CONDITION ASSOCIATED WITH VITAMIN-D DEFICIENCY

- Osteomalacia (Bone thinning)
- Osteoporosis (Bone mineral Density)
- Rickkets
- Fibromyalgia
- Hypertension
- Type-1 diabetes.
- Prostate Cancer
- Breast Cancer
- Colon Cancer
- Heart Disease
- Multiple Sclerosis

POPULATION AT RISK FOR VITAMIN-D DEFICIENCY

- Individual with low dietary vitamin D levels.
- Individuals with malabsorption syndrome patient with pancreatic enzyme deficiency crohn's disease, Celiac disease.
- Individual with severe liver disease.
- Individual with kidney disease, nephrotic syndrome.
- Individual taking phenobarbital, refampcin.
- Individual with decreases sun exposure.
- Women in menopause.

GROUPS AT HIGHER RISK FOR VITAMIN-D DEFICIENCY

There are several groups at higher risk of vitamin D deficiency including:

BREAST-FED INFANTS
Sufficiency is dependent on the mother's vitamin Dsufficiency level, and mother's milk typically contains about 25 IU/L of vitamin D. Most breast-fed infants are on 400 IU of vitamin D daily supplementation.

OLDER ADULTS
As people age, the skin is not able to synthesize vitamin D as effectively, and reduced kidney function impacts the ability to convert Vitamin D.

DARK SKINNED PEOPLE
Melanin in darker skin reduces the ability to produce vitamin D from sunlight exposure.

LIMITED SUN EXPOSURE
Eliminates one of the two possible sources or vitamin D.

OBESITY
Vitamin D is fat soluble, which does not allow it to circulate as freely.

OTHER
Gastric bypass patients have less small intestine available to absorb Vitamin D.

Importance of Measuring Total Vitamin-D Risk of Vitamin-D Toxicity

When serum 25-hydroxy-Vitamin D level are consistently >150ng/mL (375 nmol/L), it is potentially toxic. This typically occurs due to Vitamin D over supplementation and is observed in patients taking more than the prescribed 40,000 IU per day. Toxicity due to sunlight overexposure and/or diet is unlikely. When Vitamin D levels are this high, calcium concentrations rises as well, which can result in nausea, weight loss, and constipation. As a result of increased levels of Vitamin D and calcium, the patient can develop kidney stones.

VITAMIN-E

Vitamin E is fat soluble vitamin that acts as a antioxidant. Vitamin E protects tissue from damage.

Vitamin E is also important in the formation of red blood cells and helps body to use Vitamin K. Sources of Vitamin E are wheat germ, corn, nuts, seeds, olives, spinach and green, leafy vegetables.

VITAMIN-K

Vitamin K is fat solubles vitamin that plays important role in blood clotting. Sources cabbage, cauliflower, spinach and leafy vegetable, cereals, soyabeans.

IMPORTANCE OF VITAMINS

(A,B,C,D,E)

ENDOCRINE®
LABORATORY & RESEARCH INSTITUTE
(A Division of Endogenetic Life Sciences Pvt. Ltd.)
Central lab in india | ICMR Approved | ISO Certified | NABL Accrediated

Contact us

24/7 365DAYS LAB SERVICE

"Mehta 531", 1st Floor,
Nr. V.S. Hospital, Ellisbridge,
Ahmedabad-380006. (Gujarat)

+91 9252 55 9000, +91 9828 033 595

endocrine.mail@gmail.com

www.endocrineallergy.com

Branches

Ahmedabad | Surat | Vadodara | Jodhpur | Bikaner | Ajmer | Mumbai

VITAMIN-A

Vitamin A is needed by retina of the eye. vitamin A is necessary for both sctopic and color vision. Source of vitamin A is carrot, Broccoli, Sweet Potato, Butter, spinach, Cheese, Cantaloupe, egg, apricot, papaya, mango, pea, milk, live (chicken, park, beef, fish)

Vitamin A deficiency is associated with chronic malabsorption of lipids, imapared bile production and cigarette smoke. Adequate vitamin A is important for pregnant and breast-feeding women.

VITAMIN-B

Vitamin B are eight water soluble vitamins that play important role in cell metabolisom vitamin B_1 (thiamine) B2 (riboflavin) B2 (niacin or nicinamide) BS (parthonic acid), B6 (pyridoxine, pyridoxal), B7 (biotin) Be (folic acid), B12 (cynocobalmin). Primary function of vitamin B12 are in the formation of red blood cells maintence nervous system. B12 is necessary for the rapid synthesis of DNA during Cell division. Major causes of vitamin B12 deficiency are stress, (emotional, physical) processed foods, refined sugar, drugs, malnutrition by eating over cooked food. Chronic liver, kidney disease, alcoholism.

Symptoms of B12 deficiency :

Celiacdisease
Paranoria
Confusion
Diarrhea
Dizziness
Fatigue
Chest pain
Thyroid disorder
Shortness of breath
Sore tongue and mouth
Tingling
Burnig feet - hand
Legnumbness
Backache
Enlargement
Menstrual disorder
Weakness
Loss of appetite
Malabsorption
Paleness
Neurological damage
Rapid heart rate
Obtestis
poor resistance to infection

Meat, dairy products, eggs, fermented soya products. People with strict vegetarian diet have more percentage of vitamin B12 deficiency. Periodical Vitamin B12 - folic acid level is important to start vitamin therapy.

VITAMIN-C

Vitamin C is an essential nutrient for humans. Due to vitamin C deficiency synthsised collagens is too unstable to perform its function which leads to the formation of testing spots on the skin, spongy gums, bleeding from all mucous membranes. The spots are most abundant on the thighs and legs Noble prize winner Linus Pauling da Dr G C Willis have asserted that chronic long term low vitamin C is couse of atherosclerosis.

VITAMIN-D

Vitamin D is fat soluble prohormones, two major forms of which one vitamin D2 (ergo caciferol) are vitamin D3 (Cholecalciferot) Vitamin D obtained from sun exposure, food and supplements. It's major role is to increase calcium into blood stream by prompting absorption of calcium and phosphorus from food in the in the instestine, kidney, bone . Vitamin D can also inhibit parathyroid hormones secretion from the parathyroid gland. Also plays an important role in including inhibition of calcitonin release from the thyroid gland.

Susceptibility to several chronic disease as high blood pressure, TB, Cancer, multiple sclerosis, chronic pain, peripheral artery disease, antoimmune disorder.

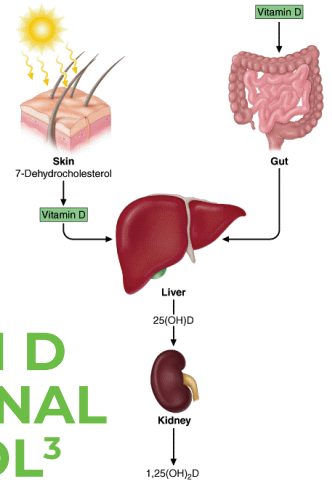
Vitamin D is an important hormone involved in bone health and calcium homeostasis. Recent studies have associated low vitamin D levels with higher risk for certain cancers, autoimmune diseases, and cardiovascular disease. These associations have been the driving force for the rapid growth in test volume over the past decade.

Vitamin D2 is derived from plant sources, whereas vitamin D3 is derived primarily from the conversion of 7 dehydrocholestrol in the skin by UVB radiation from sunlight and secondarily from animal sources. While there are many metabolites of vitamin D, the total 25(OH) vitamin D sum of 25(OH) vitamin Dz and 25(OH) vitamin D3 is the most reliable indicator of vitamin D status. Both 25(OH) vitamin D2 and 25(OH) vitamin D3 are converted in the kidney to the active metabolities 1,25(OH)2 vitamin D2 and 1,25(OH) vitamin D.

The ADVIA Centaur Vitamin D Total assay is intended for the in vitro diagnostic use in the quantitative determination of total 25(OH) vitamin D in human serum and plasma (EDTA, lithium-heparin, sodium-heparin) on the ADVIA Centaur and ADVIA Centaur xp systems. The ADVIA Centaur Vitamin D Total assay is intended as an aid in the determination of vitamin D sufficiency. The assay provides a total vitamin D value; it recovers 106.2% of 25(OH) vitamin D2 and 97.4% of 25(OH)vitamin D3 It was also designed to address high-volume testing, with a time-to-first result of 18 minutes and a throughput of 240 tests/ hour. The assay has minimal cross-reactivity for key interferents: for vitamin D2, 0.1%; for vitamin D3, 0.4%; and for 3 epi-25(OH) vitamin D3, 1.1%. The functional sensitivity of the assay was 8.3 nmol/L (conversion formula: 1nmol/L-0.4 ng/mL). The required sample volume for a single determination is 20 mL.

Whether it is synthesized through unprotected skin or ingested then absorted by the intestines, vitamin D is bound to the binding protien (both albumin and vitamin D binding protien) and carried to the liver via the bloodstream. From there it begins two hydroxylation processes. Beginning in the liver it is transformed into 25(OH) vitaminD (calcidiol), which is the primary circulating form of vitamin D and the most commonly measured form in serum. Then in the kidneys it is transformed into 1,25 dihydroxy-vitamin D (calcitriol), which is the biologically active form of vitamin D.

Natural sources of vitamin D are fish, tuna, whole egg, beef liver, mushrooms.



VITAMIN D HORMONAL CONTROL[3]