

Zinc

Supplementation in men with low zinc status is often successful for male infertility; Deficiency lowers testosterone & reduces sperm count.^{33,34,35}

Glutathione

Cofactor to the enzyme (glutathione peroxidase) that ensures structural integrity of sperm; Deficiency compromises sperm motility.^{1,2,3}

Carnitine

Transports fatty acids, the preferred energy source of sperm, into cells; Significantly improves sperm motility in clinical trials.^{4,5}

Vitamin A

Regulates genes that control sperm production (spermatogenesis); Deficiency may lower sperm count.^{6,7,8}

Selenium

Required for sperm maturation; Protects lipid shell encasing each sperm (prevents lipid peroxidation), which is especially important since sperm have a very delicate fatty acid composition.^{30,31,32}

Vitamin D

Increases sperm motility; Induces acrosome reaction, a process where a sperm releases enzymes to allow fusion with an egg; Men with low vitamin D may have slower sperm.^{9,10}

Coenzyme Q10

Acts as a potent antioxidant protecting sperm from damage; Improves semen bioenergetics via its role in mitochondrial function (helps sperm remain viable); A direct correlation exists between CoQ10 and sperm count & motility.^{27,28,29}

MALE FERTILITY

Vitamin C

Low levels increase damage to sperm's genetic material; Supplementation improved sperm count, motility and structure in human trials.^{11,12,13}

Vitamin E

Protects sensitive sperm cell membranes; Enhances sperm's ability to penetrate an egg.^{14,15}

Copper & Manganese

Both are cofactors for superoxide dismutase (a very powerful antioxidant) that protects sperm from oxidative damage.^{25,26}

Antioxidant Status

Sperm are highly susceptible to free radical damage to both their genetic material and cell membrane; Poor antioxidant status is a well documented cause of male infertility.^{22,23,24}

Folate

Deficiency may reduce testosterone; Critical to sperm creation due to its role as a methyl donor in DNA synthesis; The MTHFR (methylenetetrahydrofolate reductase) C677T gene, which increases folate requirements, is a risk factor for male infertility.^{19,20,21}

Vitamin B12

Needed for cellular replication, including spermatogenesis; B12 moves from blood to semen to assist in sperm production; May increase sperm count.^{16,17,18,19}

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