

## Side effects

Side effects with most EFA supplements are rare, because EFAs are nontoxic and are used by the body as energy when taken in excess. The exception is cod liver and fish oil supplements, which can cause **vitamin A** and D toxicity when taken in excess. Side effects of vitamin A and D toxicity include headaches, skin discoloration, fatigue, **nausea**, and gastrointestinal problems. Fish oil supplements that have vitamins A and D removed are available.

## Interactions

To maximize the benefits of EFA supplements, several recommendations can be followed. EFA users should reduce the amount of fat, particularly saturated fat from animal products, in their diet. The American Heart Association recommends that a healthy diet contains 30% or less of its total calories from fat. For 2000 total calories per day, 600 calories or less should be from fat, including EFA supplements. Consumers should also completely eliminate hydrogenated and partially hydrogenated oils from their diets. This includes eliminating all processed foods that contain them, such as margarine and many packaged foods. Other foods that contain trans-fatty acids, such as deep fried foods, should also be eliminated. Recommended cooking oils are olive, safflower, canola, and sesame oils. EFA effectiveness may be increased by lowering the intake of sugar and alcohol in the diet. Nutrients that assist EFA uptake are the B-complex vitamins, **vitamin C**, **zinc**, and **magnesium**. As with any supplement, EFA effectiveness can be augmented with a nutritious, high fiber diet that emphasizes fresh and natural foods, and the intake of fish two times a week.

## Resources

### BOOKS

- Barilla, Jean. *The Nutrition Superbook: The Good Fats and Oils*. New Canaan, CT: Keats, 1996.
- Erasmus, Udo. *Fats That Heal, Fats That Kill*. Burnaby, Canada: Alive Books, 1993.
- Finnegan, John. *The Facts about Fats*. Berkeley: Celestial Arts, 1993.
- Rudin, Dr. Donald O. and Clara Felix. *The Omega-3 Phenomenon*. New York: Rawson, 1987.
- Schmidt, Michael. *Smart Fats*. Berkeley: Frog Press, 1997.

### PERIODICALS

- "Getting Omega-3 Without the Mercury." *Nutrition Today* (July-August 2002): 142.
- "Oil-in-One." *Better Nutrition* (September 2002).

### ORGANIZATIONS

- Northwest Academy of Preventative Medicine. 15615 Bellevue-Redmond Road, Bellevue, WA 98008. (206) 881-9660.

## KEY TERMS

**Atherosclerosis**—Hardening of the arteries.

**Cholesterol**—A steroid fat found in animal foods that is also produced in the body for several important functions. Excess cholesterol intake is linked to many diseases.

**Hydrogenated fat**—An unsaturated fat, commonly vegetable oil, that is processed with high heat and hydrogen to make it solid at room temperature. Margarine is a common hydrogenated fat.

**Trans-fatty acid**—A toxic type of fat created by hydrogenating oils and by deep frying foods.

Nutrition Health Review. 171 Madison Avenue, New York, NY 10016.

Nutrition Science News. 1401 Pearl Street, Boulder, CO 80302. (303) 939-8440.

Omega Nutrition. 720 East Washington St., Sequim, WA 98382. (800) 745-8580.

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## Essential oils

### Description

Essential oils are the fragrant oils that are present in many plants. Hundreds of plants yield essential oils that are used as perfumes, food flavorings, medicines, and as fragrant and antiseptic additives in many common products.

Essential oils have been used for thousands of years. The ancient civilizations of Mesopotamia, more than 5,000 years ago, had machines for obtaining essential oils from plants. Essential oils were the primary source of perfumes for the ancient civilizations of Egypt, India, Greece, and Rome. Essential oils have been found in 3,000-year-old tombs in the Pyramids, and early Greek physicians, including Hippocrates, mentioned aromatic plant essences and oil massages for their healing and mood-enhancing qualities. The Romans associated essential oils and their fine aromas with wealth and success. **Ayurvedic medicine**, the world's oldest healing system, has long recommended essential oil massage as a health treatment for many conditions.

In modern times, essential oils are used in the manufacture of high quality perfumes, as additives in many

common products, and in the healing practice of **aromatherapy**. Aromatherapy was begun in the 1920s by a French chemist named René-Maurice Gattefosse, who became convinced of the healing powers of essential oils when he used **lavender** oil to effectively heal a severe burn on his body. Gattefosse also discovered that essential oils could be absorbed into the bloodstream when applied to the skin, and had medicinal effects inside the body. Another Frenchman, Dr. Jean Valnet, used essential oils during World War II to treat soldiers, and wrote a major book on the topic in 1964 called *Aromatherapie*. European biochemist, Marguerite Maury, performed thorough studies of how essential oils influence the body and emotions, and popularized essential oil massages as therapy. In the 1990s, aromatherapy was one of the fastest-growing alternative health treatments.

Essential oils are produced using several techniques. Distillation uses water and steam to remove the oils from dried or fresh plants, and the expression method uses machines to squeeze the oil out of plants. Other techniques may use alcohol or solvents to remove essential oils from plant materials.

Essential oils are extremely concentrated. It would take roughly thirty cups of herbal tea to equal the concentration of plant essence in one drop of essential oil. Some essential oils made from rose plants require 4,000 pounds of rose petals to make one pound of essential oil, and are thus very expensive. Lavender is one of the easiest essential oils to produce, because it only takes one hundred pounds of plant material to produce one pound of essential oil. Essential oils are generally very complex chemically, containing many different substances and compounds. Some experts have theorized that essential oils are the lifeblood of a plant, and contain compounds that the plant uses to fight **infections** and drive away germs and parasites. Scientific research has isolated hundreds of chemicals in essential oils, and has shown many essential oils to have anti-bacterial, anti-fungal, and anti-parasitic properties. Some essential oils contain more than 200 identified chemical substances.

Although there are hundreds of essential oils that are used regularly in healing treatments and perfumes, some of the more commonly used essential oils are lavender, **chamomile**, **peppermint**, **tea tree oil**, **eucalyptus**, geranium, jasmine, rose, lemon, orange, **rosemary**, frankincense, and sandalwood.

### General use

Essential oils are used in several healing systems, including aromatherapy, Ayurvedic medicine, and **massage therapy**. Essential oils are used for skin and scalp conditions including **acne**, **athlete's foot**, **burns**, cuts,

**dandruff**, **eczema**, insect bites, parasites, **sunburn**, **warts**, and wrinkles. They are recommended for muscle, joint, and circulation problems such as arthritis, high blood pressure, **cellulite**, aches and pains, and **varicose veins**. For respiratory problems and infections, various essential oils are prescribed for **allergies**, **asthma**, **ear-ache**, sinus infections, congestion, and colds and flu. Essential oils are also used to improve digestion, promote hormonal balance, and tone the nervous system in conditions including **anxiety**, **depression**, **sexual dysfunction**, and exhaustion.

Essential oils can be used as quick and effective mood enhancers, for increasing energy and alertness or reducing **stress** and promoting **relaxation**. Essential oils can be used as perfumes and lotions, and can be used as incense to improve the atmosphere in houses and offices.

In 2002, several reports were made on the benefits of tea tree oil in fighting infections. Although still preliminary, these reports will help pave the way to greater acceptance of essential oils in the mainstream medical community. In the case of tea tree oil, one small study showed its effectiveness in fighting orthopedic (bone, joint, and soft tissue) infections. Another recent study showed promising results for tea tree oil gel in topical treatment of recurrent herpes labialis.

### Preparations

Essential oils work by entering the body in two ways, through the nose and through the skin. The nose is a powerful sense organ, and the sense of smell is connected directly to the limbic system of the brain, which helps control emotions, memory, and several functions in the body. Research has shown that aromas and the sense of smell influence memory recall, moods, and bodily responses such as heart rate, respiration, hormone levels, and stress reactions. Essential oils with their potent aromas can be used to enhance moods, promote relaxation, and increase energy levels.

Essential oils are also absorbed by the skin, and act medicinally once they are absorbed into the body. For instance, eucalyptus oil, long used in common **cough** and cold remedies, can be rubbed on the chest to break up congestion and mucus inside the lungs. Some essential oils, such as tea tree oil, lavender, and **thyme**, have natural antiseptics in them, and can be applied to cuts, burns, and sores to disinfect and promote healing.

Because essential oils are very strong and concentrated, they should be diluted with *base oils* before rubbing them directly on the body. Base oils are gentle and inexpensive oils, and common ones include almond, jojoba, grapeseed, sunflower, and **sesame oil**. Mineral oil is not recommended as a base oil. Essential oils should be

diluted to make up 1–3% of a base oil solution, which is one to three drops of essential oil per teaspoon of base oil. For larger quantities, 20 to 60 drops can be added per 100 milliliters of base oil. Only a few essential oils can be rubbed directly on the skin without dilution. These are lavender, tea tree oil, eucalyptus, and geranium, although people with sensitive skin should use them with care.

Allergic reactions are possible with essential oils. People with sensitive skin or allergies should perform a simple skin test when using essential oils for the first time. To do a skin test, one drop of essential oil can be added to a teaspoon of base oil, and a small amount of this solution can be rubbed on a sensitive spot on the skin, such as the soft side of the arm or behind the ear. If no irritation occurs after 24 hours, then the essential oil is non-allergenic.

Essential oils can be used in a variety of ways. They can be added to massage oils for therapeutic massages. Essential oil solutions can be used on the skin, scalp and hair as lotions, conditioners, and perfumes. A few drops of essential oils can be added to bath water or used in the sauna. Essential oil diffusers, lamps, and candles are available which use heat and steam to spread (diffuse) the aroma of essential oils in rooms. Essential oils can be added to hot-and-cold compresses for injuries and aches. Some essential oils, like tea tree, **fennel**, and peppermint oil, can be combined with a mixture of water and apple cider vinegar and used as mouthwash. For colds and congestion in the lungs or sinuses, essential oils can be inhaled by adding a few drops to a pot of boiling water, and covering the head with a towel over the pot and breathing the vapors.

Consumers should search for essential oils made by reputable manufacturers. Essential oils should be certified to be 100% pure, without chemical additives or synthetic fragrances. The highest quality oils are generally obtained from distillation and cold pressing methods.

### Precautions

Essential oils should not be taken internally, by mouth, rectum or vagina, unless under medical supervision. Essential oils should be kept away from the eyes. If an essential oil gets into the eyes, they should be rinsed immediately with cold water. Essential oils should be used with care on broken or damaged skin.

Some essential oils have not been thoroughly tested and may be toxic. The oils to be avoided include **arnica**, bitter almond, calamus, cinnamon, clove, **mugwort**, **sage**, **wintergreen**, and **wormwood**. Pregnant women should avoid these and basil, fennel, marjoram, **myrrh**, oregano, star **anise**, and tarragon. In general, any essen-

tial oils that have not been tested or lack adequate information should be avoided.

Some essential oils may cause the skin to become photosensitive, or more sensitive to sunlight and more likely to become sunburned. Essential oils that are photosensitizing include bergamot, orange, lemon, lime, grapefruit, and **angelica** root. These oils should be avoided before exposure to sunlight and ultraviolet light such as in tanning beds. People with sun-related skin problems should avoid these oils.

Those with health conditions should use care with essential oils. Steam inhalation of essential oils is not recommended for asthma sufferers. The essential oils of rosemary, fennel and sage should be avoided by those with **epilepsy**.

Pregnant and nursing women should use caution with essential oils, because their skin and bodies are more sensitive and some oils may cause adverse reactions. Essential oils should not be used during the first three months of **pregnancy**, and after that they should only be used when heavily diluted with base oils. Women with histories of miscarriage should not use essential oils during pregnancy at all. Pregnant women should perform skin tests before using essential oils. Essential oils are not recommended for nursing mothers.

Essential oils should be used with care on children. They are not recommended for children under one year of age, and should be heavily diluted with base oils when used as a skin massage or lotion for children.

Essential oils should be stored out of the reach of children. Clean glass containers are the best storage vessels, and should be dark in color to keep sunlight from damaging the oil. Some essential oils can damage wood, varnish, plastic, and clothing, and should be handled with care.

### Side effects

Most readily available essential oils are safe if used in small doses, and side effects are generally rare. Possible side effects include **rashes**, **itching**, and irritation on the skin. Allergic reactions include watery eyes, **sneezing**, and inflammation. Some essential oils may cause **nausea**, **dizziness**, or gastrointestinal discomfort when used in excess or by those with allergic reactions. Some essential oils, particularly those derived from citrus fruit plants, can cause increased sensitivity to sunlight and increased risk of sunburn.

### Interactions

Essential oils are not recommended for those taking homeopathic remedies, as essential oils are believed to

## KEY TERMS

**Aromatherapy**—The use of essential oil aromas as health therapies.

**Ayurvedic Medicine**—Healing system developed in ancient India and practiced around the world today.

**Homeopathic remedy**—Medication prescribed by a homeopathic doctor.

interfere with their effectiveness. Essential oils are often blended together to enhance their healing effects, and mixtures can be tailored to individual preferences and conditions. Aromatherapists specialize in creating essential oil blends for individuals and health conditions.

### Resources

#### BOOKS

Cooksley, Virginia Gennari. *Aromatherapy: A Lifetime Guide to Healing with Essential Oils*. Englewood Cliffs, New Jersey: Prentice Hall, 1996.

Lawless, Julia. *The Illustrated Encyclopedia of Essential Oils*. Rockport, Massachusetts: Element, 1995.

Wildwood, Chrissie. *The Encyclopedia of Aromatherapy*. Rochester, Vermont: Healing Arts Press, 1996.

#### PERIODICALS

Walsh, Nancy. "Tea Tree Oil for Infections." *Internal Medicine News* (July 1, 2002):16–21.

*The Aromatic Thymes*. 75 Lakeview Parkway, Barrington, Illinois 60010.

#### ORGANIZATIONS

American Alliance of Aromatherapy. P.O. Box 750428, Petaluma, California 94975.

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## Essiac tea

### Description

Essiac tea is based on a Canadian Ojibwa Indian formula containing primarily **burdock root** (*Arctium lappa*), Turkish **rhubarb root** (*Rheum palmatum*), **sheep sorrel** (*Rumex acetosella*), and the inner bark of the **slippery elm** (*Ulmus fulva* or *Ulmus rubra*). It is used in alternative medicine mainly as a treatment for **cancer**.

The formula is said to have been first developed by an Ojibwa healer to purify the body and balance the spir-

it. In 1922, the formula came to the attention of Rene Caisse (essiac is Caisse spelled backwards), a nurse in Ontario, Canada, after hearing first-hand accounts of it curing cancer. She began administering the tea to cancer patients and found it to have remarkable healing abilities. She continued treating cancer patients with the tea until she died in 1978. In 1977, Caisse sold the essiac tea formula to the Resperin Corp. of Ontario, Canada.

Caisse reported that hundreds of her patients had been cured of their cancers through the use of her tea, sometimes used as intramuscular injections. Most of the patients came to her after conventional cancer treatments (surgery, chemotherapy, and radiation therapy) failed. Several alternative health care practitioners report essiac tea seems to work best in patients who have had the least amount of radiation therapy or chemotherapy.

The mainstream medical community does not embrace essiac tea. Critics contend that a certain number of cancers deemed incurable spontaneously go into remission without an adequate medical explanation as to why. Others chalk up the successes to the so-called **placebo effect**, where the belief that the treatment is working effects a cure rather than the treatment itself. The treatment is not approved by the American Medical Association or the American Cancer Society.

In 1938, a bill in the Canadian Parliament to legalize essiac tea failed by three votes. It is still not approved for marketing in the United States or Canada. However, the Canadian Health and Welfare Department permits compassionate use of essiac tea on an emergency basis.

In 1975 and again in 1982, the Memorial Sloan-Kettering Cancer Center in New York tested only the sorrel component in the tea. They boiled it which may have neutralized any beneficial compounds in the leftover tea and administered it to mice with cancerous tumors. It determined the formula had no anticancer effects. The National Cancer Institute and Canadian Bureau of Prescription Drugs reached the same conclusion in the 1980s.

### General use

Essiac tea is generally used by alternative health care practitioners to treat, and even cure, various forms of cancer and the side effects of conventional cancer therapy. It is also used to treat **AIDS**. It is used to a lesser extent to treat a variety of other medical conditions, including diabetes, skin inflammation, liver and thyroid problems, **diarrhea**, ulcers, and some other degenerative diseases. It is more commonly used in Canada than the United States. Other uses include treating **pain**, purifying the blood, healing **wounds**, lowering **cholesterol**, and increasing energy levels.