

The Health Benefits of Saffron

Learn if this spice can boost your mood and help with weight management

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You may know of saffron as the spice used to flavor dishes like bouillabaisse and paella, but saffron extract has a long and varied history in herbal medicine spanning over 2,500 years. According to a review study from 2014, it's been used in various countries to treat skin disease, respiratory issues, poor vision, pain, mental illness, gynecological problems, erectile dysfunction, and infections.

Derived from the crocus flower (*Crocus sativus*), saffron is a perennial stemless herb that's largely cultivated in Iran and some other countries including Spain, India, and Greece. The flower of *C. sativus* is a light purple, but it's the thread-like reddish-colored stigma of the flower, where the pollen germinates, that's valued both as a spice. It takes about 36,000 flowers, which are harvested by hand, to yield a single pound of stigmas. Over 200,000 dried stigmas (obtained from about 70,000 flowers) yield 500 grams of pure saffron. Due to the cultivation, harvesting, and handling, saffron—which can cost around \$260 an ounce in the American market—is the most expensive spice in the world. Hence the reason it's often referred to as "Red Gold."

More than 150 chemicals are present in saffron, but the key ones are crocetin and crocin, picrocrocin, and safranal, which are responsible for saffron's color, taste, and odor. These compounds are all strong antioxidants, molecules that protect cells against free radicals and oxidative stress, and scientists propose that many of saffron's beneficial effects can be attributed to them.

Health Benefits

Saffron has been shown to be helpful in several diseases, and according to a review study from 2015, it's time to move into more advanced stages of study or to even develop a drug for the use of saffron in the treatment of depression and Alzheimer's disease. However, there's much weaker supporting evidence for most other proposed uses, including preventing or treating cancer, reducing cholesterol and other cardiovascular benefits, and improving skin. Here's a look at some findings on the key benefits of saffron from the available research:

Depression

Preliminary studies suggest this culinary spice is helpful in treating mood disorders. In a 2016 double-blind, placebo-controlled study, 60 adults with anxiety and depression received either 50 milligrams (mg) of saffron or a placebo twice daily for 12 months. According to researchers, saffron appeared to have a significant impact on anxiety and depression compared to those receiving a placebo, and side effects were rare.

In a 2015 study published in the *Journal of Affective Disorders*, adults with major depressive disorder took crocin (an active constituent of saffron) or a placebo along with Prozac (fluoxetine), Zoloft (sertraline), or Celexa (citalopram), selective serotonin reuptake inhibitor drugs (SSRI) that are commonly used for depression. Results revealed that the group taking crocin had significantly improved scores on self-reported assessments compared to those taking the placebo.

In a 2014 study published in the *Journal of Affective Disorders*, adults with mild-to-moderate depression took either a saffron supplement or Prozac daily for six weeks. At the study's end, the saffron extract was found to be as effective as Prozac.

A review of six clinical trials with placebo or antidepressant controls published in the *Human Psychopharmacology* in 2014 concluded that "research conducted so far provides initial support for the use of saffron for the treatment of mild-to-moderate depression." The authors found that saffron extract had a large treatment effect when compared to a placebo and was as effective as antidepressant medication.

When studied on teenagers with mild-to-moderate symptoms in a 2018 study, however, the improvements in anxiety and depressive

symptoms that the adolescents reported after taking 14 mg of saffron twice a day for eight weeks were inconsistently corroborated by their parents.

Although the use of saffron in depression is poorly understood, some research suggests it may work like SSRIs to increase brain levels of serotonin, a chemical known to regulate mood.

Weight Loss and Appetite Management

When used as a [weight-loss aid](#), saffron supplements are purported to curb appetite and reduce cravings. Some proponents suggest that saffron increases brain levels of serotonin and, in turn, helps prevent compulsive overeating and the associated weight gain.

Saffron extract shows promise as a means of controlling compulsive eating, according to a small study published in *Nutrition Research* in 2010. For the study, healthy women who were mildly overweight took either a saffron-containing supplement or a placebo every day for eight weeks. Caloric intake was unrestricted. Study results showed that members of the saffron group experienced a significantly greater decrease in snacking and a significantly greater reduction in body weight compared to members of the placebo group. The study's authors note that saffron's supposedly mood-enhancing effects could contribute to the decrease in snacking frequency.

Age-Related Macular Degeneration (AMD)

Saffron is added as an ingredient in some vision supplements, and several small studies suggest it may be beneficial in the early stages of age-related macular degeneration.

In one randomized, double-blinded, placebo-controlled crossover trial published in 2018, adults with mild-to-moderate AMD were given 20 mg of saffron or a placebo for three months. Researchers concluded that saffron modestly improved visual function and that due to the chronic nature of AMD, longer-term supplementation may produce greater benefits. In another early study published in 2016, daily supplementation with 30 mg of saffron for six months was associated with statistically significant changes in retinal function in patients with both dry and wet AMD.

Alzheimer's Disease

Preliminary research suggests that saffron may inhibit the aggregation and deposition of beta-amyloid plaques in the human brain and may, therefore, be useful in Alzheimer's disease. In two random, double-blind, controlled clinical trials on patients with mild-to-moderate Alzheimer's disease, saffron improved mental function. In the first [study](#), patients were treated with 30 mg of saffron (15 mg twice a day) or placebo for 16 weeks. In the second [study](#), patients were treated with either 30 mg of saffron (15 mg twice a day) or five mg twice daily of the drug Aricept (donepezil) for 22 weeks. In both studies, the authors reported that saffron produced a significantly superior outcome on cognitive function than the placebo. They also showed that the effectiveness of saffron on improving the cognition score of Alzheimer's patients was equal to that of Aricept.

Erectile Dysfunction

While the mechanism of action of saffron on sexual function is unknown, a 2018 review of six articles found that several studies reported its usefulness on five dimensions of erectile dysfunction, including erectile function, sexual desire, orgasmic function, intercourse satisfaction, and overall satisfaction. However, researchers found contradictory effects on semen in infertile men.

Premenstrual Syndrome

Saffron extract may help relieve symptoms of premenstrual syndrome ([PMS](#)), according to a 2008 study from the *British Journal of Obstetrics and Gynecology*. After taking saffron supplements daily throughout two menstrual cycles, study participants had a significantly greater decrease in PMS symptoms than those who took a placebo for the same time period.

Possible Side Effects

Although saffron is considered safe for most people when consumed in the small amounts typically used in cooking, use of saffron or saffron supplements may trigger mild side effects. In smaller doses of 30 to 50 mg, which most studies used, side effects mostly

include nausea, vomiting, dizziness, and dry mouth. Study authors report no significant difference between saffron and placebo when it comes to side effects.

As documented in traditional medicine, saffron had been used for abortion, and in high doses (five grams) it's been shown to be able to induce uterine stimulants and have estrogenic effects in animals. As a result, you shouldn't take saffron if you're pregnant. In one study among healthy women, taking 400 mg of saffron daily for seven days caused abnormal uterine bleeding in two women.

Authors of one review study could not find any study on the interactions between different drugs and saffron. However, they suggest a cautious approach for using saffron in people under anticoagulant (blood-thinning) therapy or those having certain types of kidney disease.

As with any supplement, if you're considering using saffron for health purposes, talk with your healthcare provider first to weigh the pros and cons. Also, keep in mind that self-treating a condition like depression and avoiding or delaying standard care may have serious consequences.

Dosage and Preparation

As a dietary supplement, up to 1.5 grams of saffron can be safely taken per day. It's considered toxic when ingested at doses higher than five grams and could be lethal at doses of more than 20 grams a day.

Clinical studies have evaluated doses ranging from 20 mg a day to 400 mg a day, though the most common effective doses being applied in clinical trials are 30 mg to 50 mg a day.

What to Look For

It's important to keep in mind when [shopping for supplements](#) that mixing saffron with materials like beet, pomegranate fibers, and red-dyed silk fibers sometimes occurs as a way of decreasing its cost. Researchers report that the yellow stamens of saffron have also been mixed with the saffron powder. Sometimes the flowers of other plants, particularly safflower, marigold, arnica, and tinted grasses, are fraudulently mixed with the genuine stigmas. Turmeric, paprika, and other substances have also been combined with saffron powder.

When saffron is used for therapeutic purposes, adulterations make it completely useless or even harmful.

When buying saffron supplements, be wary of products that list "Indian saffron," "American saffron," or "Mexican saffron," which are common ways of mislabeling the herb turmeric. Make sure to purchase saffron from a reputable brand or store to avoid an adulterated or mislabeled product.

Article Sources

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1. Hosseinzadeh H. Saffron: a herbal medicine of third millennium. Jundishapur J Nat Pharm Prod. 2014;9(1):1-2. PMID: [24644431](#)
2. Gjørup I, Gjørup T, Andersen B. Serum selenium and zinc concentrations in morbid obesity. Comparison of controls and patients with jejunoileal bypass. Scand J Gastroenterol. 1988;23(10):1250-2.
3. Gohari AR, et al. [An overview on saffron, phytochemicals, and medicinal properties](#). Pharmacogn Rev. 2013 Jan-Jun; 7(13): 61–66.
4. Moshiri M, Vahabzadeh M, Hosseinzadeh H. Clinical Applications of Saffron (Crocus sativus) and its Constituents: A Review. Drug Res (Stuttg). 2015;65(6):287-95. DOI: [10.1055/s-0034-1375681](#)
5. Akhondzadeh S, Sabet MS, Harirchian MH et al. [Saffron in the treatment of patients with mild to moderate Alzheimer's disease: a 16-week, randomized and placebo-controlled trial](#). J Clin Pharm Ther 2010; 35: 581-58837.
6. Lashay Alireza, et al. [Short-term Outcomes of Saffron Supplementation in Patients with Age-related Macular Degeneration: A Double-blind](#).

Placebo-controlled, Randomized Trial. Med Hypothesis Discov Innov Ophthalmol. 2016 Spring; 5(1): 32–38.

7. Taleai A, Hassanpour moghadam M, Sajadi tabassi SA, Mohajeri SA. Crocin, the main active saffron constituent, as an adjunctive treatment in major depressive disorder: a randomized, double-blind, placebo-controlled, pilot clinical trial. J Affect Disord. 2015;174:51-6. DOI: [10.1016/j.jad.2014.11.035](https://doi.org/10.1016/j.jad.2014.11.035)
8. Shahmansouri N, Farokhnia M, Abbasi SH, et al. A randomized, double-blind, clinical trial comparing the efficacy and safety of Crocus sativus L. with fluoxetine for improving mild to moderate depression in post percutaneous coronary intervention patients. J Affect Disord. 2014;155:216-22. DOI: [10.1016/j.jad.2013.11.003](https://doi.org/10.1016/j.jad.2013.11.003)
9. Lopresti AL, Drummond PD. Saffron (Crocus sativus) for depression: a systematic review of clinical studies and examination of underlying antidepressant mechanisms of action. Hum Psychopharmacol. 2014 Nov;29(6):517-27.
10. Lopresti AL, Drummond PD, Inarejos-Garcia AM, Prodanov M. affron®, a standardised extract from saffron (Crocus sativus L.) for the treatment of youth anxiety and depressive symptoms: A randomised, double-blind, placebo-controlled study. J Affect Disord. 2018 May;232:349-357.
11. Gout B, Bourges C, Paineau-Dubreuil S. Satiereal, a Crocus sativus L extract, reduces snacking and increases satiety in a randomized placebo-controlled study of mildly overweight, healthy women. Nutr Res. 2010 May;30(5):305-13.
12. Broadhead GK, Grigg JR, Mccluskey P, Hong T, Schlub TE, Chang AA. Saffron therapy for the treatment of mild/moderate age-related macular degeneration: a randomised clinical trial. Graefes Arch Clin Exp Ophthalmol. 2019;257(1):31-40. DOI: [10.1007/s00417-018-4163-x](https://doi.org/10.1007/s00417-018-4163-x)
13. Maleki-Saghooni N, et al. A systematic review and meta-analysis of clinical trials on saffron (Crocus sativus) effectiveness and safety on erectile dysfunction and semen parameters. Avicenna J Phytomed. May-Jun;8(3):198-209.
14. Agha-hosseini M, Kashani L, Aleyaseen A, et al. Crocus sativus L. (saffron) in the treatment of premenstrual syndrome: a double-blind, randomised and placebo-controlled trial. BJOG. 2008;115(4):515-9. doi: [10.1111/j.1471-0528.2007.01652.x](https://doi.org/10.1111/j.1471-0528.2007.01652.x)

Additional Reading

- Hausenblas Heather Ann, et al. A Systematic Review of Randomized Controlled Trials Examining the Effectiveness of Saffron (Crocus sativus L.) on Psychological and Behavioral Outcomes. J Integr Med. 2015 Jul; 13(4): 231-240.
- Lopresti AL, Drummond PD. Saffron (Crocus sativus) for depression: a systematic review of clinical studies and examination of underlying antidepressant mechanisms of action. Hum Psychopharmacol. 2014 Nov;29(6):517-27.
- Mazidi M, Shemshian M, Mousavi SH, Norouzy A, Kermani T, Moghiman T, Sadeghi A, Mokhber N, Ghayour-Mobarhan M, Ferns GA. A double-blind, randomized and placebo-controlled trial of Saffron (Crocus sativus L.) in the treatment of anxiety and depression. J Complement Integr Med. 2016;13(2):195.
- Moshiri M, Vahabzadeh M, Hosseinzadeh H. Clinical Applications of Saffron (Crocus sativus) and its Constituents: A Review. Drug Res (Stuttg). 2015 Jun;65(6):287-95.
- Shahmansouri N, Farokhnia M, Abbasi SH, et al. A randomized, double-blind, clinical trial comparing the efficacy and safety of Crocus sativus L. with fluoxetine for improving mild to moderate depression in post percutaneous coronary intervention patients. J Affect Disord. 2014 Feb;155:216-22.
- Taleai A, Hassanpour Moghadam M, Sajadi Tabassi SA, Mohajeri SA. Crocin, the main active saffron constituent, as an adjunctive treatment in major depressive disorder: a randomized, double-blind, placebo-controlled, pilot clinical trial. J Affect Disord. 2015 Mar 15;174:51-6. doi: [10.1016/j.jad.2014.11.035](https://doi.org/10.1016/j.jad.2014.11.035).