

Sigma: The Supreme Testosterone Booster (Studies)



A collaboration between famous neuroscientist *Andrew Huberman* and fitness Youtuber *MPMD (MorePlatesMoreDates)* resulted in the development of an optimal testosterone booster, with **promising results of an expected increase in testosterone of 300 to 400ng/dl within 1 to 2 months.** [1]

As the booster is only available within the United States, [we decided to launch a further optimized but similar product within Europe.](#) **And chose to eliminate two unwanted substances of their formulation:**

Tongkat Ali

Tongkat Ali has promising effects in regards to libido, but not as much in favor of increasing testosterone. Although the protective effects of tongkat ali on the testicles and the profertility effects may result in a slight increase in testosterone in infertile men and the adaptogenic effects may cause a preservation of testosterone in stressed men, there is no evidence in otherwise healthy and unanxious men. [2] In addition, **the substance is considered illegal to sell within the European Union, as it did not pass the safety criteria of the Food and Drug Administration.**

Fadogia Agrestis

Supplementation of *Fadogia agrestis* is currently not prudent due to a lack of study replication in rodents and no human evidence, and **due to a possible increase in lipid peroxidation associated with damaged cell membranes that needs to be investigated further to see if this is a concern and (if it is) how much of a concern it is.** [3]

To further optimize the formulation we included 3 additional ingredients:

Tribulus Terrestris

In otherwise healthy males, testosterone is not influenced with supplementation of *tribulus terrestris*. There may be an increase in infertile men, but this is weak. There may be a small effect in postmenopausal women with low libido, however, the difference wasn't statistically significant.

Most studies found an improvement in sexual desire in women reporting a general loss of libido. One study in men found an improvement. The research is still in its early stage and great confidence in these results would be unfounded.

1.5 and 2.25 of tribulus extract or 6 g of tribulus root seems to modestly improve erections in infertile men, men with partial androgen deficiency, and men with erectile dysfunction. The effect is reliable across all studies so far, however, research is still in its early stage and great confidence in these results would be unwarranted. [4]

Shilajit

One human intervention with 200mg *Shilajit* (54.8% Fulvic Acid) daily for 90 days in infertile men was associated with **an increase in testosterone by 23.5%** (4.85ng/mL to 5.99ng/mL) in serum.

200mg *Shilajit* daily for 90 days in infertile men is also associated with **an increase in Follicle-Stimulating Hormone (FSH) by 9.8%**, with no significant influence on Luteinizing Hormone (LH) in serum. [5]

Mucuna Pruriens

Preliminary evidence suggests *Mucuna Pruriens* to be effective, with improvements in sperm motility and concentration being the best-substantiated effects. It is unclear yet how it affects fertile males, but the evidence so far suggests that it can notably improve the sperm quality of infertile males with a normal sperm count.

Testosterone was also increased in the seminal experimental groups (those with low sperm motility or count), and to a more significant degree. Testosterone levels in the control (no sperm problems, still infertile) group went from 4.49 ± 0.53 to 5.72 ± 0.36 ng/mL. The hypothesized mechanism of action was through levodopa content, in which the increase in serum dopamine antagonizes (works against) prolactin's suppressive effect on libido and testosterone. [6]

A further scientific recap of the ingredients within the original formulation:

Ashwagandha

When tested in men suffering some degree of infertility or low fertility, improvements in sperm quality came alongside subtle boosts in testosterone around the range of 14-40% or 10-22% higher than before the study. At least one study has found a mild increase in testosterone in otherwise healthy men subject to weight training by 15%. [7]

Boron

One study in otherwise healthy men noted that acute supplementation of *Boron*, over the period of 6 hours, failed to increase total testosterone levels yet trended to increase free testosterone (+14.7%) and DHT (+9.9%) although neither was statistically significant, yet significantly reduced Sex-Hormone Binding Globulin (SHBG) by 9% at the 6 hour mark yet required 2 hours to reach significance. After 7 days of supplementation, the increase in free testosterone (28.3%) reached significance yet the SHBG decrease was not. Another study using 4 weeks of 10mg Boron supplementation noted a trend towards increased testosterone (11.4%) but failed to reach statistical significance.

One study has been conducted on athletic males participating in bodybuilding, using a lower dose. 2.5mg of Boron daily for 9 weeks elevated plasma boron levels (20.1ppb to 32.6ppb; a 62% increase) yet failed to find significant differences between groups for any hormones measured. [8]

Magnesium

Magnesium is an essential dietary mineral and the second most prevalent intracellular cation in the body. It also serves as a cofactor for over 600 enzymes. Most notably, magnesium is required for energy production, carbohydrate metabolism, and DNA and protein synthesis.

Inadequate magnesium intake is common in developed countries, as Western diets tend to contain a very low content of the aforementioned foods and are rich in refined grains and processed foods, which are poor sources of magnesium. [A lack of magnesium results in an insufficient recovery after weight training sessions, which inhibits any further muscle or strength development. \[9\]](#)

Vitamine D3

Supplemental *vitamin D* is associated with a range of benefits, including improved immune health, bone health, and well-being. Supplementation may also reduce the risk of cancer mortality, diabetes, and multiple sclerosis.

[Vitamin D helps regulate testosterone levels.](#) Ideally, you would produce all the vitamin D you need through sunlight exposure, but if you live far from the equator, have dark skin, or simply spend most of your time inside, you may need to complement your own production with the help of foods or supplementation. [\[10\]](#)

Zinc

Zinc is an essential mineral and has a multitude of biological roles due to being a functional component of over 300 hundred enzymes. Many enzymes rely on zinc to be able to catalyze chemical reactions, and zinc participates in the structure of important proteins and is involved in the regulation of gene expression. Zinc deficiency can hinder testosterone production. Like magnesium, zinc is lost through sweat, so athletes are more likely to be deficient. [11]

Hydroxypropyl- β -Cyclodextrin

The inclusion of *Hydroxypropyl- β -Cyclodextrin* is to improve the bioavailability of supplementation. Meaning, any form of substance intake will yield a higher relative absorption rate, and thereby enhance its associated effects. The proposed mechanism for the increase in the permeability of drugs brought about by HP β CD is linked, as with native CDs, to the increased aqueous solubility of the drug by inclusion complexation, with consequent preferential transappendageal diffusion (Preiss et al., 1995).

SUPPLEMENT FACTS

Serving Size: 2 Capsules
Servings Per Container: 120

Serving Size: 4 Capsules
Servings Per Container: 60



	Amount Per Serving	%DV		Amount Per Serving	%DV
Vitamin D3 (as Cholecalciferol) (1500 IU)	38 mcg	188%	Vitamin D3 (as Cholecalciferol) (1500 IU)	75 mcg	375%
Magnesium (as Magnesium Glycinate)	100 mg	24%	Magnesium (as Magnesium Glycinate)	200 mg	47%
Zinc (as Zinc Glycinate)	15 mg	136%	Zinc (as Zinc Glycinate)	30 mg	272%
Tribulus Terrestris (Indonesian Origin) (95% Saponins)	200 mg	†	Tribulus Terrestris (Indonesian Origin) (95% Saponins)	400 mg	†
Shilajit Extract (Asphaltum) (50% Fulvic Acid Complex)	300 mg	†	Shilajit Extract (Asphaltum) (50% Fulvic Acid Complex)	600 mg	†
Mucuna Pruriens Extract (Standardized to 98% L-Dopa)	200 mg	†	Mucuna Pruriens Extract (Standardized to 98% L-Dopa)	400 mg	†
Ashwaghandha Extract (Withania Somnifera) (root) (Standardized to 5% Total Withanolides)	150 mg	†	Ashwaghandha Extract (Withania Somnifera) (root) (Standardized to 5% Total Withanolides)	300 mg	†
Boron (as Boron Citrate)	3 mg	†	Boron (as Boron Citrate)	6 mg	†

† Daily Value not established

★ Formulated by **APEX**