"VITAMIN-E" AND HEALTH : A REVIEW

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Vitamin E is a fat soluable vitamin. It is essential for normal reproduction in several species of animals and also in man. Evans and Bishop found that for normal reproduction in rats, a fat soluble factor present in crude vegetable oils was essential. This was termed vitamin E. In 1936 Evans and co-worlars isolated two different compounds alfa and beta tocopherals possessing vitamin E activity. The word "tocos" meaning child birth or "off spring", the Greek noun "phero" to bring forth and "ol" for alcohol. There are eight naturally occuring tocopherol derivatives. Six are toco derivatives and two are toco trienols. Vitamin E is also important in the formation of red blood cells and helps the body to use vitamin K.

Absorption & Storage

Tocopherol, like other fat soluable vitamin is absorbed to a greater extent in oil solutions. Bile is necessary for its absorption. The human serum contains about 0.9 to 1.2 mg per 100 ml. Liver stores one half to one fourth as much tocopherol as the skeletal mascles body fat and visceral organs. It is involve in various bio-chemical functions in the body.(Swaminathan).

It is present in high concentration in the adrenals, the pitutary, the uterus and the testes (Dr. A.C. Deb).

Approximately 50 to 85 percent of vitamin E in the diet is absorbed from the gastrointestinal tract by a mechanism similar to that of other fat soluable vitamins. It enters the blood stream via the lymph. The vitamin is stored in all tissues and the tissuee stores can. provide protection against the deficiency of vitamin for long periods. About one-third of the vitamin E is excreted in the bile and the balance is excreted in the urine (htp//www.stop.constipation.com)

Vitamin E and Disease Condition :

The most reasonable single explanation of vitamin E function is that the vitamin protects the integrity of cellular membrane against free radical attack. Alpha-tocopherol is probably located within the membrune as a complex with the polyunsaturated fatty acids of phospholipids. Vitamin E could also protect cells against damage by free radicals from exogeneous sources. D - alpha tocopherol and d gamma tocopherol are the most common of eight naturally occuring vitamin homologues in the human diets. These two forms of vitamin E have markedly different antioxidant abilities in chemical and biological systems. The most biologically active of these compounds are RRR - alpha - tocopherol (Asim-1994). An important new area of vitamin E research concerns the assessment of the need for an antioxidant defence system to protect the body from free radical induced damage.

1. Sterity :- Vitamin E has been used successfully in the treatment of sterility. This vitamin has proved helpful in the prevention of sterility in male animals in laboratory tests. Sterile female animals have been able to conceive after the administration of large doses of vitamin E.

2. Dysmenorrhoea :- Vitamin E has proved to be beneficial in the treatmnet of dysmenorrhoea or painful menses. Administration of large dose of Vitamin E daily during the menstrual period is found to be very effective.

3. Menopause :- Menopause or the cessation of the menstrual cycle due to aging is critical period in women's life. She often undergoes severe tension and several psychological problems. Vitamin E therapy will give her great relief from hot flushes, mental tension, sleepless ness and other symptoms.

4. Old age :- Vitamin E contributes towards a healthy old age. During this period, one usually feels weak and tired due to bio-chemical changes in the tissues. Regular intake of Vitamin E makes one feel strong and fresh.

5. Cancer :- Vitamin E protects cancer like breast cancer in women and prostate in man. It prevents formation of cancer causing substances and can also change newly formed cancer cells back to normal cells. Vitamin E detoxifies oxidizing radicals that arise as unwanted by products during the normal metabolism. Vitamin E blocks the process of conversation of nitrites to nitrosumines. Nitrates are common preservatives used in bacon, sausages and other meats and they are carcinogenic to the body. (Vinayak Pate-1996)

6. Toxicity :- In many studies it was found that Vitamin E has a protective role against liver toxicity caused by carbon tetrachloride, nitrosamines, nitrites etc. Vitamin E is capable of inhibiting peroxidation and nitrosation. Vitamin E reduced the nitrite concentration in hydrophilic reaction medium nad inhibition of NNC (cooney -1986, Mergen-1976, Mirvish-1980). Vitamin E had a protective effect on the hepatic cellular structure in CC14 hepatotoxity (Egilmez -1994). Vitamin E might have some sparing effect on AFB_1 induced liver lessions. (Roger et. a1 1994). In one animal experiment male albino rats injected AFB_1 after feeding different levels (low, normal excess) of dietary tocopherol, and different body organs like liver, kidney, lung and heart were analysed for the effect of aflatoxin toxicity. The

result found that high does of dietary tocopherol leads to protect the body organs from aflatoxin toxicity at significant level. (Prafulla - 1996)

7 Heart disease :- Vitamin E in your diet could slow down the oxidation of bad cholesterol (LDL) which promotes blockages in the heart. Thus it may help reduce the risk of heart disease. It also build up your immune system.

8 Eye Problems :- Vitamin E regulates retinol or Vitamin A levels in your body, which is essential for proper vision. It also helps in preventing age-related retinal degeneration.

9 Beauty :- Vitamin E is also great anti ageing source. It has also got sun-protective properties and prevents acne and scars. In recent times, Vitamin E has also been used in under eye gels. This is because the skin around the eye is very fragile and prove to ageing life style and enviornmental factors.

Sources : The most potent natural sources of tocopherol is the vegetable oils. Wheat germ oil has the highest concentration, while corn oil, cotton seed oil, coconut oil and safflower oil contain considerable amounts. Lettuce and alfa alfa are good sources of the vitamin (Lange-1950,Horwitt-1960). Other foods like Nuts, seeds,olives,spinach and other green leafy vegetables, asparagus has also considerable amounts.

Daily Requirement : Vitamin E requirement is related to polyunsaturated fatty acids intake.The adult humanrequirement may vary from 10-30mg per day(RDA-1964) and an intake of 0.5mg per day was suggested as a minimum intake for an infants (Nitowsky-1962).

Overdose : Few adverse effects of vitamin E have been reported even up to 80 times the recommended intake. (Dr.A.C. Deb. 2002).

Conclusion : Vitamin E is a fat soluble, antioxident vitamin. It involves in various biochemical functions as well as it protects the body from various diseases.

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