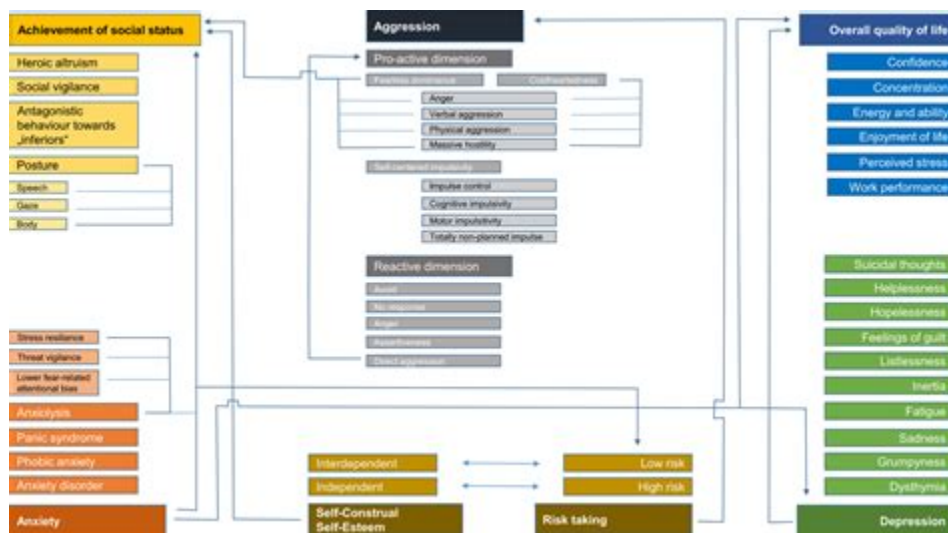


High-intensity interval training (HIIT) can be very effective as well, although all types of exercise should work to some extent (14, 15). All forms of exercise may increase your testosterone .



💣💣💣 CHECK OUT OUR STORE 💣💣💣

Testosterone, mood, behaviour and quality of life - Zitzmann - 2020 .



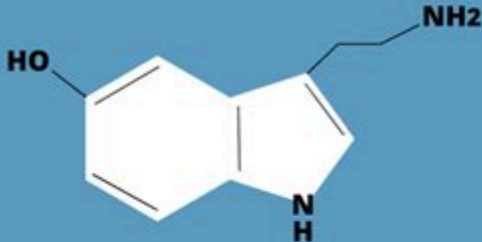
Healthy Lifestyle Products and services Testosterone therapy: Potential benefits and risks as you age
 Considering testosterone therapy to help you feel younger and more vigorous as you age? Know the

risks before you decide. By Mayo Clinic Staff As you age, testosterone therapy might sound promising.

Effects of testosterone replacement on serotonin levels in the . - Nature

HOW TO INCREASE SEROTONIN NATURALLY


ALIVEANDWELLBALANCED.COM











NCCc1c[nH]c2ccc(O)cc12

Serotonin is often referred to as the "happy" chemical, as it contributes to happiness and well-being. It also helps delay gratification, promote memory, and regulate sleep and appetite.

Although you may have been led to believe that serotonin is made in the brain, it is actually made in the both the brain and the gut. In fact, about 90% of it is found in our gut!



8 WAYS TO INCREASE YOUR SEROTONIN NATURALLY:

 meditate	 uv light	 remember positive events	 massage
 tryptophan rich foods	 supplements	 repair your gut	 aerobics

[CLICK TO READ MORE](#)

We found that testosterone, but not estradiol, correlated negatively with global 5-HT R levels ($p=0.02$)

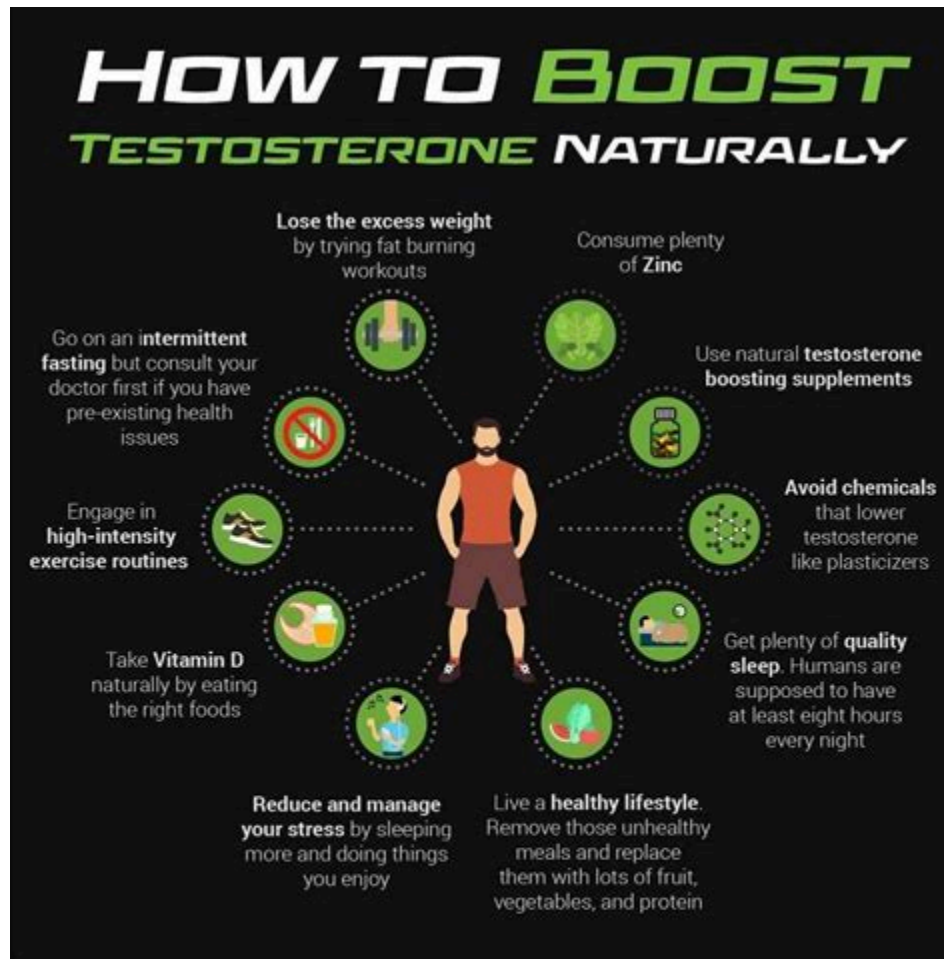
suggesting that men with high levels of testosterone have higher cerebral serotonergic tonus. Our findings corroborate the link between sex hormone levels and serotonin signalling. Future longitudinal studies in clinical relevant populations .

Serotonin: What Is It, Function & Levels - Cleveland Clinic



SERT binding increases correlated with treatment-induced increases in testosterone levels, suggesting that testosterone increases SERT expression on the cell surface. Conversely, 4 months of antiandrogen and estrogen treatment in male-to-female transsexuals led to decreases in SERT binding in insula, anterior, and mid-cingulate cortex.

8 Proven Ways to Increase Testosterone Levels Naturally - Healthline



MGS

Sources:

<http://massgainsource.com/natural-testosterone-booster/>

3. 2. The role of testosterone. The recent presence of testosterone is permissive for the precopulatory dopamine response and for copulation [68]. All gonadally intact males, all testosterone-replaced castrates, and two-thirds of oil-treated animals that had been castrated 1 week previously showed a precopulatory dopamine response, and all of them copulated.

4 scientifically proven ways to increase serotonin - Medical News Today


HOW TO INCREASE SEROTONIN NATURALLY

ALIVEANDWELLBALANCED.COM









NCC1=CNC2=CC=CC=C12O

Serotonin is often referred to as the "happy" chemical, as it contributes to happiness and well-being. It also helps delay gratification, promote memory, and regulate sleep and appetite.

Although you may have been led to believe that serotonin is made in the brain, it is actually made in the both the brain and the gut. In fact, about 90% of it is found in our gut!



8 WAYS TO INCREASE YOUR SEROTONIN NATURALLY:

 meditate	 uv light	 remember positive events	 massage
 tryptophan rich foods	 supplements	 repair your gut	 aerobics

[CLICK TO READ MORE](#)

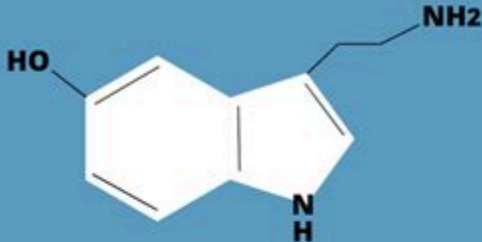
These findings support a link between testosterone and serotonin signalling in healthy men and points to a possible association between amygdala 5-HT 4 R and estradiol. . Increase in prefrontal cortex serotonin 2A receptors following estrogen treatment in postmenopausal women. Am. J. Psychiatry, 160

(2003), pp. 1522-1524.

Testosterone Supplementation May Increase Serotonin Levels in the Brain

HOW TO INCREASE SEROTONIN NATURALLY


ALIVEANDWELLBALANCED.COM











NCCc1c[nH]c2ccc(O)cc12

Serotonin is often referred to as the "happy" chemical, as it contributes to happiness and well-being. It also helps delay gratification, promote memory, and regulate sleep and appetite.

Although you may have been led to believe that serotonin is made in the brain, it is actually made in the both the brain and the gut. In fact, about 90% of it is found in our gut!



8 WAYS TO INCREASE YOUR SEROTONIN NATURALLY:

 meditate	 uv light	 remember positive events	 massage
 tryptophan rich foods	 supplements	 repair your gut	 aerobics

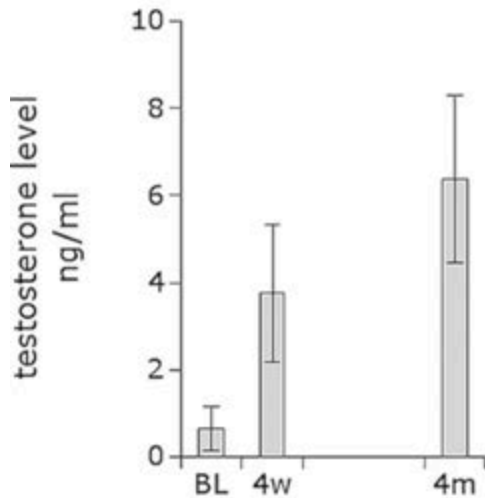
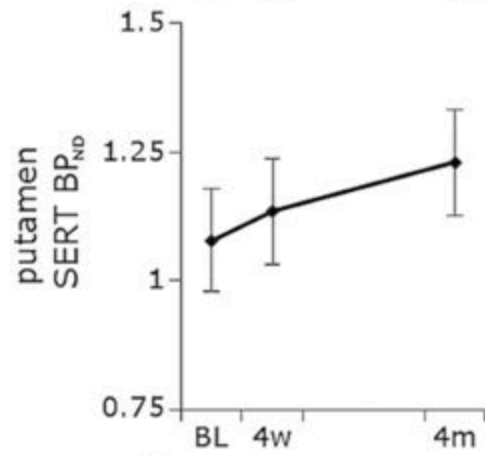
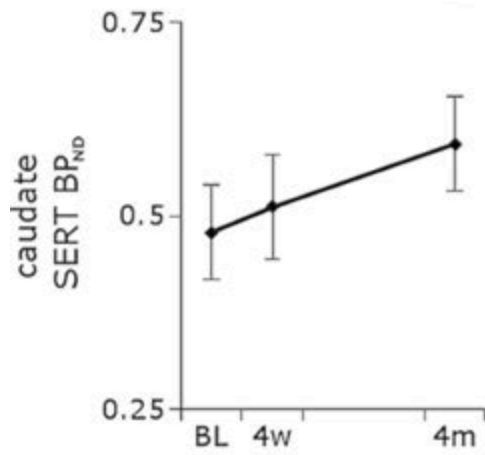
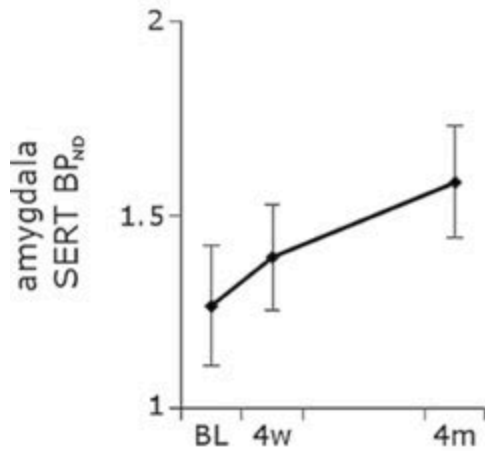
[CLICK TO READ MORE](#)

Abstract Testosterone influences the brain via organizational and activational effects. Numerous relevant

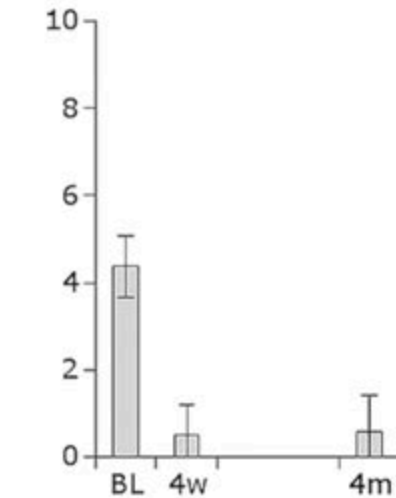
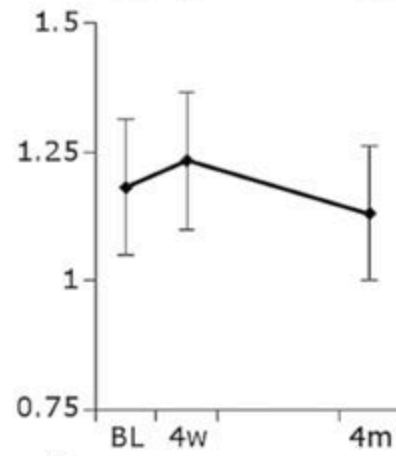
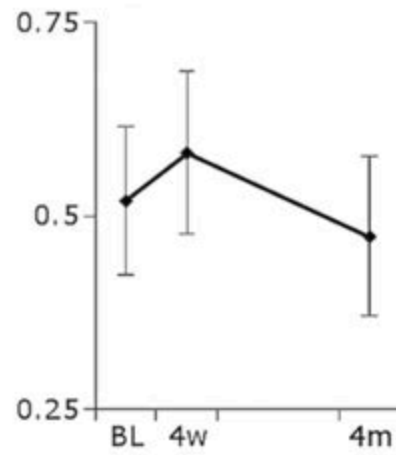
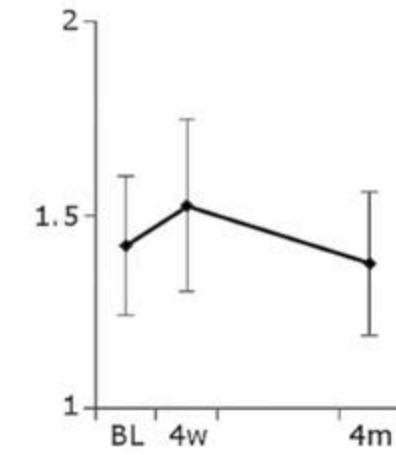
studies on rodents and a few on humans focusing on specific behavioral and cognitive parameters have been published. The results are, unfortunately, controversial and puzzling.

High-Dose Testosterone Treatment Increases Serotonin . - PubMed

Female-to-Male
transsexuals

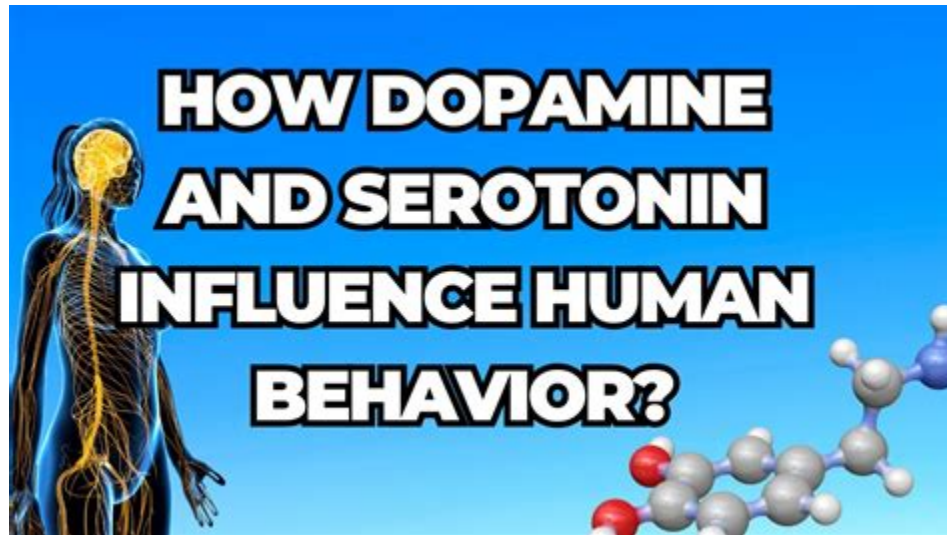


Male-to-Female
transsexuals



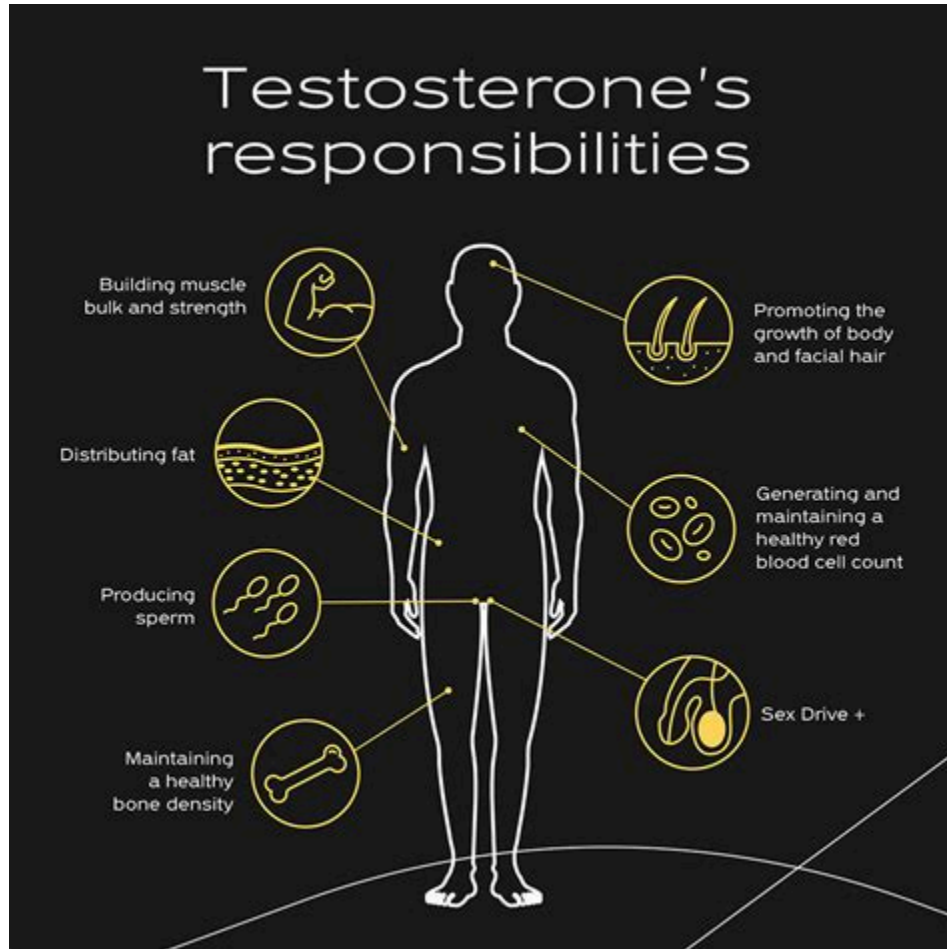
More than 100 million men are currently affected by various forms of depression. 32 Testosterone is a neuroactive steroid influencing mood and appetitive behaviour, 33 which has been demonstrated by animal models of depression in which testosterone administration increased serotonin release in the dorsal raphe nuclei as well as it induced .

Dopamine and serotonin: influences on male sexual behavior

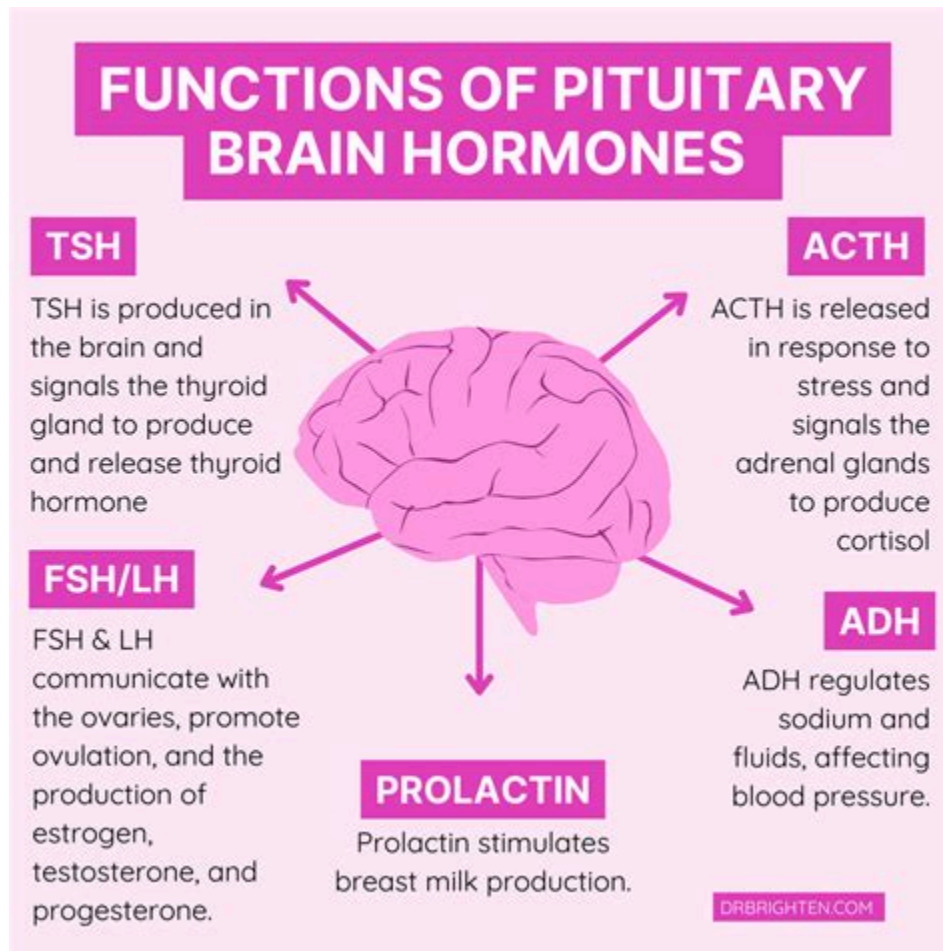


Brain & Nervous System What Is Serotonin? A chemical that helps regulate mood By Angelica Bottaro Updated on October 26, 2023 Medically reviewed by Huma Sheikh, MD Table of Contents Purpose Low Serotonin Levels How to Increase Serotonin High Levels of Serotonin When to See a Healthcare Provider

Testosterone levels in healthy men correlate negatively with serotonin 4 receptor binding

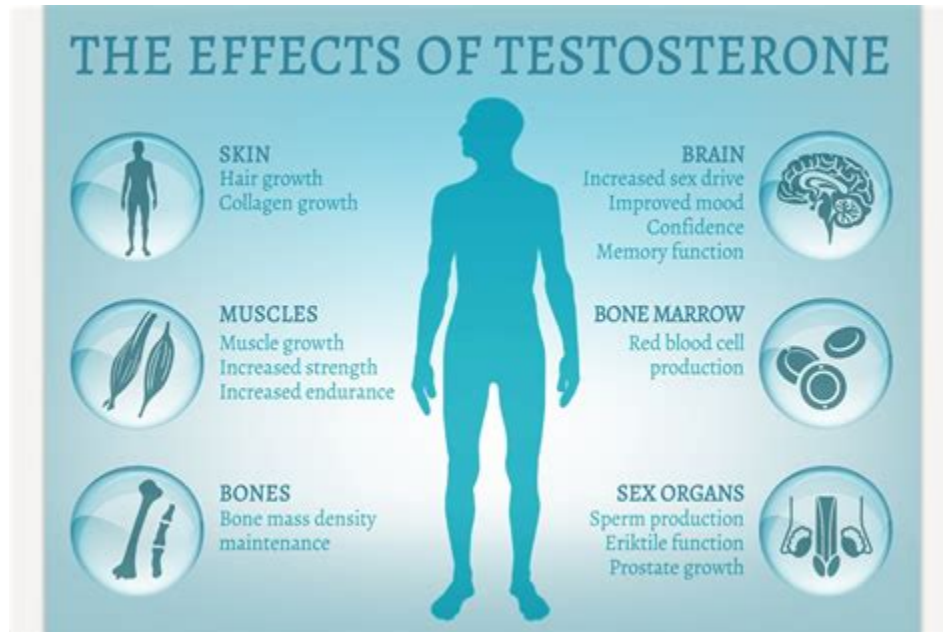


These hormones have a role to play in the production of testosterone and oestradiol. Without kisspeptin, this entire chain reaction would be damaged. . Serotonin syndrome can occur when you take medications that increase serotonin action leading to side effects. Too much serotonin can cause mild symptoms such as shivering, heavy sweating .



Serotonin and Norepinephrine Reuptake Inhibitors (SNRIs), namely venlafaxine and duloxetine, is another widely used category of antidepressants. Their common primary mechanism of action is the inhibition of the presynaptic reuptake of serotonin and/or norepinephrine neurotransmitters (Artigas et al. , 2002).

Testosterone therapy: Potential benefits and risks as you age



In one 2017 study in particular, however, researchers analyzed the impact of six of the most widely used selective serotonin reuptake inhibitors (SSRIs) on androgen and estrogen levels. Of the.

Serotonin: Functions, Normal Range, Side Effects, and More - Healthline



regulate anxiety. experience happiness. heal wounds. stimulate nausea. Here's how serotonin acts in various functions across your body: Bowel movements: About 90%. Trusted Source. of the .

Serotonin: The natural mood booster - Harvard Health



Overview What is serotonin? Serotonin, also known as 5-hydroxytryptamine (5-HT), is a monoamine neurotransmitter. It also acts as a hormone. As a neurotransmitter, serotonin carries messages between nerve cells in your brain (your central nervous system) and throughout your body (your peripheral nervous system).

Do Antidepressants Lower Testosterone Levels? - Healthline



Serotonin (5-HT) is primarily inhibitory, although stimulation of 5-HT (2C) receptors increases erections and inhibits ejaculation, whereas stimulation of 5-HT (1A) receptors has the opposite effects: facilitation of ejaculation and, in some circumstances, inhibition of erection. 5-HT is released in the anterior lateral hypothalamus at the time .

Examining the Effects of Herbs on Testosterone Concentrations in Men: A .



REVIEW

Examining the Effects of Herbs on Testosterone Concentrations in Men: A Systematic Review

Stephen J Smith,^{1,2} Adrian L Lopresti,^{1,2} Shaun YM Teo,² and Timothy J Fairchild²

¹Clinical Research Australia, Perth, Western Australia, Australia; and ²College of Science, Health, Engineering and Education, Murdoch University, Perth, Western Australia, Australia

ABSTRACT

Testosterone concentrations in males tend to decline with advancing age. Low testosterone, also known as androgen deficiency (AD), is associated with an increased risk of morbidity and mortality. Currently, the primary treatment for AD is testosterone replacement therapy (TRT), which may exacerbate pre-existing medical conditions. Therefore, the use of alternative options, such as herbs, spices, plants, or their extracts, has been explored as a potential treatment option for AD. The aim of this systematic review was to summarize and critically evaluate randomized controlled trials published on the efficacy of single herbal ingredients on testosterone concentrations, in addition to its fractions or binding proteins, in men (≥ 18 y). From the 4 databases searched, there were 13 herbs identified in 32 studies, published between 2001 and 2019. The main findings of this review indicate that 2 herbal extracts, fenugreek seed extracts and ashwagandha root and root/leaf extracts, have positive effects on testosterone concentrations in men. Also, some evidence exists for another herb and herbal extract, Asian red ginseng and forskohlii root extract. Overall, 9 out of 32 studies demonstrated statistically significant increases in testosterone concentrations. Moreover, 6 studies out of 32 were judged as having a low risk of bias. Current evidence is largely based on young, nonclinical populations, with 16 out of 32 studies using men <40 y of age. Conclusions are moderated by the paucity of research for many herbs, the variation in dosages and extracts used, small sample sizes, and the heterogeneity of study characteristics. Also, further research is required before definitive conclusions on efficacy and safety can be made. This systematic review was registered at PROSPERO as CRD42020173623. *Adv Nutr* 2021;12:744–765.

Keywords: testosterone, sex hormone-binding globulin, SHBG, male, adult, supplement, herbal, extract

Introduction

From the age of 30 onwards, testosterone concentrations in men tend to decline at the rate of $\sim 1\%$ per year (1–6). Low testosterone, also known as androgen deficiency (AD), or late-onset hypogonadism (LOH) when it occurs in men >40 y of age, is associated with a range of morbidities including major depressive disorder (7), type 2 diabetes (8), obesity (9), and cardiovascular disease (CVD) (10). AD is also associated with a reduced quality of life (11) and an increased risk of mortality in men (12–14). For example,

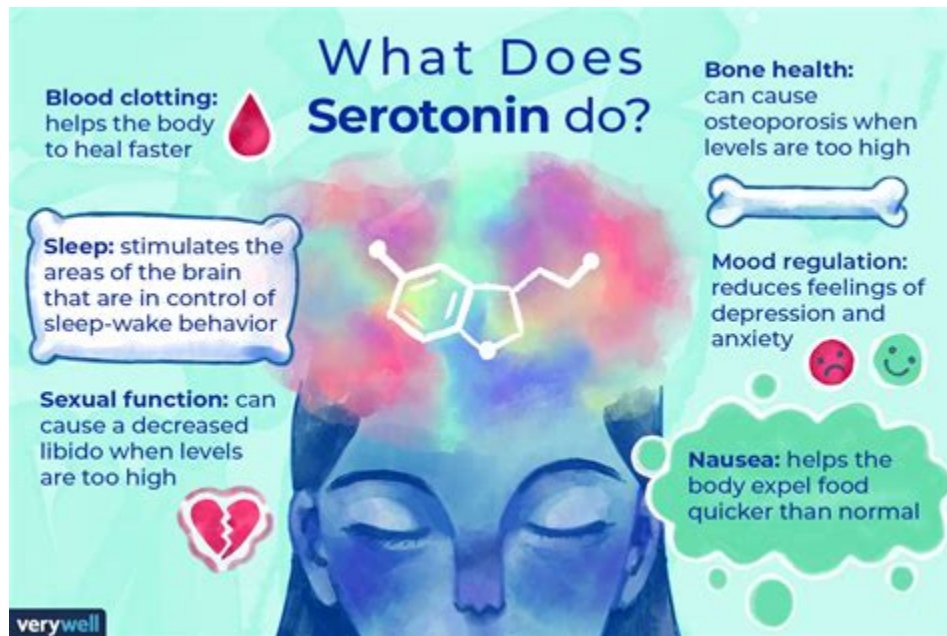
Laughlin et al. (12) observed over an 11.8-y period that men with the lowest total testosterone (TT) concentrations had a 40% greater likelihood of dying compared with men with higher testosterone concentrations, even after controlling for age, obesity, and lifestyle, whereas Pye et al. (13) noted a 5-fold greater risk of all-cause mortality in men with severe LOH compared with men without the condition, after controlling for age, BMI, current smoking, and poor general health. Testosterone replacement therapy (TRT), on the other hand, was found to significantly increase survival rates of hypogonadal men (15, 16).

Despite TRT being the primary treatment for men with AD, its use remains controversial due to its association with an increased risk of exacerbating pre-existing medical conditions. Accordingly, men with existing prostate disease, elevated hematocrit concentrations, high CVD risk, or obstructive sleep apnea may be contraindicated for TRT (17–20). Moreover, according to the US FDA, TRT is only recommended for cases of “classic” or irreversible AD rather than “functional”, age, or comorbidity-related AD (21). This

The authors reported no funding received for this study. Author disclosures of SJS and ALL are employed by Clinical Research Australia, which has received funding to conduct research on herbal extracts. The other authors report no conflicts of interest. Supplemental Tables 1 and 2 are available from the “Supplementary data” link in the online posting of the article and from the same link in the online table of contents at <https://academic.oup.com/advances>. Address correspondence to SJS (email: sjohn@clinicalresearch.com.au). Abbreviations used: AD, androgen deficiency; BPH, benign prostate hyperplasia; FT, bioavailable testosterone; FTI, calculated free testosterone; CVD, cardiovascular disease; FT, free testosterone; LOH, late-onset hypogonadism; SHBG, sex hormone-binding globulin; TRT, testosterone replacement therapy.

Introduction. From the age of 30 onwards, testosterone concentrations in men tend to decline at the rate of $\sim 1\%$ per year (). Low testosterone, also known as androgen deficiency (AD), or late-onset hypogonadism (LOH) when it occurs in men >40 y of age, is associated with a range of morbidities including major depressive disorder (), type 2 diabetes (), obesity (), and cardiovascular disease .

Testosterone Levels And Serotonin Activity in the Brain



A team from MedUni Vienna has demonstrated that testosterone increases the number of proteins that transport serotonin into the brain.

Sex Differences in Anxiety and Depression: Role of Testosterone



Background: Women are two times more likely to be diagnosed with depression than men. Sex hormones modulating serotonergic transmission are proposed to partly underlie these epidemiologic findings. Here, we used the cross-sex steroid hormone treatment of transsexuals seeking sex reassignment as a model to investigate acute and chronic effects of testosterone and estradiol on serotonin reuptake .

Serotonin Function and How to Increase Levels - Verywell Health


HOW TO INCREASE SEROTONIN NATURALLY

ALIVEANDWELLBALANCED.COM









NCCc1c[nH]c2ccc(O)cc12

Serotonin is often referred to as the "happy" chemical, as it contributes to happiness and well-being. It also helps delay gratification, promote memory, and regulate sleep and appetite.

Although you may have been led to believe that serotonin is made in the brain, it is actually made in both the brain and the gut. In fact, about 90% of it is found in our gut!



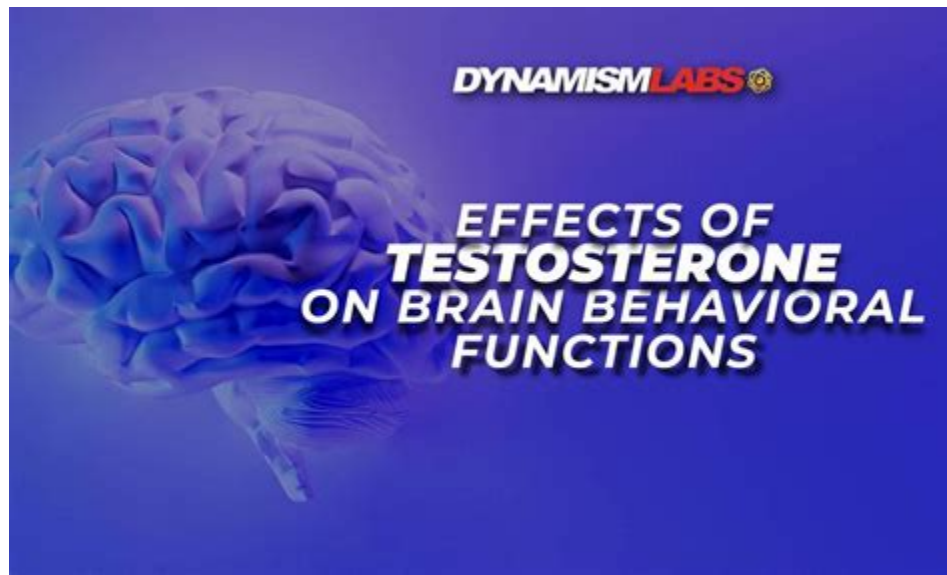
8 WAYS TO INCREASE YOUR SEROTONIN NATURALLY:

 <p>meditate</p>	 <p>uv light</p>	 <p>remember positive events</p>	 <p>massage</p>
 <p>tryptophan rich foods</p>	 <p>supplements</p>	 <p>repair your gut</p>	 <p>aerobics</p>

[CLICK TO READ MORE](#)

Recent studies described that serotonin (5-HT) inhibits benign prostate growth through the modulation of the androgen receptor, in the presence of TES. Accordingly, this work aimed to determine.

On the effects of testosterone on brain behavioral functions



The biochemical mechanisms of serotonin/testosterone interactions remain poorly understood; however, such interactions may provide insights into the functions of SSRI antidepressants. . Those authors observed that social interactions can increase estradiol levels in . Testosterone decrease does not play a major role in the suppression of .

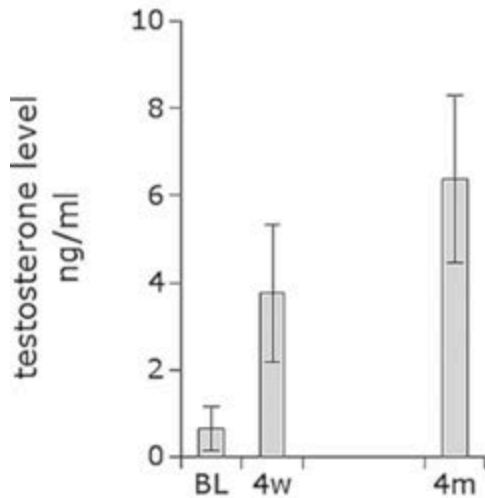
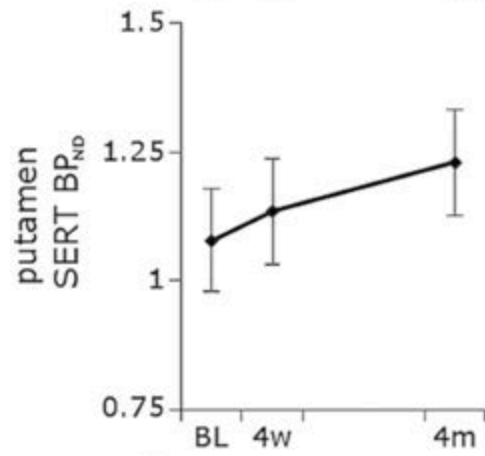
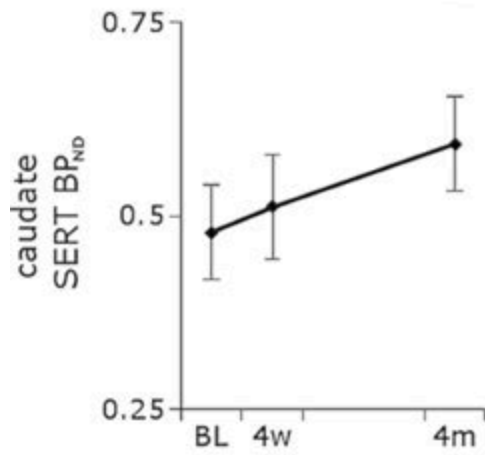
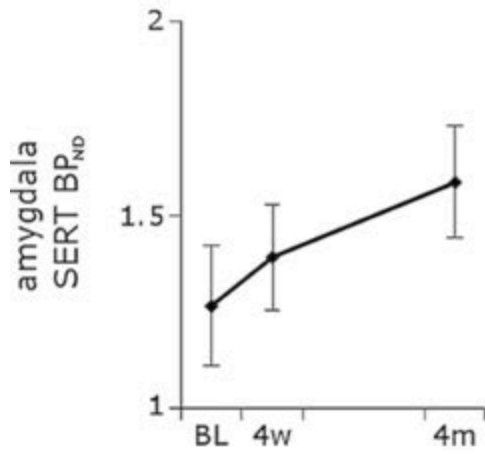
Testosterone levels in healthy men correlate negatively with serotonin .

Age	Total T	Free T	Bioavailable T
40-49	252-916	5.3-26.3	101-499
50-59	215-878	4.2-22.2	80-420
60-69	196-859	3.7-18.9	69-356
70-79	156-819	2.2-14.7	41-279

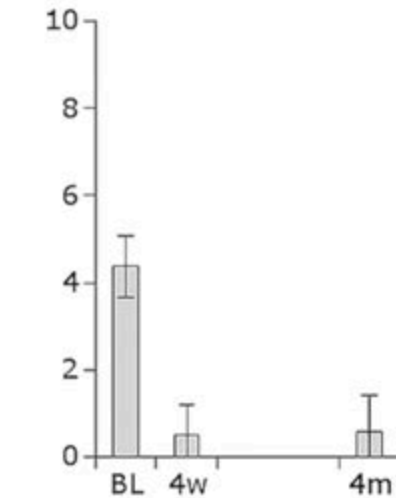
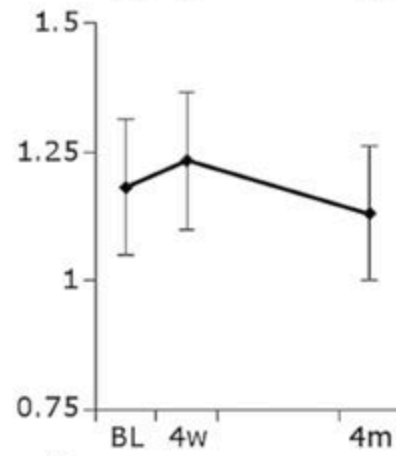
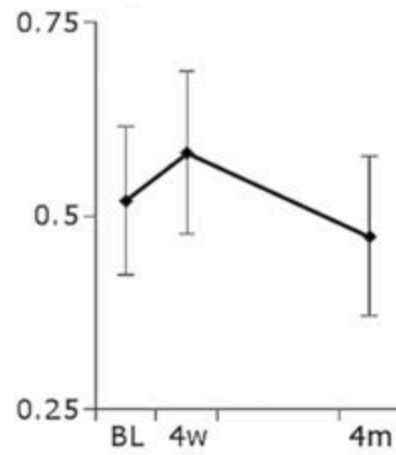
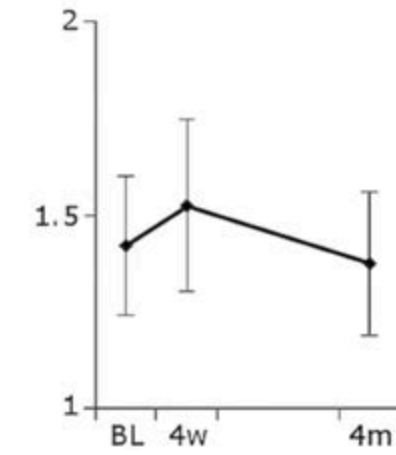
Summary Serotonin is a chemical messenger that affects many functions within the body and brain. One theory is that serotonin helps regulate anxiety and stress. Low serotonin is one of the.

High-Dose Testosterone Treatment Increases Serotonin Transporter .

Female-to-Male
transsexuals

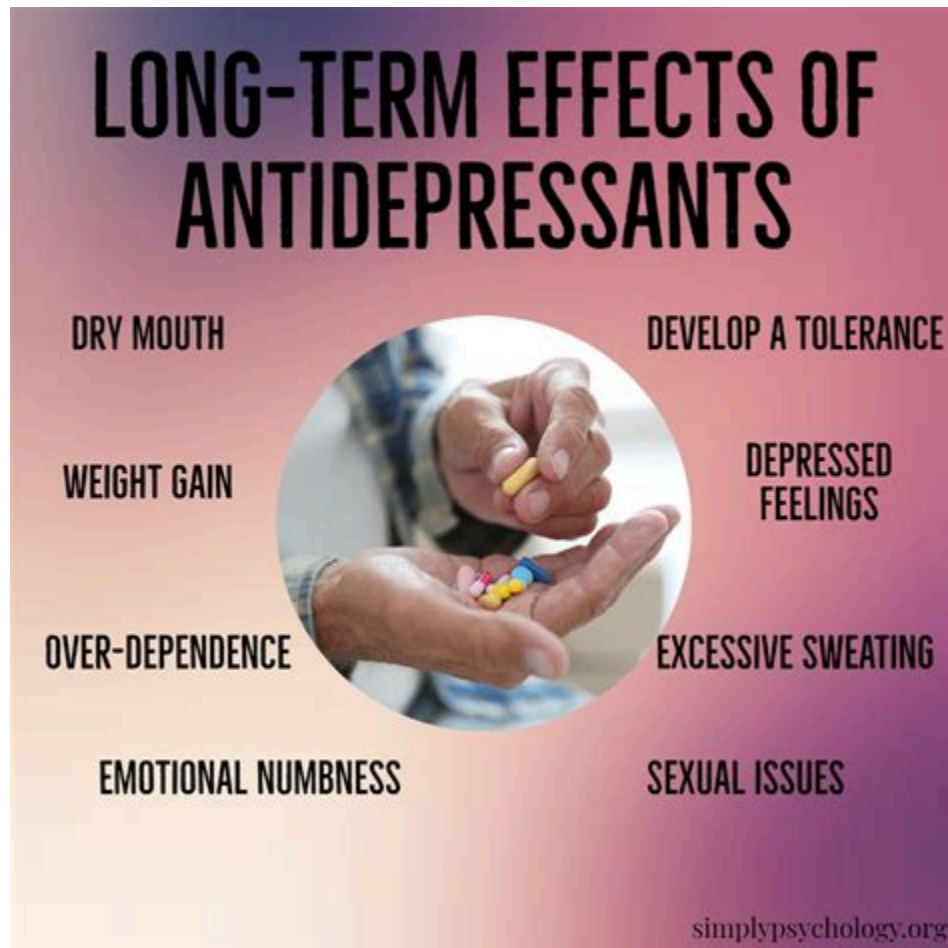


Male-to-Female
transsexuals



This boost in serotonin (along with other endorphins and other neurotransmitters) is why many people get that feeling of euphoria known as a "runner's high" after an intense workout. Exposure to either the sun or to the bright light meant to replicate it is another way to naturally increase serotonin levels. Light therapy is one of the main .

Antidepressants' effects on testosterone and . - ScienceDirect



Recent data produced by the University of Psychiatry and Psychotherapy has shown that Testosterone improves Serotonin signaling in the brain by boosting the volume of proteins that are designed to transport Serotonin. The study was conducted by scientific researchers at the Medical University of Vienna.

- https://groups.google.com/g/39hunk82/c/_9Tnzyb59Jo
- <https://groups.google.com/g/27pumpingiron30/c/kRrRhvcX8hc>
- <https://publiclab.org/notes/print/42538>