New evidence suggests that vitamin D also plays an important role in the prevention of infections, heart disease, autoimmune diseases, some forms of cancer and Type 2 diabetes. Recent studies indicate that vitamin D supplements in infancy and early childhood may decrease the incidence of Type 1 diabetes.

Mild Vitamin D deficiencies may contribute to the presence of non-specific symptoms such as gross motor delays, unusual irritability, muscle or joint pain and poor growth.

Vitamin D can be stored in the body and functions as a hormone that can be produced as needed if enough supply is present. Over 200 different body tissues have Vitamin D receptors that require Vitamin D to work properly.

### How much Vitamin D is needed each day?

Infants:	400 IU for all infants, beginning soon after birth
Children:	400 IU
Teenagers:	400 IU
Adults:	1000 - 2000 IU

Older recommendations of 200-400 IU per day appear to be too low to assure adequacy in most people. If there is a known deficiency, a higher intake may be recommended.

## What foods are good sources of Vitamin D?

Foods that contain natural vitamin D are limited to fatty fish (salmon, tuna, mackerel, and sardines), liver, cod liver oil and egg yolks. Vitamin D is added to other foods, including milk (100 IU/cup), infant formula, and some yogurt, margarine, cereal, and orange juice products.



Unless 14 oz of oily fish or one quart of fortified milk or orange juice is consumed every day, it is very difficult to get enough vitamin D from foods.

## What about Vitamin D from sunshine?

Our bodies can make vitamin D when skin is exposed to sunlight, but it is not a dependable source in Oregon. In US states north of the 37<sup>th</sup> parallel, sun strength is inadequate for Vitamin D production except in the summer months.



Other factors affecting the production of vitamin D in our skin include:

- Amount of time that is spent outdoors
- What clothing is worn when outdoors
- Use of sunscreen
- Season of the year, time of day
- Presence of air pollution or smog
- Weather conditions
- Skin pigmentation and age of skin

## Does everyone need to take Vitamin D supplements?

Yes, it is nearly impossible to consistently get the recommended amounts of vitamin D from food sources and sunshine, so the use of a supplement is advised.

The American Academy of Pediatrics (AAP) now recommends that all infants and children receive a daily supplement of 400 IU of vitamin D beginning soon after birth. Vitamin D supplementation has been used safely in the pediatric populations for many years.

There are two forms of Vitamin D used in food fortification and commercial multivitamin supplements: plant derived Vitamin D2 (ergocalciferol) and animal derived Vitamin D3 (cholecalciferol).

Most multivitamins, including children's chewable, prenatal, and adult multivitamins, contain Vitamin D2. Some infant vitamin drops contain D3. Vitamin D3 is more potent than D2 but both contribute to an individual's improved Vitamin D status. Supplements are available over-the-counter in a variety of forms.

Infants: Liquid vitamin D drops are available singly as well as in combination with other nutrients such as vitamins A, C, iron or fluoride.

Children: Chewable multivitamins are available that contain vitamin D. Some "gummy" vitamin products are not complete.

Adults: Select a multivitamin that contains 1000 IU of vitamin D. Generic is fine. It is best to buy a product that says "complete" on the label. Prenatal vitamins contain Vitamin D.

### **Can someone get too much vitamin D?**

Current research suggests that the upper level of safety could be increased to 10,000 IU or more per day. There does not appear to be any danger of getting too much vitamin D from the combination of food sources, supplementation in recommended amounts, and sunlight.

### **How do these recommendations affect WIC certifications?**

USDA has added the lack of Vitamin D supplementation as a qualifying factor for inadequate supplementation risks 411.11 for infants and 425.8 for children.

USDA has adopted the AAP recommendation that infants and children, who are drinking less than 1 quart per day of vitamin D-fortified formula or milk, should receive a vitamin D supplement of 400 IU/day to prevent vitamin D deficiency.

### **How will we assess Vitamin D use?**

A new question will be added to the TWIST diet assessment questionnaire to assist certifiers in assessing Vitamin D use. These questions will be added in August 2010:

#### **On the Children Diet Assessment Questionnaire:**

Is your child receiving a Vitamin D supplement?

- Yes (no risk assigned)
- No but drinks 1 quart of milk daily (425.8 not assigned)
- No (TWIST assigns risk 425.8)
- Unknown



#### **On the Infants Diet Assessment Questionnaire:**

Is your baby receiving a Vitamin D supplement?

- Yes (no risk assigned)
- No but drinks 1 quart of formula daily (411.11 not assigned)
- No (TWIST assigns risk 411.11)
- Unknown

Since 1 quart of milk is in excess of the recommended 2 cups of milk per day for pre-school children, most children will require a vitamin D supplement. Since most infants are breastfed or drink less than 1 quart of formula per day, the majority of infants will also need a Vitamin D supplement.

### **What information can we offer WIC participants?**

We now know that Vitamin D is important for the health of everyone in the family. It is very hard to get enough from food so a supplement is recommended. Although WIC staff do not prescribe specific vitamins, we can recommend taking a supplement just like we do with prenatal vitamins.

- Encourage parents to provide a Vitamin D supplement via over the counter children's chewable vitamins or infant drops. Infant drops can stain, so a good place to give them to a baby is in the bath.
- Reading the product label will help parents identify brands containing Vitamin D. Reinforce following the directions on the package to assure correct dosage.
- Reassure parents that these supplements can safely be used in addition to Vitamin D fortified milk or formula.
- Consider offering a Vitamin D handout for additional information. A new handout on "Vitamin D for the Family" will be available online in July 2010 and for order in August 2010.
- If a participant has questions or concerns, refer them to the WIC nutritionist or the child's health care provider.

