Fat Soluble Vitamins

Vitamin A

**Function:** Maintains healthy vision, skin, teeth, and skeleton

**Recommendations:**
- Adult Men: 900µg
- Adult Women: 700µg
- Upper Limit: 3000µg

**Deficiency:** Night blindness, decreased immune function, dry scaly skin

**Toxicity:** Birth defects, central nervous disorders, liver abnormalities, and loss of bone density

**Food Sources:** Liver, fish, eggs, bright yellow and orange fruits and vegetables, dark green leafy vegetables and broccoli

Vitamin D

**Function:** Helps absorb calcium, support immune function, nerve function, and muscle movement

**Recommendations:**
- Adult Men: 600 IU
- Adult Women: 600 IU
- Upper Limit: 4000 IU

**Deficiency:** Soft, thin brittle bones known as rickets in children and bone softening in adults

**Toxicity:** Usually caused by supplements- kidney damage, nausea, weakness, disorientation

**Food Sources:** Tuna, salmon and fortified milk

Note: Vitamin D is currently undergoing research in an effort to better understand the role it plays in our bodies as well as the impact of deficiencies. There have been results suggesting that Vitamin D does a lot more than help with calcium absorption, from controlling blood sugar to kidney function. A link has been given to check the research out for yourself.

Vitamin E

**Function:** Immune function, cell signaling, regulating gene expression, and is an antioxidant

**Recommendations:**
- Adult Men: 15mg
- Adult Women: 15mg
- Upper Limit: 1000mg

**Deficiency:** It’s rare, but nerve damage in extremities and decreased immune function

**Toxicity:** Unknown

**Food Sources:** Nuts such as almonds and peanuts, vegetable oils such as corn and sunflower and green leafy vegetables.

Vitamin K

**Functions:** Important in helping the blood clot.

**Recommendations:**
- Adult Men: 90µg
- Adult Women: 90µg
- No upper limit

**Deficiencies:** blood clotting is compromised which is shown as excessive bruising and bleeding.

**Toxicity:** Rare

**Food Sources:** Green leafy vegetables, cauliflower, cabbage, spinach, soybeans, and cereals

For more information:
Office of Dietary Supplements- Good resource on vitamins-under General Information click full list of fact sheets

Linus Pauling Institute- U of Ohio- good site for more clinical information on vitamins. Click on second link to the left.

Vitamin D Council- Gives current research on Vitamin D