

# MALE FERTILITY

## Zinc

Supplementation in men with low zinc status is often successful for male infertility; Deficiency lowers testosterone & reduces sperm count.<sup>33,34,35</sup>

## Glutathione

Cofactor to the enzyme (glutathione peroxidase) that ensures structural integrity of sperm; Deficiency compromises sperm motility.<sup>1,2,3</sup>

## Carnitine

Transports fatty acids, the preferred energy source of sperm, into cells; Significantly improves sperm motility in clinical trials.<sup>4,5</sup>

## Vitamin A

Regulates genes that control sperm production (spermatogenesis); Deficiency may lower sperm count.<sup>6,7,8</sup>

## 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.<sup>30,31,32</sup>

## 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.<sup>9,10</sup>

## 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.<sup>27,28,29</sup>

## Vitamin C

Low levels increase damage to sperm's genetic material; Supplementation improved sperm count, motility and structure in human trials.<sup>11,12,13</sup>

## Copper & Manganese

Both are cofactors for superoxide dismutase (a very powerful antioxidant) that protects sperm from oxidative damage.<sup>25,26</sup>

## Vitamin E

Protects sensitive sperm cell membranes; Enhances sperm's ability to penetrate an egg.<sup>14,15</sup>

## 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.<sup>22,23,24</sup>

## 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.<sup>19,20,21</sup>

## Vitamin B12

Needed for cellular replication, including spermatogenesis; B12 moves from blood to semen to assist in sperm production; May increase sperm count.<sup>16,17,18,19</sup>

Additional nutrients affect male fertility. This list is non-exhaustive.

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