

## Chrysin

Chrysin is well absorbed transdermally (via the skin) ...

Chrysin Cream when applied in strengths ranging from 5% to 20% have proven very effective in raising levels of testosterone in both men and women.

extract from website: www.smartbodyz.com

A bioflavonoid called chrysin has shown potential as a natural aromatase-inhibitor. Chrysin can be extracted from various plants. Bodybuilders have used it as a testosterone-boosting supplement. The problem with chrysin is that because of its poor absorption into the bloodstream when taken orally, it has not produced the testosterone enhancing effects users expect. Aromatase-inhibiting drugs are used to treat women with oestrogen-dependant breast cancers. The rationale for this therapy is that oestrogen is produced by fat cells via a process known as aromatization. Aging men often have excess aromatase enzyme activity, and the result is that too much of their testosterone is "aromatized" into oestrogen. In a study published in the Journal of Steroid Biochemical Molecular Biology (1993; Vol 46, No chrysin and 10 other flavonoids were compared to an aromatase-inhibiting drug (aminoglutethimide). The study tested the aromatase-inhibiting effects of these natural flavonoids (such as genistein, rutin, tea catechins, etc.) in human fat cell cultures. Chrysin was the most potent aromatase-inhibitor, and was shown to be similar in potency and effectiveness to the aromatase-inhibiting drug. The scientists conducting the study concluded by stating that the aromatase-inhibiting effects of certain flavonoids may contribute to the cancer preventive effects of plant-based diets. Two recent studies have identified specific mechanisms by which chrysin inhibits aromatase in human cells. These studies demonstrate that chrysin is a more potent inhibitor of the aromatase enzyme than phyto-oestrogens and other flavonoids that are known to have aromatase-inhibiting properties (Arch Pharm Res 1999 Jun;22(3):309-12; J Steroid Biochem Mol Biol 1997 Apr;61(3-6):107-15). The purpose of these studies was to ascertain which fruits and vegetables should be included in the diet of postmenopausal women to reduce the incidence of breast cancer. Excess levels of mutagenic forms of oestrogen have been linked to a greater risk of breast cancer, and scientists are studying dietary means of naturally reducing levels of these dangerous oestrogens. Flavonoids such as chrysin are of considerable interest because they suppress excess oestrogen via their aromatase-inhibiting properties. While this cancer preventing effect is most important for women, inhibiting aromatase in aging men has tremendous potential for naturally suppressing excess oestrogen while boosting low levels of testosterone to a youthful state.

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Since chrysin is not a patentable drug, don't expect to see a lot of human research. While prescription aromatase-inhibiting drugs are relatively free of side effects, aging men who are seeking to gain control over their sex hormone levels often prefer natural sources, rather than trying to convince a doctor to prescribe a drug (such as Arimidex®) that is not yet approved by the FDA as an anti-aging therapy. (Arimidex® is prescribed to oestrogen-dependant breast cancer patients to prevent testosterone and other hormones in the body from converting, i.e. aromatasing, into oestrogen.)

An advantage to using plant extracts to boost testosterone in lieu of drugs is that the plant extracts have ancillary health benefits. Chrysin, for example, is a potent antioxidant that possesses vitamin-like effects in the body. It has been shown to induce an anti-inflammatory effect, possibly through inhibition of the enzymes 5-lipoxygenase and cyclooxygenase inflammation pathways. Aging is being increasingly viewed as a pro-inflammatory process, and agents that inhibit chronic inflammation may protect against diseases as diverse as atherosclerosis, senility and aortic valve stenosis. Chrysin is one of many flavonoids being studied as a phyto-extract that may prevent some forms of cancer. If chrysin can boost free testosterone in the aging male by inhibiting the aromatase enzyme, this would provide men with a low cost natural supplement that could provide the dual anti-aging benefits of testosterone replacement and aromatase-inhibiting drug therapy.

As previously discussed, boosting free testosterone levels can have a dramatic effect on sex drive, performance and satisfaction.

Chrysin has one other property that could add to its libido-enhancing potential. A major cause of sexual dissatisfaction among men is work-related stress and anxiety. Another problem some men have is "sexual performance anxiety" that prevents them from being able to achieve erections when they are expected to. In a study published in Pharmacology Biochemistry and Behavior (1994, Vol 47), mice were injected with diazepam (Valium), chrysin or placebo to evaluate the effects these substances had on anxiety and performance levels. Chrysin was shown to produce anti-anxiety effects comparable with diazepam, but without sedation and muscle relaxation. In other words, chrysin produced a relaxing effect in the brain, but with no impairment of motor activity. The mechanism of action of chrysin was compared to diazepam, and it was shown that unlike diazepam, chrysin reduces anxiety without inducing

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