AROMATHERAPY: THE HEALING POWER OF SCENT

COURSE DESCRIPTION

Aromatherapy is a complementary and alternative therapy that uses essential oils to promote both physical and psychological health. It is often used in conjunction with massage, meditation, and other therapies to achieve healing.

Aromatherapy has gained in popularity in recent years, and clinical aromatherapy (the use of specific essential oils for the prevention and treatment of health conditions) is being incorporated into treatment plans by naturopathic physicians, medical doctors, registered nurses, licensed massage therapists, and licensed acupuncturists as well as other health care providers.

The outcome of this course is for the learner to describe the historical use of fragrance and aromatherapy for healing, the methods of essential oil extraction and application, the clinical effects of essential oils using a body systems approach, the research about using aromatherapy for specific conditions, contraindications regarding the use aromatherapy, and the key elements of some of the most common essential oil monographs.

COURSE OBJECTIVES

Upon completing this course, you will be able to do the following:

1. Define aromatherapy.
2. Describe the historical use of fragrance and aromatherapy for healing.
3. Describe how essential oils are absorbed into the body.
4. Examine methods of essential oil extraction.
5. Describe methods of essential oil application.
6. Describe the clinical effects of essential oils using a body systems approach.
7. Examine evidence-based clinical research regarding the use of aromatherapy for specific conditions.
8. Discuss safety issues and contraindications in aromatherapy use.
9. Discuss training and education for aromatherapists.
10. Describe the key elements of some of the most common essential oil monographs.
INTRODUCTION

Aromatherapy is defined as the use of essential oils from plants (flowers, herbs, or trees) as therapy to improve physical, emotional, and spiritual well-being. Essential oils are most often inhaled or applied to the skin (National Center for Complementary and Alternative Medicine [NCCIH], 2016).

Aromatherapy can also be defined as the art and science of utilizing naturally extracted aromatic essences; as such, it seeks to explore the physiological, psychological, and spiritual realm of an individual's response to aromatic extracts as well as to observe and enhance the individual's innate healing process (National Association for Holistic Aromatherapy [NAHA], 2017; Tisserand, 2017).

As a holistic practice, aromatherapy is both a preventive approach to health and an active method employed during acute and chronic stages of illness or disease. It is a natural, noninvasive modality designed to heal the whole person (not just the symptom or disease) and to assist the body's natural ability to balance, regulate, heal, and maintain itself through the correct use of essential oils.

Despite much scientific research and the fact that scientists have long known that certain smells have the power to evoke strong physical and emotional reactions, aromatherapy is often misunderstood and therefore somewhat marginalized. Because aroma literally means fragrance, a popular misconception of aromatherapy is that it involves only the inhalation of perfumes that have little therapeutic value.

Just how essential oils work is not entirely understood. Healthy humans can detect as many as 10,000 different odors but most people are completely unaware of the extent to which smell affects their daily lives (Fontaine, 2000; Keville & Green, 2009).
Some therapists believe that essential oil is the “soul” of the plant, interacting with the body to uplift the spirit and heal conditions of the body and mind (Rankin-Box, 1996). However, after a decade of developing protocols and policies, the use of aromatherapy is expanding (Buckle, 2016). Aromatherapy is now one of the fastest growing therapies in the United States and globally, and it is rapidly gaining scientific, medical, and popular recognition (NAHA, 2017).

**HISTORICAL PERSPECTIVE**

Evidence of the use of essential oils for healing dates back tens of thousands of years. Some research estimates that Australian aborigines developed knowledge of native plants for medicinal purposes over 40,000 years ago. For example, the Australian tea tree (*Maleleuca alternifolia*) is still used today for its valuable antibacterial and antifungal properties (Sorgen, 2007).

Early Chinese, Egyptian, Greek, and Roman empires used aromatherapy several thousand years ago for healing as well as religious ceremonies.

- The Chinese may have been one of the first cultures to use aromatic plants in their practices.
- Later, the Egyptians extracted cedarwood oil by using a distillation machine; they also used cloves, cinnamon, nutmeg, and myrrh to embalm the dead, and they used infused oils and herbal preparations for spiritual, medicinal, fragrance, and cosmetic use (Aromaweb.com, 2017).
- The Greeks, including Hippocrates, recognized the medicinal and aromatic benefits of plants. The *De Materia Medica* (considered by many to be the premiere historical source of information about medicines used by the Greeks and Romans) described the properties of approximately 500 plants (Aromaweb.com, 2017).
• Romans diffused oils in their temples and political buildings and bathed in hot tubs scented with oils. There are hundreds of references made to oils in the Bible (Fontaine, 2000).

Native American shamans have used herbs and aromatics for thousands of years as well (Lewis, 2015).

According to popular opinion, the Arabs discovered the distilling of plants in the Middle Ages (1000 to 1300 AD). Evidence of a terra-cotta distillation apparatus dating back 5,000 years or more (to the Indus Valley civilization) is in a museum in Italy. (Lewis, 2015).

The French used organic and oxygen-based compounds (terpenes, esters, aldehydes, phenols, ketones, and alcohol) in essential oils since the 19th century.

While these oils have been used throughout history, the term aromatherapy was coined in the 1930s by French chemist René-Maurice Gatetfossé, who described it as a particular branch of science and therapeutics. After badly burning his hand, Gatetfossé applied lavender essential oil to the injury. When it healed with remarkable speed and without infection or scarring, Gatetfossé became interested in the study of essential oils (Lewis, 2015). He investigated their properties and was the first person to analyze and record their individual chemical components, classifying them according to their properties (e.g., antitoxic, antiseptic, tonifying, stimulating, and calming). He carried out experiments in military hospitals during World War I and claimed remarkable results from using essential oils to prevent gangrene and heal burns (Horowitz; 2011; Lewis, 2015).
The use of essential oils became an integral part of health and healing throughout the world and prepared the path for the use of aromatherapy today (Keville & Green, 2012; Kligler & Lee, 2004).

Listed below are other important historic events in the use of aromatherapy for healing (Aromaweb.com, 2017; Keville & Green, 2012; Lewis, 2015):

- In the 12th century, an abbess of Germany named Hildegard grew and distilled lavender for its medicinal properties.
- In the 13th century, the pharmaceutical industry came into being and encouraged the distillation of essential oils.
- In the 14th century, herbal preparations were used to help fight the Black Death (an outbreak of bubonic plague that was pandemic throughout Europe and much of Asia).
- In the 15th century, additional plants were distilled to create the essential oils of frankincense, juniper, rose, sage, and rosemary.
- In the 16th century, people could purchase oils at an “apothecaary,” and more essential oils were introduced.
- In the 19th century, components of essential oils became isolated.

HOW ARE ESSENTIAL OILS ABSORBED INTO THE BODY?
Aromatherapy influences the physical, spiritual, and psychological levels of the mind-body. After topical application or inhalation, essential oils (with their fine aromatic molecules) pass through the skin or mucous membranes and enter the bloodstream, where they are carried by the lymph system and interstitial fluid to all organs of the body. When placed on healthy skin, the molecules are absorbed within a few minutes (Buckle, 2016).

**Aromatherapy Applied to the Skin**

Some research shows that essential oils may be more readily absorbed from skin locations with greater concentrations of sweat glands and hair follicles, such as the genitals, head, soles of the feet, palms of the hands, and armpits (Battaglia, 2004). However, essential oils are not as effectively absorbed through the skin if it is moist from perspiration or if other chemicals (such as lotions or sunscreens) have been applied. If the individual has perspired, he or she should wait several hours before applying an essential oil to achieve the most therapeutic benefits.

During a facial, for example, even though the skin is warmed, this warmth is just enough to facilitate absorption of the oils. Essential oils added to aromatic baths are beneficial if the water is not too hot. Aromatherapy used during a massage is an ideal way to facilitate the absorption of essential oils because the body is usually the appropriate temperature.

The effects of an essential oil can be relaxing or stimulating and can depend on a previous experience (Buckle, 2016).

**Aromatherapy Applied and the Sense of Smell**
Aromatherapy is most commonly experienced through the sense of smell. During inhalation, oil molecules enter the nasal passages, where they stimulate olfactory sensory neurons found on a small patch of tissue high inside the nose. Through a series of complex processes, the oil molecules stimulate the olfactory neurons and communicate with the limbic portion of the brain, which is responsible for our emotions, memory, and learning (NAHA, 2017; Rankin-Box, 2001). The limbic system, or “emotional brain,” is directly connected to parts of the brain that control heart rate, blood pressure, breathing, memory, stress levels, and hormone regulation. Because of this relationship, smells and aromas trigger emotions that can cause profound emotional and physiological effects on the body.

Specific smells and aromas can have a profound effect on our psyches and evoke memories of childhood, lost loves, happiness, sadness, or a whole range of emotions as real as the day they were first experienced. Smell has an immediate impact on the mind and body, is not influenced by language, and is unimpaired by the passage of time.

Culture may play a role in a person’s sensitivity to smells. Certain aromas in perfumes and fragrances can evoke different emotional responses. Our reactions to different scents are influenced by our personal experiences. For example, vanilla is comforting to most Americans, but has little effect on most Japanese people, probably because the unfamiliar scent has no link to their childhood memories (Keville & Green, 2012).

**METHODS OF EXTRACTION**

The method by which oils are extracted from plants is crucial and affects the quality of the oil. Only steam-distilled or expressed extracts can legitimately be called essential oils. These two methods use no solvents or impurities. Many of products that are
labeled essential oils on the market today are actually extracted using petrochemicals (solvents), which can cause allergic or sensitivity reactions in users. The label on an essential oil should state that the contents are "pure" and how they have been extracted. However, because standards for quality control of essential oils do not currently exist, it is important to find reputable sources that sell good quality essential oils (Buckle, 2016).

Essential oils are extracted from different parts of plants, including the roots (calamus), gum (frankincense), bulb (garlic, onion), bark (cinnamon), flower (lavender, rose), blossoms (orange blossom or neroli), dried flower buds (clove), fruit (lemon, mandarin), grasses (lemongrass), wood (camphor, sandalwood), and leaves (eucalyptus, peppermint). It takes various amounts of a plant to yield an essential oil. For example, to obtain 2 ounces of rose essential oil requires 220 pounds of rose petals. Lavender, lemon, and eucalyptus essential oils require a much smaller quantity of raw ingredients for production. This is one element that accounts for the difference in price among essential oils (Lewis, 2015).

Many essential oils are obtained from plants that are specifically grown, or farmed, for the purpose of obtaining their oil. Others are obtained from plants harvested in the wild. To ensure an abundant supply of raw ingredients for essential oils in the future, it is important that wild medicinal plants are not over-harvested, organic cultivation is encouraged, and responsible management of resources is encouraged (Keville & Green, 2012)

METHODS OF APPLICATION

Aromatic oils can be inhaled, used topically in baths, used as compresses, massaged into the skin, used topically on the skin, used in a spray, or mixed into an ointment and applied directly to the skin.

While essential oils are not intended for internal use, some French physicians insert them internally via rectum or mouth. For internal use in the United States, some
essential oils (such as oil of peppermint and cinnamon), can be used to make teas or mouthwashes, or mixed with a glass of honey and water. The dose depends on the particular oil used, but a physician, naturopath, or other practitioner should be consulted before any essential oil is used internally (Buckle, 2016; Lewis, 2015; Moore & Schmais, 2000).

AROMATHERAPY IN CLINICAL SETTINGS

Aromatherapy is currently used in a wide variety of settings throughout the United States and Europe including the following (Halm, 2008; McUsic, 2008; Lewis, 2015):

- Intensive care units
- Coronary care units
- Renal units
- Neurological units
- HIV/AIDS units
- Geriatric units
- Cancer units
- Palliative care settings
- Hospices
- Pediatric units
- Midwifery units
- Obstetrical units
- Learning disability settings
- Burn units
- Outpatient clinics
- Medical spas
- Fitness and spa facilities
- Private aromatherapy practices
Aromatherapy is used for a wide variety of clinical conditions ranging from stress and anxiety-related issues to muscular pains, digestive disorders, and certain women’s health issues such as premenstrual syndrome. As a general consideration, individuals with skin allergies or asthma should carefully consider whether to use aromatherapy oils because their airways may become swollen from an allergic reaction and life-threatening anaphylaxis can result. Individuals with asthma or allergies should consult a professional aromatherapist or other professional trained in aromatherapy (e.g., physicians, naturopaths, nurses, physical therapists, and massage therapists) before using essential oils. (American Cancer Society, 2017; Moore & Schmais, 2000).
sections provide a brief overview of the body’s major systems and examples of effective aromatherapy treatments for each.

**Circulatory System**

The circulatory system transports blood throughout the body and includes the heart, blood vessels, and lymphatic system (which supplies nutrients and moves cellular fluid through the body). Bay leaf, lemon, and grapefruit are often used to stimulate the lymphatic system during massage. Neroli oil can lower blood pressure, while chamomile, myrtle, and cypress oils are effective in easing the pain and inflammation associated with varicose veins, phlebitis, and hemorrhoids (Keville & Green, 2012).

**Musculoskeletal System**

For degenerative conditions such as arthritis and rheumatism, aromatherapists contend that the entire body must be treated, with a focus on the musculoskeletal system. Essential oils with anti-inflammatory properties that stimulate blood flow to the muscles and eliminate toxins from the musculoskeletal system include grapefruit, juniper, and helichrysum. Rosemary and lemongrass can be used to ease stiffness (Keville & Green, 2012).

**Gastrointestinal System**

How effectively a person processes and assimilates nutrients, and how thoroughly waste is eliminated from the body are crucial to well-being. Digestive harmony is created when one eats in a peaceful environment; eats wholesome, organic foods (whenever possible); and experiences effective elimination. Digestive fluids are released in the mouth, stomach, pancreas, gallbladder, and small intestine when aromas signal the brain that food has been ingested or is about to be ingested. The
essential oils found in culinary herbs such as basil, cumin, anise, coriander, ginger, and cinnamon can make food taste flavorful and stimulate as well as support the body’s digestive processes (Keville & Green, 2012).

**Nervous System**

The nervous system provides the connection between the mind and the body and supports the action of every muscle and organ. For stress-related issues (e.g., insomnia, hypertension, anxiety), bergamot, chamomile, lavender, clary sage, neroli, rose, or jasmine may be helpful. For insomnia due to mental agitation, clary sage, marjoram, ylang-ylang, and neroli may be helpful (Keville & Green, 2012).

**Integumentary System**

An excellent antiseptic for skin conditions is a spray made from essential oils. The germ-killing abilities of turpentine found in essential oils such as tea tree, pine, eucalyptus, and lemon are effective when used in a diluted spray. Essential oils that encourage new cell growth for faster healing include tea tree, lavender, eucalyptus, rose geranium, sandalwood, and rose (Keville & Green, 2012).

**Respiratory System**

The respiratory system supplies oxygen to the bloodstream so it can supply the body’s cells with oxygen. It also carries nutrients to the cells, removes carbon dioxide from the body, and helps regulate the body’s pH levels. The respiratory system consists of the
mouth, nose, pharynx, larynx, trachea, bronchi, bronchioles, lungs, and diaphragm. When an illness affects the respiratory system, inhaled essential oils can help increase the body’s ability to fight congestion and infections of the nose and throat. The essential oils of rosemary, hyssop, tea tree, eucalyptus, lavender, and peppermint can be helpful (Keville & Green, 2012).

**Immune System**

Essential oils can help increase the body’s resistance to disease by improving the immune system’s ability to fight infection. Essential oils should not be completely relied upon in the case of a serious illness but they can be integrated into any therapeutic program. The essential oils of lavender, lemon, bergamot, thyme, chamomile, pine, sandalwood, myrrh, and vetiver stimulate the production of leukocytes (white blood cells), which help the body fight disease-causing microorganisms (Keville & Green, 2012).

**AROMATHERAPY FOR SPECIFIC CLINICAL CONDITIONS**

Available scientific evidence does not support claims that aromatherapy cures or prevents disease. However, clinical studies suggest that aromatherapy may be a beneficial complementary therapy to support other treatment methods (American Cancer Society, 2017; NCCIH, 2016).

**Effects of Aromatherapy for Cancer**

Studies on the effects of aromatherapy used during massage in people with cancer have demonstrated mixed clinical outcomes. Some studies show no differences in the levels of anxiety, depression, tension, or pain experienced by these patients after a massage with essential oils. However, research in Britain has shown that aromatherapy massage has resulted in the reduction of anxiety, depression, tension, and pain in patients with cancer. Other studies have revealed the following (American Cancer Society, 2017; NCCIH, 2016):
❑ Inhaling the vapors from black pepper extract reduced the craving for tobacco in lung cancer patients and improved patients’ moods.

❑ The use of citrus fragrance by twelve depressed cancer patients made it possible to reduce the amount of antidepressant medicine they needed during treatment.

❑ Aromatherapy may have changed a cancer patient’s memory of pain, even though the person’s perception of the pain’s severity while it was happening did not change.

❑ The power of suggestion may explain at least part of the effect of aromatherapy. For example, in one study, a saltwater placebo was just as effective in reducing nausea as an essential oil used in the study.

❑ A daily scalp massage with essential oils was shown to be a safe and effective treatment for hair loss resulting from alopecia areata, a condition in which the patient’s immune system damages the hair follicles. This treatment has not been evaluated as a treatment for hair loss related to cancer treatments but holds some interesting promise.

Aromatherapy for Insomnia

Research shows that certain essential oils may help promote relaxation and thereby promote improved sleep. Although many essential oils can be used to help an individual relax or make it easier to fall asleep, a few oils are particularly good in fulfilling those needs (Wong, 2015).
Studies have shown that the top five essential oils for insomnia are lavender, chamomile, bergamot, sandalwood, and mandarin (NCCIH, 2016; Wong, 2015):

- **Lavender**, an herb that produces one of the most popular essential oils, can be grown in a garden. This bushy plant produces pale violet flowers that bloom all summer. Its varied uses include aiding with digestion, acting as an antidepressant, calming the nervous system, relaxing the body, and enabling blissful sleep. This essential oil is often used in a warm bath or with a diffuser, also known as a “mist maker.”

- The flowers from the **chamomile** plant are the only part used to make this therapeutic essential oil. As a tea, it is used to calm an upset stomach. Used in aromatherapy, it is most effective in reducing insomnia. It has a fruity, slightly sweet fragrance and both the German and Roman chamomiles are good for reducing insomnia.

- Extracted from citrus fruit rind, **bergamot** has a lovely citrus scent that creates a sense of well-being and a feeling of being refreshed. It relieves stress and enables an individual to relax. Interestingly, bergamot is the main ingredient in Earl Grey tea.

- **Sandalwood** comes from wood of the sandalwood tree. To produce the proper intensity of oil for therapeutic purposes, the tree must be at least 30 to 40 years old. The older the tree, the better the quality of oil; a tree 80 years old will produce excellent oils. Sandalwood is a calming agent that relieves nervous tension and helps a person relax.

- **Mandarin** can be formulated into two different types of oil, one green and the other red. Among its many advantages, mandarin is gentle enough to use with children as well as adults. Interestingly, its scent is closer to that of a bergamot oil and less like the tangerine it’s expected to smell like. Mandarin oil has been shown to be a successful treatment for sleep difficulties and may be almost as effective as lavender.

Sometimes a combination of scents can help an individual feel more relaxed and promote a good night’s sleep. For example, combining lavender, chamomile, and bergamot and using jojoba as the carrier oil (an oil that is used to mix the other oils into) creates a wonderful aromatherapy blend for relaxation. Used either in a diffuser or by shaking three or four drops on a pillow before going to bed, this combination helps promote a restful sleep experience (Wong, 2015).

**Aromatherapy for Pain Relief**

Although clinical research on aromatherapy is in its infancy, early research is yielding very exciting results. For example, current trials suggest that aromatherapy may help patients cope with chronic pain (Chappell, 2017). Evidence suggests that aromatherapy might be used as a complementary therapy for managing chronic pain (NIH, 2017).
SAFETY ISSUES AND CONTRAINDICATIONS IN AROMATHERAPY USE

Two issues must always be considered when incorporating any therapy into clinical practice: safety and efficacy. Few adverse reactions to the use of aromatherapy or essential oils have been reported in the literature. The efficacy of this therapy has been more difficult to prove and much of the research about it is anecdotal. Research is just beginning to demonstrate aromatherapy’s potential for increasing well-being and improving health (NCCIH, 2016).

Aromatherapy is currently an unregulated field. Because of the lack of regulation regarding essential oils and aromatherapy, and because there is not a large amount of evidence-based research on this therapy, consumers and health care providers alike need to be aware of a variety of safety issues. They include the following (Buckle, 2016):

- Never take essential oils orally unless the therapy is provided under the supervision of a trained aromatherapy professional.
- Avoid the use of essential oils near the eyes to prevent irritation or damage.
- Store essential oils in a cool place out of sunlight and away from heat to assure they remain potent and effective. Essential oils can also be stored in the refrigerator.
- Keep the essential oil container closed tightly to help assure it does not become contaminated.
- Keep essential oils away from children and pets who may accidentally ingest them and become ill.
- Avoid using undiluted phenol-rich essential oils directly on the skin to prevent skin irritation.
- Only use essential oils obtained from a reputable supplier (someone who can identify the correct botanical name, place of origin, part of the plant used, method
of extraction, and batch number of the oil). This helps assure their purity and potency.

- Use caution when combining aromatherapy with other medications (such as phenobarbital and amphetamines) as essential oils can impact the effectiveness of these medications.

When working with an aromatherapy professional, consider asking the following questions to help ascertain the individual’s level of training, expertise, and education in this therapy (NAHA, 2017):

1. Have you ever heard of this method of application, or particular oil, benefiting other people with this condition?

2. Can you provide 3–5 reputable (preferably peer-reviewed, double-blind, controlled) resources supporting the use of this oil and the application method for this condition?

3. Would you typically use this oil in this manner?

4. What are the ingredients in this essential oil? Are they safe, free from impurities, and researched for their benefits?

5. Is there any research that shows this essential oil to be unsafe?

**Contraindications**

Essential oils should be used under the supervision of a trained professional. In addition, it is beneficial for individuals using aromatherapy to discuss it with their primary care providers. Aromatherapy must be used with caution when individuals have the following conditions (Buckle, 2016; University of Maryland Medical Center, 2013):
• Severe asthma or multiple allergies (any essential oil that is irritating to the skin or respiratory tract should be avoided)

• Cancer, chemotherapy, or immunosuppression

• Estrogen-dependent tumors, such as breast or ovarian cancer (essential oils with estrogen-like compounds, such as fennel, aniseed, sage, and clary sage, should be avoided)

• Cardiovascular hypertension (essential oils with stimulating properties, such as rosemary and spike lavender, should be avoided)

• Seizures (essential oils such as hyssop oil should be avoided)

• Pregnancy

Since it would be highly unethical to test on pregnant women, the list of essential oils to avoid during pregnancy is based on knowledge of the general properties of each essential oil. Due to the lack of clear information regarding the toxicity of essential oils during pregnancy, it is best to adhere to general safety guidelines. For obvious reasons, the use of essential oils, which are known to thin the blood or cause cramping or contractions, should be avoided during pregnancy or in a woman who suspects she may be pregnant. In the proper dilution, most of these oils should not cause any problems during a healthy pregnancy, but it is always best to err on the side of caution.

The following list contains oils that should be avoided during pregnancy (NAHA, 2017):

- Birch
- Camphor
- Cedarwood
- Cinnamon
- Clary sage (okay during labor)
- Hyssop
- Jasmine (okay during labor)
- Juniper
- Mugwort
- Parsley
- Pennyroyal
- Sage
- Tarragon
- Wintergreen
- Wormwood

As with many other forms of complementary therapies, research in the area of aromatherapy is in its early stages. Much of the research has been performed on animal models and isolated tissue cultures. Little is known about possible interactions with conventional medicine or therapies, so members of the medical profession continue to be reluctant to use aromatherapy along with conventional therapy. Further research is required before it is used commonly along with conventional medical therapy.

**TRAINING AND EDUCATION FOR AROMATHERAPISTS**

Since the 1980s, many schools of massage and aromatherapy have opened in both Europe and the United States. Training has increased and many nursing programs include courses in aromatherapy as part of their curricula.

Currently, there is no law in the United States that specifies a minimum level of training and practice for aromatherapists, although many practitioners are members of
aromatherapy organizations, and are also licensed health care professionals such as massage therapists, registered nurses, acupuncturists, and naturopaths. The National Association for Holistic Aromatherapy (NAHA) and the Alliance of International Aromatherapists, both have national education standards for aromatherapists, and NAHA has approved certificate programs at a number of schools. The Canadian Federation of Aromatherapists (CFA) certifies aromatherapists in Canada. Licensure will soon be standardized because the Alliance of International Aromatherapists (AIA) is currently in the process of developing certification standards (AIA, 2014; CFA, 2014; NAHA, 2017).

ESSENTIAL OIL MONOGRAPHS

Some of the most important essential oils in aromatherapy will be discussed in this section; however, many other essential oils are not listed. The interested learner is encouraged to seek out additional resources for further information.

Historical information, family name (herb’s botanical family), extraction method, clinical indications, psychological attributes, safety, and precautions are provided in the following monographs. The plant name is listed by the common name, with the botanical name in italics.

Consider the following essential oil monographs (Aromatherapy.com, 2010; Horowitz, 2011; Keville & Green, 2012; NAHA, 2017; National Institutes of Health [NIH], 2017; Natural Touch Aromatherapy, 2011):
### BERGAMOT (CITRUS BERGAMIA)

**History and Place of Origin**
These small green Mediterranean citrus fruits aren’t edible but the outer rind of the fruit emits an intoxicating scent. The oil was named after the town of Bergamo, Italy, where it was first distilled. It is also found in Sicily and the Ivory Coast. Bergamot is used in perfumes, Earl Grey tea, and some candles.

**Family**
*Rutaceae*

**Extraction and Application Method**
Bergamot is extracted by pressing the oil from the rind of the fruit. Bergamot can be used as incense or in a vaporizer. It can also be diluted with bathwater and blended with massage oils.

**Clinical Indications**
Bergamot is indicated for the diseases and conditions of the digestive system (e.g., irritable bowel syndrome [IBS], flatulence, colic, indigestion); immune system (e.g., viral or bacterial infections, herpes, chickenpox, shingles); nervous system (e.g., anxiety, tension, stress, frustration, irritability, depression); and integumentary system (e.g., acne, cellulite, oily skin, lymphatic congestion, lymphedema, warts).

**Psychological Attributes**
Bergamot helps to reduce stress, depression, anxiety, insomnia, irritability, and compulsive behavior.

**Safety and Precautions**
Bergamot is strongly phototoxic due to its bergapten content. It can occasionally cause a rash when skin that has been treated with it is exposed to the sun. The best products are those with labels that state “bergapten free.”
CEDARWOOD (CEDRUS SPECIES)

<table>
<thead>
<tr>
<th>History and Place of Origin</th>
<th>Cedarwood is a woody-scented essential oil commonly found in Morocco and native to North America. Cedarwood has been around for thousands of years and is thought to be one of the first essential oils to be extracted.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family</td>
<td>Cupressaceae</td>
</tr>
<tr>
<td>Extraction and Application Method</td>
<td>The essential oil is extracted from the wood chips of the cedar tree, using steam distillation. Cedarwood aromatherapy can be applied via vapor inhalation, as a massage oil blend, or mixed with facial creams.</td>
</tr>
<tr>
<td>Clinical Indications</td>
<td>Cedarwood is indicated for diseases and conditions of the musculoskeletal system (e.g., rheumatism, arthritis, gout); the nervous system (e.g., anxiety, tension, insomnia); the respiratory system (e.g., bronchitis, sinusitis, cough, excessive mucus production); and the integumentary system (e.g., acne, dandruff, oily skin, psoriasis, alopecia, fungal skin infections).</td>
</tr>
<tr>
<td>Psychological Attributes</td>
<td>The scent of cedarwood is emotionally invigorating and helps reduce anxiety, confusion, and stress.</td>
</tr>
<tr>
<td>Safety and Precautions</td>
<td>Cedarwood is nontoxic, non-irritating, and non-sensitizing for aromatherapy.</td>
</tr>
</tbody>
</table>
**CHAMOMILE (MATRICARIA RECUTITA)**

<table>
<thead>
<tr>
<th>History and Place of Origin</th>
<th>The Greeks named it kamai (ground) melon (apple) because of its apple-like scent. Chamomile includes several types of flowering plants, including Roman and German chamomile.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family</td>
<td>Asteraceae (Compositae)</td>
</tr>
<tr>
<td>Extraction and Application Method</td>
<td>Chamomile oil is extracted from chamomile flowers using steam distillation. Both varieties of chamomile can be blended with massage oils, used in steam or vapor therapy, or mixed with lotions and creams.</td>
</tr>
<tr>
<td>Clinical Indications</td>
<td>Chamomile is relaxing and can help with sleeplessness and anxiety. It reduces muscle aches and tension and aids in the treatment of wounds and infections.</td>
</tr>
<tr>
<td>Psychological Attributes</td>
<td>Chamomile can be used as a mild antidepressant, and the scent helps alleviate symptoms of stress, anxiety, and insomnia.</td>
</tr>
<tr>
<td>Safety and Precautions</td>
<td>Chamomile is considered nontoxic and non-irritating but since it has emmenagogic (menstruation-inducing) properties when used in high concentrations, it should be avoided during pregnancy.</td>
</tr>
</tbody>
</table>
# Eucalyptus (Eucalyptus Globulus)

## History and Place of Origin
Eucalyptus oil comes from the eucalyptus tree, a plant native to Australia. There are over 600 species of eucalyptus trees; the blue gum variety is the most widely used for oil and produces the most oil. In the late 1800s the French government planted eucalyptus trees in Algeria to ward off “noxious gases” thought responsible for malaria. It “worked” because the trees transformed the marsh into dry land, thus eliminating the mosquito’s habitat.

## Family
- **Myrtaceae**

## Extraction and Application Method
Eucalyptus oil is steam-distilled from the leaves and small twigs of eucalyptus trees.

## Clinical Indications
Eucalyptus is indicated for diseases and conditions of the immune system (e.g., infectious diseases, herpes, chickenpox); musculoskeletal system (e.g., muscular stiffness, arthritis, rheumatism, cramps, gout); nervous system (e.g., migraines, headaches, neuralgia); respiratory system (e.g., asthma, acute and chronic bronchitis, sinusitis, coughs, colds, fever); and integumentary system (e.g., insect bites, lice, acne, oily skin).

## Psychological Attributes
The scent from eucalyptus oil increases energy and helps with emotional balance, stress, and headaches.

## Safety and Precautions
Eucalyptus oil is nontoxic, non-sensitizing, and not usually irritating to the skin.
### JASMINE (JASMINIUM OFFICINALE)

#### History and Place of Origin

Originally from China and northern India, jasmine was brought to Spain by the Moors, with France, Italy, Morocco, Egypt, China, Japan, and Turkey producing the best essential oil. The most prized jasmine oil comes from France and Italy, although 80% of the oil is produced in Egypt. The name *jasmine* is derived from the Persian word *yasmin*. Jasmine oil is extracted from *Jasminum grandiflorum*, an evergreen with origins in China. There are 43 species of jasmine grown in East India, where it is called the “moonlight of the grove” and the “king of fragrance.”

#### Family

*Oleaceae*

#### Extraction and Application Method

Jasmine oil is obtained through the process of solvent extraction, which produces a substance (a fatty product) rather than an oil. This substance must then go through a process whereby the flowers are placed on top of the fatty substance to absorb the fragrance. This produces a pomade. The process takes many days. The fats are removed with alcohol and eventually the alcohol is removed to produce an oil. The high price of jasmine oil is due to this costly and labor intensive process, with a lot of flowers procuring little oil. The complex scent of jasmine is used in most great perfumes.

#### Clinical Indications

Jasmine has healing and relaxing properties. It is indicated for diseases and conditions of the reproductive system (e.g., menstrual and other muscle cramps) and integumentary system (e.g., dry and sensitive skin).

#### Psychological Attributes

Jasmine’s fragrance can soothe headaches, improve insomnia, and reduce the symptoms of depression and grief. It has also been used as an aphrodisiac for centuries.

#### Safety and Precautions

Overall, jasmine is a fairly safe and nontoxic oil; however, it can sometimes cause allergic dermatitis. Pregnant women should avoid jasmine because it might thin the blood, cause cramping or contractions.
**History and Place of Origin**

Native to the Mediterranean, lavender is one of the most popular herbs in the world. It has been associated with cleanliness since the Romans added it to bathwater thousands of years ago. Numerous varieties of lavender are now grown all over the world.

**Family**

*Lamiaceae (Labiatae)*

**Extraction and Application Method**

Lavender oil is extracted from the flowers of the lavender plant and steam-distilled. It’s a wonderful essential oil for a bath, a relaxing oil that massage therapists use for their clients, and, when a few drops are placed on a pillow, it helps promote a good night’s sleep.

**Clinical Indications**

Lavender is indicated for diseases and conditions of the circulatory system (e.g., high blood pressure, poor circulation); digestive system (e.g., colic, cramps, dyspepsia, flatulence); musculoskeletal system (e.g., headaches, cramps, pain, spasms, arthritis); nervous system (e.g., depression, mental fatigue, anger, tension, insomnia, anxiety); respiratory system (e.g., colds, flu, sinusitis); integumentary system (e.g., acne, skin infections, fungal infections, allergies).

**Psychological Attributes**

One of the best aromatic remedies, lavender is used to reduce stress-related conditions.

**Safety and Precautions**

One of the safest of all the essential oils, lavender is nontoxic, non-sensitizing, and non-irritating.
# LEMON (CITRUS LIMON)

**History and Place of Origin**
Originating in Asia, the lemon tree is widely cultivated in Italy, Australia, and California. A native of India, this evergreen tree grows up to about 6 meters (20 feet) and has dark green serrated oval leaves with highly perfumed pink/white flowers. The name is derived from the Arabic *laimun* or the Persian *limun*. The Crusaders in the Middle Ages brought the tree to Europe.

<table>
<thead>
<tr>
<th>Family</th>
<th>Rutaceae</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Extraction and Application Method</strong></td>
<td>Lemon oil is cold-pressed from the fresh peel. It is commonly used as a fragrance for the home (when a few drops of the essential oil are added to a diffuser or vaporizer), as a lotion in massage therapy, or as a bath oil.</td>
</tr>
<tr>
<td><strong>Clinical Indications</strong></td>
<td>Lemon oil is indicated for diseases and conditions of the immune system (e.g., boosts immune function, counters viral and bacterial infections); circulatory system (e.g., helps to lower high blood pressure, relieve throat infections and flu).</td>
</tr>
<tr>
<td><strong>Psychological Attributes</strong></td>
<td>The smell of lemon may increase one’s sense of humor and general sense of well-being. It can enhance mood, stimulate the mind, and increase concentration.</td>
</tr>
<tr>
<td><strong>Safety and Precautions</strong></td>
<td>Lemon oil isn’t toxic but it can cause an allergic dermatitis. Lemon oil should not be applied to skin that will be exposed to direct sunlight or ultraviolet light within 24 hours.</td>
</tr>
</tbody>
</table>
**MARJORAM (ORIGANUM MAJORANA)**

<table>
<thead>
<tr>
<th>History and Place of Origin</th>
<th>Marjoram oil is derived from a plant native to Asia and also found in France, Tunisia, and Spain. Marjoram was a popular plant used by the Greeks in medicines. Its flowering tops and leaves are used for essential oils.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family</td>
<td>Lamiaceae (Labiatae)</td>
</tr>
<tr>
<td>Extraction and Application Method</td>
<td>Marjoram oil is steam-distilled from the leaves and flowers of the herb. Marjoram is used in vapor therapy, bathwater, and massage oil.</td>
</tr>
<tr>
<td>Clinical Indications</td>
<td>Marjoram is indicated for diseases and conditions of the circulatory system (e.g., poor circulation, cold hands and feet, high blood pressure); digestive system (e.g., colic, cramps, dyspepsia, flatulence); genitourinary system (e.g., dysmenorrhea, post menstrual syndrome); musculoskeletal system (e.g., cramps, muscular aches and pains, arthritis, joint stiffness, sciatica); nervous system (e.g., anxiety, tension, headaches, insomnia, stress-related conditions); respiratory system (e.g., bronchitis, asthma, sinusitis, cough, colds and flu, chills and fever).</td>
</tr>
<tr>
<td>Psychological Attributes</td>
<td>Marjoram aids in relaxation and helps calm obsessive thinking. It helps reduce stress and anxiety.</td>
</tr>
<tr>
<td>Safety and Precautions</td>
<td>Although marjoram is nontoxic, it is not recommended during pregnancy.</td>
</tr>
</tbody>
</table>
### History and Place of Origin
Patchouli comes from the plant *Pogostemon cablin*. It originated in southeast Asia and is now available in Indonesia, India, and China. Indian women stuff mattresses with patchouli leaves and lay the leaves among clothes to scent them. Patchouli’s heyday was in the 1960s, and it is often associated with “hippies” who used it for its mood-lifting properties.

### Family
*Lamiaceae (Labiatae)*

### Extraction and Application Method
Patchouli oil is steam-distilled after it is extracted from the leaves. Since the oil results from the process of oxidation, the leaves carry little indication of their potential. They are aged for up to 24 hours before being distilled. Patchouli is used in bathwater, humidifiers, and blended in massage lotions.

### Clinical Indications
Patchouli is indicated for diseases and conditions of the digestive system (e.g., dyspepsia, abdominal pain and bloating, IBS, indigestion, colic); musculoskeletal system (e.g., arthritis, rheumatism, headaches); nervous system (e.g., anxiety, restlessness, agitation, stress-related tension, insomnia); integumentary system (e.g., chapped skin, dry skin, eczema, psoriasis, scars, inflamed or infected skin, wounds).

### Psychological Attributes
Patchouli helps reduce anxiety, nervousness, oversensitivity, and depression. An aphrodisiac, patchouli also helps insomnia while also being mildly stimulating.

### Safety and Precautions
Although nontoxic, it is best to use patchouli in small doses, given its strength. The aroma of patchouli improves with age, but the therapeutic effects of the oil may be adversely affected.
# PEPPERMINT (MENTHA PIPERITA)

![Peppermint Plant](image)

## History and Place of Origin
Native to the Mediterranean, peppermint leaves are long and serrated and the flowers can be white or mauve. Places of origin include China, the United States, and the United Kingdom. Peppermint is one of the few essential oil plants grown and distilled in the United States. Peppermint now grows wild throughout Europe, North America, and Australia. Menthol cones that evaporate into the air and candles scented with peppermint became popular in 1879 as a way to relieve headaches.

## Family
*Lamiaceae (Labiatae)*

## Extraction and Application Method
Peppermint oil is extracted before the herb flowers and is then steam-distilled. It is used in vaporizers, massage oils and lotions, baths, and mouthwash. The cloudy skies over Oregon and Michigan (where a lot of peppermint is grown) increase production of the oil, most of which is redistilled to produce a higher mint flavor.

## Clinical Indications
Peppermint is indicated for diseases and conditions of the digestive system (e.g., colic, cramps, dyspepsia, flatulence, nausea, IBS); genitourinary system (e.g., dysmenorrhea, PMS); nervous system (e.g., mental fatigue, migraine headaches, neuralgia); musculoskeletal system (e.g., headaches, cramps, muscular aches and pain); respiratory system (e.g., bronchitis, flu, sinusitis, cough, colds); integumentary system (e.g., sunburn, acne, ringworm).

## Psychological Attributes
Peppermint has an invigorating effect and must not be overused or insomnia could result. Peppermint stimulates the nerves and the brain, enhancing concentration.

## Safety and Precautions
Although peppermint is nontoxic, its menthol component may bother some people. Its use should be avoided in children less than 2 years of age, people with cardiac fibrillation, and pregnant women.
# ROSEMARY (ROSMARINUS OFFICINALIS)

## History and Place of Origin
Rosemary originated in Spain, Morocco, Tunisia, and France, and its name means “dew of the sea.” Throughout history, the plant has been thought of as sacred. The French name, **incensier**, came from rosemary’s historical use as church incense. Until the 20th century, the fragrant leaves were burned to purify French hospitals.

## Family
**Lamiaceae (Labiatae)**

## Extraction and Application Method
Rosemary is extracted from the flowering part or the leaves of the herb and then steam-distilled. Rosemary is blended with massage oils and lotions to help relieve stiff, aching muscles and in shampoos to stimulate the scalp.

## Clinical Indications
Rosemary is indicated for diseases and conditions of the circulatory system (e.g., poor circulation, cold extremities); digestive system (e.g., colic, cramps, dyspepsia, indigestion, liver toxicity); musculoskeletal system (e.g., headaches, cramps, muscular aches and pains, arthritis, neuralgia); nervous system (e.g., mental fatigue, stress-related disorders, poor concentration); respiratory system (e.g., mucus congestion, sinusitis, bronchitis); integumentary system (e.g., acne, skin infections, fungal infections, scalp stimulant).

## Psychological Attributes
Rosemary may help improve memory and is good for stimulating the mind and uplifting a person’s mood. Its antioxidant actions slow the breakdown of acetylcholine in the brain. It may be helpful for the elderly who experience psychosensory deterioration.

## Safety and Precautions
Rosemary is regarded as nontoxic, non-irritating, and non-sensitizing but there are a few contraindications to its use. Rosemary can be overwhelming and may increase blood pressure. People who have been diagnosed with epilepsy or high blood pressure should avoid the use of rosemary. Rosemary oil should also be avoided during pregnancy.
**History and Place of Origin**
Sandalwood has been used for at least 2,000 years and is one of the oldest perfume materials. It originated in India and Indonesia and has been introduced and cultivated in various southeastern Asian locations.

**Family**
*Santalaceae*

**Extraction and Application Method**
Sandalwood oil is extracted and distilled from the wood chips of a mature sandalwood tree. The best quality oil is obtained from trees more than 30 years old. Sandalwood can be blended with massage oil and lotions, added to a vaporizer, used as incense, and gargled.

**Clinical Indications**
Sandalwood is indicated for diseases and conditions of the circulatory system (e.g., varicose veins, lymphatic congestion); digestive system (e.g., dyspepsia, colitis, nausea, colic, indigestion); genitourinary system (e.g., urinary infections, cystitis); musculoskeletal system (e.g., arthritis, rheumatism, muscle spasm, pain); nervous system; (e.g., anxiety, restlessness, agitation, degenerative conditions, stress-related tension, insomnia); respiratory system (e.g., coughs, sore throats, chest tightness); integumentary system (e.g., chapped skin, eczema, scars, acne).

**Psychological Attributes**
Sandalwood may improve depression, anxiety, stress, and insomnia. Sandalwood is said to create an energy flow between the unconscious and conscious mind, thus reducing the tendency to overthink and rationalize behaviors and situations.

**Safety and Precautions**
Sandalwood is nontoxic, non-irritant, and non-sensitizing.
**TEA TREE (MELALEUCA ALTERNIFOLIA)**

<table>
<thead>
<tr>
<th>History and Place of Origin</th>
<th>Native to Australia, tea tree oil has long been used by aboriginal people for traditional remedies. Tea tree oil is one of the most popular and effective essential oils for aromatherapy use.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family</td>
<td>Myrtaceae</td>
</tr>
<tr>
<td>Extraction and Application Method</td>
<td>Tea tree oil is extracted from the tree’s leaves and steam-distilled. Tea tree oil can be inhaled via humidifier or steam inhalation or applied to the skin during massage when blended with lotion, oil, or cream. The drops can also be used in a bath.</td>
</tr>
<tr>
<td>Clinical Indications</td>
<td>Tea tree essential oil is indicated for diseases and conditions of the nervous system (e.g., anxiety, tension, insomnia, stress-related conditions); respiratory system (e.g., asthma, bronchitis, sinusitis, cough, chest infections); integumentary system (e.g., insect bites, boils, warts, skin infections).</td>
</tr>
<tr>
<td>Psychological Attributes</td>
<td>The scent from tea tree oil is said to build emotional strength, especially before surgery.</td>
</tr>
<tr>
<td>Safety and Precautions</td>
<td>Tea Tree oil is nontoxic, non-sensitizing, and non-irritating.</td>
</tr>
</tbody>
</table>

© ALLEGRA Learning Solutions, LLC  All Rights Reserved
YLANG-YLANG (CANANGA ODORATA)

(Used with permission from Gardino Nursery [2017])

<table>
<thead>
<tr>
<th>History and Place of Origin</th>
<th>Ylang-ylang originated in the Comoro Islands and Madagascar. Ylang-ylang means “flower of flowers.” The flowers are often grown for the perfume trade.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family</td>
<td>Annonaceae</td>
</tr>
<tr>
<td>Extraction and Application Method</td>
<td>Ylang-ylang is extracted from the flowers of a tropical tree and steam-distilled. Ylang-ylang can be used in a vaporizer or blended with lotions for massage purposes. Drops can also be added to the bath.</td>
</tr>
<tr>
<td>Clinical Indications</td>
<td>Ylang-ylang is indicated for disorders of the circulatory system (e.g., hypertension, palpitations); genitourinary system (e.g., menopausal imbalances); nervous system (e.g., depression, anxiety, stress-related tension, irritability, insomnia); integumentary system (e.g., acne, alopecia, oily skin).</td>
</tr>
<tr>
<td>Psychological Attributes</td>
<td>The fragrance (a sweet floral scent) is very relaxing.</td>
</tr>
<tr>
<td>Safety and Precautions</td>
<td>While ylang-ylang is nontoxic, overuse can lead to headaches.</td>
</tr>
</tbody>
</table>

**SUMMARY**

Aromatherapy is the technique of using essential oils from plants with the intention of promoting health and wellness and reducing stress. Essential oils of plants have been used for thousands of years and can be used for healing through application directly to the skin (usually diluted) as part of a massage, added to bathwater, and via steam inhalation. Aromatherapy is offered in many health care settings by a wide range of practitioners with licenses in other fields such as massage therapists, chiropractors, nurses, and other health therapists.
REFERENCES


