

VITAMIN E AND MALE FERTILITY

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Infertility is an important medical and social problem. Approximately 15%-20% of couples of reproductive age are infertile.

For the clinician it is important to know the clinical conditions in which oxidative stress may play a role in the etiology of infertility. Excess reactive oxygen species (ROS) in the sperm or seminal plasma is known to result in oxidative damages of sperm DNA and impair sperm functions and has been linked to male infertility. Clinical conditions were found to be associated with increased oxidative stress: infections, inflammations involving the male reproductive, spinal cord injury, varicocele and smoking. Morphologically abnormal spermatozoa and leukocytes are the major sources of ROS in the male reproductive tract.

Vitamin E (VE) has been known as an essential nutrient for reproduction since 1922 when Evans and Bishop observed fetal resorption in rats fed with rancid fat.

VE are essential antioxidants that protect the body's cells from free radical damage. In vitro studies show that VE is a major chain-breaking antioxidant in the sperm cell membranes and it appears to have a dose dependent protective effect. VE is a synergist of androgens action. A few foods that can contain a high amount of VE such as: cereals, seeds and nuts, green vegetables, tomatoes, red peppers, oils, potatoes, fruits such as mangoes or papaya.

A low intake of VE was associated with poor sperm concentration and motility. The association VE intake and progressive motility was reported in Eskenazi study and Suleiman et al. study determined that VE improved sperm motility. Treatment with VE (300 mg per day) significantly decreased the malondialdehyde (a marker for lipid peroxidation) concentration in spermatozoa.

VE supplements the first line of empirical therapy for male idiopathic infertility. The therapeutic dose makes 50-400 mg per day. Usually VE supplements with another antioxidants: Vitamins A and C, L-Carnitine, zinc, selenium. Our researches have shown that the complex supplement VE (200 mg per day) with selenium (100 µg per day) in a current of two months leads to normalization of spermograms parameters in men with idiopathic asthenozoospermias (increase percentage of motility forms spermatozooids).

Thus, VE is one of the main antioxidant of male reproductive system, essential for fertility.