VITAMIN D

Vitamin D is stored in your body fat. The vitamin D precursors produced in yeast and plants (ergosterol) and animals (7-dehydrocholesterol) are converted to vitamin D by exposure to ultraviolet light and sunlight. Vitamin D can also be metabolized in the liver then in the kidney.

The major functions of vitamin D are to increase the efficiency of intestinal calcium absorption and to mobilize calcium stores from bone in order to maintain the serum calcium and phosphorus concentrations within the normal physiological range.

Deficiencies: In humans, deficiency symptoms include rickets in children, osteomalacia in adults, muscle weakness, bony deformities, neuromuscular irritability causing muscle spasms of the larynx (laryngospasm) and hands (carpopedal spasm), generalized convulsions and tetany.

Clinical uses: Vitamin D is useful for preventing and treating vitamin D deficiency bone diseases (rickets in children and osteomalacia in adults). Vitamin D has also recently been shown to valuable in treating the skin disease psoriasis.

Diet recommendations:
Based on the available literature and assuming some exposure to sunlight, an AI for ages 0 - 50 years was set at 200 IU (5 mg)/day. The IOM panel recognized that vitamin D insufficiency and deficiency are prevalent in adults over the age of 50 years and set the AI for adults 51 - 70 years as 400 IU (10 mg)/day and for adults > 71 years, 600 IU (15 mg)/day.

There was no compelling data to increase the vitamin D requirement either during pregnancy or lactation. A Tolerable Upper Limit level for vitamin D for ages 0 - 12 months was set at a limit of 1,000 IU (25 mg)/day. For older children and adults, including pregnant and lactating women, the UL was set at 2,000 IU (50 mg)/day.

Food sources: Good food sources are milk properly fortified with vitamin D, fatty fish such as salmon and mackerel, cod liver oil, fish liver oil, some breads and cereals, and some egg yolks.

Toxicity: Excessive quantities of vitamin D (in excess of 5,000-10,000 IU/day) can cause hypercalcemia, hypercalciuria, kidney stones, and soft tissue calcifications.

Recent research: Epidemiological evidence suggests that there may be a correlation with increased exposure to sunlight with decreased risk of colon, breast and prostrate cancer.