get the **facts**

# St. John's Wort and Depression

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St. John's wort, a plant that grows in the wild, has been used for centuries for health purposes. However, consumers need to be aware of serious concerns about its safety and effectiveness. This fact sheet summarizes scientific research on St. John's wort for depression and suggests sources for more information.

## Key Points

- St. John's wort may help some types of depression, similar to treatment with standard prescription antidepressants, but the evidence is not definitive.
- Combining St. John's wort with certain antidepressants can lead to a potentially life-threatening increase of serotonin, a brain chemical targeted by antidepressants. St. John's wort can also limit the effectiveness of many prescription medicines.
- Psychosis is a rare but possible side effect of taking St. John's wort.
- St. John's wort is not a proven therapy for depression. Do not use St. John's wort to replace conventional care or to postpone seeing your health care provider. If depression is not adequately treated, it can become severe and, in some cases, may be associated with suicide. Consult a health care provider if you or someone you know may be depressed.
- Tell all your health care providers about any complementary health approaches you use. Give them a full picture of what you do to manage your health. This will help ensure coordinated and safe care.

## About Depression

Depression is a medical condition that affects about 1 in 10 U.S. adults. Mood, thoughts, physical health, and behavior all may be affected. The symptoms and severity of depression can vary from person to person. Depression can be treated with conventional medicine, including antidepressants and certain types of

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psychotherapy. For more information on depression, visit the National Institute of Mental Health's Web site at www.nimh.nih.gov/health/topics/depression/index.shtml.

## About St. John's Wort

Although St. John's wort *(Hypericum perforatum)* has been used for centuries for mental health conditions and is widely prescribed for depression in Europe, the herb can have serious side effects. In addition, current evidence for using St. John's wort for depression is not conclusive. It is also important to note that in the United States, while there may be public interest in St. John's wort to treat depression, the Food and Drug Administration has not approved its use as an over-the-counter or prescription medicine for depression.

For more information about St. John's wort, see the National Center for Complementary and Alternative Medicine's fact sheet at nccam.nih.gov/health/stjohnswort/ataglance.htm.

## Side Effects and Cautions

St. John's wort is known to affect metabolism of a number of drugs and can cause serious side effects.

- Serotonin is a brain chemical targeted by antidepressants. Combining St. John's wort and certain antidepressants can lead to a potentially life-threatening increase in serotonin levels—a condition called serotonin syndrome. Symptoms range from tremor and diarrhea to very dangerous confusion, muscle stiffness, drop in body temperature, and even death.

- Psychosis is a rare but possible side effect of taking St. John's wort, particularly in people who have or are at risk for mental health disorders, including bipolar disorder.

- Taking St. John's wort can weaken many prescription medicines, such as:

    - Antidepressants
    - Birth control pills
    - Cyclosporine, which prevents the body from rejecting transplanted organs
    - Digoxin, a heart medication
    - Some HIV drugs including indinavir
    - Some cancer medications including irinotecan
    - Warfarin and similar medications used to thin the blood.

- Other side effects of St. John's wort are usually minor and uncommon and may include upset stomach and sensitivity to sunlight. Also, St. John's wort is a stimulant and may worsen feelings of anxiety in some people.

## What the Science Says About St. John's Wort for Depression

Study results on the effectiveness of St. John's wort for depression are mixed.

- A 2009 systematic review of 29 international studies suggested that St. John's wort may be better than a placebo (an inactive substance that appears identical to the study substance) and as effective as standard prescription antidepressants for major depression of mild to

moderate severity. St. John's wort also appeared to have fewer side effects than standard antidepressants. The studies conducted in German-speaking countries—where St. John's wort has a long history of use by medical professionals—reported more positive results than those done in other countries, including the United States.

- Two studies, both sponsored by NCCAM and the National Institute of Mental Health, did not have positive results. Neither St. John's wort nor a standard antidepressant medication decreased symptoms of minor depression better than a placebo in a 2011 study. The herb was no more effective than placebo in treating major depression of moderate severity in a large 2002 study.

- Preliminary studies suggest that St. John's wort may prevent nerve cells in the brain from reabsorbing certain chemical messengers, including dopamine and serotonin. Scientists have found that these naturally occurring chemicals are involved in regulating mood, but they are unsure exactly how they work.

**The Placebo Effect**

The placebo effect describes improvements that are not related specifically to the treatment being studied. For example, a recent reanalysis of the 2002 study on St. John's wort for major depression showed that the study participants' beliefs about whether they were taking a placebo or St. John's wort influenced their depression more so than what they actually received. Even how a clinician talks with patients may lead to a positive response unrelated to the treatment. To understand the usefulness of any intervention, rigorous studies are needed to compare the product or practice being tested with comparable but inactive products or practices.

## If You Are Considering St. John's Wort for Depression

- Do not use St. John's wort to replace conventional care or to postpone seeing a health care provider about a medical problem. If not adequately treated, depression can become severe. Consult a health care provider if you or someone you know may be depressed.

- Keep in mind that dietary supplements can act in the same way as drugs. They can cause medical problems if not used correctly or if used in large amounts, and some may interact with medications you take. Your health care provider can advise you.

- Many dietary supplements have not been tested in pregnant women, nursing mothers, or children. Little safety information on St. John's wort for pregnant women or children is available, so it is especially important to talk with health experts if you are pregnant or nursing or are considering giving a dietary supplement to a child. To learn more, see the NCCAM fact sheet *Using Dietary Supplements Wisely* at nccam.nih.gov/health/supplements/wiseuse.htm.

- Tell all your health care providers about any complementary health approaches you use. Give them a full picture of what you do to manage your health. This will help ensure coordinated and safe care. For tips about talking with your health care providers about complementary approaches, see NCCAM's Time to Talk campaign at nccam.nih.gov/timetotalk.

## Selected References


Boyer EW, Shannon M. The serotonin syndrome. *New England Journal of Medicine*. 2005;352:1112-1120.

Clauson KA, Santamarina ML, Rutledge JC. Clinically relevant safety issues associated with St. John's wort product labels. *BMC Complementary and Alternative Medicine*. 2008;8:42.

De Smet PA. Herbal remedies. *New England Journal of Medicine*. 2002;347(25):2046-2056.

Hypericum Depression Trial Study Group. Effect of *Hypericum perforatum* (St. John's wort) in major depressive disorder: a randomized controlled trial. *JAMA*. 2002;287(14):1807-1814.

Larzelere MM, Campbell JS, Robertson M. Complementary and alternative medicine usage for behavioral health indications. *Primary Care*. 2010;37(2):213-236.

Linde K. St. John's wort—an overview. *Forschende Komplementärmedizin: Research in complementary medicine*. 2009;16(3):146-155.

Linde K, Berner MM, Kriston L. St. John's wort for major depression. *Cochrane Database of Systematic Reviews*. 2009;(4):CD000448. Accessed at http://www.thecochranelibrary.com on June 7, 2012.

National Institute of Mental Health. *Depression.* National Institute of Mental Health Web site. Accessed at http://www.nimh.nih.gov/health/publications/depression/index.shtml on June 7, 2012.


## For More Information

### NCCAM Clearinghouse

The NCCAM Clearinghouse provides information on NCCAM and complementary health approaches, including publications and searches of Federal databases of scientific and medical literature. The Clearinghouse does not provide medical advice, treatment recommendations, or referrals to practitioners.

Toll-free in the U.S.: 1-888-644-6226
TTY (for deaf and hard-of-hearing callers): 1-866-464-3615
Web site: nccam.nih.gov
E-mail: info@nccam.nih.gov

### National Institute of Mental Health (NIMH)

NIMH's mission is to transform the understanding and treatment of mental illnesses through basic and clinical research, paving the way for prevention, recovery, and cure. NIMH provides publications on depression and other mental illnesses.

Toll-free in the U.S.: 1-866-615-6464
Web site: www.nimh.nih.gov
E-mail: nimhinfo@nih.gov

### Office of Dietary Supplements (ODS), National Institutes of Health (NIH)

ODS seeks to strengthen knowledge and understanding of dietary supplements by evaluating scientific information, supporting research, sharing research results, and educating the public. Its resources include publications (such as *Dietary Supplements: What You Need to Know*), fact sheets on a variety of specific supplement ingredients and products (such as vitamin D and multivitamin/mineral supplements), and the PubMed® Dietary Supplement Subset.

Web site: www.ods.od.nih.gov
E-mail: ods@nih.gov

### PubMed

A service of the National Library of Medicine, PubMed contains publication information and (in most cases) brief summaries of articles from scientific and medical journals.

Web site: www.ncbi.nlm.nih.gov/sites/entrez

### NIH Clinical Research Trials and You

NIH has created a Web site, NIH Clinical Research Trials and You, to help people learn about clinical trials, why they matter, and how to participate. The site includes questions and answers about clinical trials, guidance on how to find clinical trials through ClinicalTrials.gov and other resources, and stories about the personal experiences of clinical trial participants. Clinical trials are necessary to find better ways to prevent, diagnose, and treat diseases.

Web site: www.nih.gov/health/clinicaltrials/

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