

#### ***4. How To Increase Vitamin D intake naturally?***

Among all the vitamins, vitamin D- the bone vitamin, is an exception that the body can make from natural Sunlight. In addition to bone health, Vitamin D also boosts immunity and protects against infections. The viral infections of the respiratory system are more common in the winter months than the summer months because the Sunlight is sparse and weak.

To improve Vitamin D levels naturally, one needs to be familiar with:

- a). Natural sources of Vitamin D
- b). Beneficial effects of vitamin D and sunlight
- c). Recommended blood levels of Vitamin D
- d) Taking Sunlight safely to maximize the production of Vitamin D

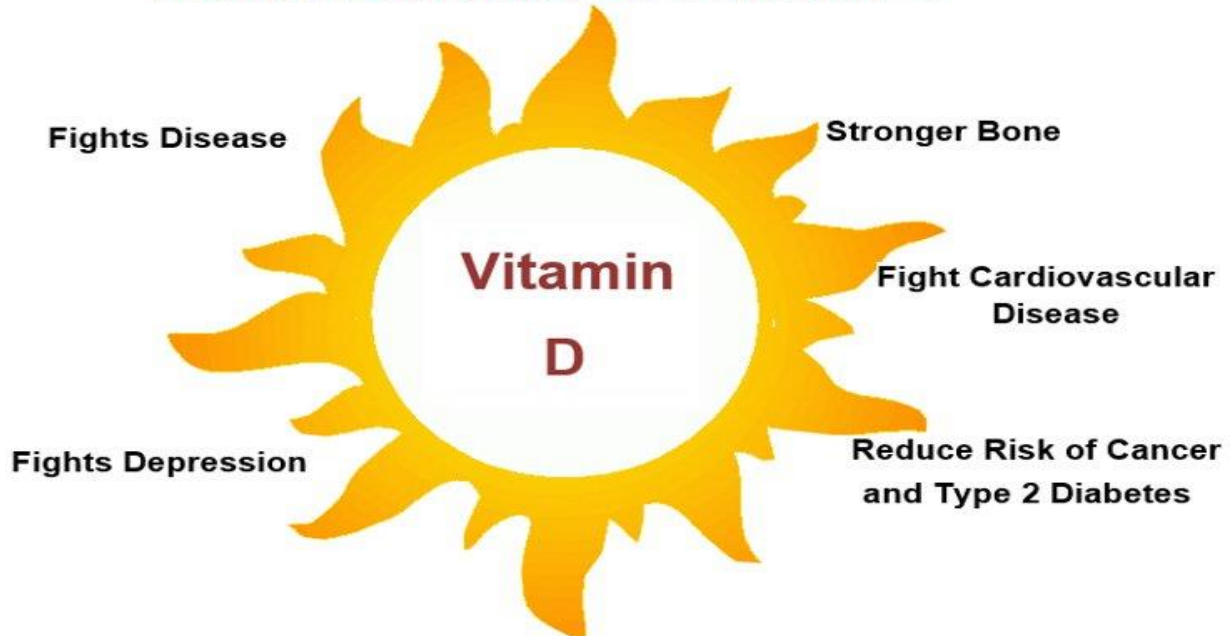
***a). Natural Sources of Vitamin D*** --There are two natural sources of vitamin D, diet and Sunlight.

- **Dietary Sources-** Most plant and animal foods such as milk, vegetables, eggs, and meat are poor sources of vitamin D. The only food product rich in Vitamin D is Cod liver oil.
- **Sunlight exposure-** The ideal and most abundant source of vitamin D is the UV-B rays of the morning and evening sun. Sunlight exposure can never overdose a person with vitamin D; in contrast, medical Vitamin D supplements can overdose and cause side effects. Therefore vitamin D supplements, especially in high doses, should be avoided or taken with great caution under close medical supervision. Proper exposure to Sunlight can provide an individual up to 80% of the body's Vitamin D requirements. Sunlight is abundant in India, but the city population in India and worldwide suffers from vitamin D deficiency because of a preference for an indoor lifestyle. Geographic areas of the world where there is no sunlight for many months of the year suffer from low vitamin D levels.

***b). Beneficial effects of Vitamin D and Sunlight-*** Natural Vitamin D in conjunction with Sunlight has so many benefits that it will be fair to say:

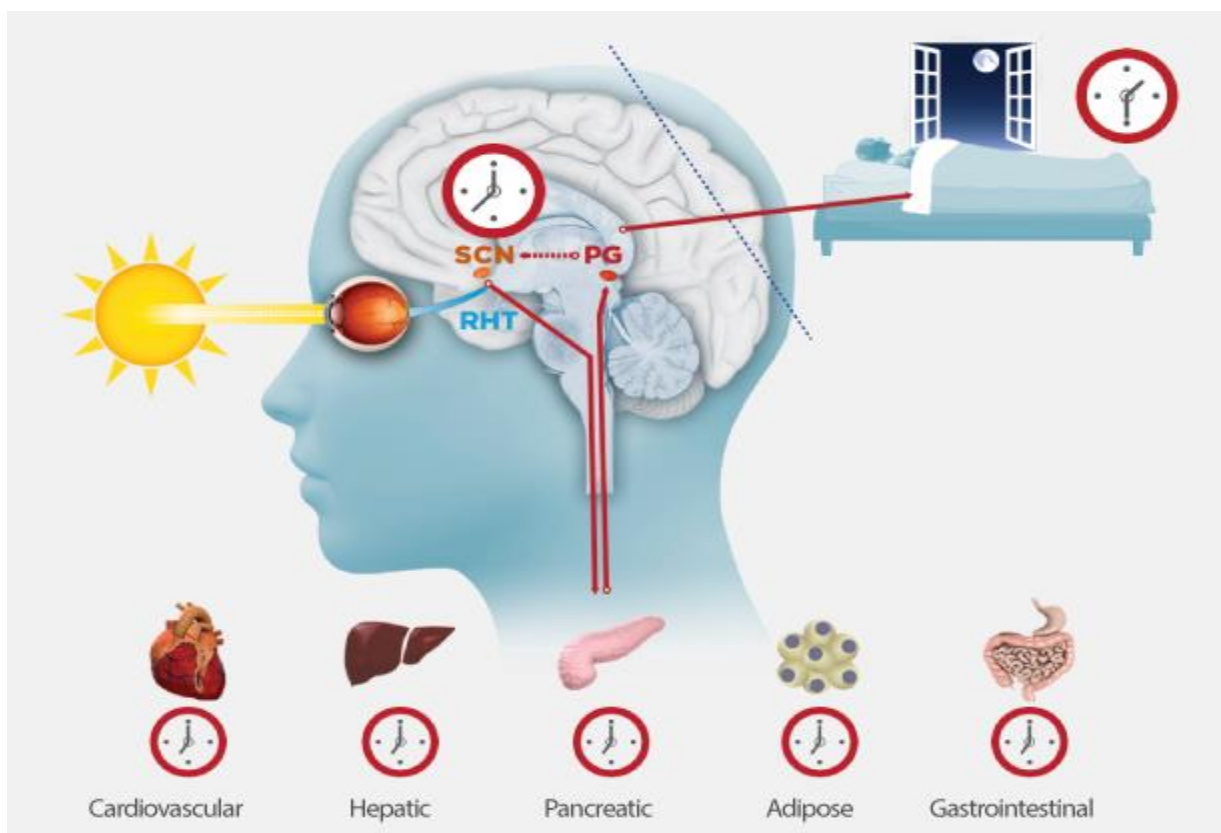
***"There are all kinds of light for sight, but for health, there is only one light, and that is Sunlight. "***

## **Health Benefits of Vitamin D**



- **Bone health**—Vitamin D plays a vital role in maintaining blood levels of calcium and phosphorus for bone mineralization. Vitamin D produces this effect by promoting the absorption of these elements from the digestive tract.
- **Hormonal balance**—The eyes perform the unique function of connecting the brain to Sunlight. Vitamin D receptors have a universal presence in the body, including the brain. The nerves from the eyes carrying the signals stimulate the brain's hypothalamus area, the master controller of all many hormones such as Growth hormone, Thyroid-stimulating hormone, Cortisol stimulating hormone, etc. The hormones are vital chemical messengers in the body.
- **Sleep and Mood**—Deep rejuvenating sleep hormone Melatonin and mood-elevating hormone Serotonin are synthesized in the brain in the morning on exposure to Sunlight or the bright morning light. Both Melatonin and Serotonin are interrelated to each other, so insomnia leads to depression and depression to insomnia. The people in the geographic areas of the world where there is no sunlight many days at a stretch have a higher incidence of depression and suicides.

- **Immunity**- Sunlight exposure and Vitamin D increases the number of immune cells which defend the body against bacterial and viral infections. Respiratory diseases such as the Common cold, Influenza, and Pneumonia are more common during the winter months. Sunlight and optimal Vitamin D levels boost immunity and are protective against infections and cancers. The incidence of autoimmune diseases such as Rheumatoid arthritis, Type1 Diabetes, Hashimoto Thyroiditis, and Multiple sclerosis (weakness and paralysis of muscles) is increasing worldwide. That could be related to a preference for indoor style with reduced exposure to Sunlight leading to deficiency of Vitamin D..
- **Skin health** –Vitamin D deficiency and lack of healthy exposure to Sunlight can lead to skin conditions such as Psoriasis and Eczema. Human skin is the site of vitamin D synthesis, and it influences many functions such as skin cell growth, turnover of dead cells, and protection against infections. Several clinical studies have shown beneficial effects of vitamin D in Psoriasis and Eczema.
- **Brain function and memory**—Exposure to sunlight increases cell growth in the brain called the Hippocampus, which is the seat for forming new memories. Diminution in the Hippocampus's size occurs with aging and correlates with reduced memory and cognitive function (reasoning and use of gathered information).



c). ***Recommended Blood Levels of Vitamin D***- The International Osteoporosis Foundation estimates that 80% of the Indian city population suffer from vitamin D deficiency. That is unfortunate, considering India is near the equator and has abundant Sunlight for making natural Vitamin D.

- Vitamin D levels of 30 ng/ml or higher are optimal for bone health.
- Levels below 12 ng/ml indicate severe vitamin D deficiency.
- The levels above 50ng/ml are considered high and an indication to stop vitamin D supplementation
- The levels above 100 ng/ml are considered high. These high levels can occur when doctors prescribe very high doses of vitamin D weekly or monthly (Sunrise Vitamin D 60,000 units).

Testing for vitamin D levels has become widely popular worldwide in the past 5 -10 years. That has led to routine supplementation with high doses of vitamin D, which can be harmful. The current medical research does not favor regular testing and supplementation of Vitamin D in doses larger than 1000 units a day. Supplementation with high doses of vitamin D also is unnecessary and harmful. Vitamin D can be safely obtained from natural sunlight exposure at no expense without any overdose risks. Vitamin D testing and replacement are required when the patient has symptoms and signs of vitamin D or calcium deficiency (see below).

### ***Taking Sunlight Safely to Maximize Production of Vitamin D***

Medical science has exaggerated the harmful effects of Sunlight on the skin, specifically skin cancer (that risk is only in the white population) and early cataracts. Proper protection of the skin and eyes eliminates any chance of sunlight damage. Healthy tips for sunbathing to get the maximum benefit of UV-B rays of the sun for vitamin D synthesis are:

- Indian continent located near the equator allows for the maximum benefit of the Sunlight. Unfortunately, environmental pollution in the big

- cities blocks UV-B rays of the Sunlight necessary for Vitamin D synthesis in the skin. The stay healthy, the population must campaign for clean air.
- Winter Sun is less effective in generating UV-B rays for vitamin D synthesis in the skin, so sun exposure needs to be later in the morning and longer.
  - The ideal time to sunbathe is one hour after the sunrise and one hour before the sunset. Morning time one hour after sunrise is preferable as there is less environmental pollution in big cities in the mornings than in the evenings. Morning Sun also provides the additional benefit of promoting hormone secretions in the brain, as outlined above.
  - An easy way to check if Sunlight is safe for sunbathing is to check your own shadow. If the shadow is longer than your height, then it is safe to sunbathe. If the shadow is the same size or shorter than your height, the sun is too strong to sunbathe.
  - In older age individuals, vitamin D production in the skin is lower. So older individuals must sunbathe for a more extended period.
  - Avoid heavy clothing and sunscreen lotions during sunbathing as both block the sun's UV-B rays. Sunbathing is done in the morning hours when the sun is not intense, so there is no sunburn or suntan risk.
  - Darker the skin, the longer the time required to get the appropriate benefit of the Sunlight. The safe duration of sunbathing based on the color of the skin is as follows:

**Individuals with fair and light-colored skin –15 to 30 minutes**

**Individuals with brown skin—30 to 60 minutes**

**Individuals with very dark skin—1 to 2 hours**

**Elderly individuals—1-2 hours**

- For maximum benefit, up to 40% of the body requires exposure to Sunlight, including hands, arms, feet, and legs. The best UV-B absorption of rays occurs from the lighter area of arms and hands.
- Multiple 2-3 short 10-15 minute exposures are more useful for Vitamin D synthesis than one long 60-minute exposure.
- The heating and redness of the skin suggest that sun rays are too intense for sunbathing, and further exposure to Sunlight must stop.

- Sunbathing, as described above, done 3-4 times per week, will do the needful in light-colored individuals. Darker skin color individuals require longer exposure time, so daily sunbathing may be more appropriate.