

# Testosterone

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graph TD; T((Testosterone)) --- Z[Zinc]; T --- M[Magnesium]; T --- C[Carnitine]; T --- F[Folate]; T --- VC[Vitamin C]; T --- VB6[Vitamin B6]; T --- VD[Vitamin D]; T --- VK[Vitamin K]; T --- VE[Vitamin E];
```

## Zinc

Deficiency lowers testosterone levels; Inhibits prolactin secretion (testosterone inhibiting hormone); Supplementation increases testosterone depending on baseline levels.<sup>28,29,30,31</sup>

## Folate

Deficiency reduces circulating testosterone; Evidence suggests testosterone may regulate folate metabolism.<sup>1,2,3</sup>

## Vitamin B6

Regulates sex hormones; Vitamin B6 reduces prolactin which stimulates hypothalamus to increase testosterone; B6 also a cofactor for dopamine synthesis which influences testosterone levels.<sup>4,5,6,7</sup>

## Magnesium

Makes testosterone more biologically active in the body; Raises free and total testosterone levels in men.<sup>25,26,27</sup>

## Vitamin D

Actually a hormone, vitamin D regulates the synthesis of testosterone; Supplementation can significantly increase total, free and bioactive testosterone levels.<sup>8,9,10,11,12</sup>

## Carnitine

Boosts dopamine, which is directly related to testosterone levels; May prevent testosterone decline after intense physical stress.<sup>21,22,23,24</sup>

## Vitamin K

Deficiency reduces testosterone production because the rate-limiting enzyme for testosterone synthesis (Cyp11a) is vitamin K dependent.<sup>13,14,15</sup>

## Vitamin C

Studies suggest it protects prostate from testosterone induced tumors.<sup>18,19,20</sup>

## Vitamin E

Long term administration of some forms of vitamin E may reduce testosterone levels.<sup>16,17</sup>