Boron

Boron is a dietary mineral which is claimed to increase testosterone when supplemented at doses higher than from food.

This page features **40 unique references** to scientific papers.

History (/history/boron/)

Discussion (/discussion/boron/)

How to Take

Recommended dosage, active amounts, other details

The lowest active dose of Boron supplementation appears to be 3mg, which is effective in supporting hormonal parameters in postmenopausal women. Studies on osteoarthritis have used 6mg of Boron while studies in youth investigating hormonal changes have used 10mg.

The optimal dose is currently not known, but the above doses appear to be active for their aforementioned goals.

Human Effect Matrix

The **Human Effect Matrix** looks at human studies (it excludes animal and *in vitro* studies) to tell you what effects boron has on your body, and how strong these effects are.

GRADE	LEVEL OF EVIDENCE
	Robust research conducted with repeated double-blind clinical trials
	Multiple studies where at least two are double-blind and placebo controlled
	Single double-blind study or multiple cohort studies
	Uncontrolled or observational studies only

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
?		?	?	
	Estrogen (/topics/estrogen/)	Minor	- See 2 studies (/rubric/effects/view/258/Estrogen/all/)	Appears to influence estrogen, seems unreliable in its mechanisms and is likely context dependent. Both increases and decreases have been noted
	Free Testosterone (/topics/free-testosterone/)	Minor	- See study (/rubric/effects/view/258/Free+Testosterone/all/)	Appears to be quite effective, but requires some more robust trials
	Inflammation (/topics/inflammation/)	Minor	- See study (/rubric/effects/view/258/Inflammation/all/)	Some influence on typically inflammatory cytokines, practical relevance of these changes unknown
	Kidney Stones (/topics/kidney-stones/)	Minor	- See study (/rubric/effects/view/258/Kidney+Stones/all/)	Appears effective, but no comparison to a reference drug nor control group thus far
	Testosterone (/topics/testosterone/)	Minor	**MODERATE** See 2 studies (/rubric/effects/view/258/Testosterone/all/)	There appears to be an interaction with Boron and testosterone in both genders, but it is seemingly unreliable
	C-Reactive Protein (/topics/c-reactive-protein/)	-	- See study (/rubric/effects/view/258/C-Reactive+Protein/all/)	No significant effect on this inflammatory biomarker

	Cortisol (/topics/cortisol/)	-	- See study (/rubric/effects/view/258/Cortisol/all/)	No significant effect on cortisol has been noted with supplemental boron
	DHT (/topics/dht/)	-	- See study (/rubric/effects/view/258/DHT/all/)	No significant influences on serum DHT noted

Scientific Research

Table of Contents:

1 Sources and Structure

Boron is a dietary mineral that, although it has a daily intake, has not been accepted as an Essential Vitamin or Mineral (/supplements/essential-vitamin-or-mineral/). It currently does not have a known minimum requirement.

1.1. Sources

The most prominent sources of Boron in the diet are fruits, vegetables, tubers, and drinking water.[1] It is also used in some industrial products, and the possibility of serum levels of boron being increased secondary to these is plausible, especially if coming into contact with wounds.[2] Good sources of Boron are:[1]

- Avocado (about 1.11mg/0.102mmol per avocado)[3]
- Flaked onions, dehydrated (6.573+/-3.228mcg/g)
- Ground Cinnamon (10.37+/-0.661mcg/g)
- Parsely (26.878+/-1.778mcg/g)
- Apple Juice (1.881+/-0.082mcg/g) and Sauce (2.828+/-0.12mcg/g)
- Cherries (1.482+/-0.243mcg/g)
- Grape Juice (2.020+/-0.265mcg/g)
- Peaches (1.872+/-0.112mcg/g)
- Beef boullion (1.264+/-0.609mcg/g)
- Ice Cream (0.192+/-0.03mcg/g)
- Flour (0.275+/-0.139)
- Fortified Cornflakes (0.314+/-0.079mcg/g)
- Enriched White Bread (0.202+/-0.07mcg/g)
- Broccoli stalk (0.889+/-0.039mcg/g)

Products with a negligible (less than 0.015mcg/g) are:[1]

- Beef and Chicken
- Cheese and Dairy products excluding Ice Cream
- Cornstarch
- Rice
- Spaghetti
- Gelatin, Puddings, or Sugar

1.2. Biological Significance

Boron is a mineral which also participates as a Lewis acid, binding to hydroxyl groups (an anti-oxidant action, but likely to be insignificant due to low quantities of Boron *de novo*); when Boron binds to three hydroxyl groups, the structure is referred to as Boric Acid or Boracic Acid.[4]

2 Pharmacology

2.1. Absorption

Boron appears to be absorbed from the intestines and is reported to be nearly complete[5] as 84% of a radiolabelled dose has been found in the urine following an oral dose of 10mg in otherwise healthy persons.[6]

It is thought that passive transportation may play a role as boron is the smallest known metalloid[7] (this has been noted in plants[8]) although plants have also shown transporters which accept boron selectively.[9][10] In regards to mammals a sodium coupled borate transporter (NaBCl or SLC4A11) has been identified in rat,[11] swine[12] as well as human intestinal tissue[13] and is responsive to dietary boron.[12]

> Boron appears to be well absorbed from the intestines, and this may be due to being absorbed (as borate) via the transporter known as SLC4A11

2.2. Serum

Oral administration of 11.4mg Boron (via 102.6mg sodium tetra borate decahydrate) alongside a meal can elevate plasma boron concentrations within one hour peaking at 4 hours post-consumption;[14] fluctuating from 0.008-0.016mg/L in placebo yet spiking to 0.058mg/L at 1 hour and peaking at 0.136mg/L at 4 hours.[14] This study failed to note differences in urinary boron concentrations for 2 days of collection. A study measuring effects of Boron in serum noted that standard boron supplementation at 10mg was able to influence select biomarkers according to the same timeline (with peak efficacy at 4 hours and some at 1 hour).[15]

2.3. Elimination

It has been noted that at dietary levels of intake boron is minimally lost in the feces (2%) with other routes of loss being urinary and, to a degree, via sweat and breath.[5][16]

One study conducted in postmenopausal women given 3mg supplemental Boron found that the majority of supplemental born was excreted (primarily via the urine), which failed to support the notion that Boron builds up in the body.[17] Extremely rapid boron excretion via the urine has been noted elsewhere in humans.[18]

3 Neurology and the Brain

3.1. Deficiency

A Boron deficiency (intake of less than 0.23mg daily) appears to alter brainwave activity; enhancing delta power in the left parietal and temporal lobes and decreasing frontal lobe activity; similar results to intentional Magnesium (/supplements/magnesium/) deficiency.[19] This state of deficiency is associated with cognitive impairment when paired against an adequate intake of 3mg or more[20] which may be associated with Boron being involved in neuronal membrane stabilization.[21][22]

> May play a role in preserving neuronal function, but no intervention evidence exists to support supplementation currently

4 Interactions with Performance

5 Glucose Metabolism

5.1. Interventions

Oral administration of 11.6mg Boron fails to influence plasma insulin or glucose following a test meal despite serum levels of Boron being increased.[14]

6 Bone and Skeletal Mass

6.1. Osteoarthritis

It has been hypothesized that 6mg daily Boron (tetraborate) could alleviate inflammation of the joints,[23] which was followed by a pilot study in 20 patients with confirmed osteoarthritis showed 50% response (half of patients reporting benefit) with 55mg Sodium tetraborate decahydrate (6mg elemental Boron) suggesting some possible benefit to osteoarthritis.[24] This may be related to the observation that the bone and synovial fluid of arthritic persons is less than healthy controls.[23]

6.2. Interventions

In a single-blind study assessing both athletic women and sedentary women given 3mg Boron (mixed chelation of Aspartate, Citrate, and Glycinate) daily for 10 months in conjunction with a Boron sufficient diet, Boron was associated with a slight reduction in circulating phosphorus levels (1.5mmol/L reduced to 1.3mmol/L in athletic; 1.7mmol/L reduced to 1.4mmol/L in sedentary) with no significant influence on calcium or Magnesium (/supplements/magnesium/) serum levels.[25] There appeared to be a reduced urination of phosphorus and a slight increase in urinary calcium in female athletes only.[25]

When Magnesium deficient, supplemental Boron still appears to suppress phosphorus urinary levels,[26] the reduction of urinary calcium has been noted in women with low Magnesium intake another study and this was not noted alongside Magnesium supplementation (non-deficient).[17]

7 Inflammation and Immunology

7.1. Cytokines

6 days of supplementation of 10mg Boron is able to reduce TNF-a levels in serum by 19.1%, high sensitivity C-Reactive Protein by 45%, and IL-6 by 43.9% in otherwise healthy males.[15]

8 Interactions with Hormones

8.1. Testosterone

Mechanistically, concentrations of boron *in vitro* in testicular homogenates are not associated with conversion rates of androstenedione to testosterone.[27]

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.[15] After 7 days of supplementation, the increase in free testosterone (28.3%) reached significance yet the SHBG decrease was not.[15] Another study using 4 weeks of 10mg Boron supplementation noted a trend towards increased testosterone (11.4%) but failed to reach statistical significance.[6]

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 32.6ppm; a 62% increase) yet failed to find significant differences between groups for any hormones measured.[28]

> In healthy male adults, supplemental Boron appears to be have mixed results. It has been implicated in increasing testosterone, but these may be dependent on time or dose as prolonged studies with the same or a lesser dose fail to replicate the increase in free testosterone seen in one study

In postmenopausal women on a Boron deficient diet (0.25mg daily), 3mg in supplementation can preserve a decrease in testosterone induced by the diet.[26] The increase appeared to be of greater magnitude when dietary Magnesium (/supplements/magnesium/) was low, suggesting Boron may act on similar mechanisms.

> Boron deficiency appears to reduce androgen status in women, and sufficiency can restore levels; a similar phenomena as seen with Zinc (/supplements/zinc/)

One toxicological study in rats noted that, as it pertains to testosterone, that over 30 days of observation that there was an increase in testosterone in a dose-dependent manner up to 122% elevations (2000ppm) but that the progression of toxicological effects over 60 days reversed the increase in testosterone in the highest group to a decline while the lowest group (500mg) experiencing a 10.5% increase at day 30 increased this to 158% at day 60.[29] These results suggest that boron accumulation in the testes contributes to an increase in testosterone, and time or dose can be contributing factors and have been replicated with 25mg/kg over 6 weeks (toxicity) while 2-12.5mg/kg were associated with improvements in testosterone.[27]

8.2. Estrogen

In otherwise healthy adult men, 10mg of Boron daily for a week significantly reduces serum estradiol (an estrogen) from 42.33pg/mL to 25.81pg/mL (39%), although no significant effect was seen after a single dose when measured for 6 hours afterwards.[15] Conversely, another study found 4 weeks of 10mg Boron found increases of serum estradiol from 51.9pmol/mL to 73.9pmol/L in 18 apparently healthy men.[6]

> Two studies on males and estrogen, with dichotomous results at the same dose in the same population

In postmenopausal women on a Boron deficienct diet, supplementation of Boron at 3mg/day is able to preserve estrogen levels that drop during boron deficiency.[26]

8.3. Luteinizing Hormone

10mg of Boron daily for a week does not significantly influence LH in adult males[15] and varying doses in rats ranging into toxic doses also fail to influence LH.[29]

8.4. Follicle-Stimulating Hormone

In rats fed 500, 1000, or 2000ppm Boron for 60 days, a time and dose dependent increase in FSH was seen in all groups.[29]

8.5. Cortisol

A week of 10mg Boron supplementation in otherwise healthy males fails to influence cortisol.[15]

9 Interactions with Organ Systems

9.1. Testicles

One rat study noted that higher doses (associated with testicular toxicity) had elevated testicular concentrations of boron, indicative of either selective accumulation of boron in the testicles or perhaps the concentration was skewed due to testicular atrophy; it was not noted with a lower dose of 500ppm.[29]

9.2. Prostate

In assessing a cohort of 35,222 men with 832 confirmed cases of prostate cancer over 3 years of surveillance, it was noted that the highest quartile was not significantly protected against prostate cancer when compared to the lowest quartile; respective RR was 1.17 (CI 0.85-1.61).[30] This is in contrast to a previous study finding a RR of 0.63 indicating close to half the risk with a higher boron diet.[31]

9.3. Bladder and Urinary Tract

A letter to the editor of the *Journal of Alternative and Complementary Medicine* makes note of a small study with 14 participants.[32] 10mg of Boron daily was given to persons with confirmed urolithiasis (kidney stones) and patients tended to report pain reduction after 2-3 days of treatment and multiple patients noted passing of kidney stones within a few weeks of treatmetn; the time to pass kidney stones was highly variable.[32]

10 Nutrient-Nutrient Interactions

10.1. Vitamin D

Boron supplementation interacts with Vitamin D metabolism.[33] This is exemplified by a boron-deficient diet (marginal in Magnesium (/supplements/magnesium/) and copper) reducing Vitamin D levels to 44.9nM 25-hyroxyvitamin D after 63 days but being increased back to 62.4nM after 49 days of repletion with 3mg Boron[34] and an intervention using 6mg fructoborate (fruit storage form of boron) noting a 20% increase in 25-hydroxyvitamin D in Vitamin D deficient individuals, and was said to not be due to seasonal fluctuations.[33]

Currently, these observations do not have proven mechanisms; one author hypothesized that boron may be reacting with a vitamin D metabolite to form a competitive inhibitor of 24-hydroxylase, an enzyme in Vitamin D synthesis, or otherwise directly inhibiting the enzyme.[33] These hypothesis' has not been tested.

> Appears to elevate levels of an intermediate between Vitamin D3 and hormonally active Vitamin D3, via unknown mechanisms

11 Safety and Toxicology

11.1. General

The Tolerable Upper Limit (TUL) of Boron has been set at 20mg daily for persons over the age of 18.[35] This is slightly higher than the No Observable Adverse Upper Limit (NOAEL) of 17.5mg based on rat studies.[36]

It has been noted[37] that there is no clear evidence for testicular harm from excess boron exposure, which is in contrast to many dietary metals. Water levels of 6.5mg/L in a boron mining area are not associated with testicular harm[38] and when serum levels were confirmed at 499.2ppb and concentrated in seminal fluid there was no adverse harm on seminal parameters[39] nor have they been observed in a cohort averaging 14.45mg daily, with a range of intake exceeding 30mg.[36]

These lack of toxic effects on the testicles have been extended to rats receiving 500ppm daily for 60 days, although 1000-2000ppm were associated with accumulation of testicular boron and testicular atrophy.[29] These effects were replicated in rats exposed to 1173mg for 90 days.[40]

> Testicular harm from excess Boron levels appears to be at least three-fold higher than standard supplemental doses, and are likely not a concern with proper supplementation

11.2. Boron Acute Toxicity

It has been reported (no cited case studies) that oral doses of 5-6g Boron (5,000-6,000mg) in infants or 15-20g in adults (15,000-20,000mg) causes acute death in humans.[29]

Boron, being used in pesticides, has some toxicological information in animals who are greatly overexposed to Boron.

Scientific Support & Reference Citations

References

1. Hunt CD, Shuler TR, Mullen LM Concentration of boron and other elements in human foods and personal-care products (http://www.ncbi.nlm.nih.gov/pubmed/2019698) . *J Am Diet Assoc*. (1991)
2. Siegel E, Wason S Boric acid toxicity (http://www.ncbi.nlm.nih.gov/pubmed/2870462) . *Pediatr Clin North Am*. (1986)
3. Concentrations and intakes of H, B, S, K, Na, Cl, and NaCl in foods (http://europepmc.org/abstract/AGR/IND20428273)
4. Loomis WD, Durst RW Chemistry and biology of boron (http://www.ncbi.nlm.nih.gov/pubmed/1605832) . *Biofactors*. (1992)
5. Devirian TA1, Volpe SL The physiological effects of dietary boron (http://www.ncbi.nlm.nih.gov/pubmed/12705642) . *Crit Rev Food Sci Nutr*. (2003)
6. Naghii MR1, Samman S The effect of boron supplementation on its urinary excretion and selected cardiovascular risk factors in healthy male subjects (http://www.ncbi.nlm.nih.gov/pubmed/9197924) . *Biol Trace Elem Res*. (1997)
7. Zangi R1, Filella M Transport routes of metalloids into and out of the cell: a review of the current knowledge (http://www.ncbi.nlm.nih.gov/pubmed/22370390) . *Chem Biol Interact*. (2012)
8. Dordas C1, Brown PH Permeability of boric acid across lipid bilayers and factors affecting it (http://www.ncbi.nlm.nih.gov/pubmed/10811971) . *J Membr Biol*. (2000)
9. NIP6;1 Is a Boric Acid Channel for Preferential Transport of Boron to Growing Shoot Tissues in Arabidopsis (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2590723/)

10. Dordas C1, Chrispeels MJ, Brown PH Permeability and channel-mediated transport of boric acid across membrane vesicles isolated from squash roots (http://www.ncbi.nlm.nih.gov/pubmed/11080310) . *Plant Physiol.* (2000)
11. Park M1, *et al* NaBC1 is a ubiquitous electrogenic Na+ -coupled borate transporter essential for cellular boron homeostasis and cell growth and proliferation (http://www.ncbi.nlm.nih.gov/pubmed/15525507) . *Mol Cell.* (2004)
12. Liao SF1, *et al* Dietary supplementation of boron differentially alters expression of borate transporter (NaBCl) mRNA by jejunum and kidney of growing pigs (http://www.ncbi.nlm.nih.gov/pubmed/21190139) . *Biol Trace Elem Res.* (2011)
13. Damkier HH1, Nielsen S, Praetorius J Molecular expression of SLC4-derived Na+-dependent anion transporters in selected human tissues (http://www.ncbi.nlm.nih.gov/pubmed/17715183) . *Am J Physiol Regul Integr Comp Physiol.* (2007)
14. Wallace JM, *et al* Boron supplementation and activated factor VII in healthy men (http://www.ncbi.nlm.nih.gov/pubmed/12428176) . *Eur J Clin Nutr.* (2002)
15. Naghii MR, *et al* Comparative effects of daily and weekly boron supplementation on plasma steroid hormones and proinflammatory cytokines (http://www.ncbi.nlm.nih.gov/pubmed/21129941) . *J Trace Elem Med Biol.* (2011)
16. Samman S1, *et al* The nutritional and metabolic effects of boron in humans and animals (http://www.ncbi.nlm.nih.gov/pubmed/10050922) . *Biol Trace Elem Res.* (1998)
17. Hunt CD, Herbel JL, Nielsen FH Metabolic responses of postmenopausal women to supplemental dietary boron and aluminum during usual and low magnesium intake: boron, calcium, and magnesium absorption and retention and blood mineral concentrations (http://www.ncbi.nlm.nih.gov/pubmed/9062533) . *Am J Clin Nutr.* (1997)
18. Vanderpool RA, Hoff D, Johnson PE Use of inductively coupled plasma-mass spectrometry in boron-10 stable isotope experiments with plants, rats, and humans (http://www.ncbi.nlm.nih.gov/pubmed/7889873) . *Environ Health Perspect.* (1994)
19. Penland JG Quantitative analysis of EEG effects following experimental marginal magnesium and boron deprivation (http://www.ncbi.nlm.nih.gov/pubmed/8861134) . *Magnes Res.* (1995)
20. Penland JG Dietary boron, brain function, and cognitive performance (http://www.ncbi.nlm.nih.gov/pubmed/7889884) . *Environ Health Perspect.* (1994)
21. The saga of boron in food: from a banished food preservative to a beneficial nutrient for humans (http://naldc.nal.usda.gov/catalog/48081)
22. Naghii MR, Samman S The role of boron in nutrition and metabolism (http://www.ncbi.nlm.nih.gov/pubmed/8140253) . *Prog Food Nutr Sci.* (1993)
23. Newnham RE Essentiality of boron for healthy bones and joints (http://www.ncbi.nlm.nih.gov/pubmed/7889887) . *Environ Health Perspect.* (1994)
24. Boron and Arthritis: The Results of a Double-blind Pilot Study (http://informahealthcare.com/doi/abs/10.3109/13590849009003147)
25. Meacham SL, Taper LJ, Volpe SL Effect of boron supplementation on blood and urinary calcium, magnesium, and phosphorus, and urinary boron in athletic and sedentary women (http://www.ncbi.nlm.nih.gov/pubmed/7840072) . *Am J Clin Nutr.* (1995)
26. Nielsen FH, *et al* Effect of dietary boron on mineral, estrogen, and testosterone metabolism in postmenopausal women (http://www.ncbi.nlm.nih.gov/pubmed/3678698) . *FASEB J.* (1987)
27. The effect of boron supplementation on the distribution of boron in selected tissues and on testosterone synthesis in rats (http://www.sciencedirect.com/science/article/pii/0955286396001027)
28. Ferrando AA, Green NR The effect of boron supplementation on lean body mass, plasma testosterone levels, and strength in male bodybuilders (http://www.ncbi.nlm.nih.gov/pubmed/8508192) . *Int J Sport Nutr.* (1993)
29. Lee IP, Sherins RJ, Dixon RL Evidence for induction of germinal aplasia in male rats by environmental exposure to boron (http://www.ncbi.nlm.nih.gov/pubmed/705788) . *Toxicol Appl Pharmacol.* (1978)
30. Gonzalez A, *et al* Boron intake and prostate cancer risk (http://www.ncbi.nlm.nih.gov/pubmed/17851770) . *Cancer Causes Control.* (2007)
31. Barranco WT, Hudak PF, Eckhert CD Evaluation of ecological and in vitro effects of boron on prostate cancer risk (United States) (http://www.ncbi.nlm.nih.gov/pubmed/17186423) . *Cancer Causes Control.* (2007)
32. Naghii MR, Einollahi B, Rostami Z Preliminary evidence hints at a protective role for boron in urolithiasis (http://www.ncbi.nlm.nih.gov/pubmed/22385047) . *J Altern Complement Med.* (2012)
33. Miljkovic D, Miljkovic N, McCarty MF Up-regulatory impact of boron on vitamin D function -- does it reflect inhibition of 24-hydroxylase (http://www.ncbi.nlm.nih.gov/pubmed/15504575) . *Med Hypotheses.* (2004)
34. Effect of Boron depletion and repletion on blood indicators of calcium status in Humans fed a Magnesium-low diet (http://naldc.nal.usda.gov/download/49316/PDF)
35. Trumbo P, *et al* Dietary reference intakes: vitamin A, vitamin K, arsenic, boron, chromium, copper, iodine, iron, manganese, molybdenum, nickel, silicon, vanadium, and zinc (http://www.ncbi.nlm.nih.gov/pubmed/11269606) . *J Am Diet Assoc.* (2001)
36. Duydu Y, *et al* Reproductive toxicity parameters and biological monitoring in occupationally and environmentally boron-exposed persons in Bandirma, Turkey (http://www.ncbi.nlm.nih.gov/pubmed/21424392) . *Arch Toxicol.* (2011)
37. Pizent A, Tariba B, Živković T Reproductive toxicity of metals in men (http://www.ncbi.nlm.nih.gov/pubmed/22548851) . *Arh Hig Rada Toksikol.* (2012)
38. Korkmaz M, *et al* Effects of chronic boron exposure on semen profile (http://www.ncbi.nlm.nih.gov/pubmed/21170602) . *Biol Trace Elem Res.* (2011)
39. Robbins WA, *et al* Chronic boron exposure and human semen parameters (http://www.ncbi.nlm.nih.gov/pubmed/19962437) . *Reprod Toxicol.* (2010)
40. Weir RJ Jr, Fisher RS Toxicologic studies on borax and boric acid (http://www.ncbi.nlm.nih.gov/pubmed/4673567) . *Toxicol Appl Pharmacol.* (1972)

(Common misspellings for Boron include borin, boring)

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