

***MENOPAUSE:  
UNDERSTANDING AND  
MANAGING THE  
TRANSITION USING  
ESSENTIAL OILS VS.  
TRADITIONAL  
ALLOPATHIC MEDICINE***

by

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## *I n t r o d u c t i o n*

"Every morning I greeted myself in the early winter light with the same ritual. Looking in the mirror with utmost seriousness I would pull the loose skin of my jowls behind my ears and contemplate the physical, emotional, and financial ramifications of a face lift. I dealt with the loose skin of the lower regions of my anatomy by refusing to look in the mirror altogether. For two months, I was sure that I was having hot flashes until I finally realized that they occurred only while I was standing under the bathroom lights for the protracted morning scrutiny. Even this was not reassuring for all I knew that menopause was surely on it's way."<sup>i</sup>

*Joan Boryensko – A Woman's Book of Life*

Menopause has been given many names by many different cultures. The change. The climacteric. The crowning. In American culture, menopausal women are often viewed as old, sexless women who complain of hot flashes and weight gain.

This American view of menopause is not common in most other cultures and societies. The Cherokee Indians believed that women did not enter adulthood until the age of 51. In Celtic cultures, the elder woman was seen as the seed –

the part that contains all the knowledge of the parts within it. The elder's role was to go forth and reseed the community with her wisdom. Anthropologists Margaret Mead and Judith K. Bwon studied the status of women in primitive cultures around the world. They found that women who have reached menopause are "crowned" wise women, midwives, healers, and givers of initiation.<sup>ii</sup> In a wide diversity of ancient cultures from North American to Middle Eastern, African to Aborigine, and European to Icelanders, postmenopausal women are valued for their intuitive wisdom. In ancient times, these women were trained as oracles, priestesses, shamans, and healers.<sup>iii</sup>

Menopause is an empowering spiritual and physiological change. Comprehending the reasons why menopause occurs, and the symptoms it creates, gives a greater understanding into this changing time of the female body. Unfortunately, for many women, some uncomfortable and unpleasant symptoms accompany this transition.

Although the symptoms of menopause are normal physiological occurrences during this time, it has become commonplace in the medical field to administer medication to stop the symptoms. A large number of women find it necessary to manage these symptoms through medication. Physicians

routinely prescribe hormone replacement therapy for women experiencing premenopausal and menopausal symptoms. The risks and side effects of these hormone replacement drugs can be serious and even deadly. Increasingly, statistics and studies show that hormone replacement therapy is not an effective or healthy way to manage menopausal symptoms.

Fortunately, there are safe alternative methods of effectively treating menopausal symptoms. One of these methods is aromatherapy. Aromatherapy and the use of essential oils for healing benefits date back to Egyptian times. It is a natural and much less dangerous way of balancing the body and managing menopausal symptoms. Aromatherapy can positively impact the immune system by improving mood, increasing brain activity, and enhancing other biological functions important to health and healing.<sup>iv</sup> Easing the transition through menopause using aromatherapy is a relaxing and safe way to manage the physiological changes of menopause.



## **Chapter 1 – Female Reproduction**

### **The Female Reproductive System**

In order to understand menopause, we must first understand the parts of the female body that make up the reproductive system, as well as the hormones that control the actions of the reproductive system. The female body is amazing in that it has the ability to bring forth life into the world, and we must understand the physiological processes that allow this to occur.

The female reproductive system consists of many parts, all of which play a vital role in reproduction. The organs of the female reproductive system include the ovaries, uterus, vagina, vulva, fallopian tubes, breasts, and Bartholin's glands.

The ovaries are the essential organs of reproduction. The female sex cells, or ova, are produced here. The ovaries also secrete the female sex hormones, estrogen and progesterone. The two ovaries resemble large almonds and attach on either side of the uterus by ligaments in the pelvic cavity.

## The Female Reproductive System

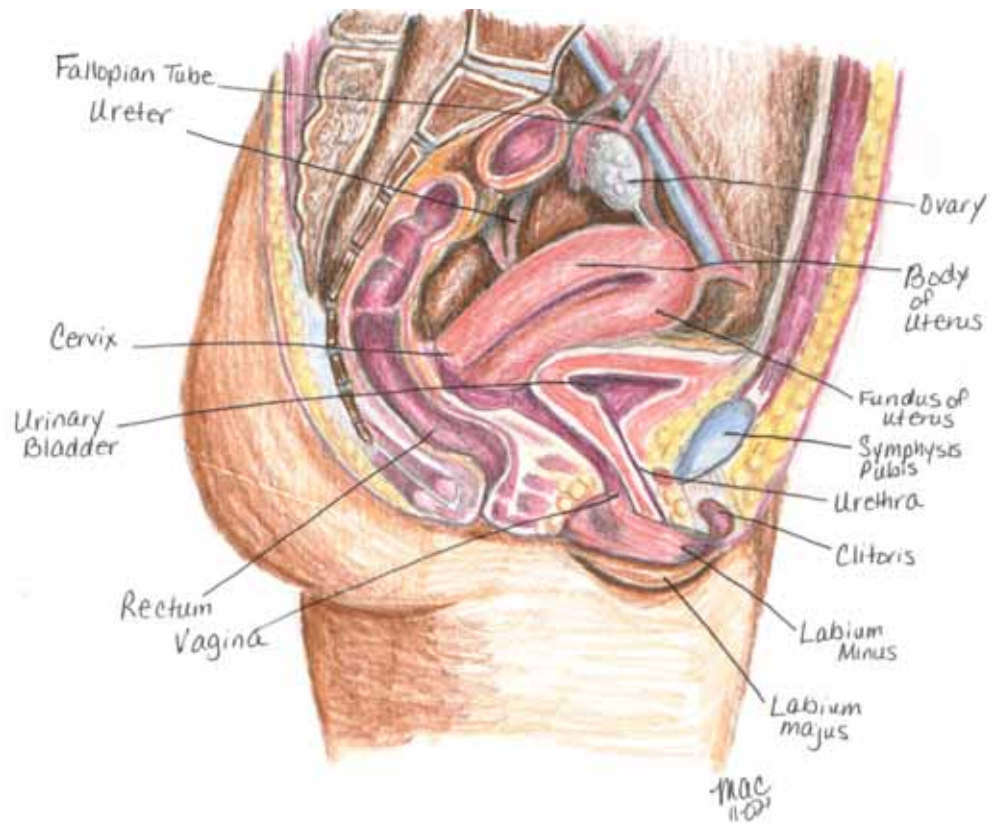


Figure 1.1

The fallopian tubes, or oviducts, act as ducts for the ovaries, connecting them to the uterus. The outer edge of each fallopian tube ends in a funnel-shaped structure with finger-like projections called fimbriae. The outer edges of the tubes curve over the ovary and into the abdominal cavity. The inner ends of the fallopian tubes attach to and open into the uterus.

The uterus has three functions: menstruation, pregnancy, and labor. It is a small pear shaped organ made up mostly of muscle with a small inner cavity. It lies in the pelvic cavity behind the bladder. The upper portion of the uterus is called the body, and the lower portion of the uterus is called the cervix. The uterus rounds out to form the fundus just above where the fallopian tubes attach.

The vagina opens to the exterior, and ends at the cervix. The sperm enter the female body through the vagina, and it is also where a baby emerges. The vagina is a tube about 4 inches long made up of smooth muscle and mucous membranes. It is located between the bladder and the rectum in the pelvic cavity.

The vulva is the external genitalia of the female. It consists of the mons pubis, clitoris, labia minora, labia majoris, and the hymen. The mons pubis is a skin

covered pad of fat over the symphysis pubis bone. The labia majora are elongated folds, or lips, made up of fat and glands. The labia minora are also folds of modified skin and are located within the labia majora. The clitoris is located behind the anterior junction of the labia minora. It is the erectile tissue in the female. The hymen is the membrane that partially closes the vaginal orifice.

The vestibule is located in the area between the labia minora and the vaginal opening. It contains several structures of the female reproductive system. The Bartholin's glands are two ducts that open into both sides of the vestibule. The function of the Bartholin's glands is secretion of a lubricating fluid.

The two breasts are located over the pectoral muscles. Their function is to produce milk for a baby after its birth. Each breast has lobes that consist of several lobules. Each lobule contains milk-secreting cells called alveoli. The alveoli drain through lactiferous ducts, which converge at the nipple. The colored area around the nipple is the areola.

All of these organs of the female reproductive system play a vital role in the physiological processes of the body. Although the organs are vital for reproduction, they cannot function alone. The brain and the endocrine system,

which regulate and control the body's hormones, work alongside the reproductive system to allow it to function properly.

## **The Female Hormones**

The functions of the female reproductive system are regulated by hormones produced in the brain and endocrine glands. These hormones regulate every aspect of the reproductive system, and most of these hormones play a vital role in menstruation. Menstruation is defined as "...the cyclic physiologic discharge through the vagina of blood and mucosal tissues from the non-pregnant uterus; it is under hormonal control, and normally recurs usually at approximately four week intervals, except during pregnancy and lactation throughout the reproductive period, which is puberty through menopause."<sup>v</sup>

Puberty is the period in which the secondary sex characteristics begin to develop, and the body is capable of reproduction. The pituitary gland in the brain responds to influences including emotions, stress levels, sex, nutrition, and day length. The pineal gland, also located in the brain, secretes the neurohormone melatonin. Melatonin regulates the circadian rhythms of the body by responding to changes in light/dark cycles. This action of the pineal gland tells the pituitary gland when it's time to begin puberty.<sup>vi</sup>

Most of the female hormones begin to be produced during puberty. Some of these hormones are produced in the brain, and the others are produced in the

female sex glands, the ovaries. The anterior pituitary gland in the brain secretes several major hormones necessary for the female reproductive system. These hormones, called tropic hormones, stimulate another gland to grow and secrete hormones. Follicle stimulating hormone, or FSH, stimulates ovarian follicles to start growing and developing to maturity. FSH also stimulates these follicles to secrete the hormone estrogen.

Luteinizing hormone, or LH, is another tropic hormone produced by the pituitary gland. LH acts with FSH to perform several functions. They stimulate an ovum to grow to maturity, stimulate follicles to secrete estrogen, and cause ovulation. In a process called luteinization, LH stimulates the formation of the corpus luteum in a ruptured follicle, which in turn produces the hormone progesterone.

The pituitary gland also releases a hormone, oxytocin, which is produced in the hypothalamus of the brain. Oxytocin is secreted shortly before and after the birth of a child. It stimulates uterine contractions during labor and following birth. It also stimulates lactation.

The ovaries secrete the hormones estrogen and progesterone. Estrogen causes the development and maintenance of the female sex characteristics. It is

involved in the development and maturation of breasts, external genitalia, and female body contours. Estrogen also signals the onset of menstruation. Progesterone is produced by the corpus luteum in the ovary, and is responsible for developing the milk-secreting breast cells. It also prepares the uterus for a fertilized egg.

During pregnancy, the placenta acts as an endocrine organ, as well as an excretory and respiratory organ for the developing child. It produces a hormone, chorionic gonadotropin, which ensures that the ovaries continue to produce estrogen and progesterone during pregnancy.

All of these hormones play an important part in regulating the menstrual cycle. They also prepare the body for and help maintain pregnancy. Each hormone plays a specific part in the menstrual cycle and in pregnancy.



## **The Menstrual Cycle and Pregnancy**

The female hormones and organs of the reproductive system act together in the menstrual cycle and pregnancy. The menstrual cycle continuously prepares the body for pregnancy, and if pregnancy does not occur, menstruation commences and the cycle repeats again. Menstruation begins at puberty and ceases after the transition through menopause.

When the pineal gland signals the pituitary gland that the time is right, the pituitary gland begins to produce FSH and LH, and the young woman's body begins to respond to the moonlight as well as sunlight.<sup>vii</sup> As the young woman's body changes, menstruation begins. Estrogen causes the development and maturation of the female reproductive organs. The external genitals mature and pubic hair appears. The breasts and female body contours develop due to the deposition of fat below the skin surface in these areas. This is when the first menstrual flow, or menarche, occurs.

There are four phases of the menstrual cycle: the menses, the proliferative phase, ovulation, and the secretory phase. The menses is the period of menstrual bleeding usually occurring for about 5 days. The first day of bleeding is considered day 1 of the menstrual cycle. During the menses, the

lining of the uterus is shed through the vagina. Dead cells of the uterine lining are expelled leaving torn blood vessels, causing bleeding. The pituitary gland secretes FSH during the first seven days of the cycle.

When the menses phase is complete, the proliferative phase begins. Under the influence of FSH, several ovarian follicles begin to ripen and secrete estrogen. The follicles are little sacs of cells containing an undeveloped egg. Also during this phase, epithelial cells in the uterus reproduce, repair, and rebuild it's lining.

As estrogen levels become increased in the blood, the pituitary gland is stimulated to secrete LH, which causes the egg in the ovary to continue to grow and mature. The mature follicle in the ovary ruptures and the egg is released. This is referred to as ovulation.

After ovulation, the egg enters the abdominal cavity. The fimbriae on the edge of the fallopian tube "grab" the egg and move it into the tube. The egg then begins to travel toward the uterus. If fertilization of the egg does not occur, the egg is expelled with the next menses.

After the egg is ejected from the ovary, the secretory phase occurs. LH stimulates the formation of the corpus luteum. The corpus luteum produces progesterone. The progesterone causes the uterine lining to grow thicker and have a greater blood supply in preparation for pregnancy.

Eleven days after ovulation, the corpus luteum stops secreting progesterone, and estrogen production decreases. When estrogen and progesterone levels fall to a certain level, the menses starts again. This cycle repeats, and hence is known as the menstrual cycle.

If an egg is fertilized, it will move down the fallopian tube and implant into the uterine lining and begin growing into an embryo. The placenta forms as well, and produces the hormone chorionic gonadotropin. This hormone stimulates the ovaries to continue to produce estrogen and progesterone in order to maintain the pregnancy to full term.

During pregnancy, progesterone stimulates the breasts to form milk-secreting cells in order to nourish the developing child upon birth. When it is time for birth, oxytocin stimulates labor by contracting the uterus until the child is born. It also stimulates lactation in the breasts to provide milk for the baby, as well as uterine contractions after birth to shrink the uterus.

After pregnancy and lactation, the menstrual cycle will begin again. The menstrual cycle and the ability to bear children continue throughout a woman's childbearing years, and cease after menopause.

## **Chapter 2 – Physiology of Menopause**

### **What is Menopause?**

Menopause is the cessation of the menses. The term derives from the Greek *meno* which means “month or menses”, and *pausis* which means “pause”. It is often referred to as “the change of life”, “the change”, or “the climacteric.”

The years surrounding menopause constitute an entire stage of a woman’s life, lasting anywhere from six to thirteen years.

Menopause is a natural biologic process occurring in the body due to changing hormone levels. During menopause, the female hormonal output stops and starts. The estrogen level eventually regulates and reaches a plateau, where it remains until age seventy.<sup>viii</sup> Menopause is the point that is defined after twelve months of amenorrhea following the final menstrual period.<sup>ix</sup> This is also the end of natural childbearing.

The exact age a woman will experience menopause is not known. However, some physical characteristics and health issues can indicate an earlier or later menopause. Increased body mass index or multiparity (being born as a multiple) is associated with menopause occurring later than average. Higher

cognitive scores in childhood are also associated with later menopause. Medically treated depression, toxic chemical exposure, epilepsy, and treatment of childhood cancer with pelvic radiation are associated with earlier menopause. Women who have never given birth also tend to have earlier menopause.<sup>x</sup>

Menopause can last from six to thirteen years. It can begin at any time between the ages of 40 and 55 years. Approximately one in a hundred women go through menopause at age 40 or younger.<sup>xi</sup> The average age of menopause is currently about 52, and most women experience menopause at approximately the same age as their mother.

In 1998, there were more than 477 million postmenopausal women in the world, with 9% expected to live to age 80. By 2025, the number of postmenopausal women is expected to rise to 1.1 billion. According to the 1991 United States Census, there were 13 million menopausal women ages 45 to 54. This number is expected to increase by 73% by the year 2010. Thirty-five hundred American women enter the “menopausal years” every day.<sup>xii</sup> Over 40 million American women are postmenopausal (See Table 1.1).<sup>xiii</sup>

Table 1.1 - Numbers of United States Women				
	<i>July 1, 1999</i>	<i>July 1, 2000</i>	<i>% Change</i>	<i>Postmenopausal</i>
Age 50+	41,000,000	42,189,280	+2.9%	39,944,824
<i>Age groups:</i>				
Age 40-44	11,188,000	11,312,761	+1.1%	1,134,000
Age 45-49	9,832,000	10,202,898	+3.8%	2,017,600
Age 50-54	8,439,000	8,977,824	+6.4%	6,733,368

Source: US Census Bureau, 2000 Census

Many women enter instant menopause due to surgery. Currently, one in every four American women will enter menopause immediately because of a hysterectomy – the removal of the ovaries, or both fallopian tubes and the ovaries.<sup>xiv</sup> This is an alarming statistic and encompasses a large portion of the female population. Surgical menopause is very different from natural physiological menopause. Hormones dramatically decrease, and symptoms of menopause can be much more severe and debilitating than those symptoms experienced by premenopausal women.

Perimenopause, or premenopause, is the period between normal menstrual cycles and the cessation of menstruation. It is the period before menopause. This period can last several months to several years, and is characterized by several years of irregular cycles. Premenopause occurs between the ages of 35 to 50, and normally is the 5 to 10 years before menopause.

Many hormonal and physical changes occur during premenopause and menopause. Female hormone levels fluctuate in the body, causing physiological changes in the body until the hormones balance out.



## **Physiological Changes of Menopause**

Many physiological changes occur during premenopause and menopause. The hormonal changes that occur cause physical changes in the body. These hormonal and physical changes cause the symptoms of menopause.

A woman experiences a decline in the female hormones estrogen and progesterone during menopause. Ovulation stops because the ovaries do not contain any more eggs. Therefore, progesterone levels decline dramatically, as there is no corpus luteum to produce the progesterone. Estrogen dominance frequently occurs during menopause.

When ovulation stops, the pituitary gland secretes more LH and FSH in an attempt to try to force ovulation to occur. Since no egg is released, estrogen and progesterone cannot be produced. These hormones signal the pituitary to stop secreting FSH and LH, and since they are not being produced, more FSH and LH are released. Most likely, these hormones have a different purpose after menopause, but the purpose is not yet known.<sup>xv</sup>

Estrogen is still produced in smaller amounts in other areas of the female body during premenopause. It is produced in fat cells, the supporting tissue around

the ovaries, and in the intestinal tract. Estrogen and progesterone are significant in preventing osteoporosis and maintaining energy and libido.<sup>xvi</sup>

Progesterone is extremely deficient during menopause, leading to an excess of estrogen. Progesterone opposes some of the effects of estrogen. Estrogen causes the release of the stress hormone cortisol, and progesterone counteracts it. Estrogen causes water retention, and progesterone is a diuretic.<sup>xvii</sup>

The ovaries produce a small amount of male hormones through the childbearing years. During menopause however, there is an increase in the production of the androgenic hormones, dehydroepiandrosterone, or DHEA, and testosterone. These hormones are associated with sexual response, libido, and general well being. DHEA and testosterone are also produced in other areas of the body including the adrenal glands, skin, muscles, brain, pineal gland, hair follicles, and body fat. As hormonal production in the ovaries declines, there is increased production of androgenic hormones from these other areas in the body.

This vast array of changing and imbalanced hormone levels causes physical changes in the female body as well. The menstrual cycle becomes irregular.

Menses may stop for months and then return. The duration and flow may increase or decrease.

Decreased estrogen levels can cause thinning and atrophy in vaginal tissue and in the bladder. The cells of the vagina become deficient in a carbohydrate substance called glycogen. This deficiency causes a reduction of the protective secretion of acid, which disrupts the acid/alkaline balance of the vagina. The vagina loses its texture, and becomes smoother and less lubricated. These changes can also affect the bladder. This can lead to itching, increased susceptibility to infections, and less interest in sex.

These natural hormonal changes cause emotional and physical discomfort. These symptoms can affect all aspects of the body, and range from slight discomfort to severe effects. The imbalance of estrogen and progesterone during menopause causes the majority of menopausal symptoms.

## Symptoms of Menopause

Most women experiencing premenopause or menopause notice a variety of symptoms due to fluctuating hormonal levels. Symptoms can be frequent and intense, but will cease once “the change” is complete. Some women have more intense symptoms, and some women experience no symptoms at all, other than the cessation of the menses.

Women who have experienced a surgical menopause suffer drastic and immediate side effects and symptoms due to an abrupt drop in estrogen levels.

Women who undergo premature menopause have been shown to have increased susceptibility to dementia.<sup>xviii</sup> Hot flashes and night sweats are the most common symptoms in women who undergo surgical menopause. The flashes can lead to insomnia, irritability, fatigue, and mood swings. Research studies indicate negative views of menopause increase symptoms of hot flashes, night sweats, fatigue, and insomnia.<sup>xix</sup>

Hot flashes are recurrent periods of sweating and sensations of heat. They can be accompanied by palpitations, anxiety, and can be followed by chills. They may occur nocturnally and during the day. Hot flashes are the most common complaint of premenopausal women. In the United States, 85% of menopausal

women have hot flashes and 40% seek medical help.<sup>xx</sup> In about 2/3 of women, hot flashes will last from 1-5 years, and 1/4 of women experience flashes for up to 10 years.<sup>xxi</sup>

Hot flashes occur due to the actions of the hypothalamus in the brain. The hypothalamus, which regulates body temperature, goes haywire during menopause. This results in what physicians call “vasomotor instability”. The hypothalamus tells the pituitary gland to stimulate estrogen production in the ovaries. The pituitary sends out FSH, but the ovaries don’t respond due to the lack of eggs. The hypothalamus will then release epinephrine, which is a stimulant. The epinephrine causes increased circulation and dilated blood vessels, and blood quickly rushes to the skin and causes a hot flash. These flashes can last from thirty seconds to thirty minutes. They can be as infrequent as a few times a year, or as frequent as 20 times a day.

Other physical symptoms are experienced during menopause. Many women report headaches and irritability, which are often due to estrogen dominance because of lack of progesterone.<sup>xxii</sup> Other common symptoms include fatigue, body aches, sore breasts, migraine headaches, bloating, decrease in sexual interest, irregular or heavy menstrual cycles, weight gain, depression, swollen ankles, forgetfulness, panic attacks, excitability, and mental imbalance. These

symptoms can be attributed to estrogen dominance in the body, as well as increased levels of FSH, LH, and epinephrine. Researchers in Rochester, NY and Sweden found bone loss at menopause causes the release of lead into the bloodstream. This lead had been stored in the long bones, and upon release accumulates in soft tissues such as the brain. Surges of lead in the brain during menopause can cause brain toxicity affecting intellectual function, memory, and mood control.<sup>xxiii</sup> This may explain the cause of some menopausal symptoms.

Symptoms such as increased energy, increased libido, numbness and coldness in the extremities, and dizzy spells may occur. This may be due to the imbalanced activity of the hypothalamus at this time, and to increased production of androgenic hormones. It has been theorized that "...if female bodies are fighting menopause by flooding the body with FSH and LH, other vital functions are being robbed. Possibly, the body is not producing enough endorphins and corticosteroids, which could cause many of the menopausal symptoms."<sup>xxiv</sup> Somewhat uncommon symptoms also appear during menopause. Some women experience acne and carpal tunnel syndrome.<sup>xxv</sup> One third of women experience thinning hair, which may be due to the higher levels of androgenic hormones in the body.

In many women, symptoms become so debilitating and severe they find it necessary to seek medical treatment. Many prescription medications are available to help deal with menopausal symptoms. Most of these medications are forms of synthetic or natural hormones, and are prescribed to replace the loss of estrogen and progesterone.

## **Chapter 3 –Allopathic Approaches to Menopausal**

### **Symptoms**

#### **Diagnosis and Common Medical Treatments**

Menopause is not normally diagnosed, although there is a blood test that can be administered to measure hormone levels in the body. The blood test measures the levels of FSH and LH in the bloodstream. When FSH and LH reach a certain level in the blood, they are said to be in menopausal range.<sup>xxvi</sup>

Many doctors consider it standard procedure to perform a complete hysterectomy on a menopausal woman. This includes complete removal of the ovaries, fallopian tubes, and sometimes the uterus. After a hysterectomy, a woman has immediate menopause and often exhibits severe symptoms. Because of this, most doctors will prescribe hormone replacement therapy for life.

Other treatments used commonly by physicians for menopausal symptoms include a procedure called a dilation and curettage, or D&C. The doctor dilates the cervix and inserts a small instrument called a curette, which



removes part of the lining of the uterus. It is used to help try to control irregular or very heavy menses.

Physicians routinely prescribe medication for easing or eliminating menopausal symptoms. The majority of these drugs are known as hormone replacement therapy, or HRT. They are used to replace the deficient estrogens and progesterones in order to ease the symptoms of menopause.

HRT first became popular in 1964, when Newsweek published an article entitled “No More Menopause” based on the work of New York gynecologist Robert A. Wilson. Dr. Wilson wrote a book entitled *Feminine Forever* that touted estrogen as a fountain of youth that would prevent women from experiencing the “tragedy” of menopause, which would leave them dried up, sexless, and depressed.<sup>xxvii</sup> Following this book, doctors were bombarded with advertisements and marketing materials from drug companies about estrogens, and women were eager to try HRT.

There are several brands and formulations of HRT. Most of these formulations consist of natural or synthetic estrogens and progesterones, and are prescribed mainly to prevent hot flashes and osteoporosis. The most widely used estrogen pill, Premarin®, has been on the market since 1941.

Premarin® is estrogen manufactured from the urine of pregnant horses. It is available in pill form, or also as a vaginal cream. Vaginal creams are used mainly to relieve vaginal dryness. Other common estrogen pills are Estrace® and Ogen®. Estrace® is manufactured from a natural plant estrogen compound derived from soybeans. Ogen® is also derived from natural plant estrogen compounds, Mexican wild yam and soybean. Both Ogen® and Estrace® are available also as creams.

Ortho-Est®, Menest®, Estratab®, Eshinyl®, and Feminone® are estrogen pills derived from natural and synthetic estrogens. There are also vaginal rings being marketed for vaginal dryness. Estring® is one of the most popular products.

Skin patches are small self-adhesive patches that deliver estrogen directly through the skin into the bloodstream. The estrogen is administered on a continual basis. Some of the most common patches are Estraderm®, Vivelle®, Climara®, and Fempatch®. These all contain plant-based estrogen compounds derived from soybeans.

Progesterone replacement prescriptives are also available. These are administered in order to increase progesterone levels in the body to alleviate menopausal symptoms associated with estrogen dominance. The most widely prescribed progesterone is a drug called Provera®, a synthetic form of progesterone. Other oral progestones include Aygestin® and Cycrin®, both synthetic progestones. Prometrium®, derived from a natural progesterone, is also available.

There is a drug available that is a combination of estrogen and progesterone. This drug, Prempro®, is a combination of Premarin® and generic progesterone. Women are able to take this combination pill instead of taking separate estrogen and progesterone pills.

Evista®, a new drug, is referred to as a SERM – Selective Estrogen Receptor Modulator. It is taken as estrogen replacement, and acts on only certain body parts. It binds to and activates estrogen receptors in only the bones and lipids.<sup>xxviii</sup>

Although HRT can alleviate many symptoms of menopause, there are serious and sometimes deadly side effects and risks associated with prescription hormone replacement therapy. It appears that supplementing the body with

prescription estrogen and progesterone may not be a healthy or safe solution to managing the symptoms of menopause.

## **Side Effects and Risks of Hormone Replacement Therapy**

Although HRT may alleviate some menopausal symptoms, it causes many side effects and health risks that can be very dangerous. Numerous case studies and statistics have shown that HRT may be detrimental to health.

In 1995, the results of the largest study to date were published in the New England Journal of Medicine. Post menopausal women using HRT for more than 5 years have a 30 to 40 percent greater risk of developing breast cancer than those women who do not take hormones.<sup>xxix</sup> This risk occurs because estrogen levels in the body affect many tissues and organs. In some of these tissues, estrogen-like functions are needed, such as in the heart, bones, cholesterol, and brain. Estrogen-like functions are not needed in the breasts and uterus. In these tissues, estrogen stimulates cell division, which can lead to precancerous conditions.

Women taking estrogen showed other risks. Postmenopausal women taking estrogen have a 50% increase in the risk of stroke.<sup>xxx</sup> Other possible health risks include increased frequency of gallstones, fluid retention, postmenopausal bleeding, increased blood pressure, decreased blood sugar, bloating, vomiting, diarrhea, increased vaginal secretions, accelerated growth

of preexisting fibroid tumors in the uterus, deep vein thrombophlebitis, and thromboembolism.<sup>xxx</sup> These are very serious health risks.

Estrogen replacement therapy can also aggravate some preexisting medical conditions. Estrogen replacement therapy may cause a reoccurrence of certain conditions. These conditions include liver disease, gall bladder disease, migraine headaches, high blood pressure, and endometriosis.

Estrogen replacement therapy causes precancerous or cancerous changes in the uterine lining in one-third of women taking it. Due to the lack of progesterone, the uterine lining is not stimulated to shed. By adding progesterone to HRT, menstruation occurs, and the risk lowers for some precancerous conditions.

Progesterone hormone replacement also shows risks. Synthetic progestones create many side effects such as fluid retention, depression, breast tenderness, cervical erosions, jaundice, blood clotting, stroke, headaches, weight gain, heart disease, osteoarthritis, thrombophlebitis, acne, backaches, and abdominal cramps.

Almost every study to date shows using HRT is a significant cancer risk. A Swedish study of 23,000 women using combined estrogen/progesterone therapy, showed a quadrupled risk of breast and uterine cancer after 6 years of continuous use. Hormone replacement therapy has been readily prescribed in order to prevent osteoporosis, as lack of estrogen is linked to early bone loss. However, HRT preserves bone mass only when taken for at least seven years. When HRT is stopped, bone mineral density declines rapidly, and menopausal symptoms return.<sup>xxxii</sup>

Combined hormone replacement therapy has risks. It increases the risk for dementia in women aged 65 and older, as well as the risk for ischemic stroke in postmenopausal women. Women on HRT are also 50% more likely to develop adult onset asthma than women not taking hormones.<sup>xxxiii</sup>

Combined hormone replacement therapy can also aggravate preexisting conditions. Women with heart disease who take HRT show an increased rate of heart disease events. Women with diabetes mellitus taking HRT show an increased rate of death, especially from cardiovascular disease and myocardial infarction. Half of all women prescribed HRT stop taking the medication within 6 months to 2 years because of unwanted side effects such as weight gain, bloating, and breakthrough bleeding.<sup>xxxiv</sup>

With all the negative effects of estrogen and progesterone replacement therapy, it appears that the dangers far outweigh the benefits. Although HRT may stop symptoms of hot flashes, decreased libido, osteoporosis, and vaginal dryness, women suffer the risk of heart disease, cancer, high blood pressure, stroke, and depression. Although these medications are very affordable and readily available, the long-term health price is high.



## **Retail Cost of Common Hormone Replacement Therapy**

HRT is readily available and very reasonably priced. The most commonly prescribed HRT drugs are available at most pharmacies and through the internet. Most of these drugs are covered by prescription drug insurance plans, lowering the out of pocket expense of these drugs even more.

Even without insurance coverage, HRT drugs are very affordable. The estrogen pills range in dosage from .25 mg to 5 mg. They are priced from \$8.00 to \$35.00, depending on the brand, for a 30-day supply. Estrogen patches are a bit more expensive ranging from dosages of .25 mg to 5 mg. The price ranges from \$21.00 to \$37.00 a box, which includes a 30-day supply.

Vaginal estrogen rings are much more expensive, ranging at \$94.00 and up. Progesterones are a bit more expensive than estrogens. Dosages range from .625mg to 5 mg, and prices range from \$20.00 to \$49.00 for a 30-day supply.

Although the out of pocket cost for prescription HRT is affordable and reasonable, there is a much more safe, effective, and reasonable method of managing menopausal symptoms. By using natural methods of therapy, such as aromatherapy, menopausal symptoms are not suppressed causing side

effects and health risks. The body is helped to balance naturally without the dangers associated with hormone replacement therapy.

## **Chapter 4 – Aromatherapy**

### **What is Aromatherapy?**

There are many natural alternatives to easing menopausal symptoms. One very effective method is aromatherapy. Aromatherapy has been used for thousands of years for dealing with a variety of ailments, illnesses, and diseases. It is a very safe, gentle way to help balance the body with no side effects. Aromatherapy is one of the best ways to help the body ease through the transition of menopause.

There are many definitions of aromatherapy. A simple definition is the use of essential oils for therapeutic or medicinal purposes. English aromatherapist Shirley Price defines aromatherapy as “the use of essential oils, all of which are derived from plants.” American aromatherapist Jeanne Rose calls aromatherapy “the healing of essential oils through the sense of smell by inhalation, and through other applications of these therapeutic volatile substances.” French physician Blanet writes that aromatherapy “involves essences obtained from plants that are generally given in the form of drops.”<sup>xxxv</sup> Dr. Jean Valnet, the French physician, defines aromatherapy as “the medicinal use of aromatic essences.”<sup>xxxvi</sup>

Essential oils are common in many plants, trees, and flowers. They are complex organic chemical compounds that play important roles necessary to plant life. They have different functions, some acting as chemical messengers from cell to cell, some make up the structure of the plants cells, some for defense against predators, and others to attract insects for pollination.<sup>xxxvii</sup> In the human body, they exhibit healing and therapeutic effects.

Essential oils can occur in all parts of the plant. Garlic oil (*Allium sativum*) is produced in the bulb of the plant, bergamot oil (*Citrus aurantium* var. *bergamia*) is produced in the fruit, lavender oil (*Lavandula officinalis*) is produced in the flowers, and cedarwood oil (*Cedrus atlantica*) is produced in the bark of the tree. Essential oils are produced from areas all over the world, depending on where the plant is native. Cajuput (*Melaleuca leucadendron*) is native only to the Philippines, Malaysia and the Moluccas. Cinnamon (*Cinnamomum zeylanicum*) is native to Sri Lanka, the East Indies, the Antilles, Java, and Madagascar. A few of these essential oil bearing plants are native to the United States and North America such as pine (*Pinus sylvestris*) and grapefruit (*Citrus paradisi*).

Essential oils are extracted from the plant in a variety of ways. Some of these methods include cold pressing, extraction (by solvents or carbon dioxide gas), enfleurage, and distillation. The most commonly used method is distillation, which is done with either water or steam.

Steam distillation is mainly used for fresh plant materials such as lavender flowers and peppermint leaves. Water distillation is used with dried materials such as pine needles. Steam or water is forced through the material releasing the essential oil, and the mixture is cooled, releasing the oil as it separates from the water. The oils are then drawn off the water.

Solvent extraction is used with flowers such as jasmine and rose. The flowers are mixed with a volatile solvent until the oils dissolve. The solution is filtered and further refined producing an absolute. In carbon dioxide extraction, pressurized carbon dioxide gas is used to dissolve the oils in the plant material. The pressure is then lowered and the oils are collected.

Enfleurage is also used with flowers. Petals are layered onto wax making a pomade. The oils saturate the pomade, and are extracted using a solvent and further refinement. This also results in an absolute. Cold pressing is used for most citrus oils such as orange (*Citrus aurantium*) and lemon (*Citrus*

*limonum*). The oils are located in the peel, which is punctured, pressed, and washed. The oil and water mixture is rotated at high speeds to separate out the essential oils.

After these essential oils are collected they are bottled, labeled, stored, and eventually sold. Soil quality, climate, harvesting, distillation, and production are all important factors in determining the quality of an essential oil. There are also laboratory tests that give an indication as to the quality of an essential oil. A poor quality essential oil will have little or no therapeutic benefits.

Most of these methods of extraction have been used for hundreds and even thousands of years. Aromatic medicines date back to before the birth of Christ. Essential oil use is even documented from ancient Egyptian times.

## Essential Oil History and Research

The Egyptian papyrus Ebers manuscript, found near Thebes in 1872, is one of the most famous documents referring to aromatic medicine. It was written around 2800 BC, during the reign of Khufu while the Great Pyramid was being built. It refers to fine oils and perfumes being used as medicine. It also reveals that during the time of Moses, frankincense (*Boswellia carterii*), myrtle (*Myrtus communis*), galbanum (*Ferula gummosa*), and eaglewood were used as medicines to cure symptoms of disease. There is even mention of myrrh (*Commiphora myrrha*) being used to treat hay fever.<sup>xxxviii</sup>

Aromatic medicine and essential oils were used throughout history all over the world. The Greeks and Romans used perfumes and aromatic herbs to freshen, disinfect, and purify the air. As the Roman army conquered Europe, the use of aromatic herbs spread throughout the world. There are over 200 references to aromatics, incense, and ointments throughout the Old and New Testaments of the Bible. Aromatics such as frankincense (*Boswellia carterii*), myrrh (*Commiphora myrrha*), galbanum (*Ferula gummosa*), cinnamon (*Cinnamomum zeylanicum*), cassia (*Cinnamomum cassia*), rosemary (*Rosmarinus officinalis*), hyssop (*Hyssopus officinalis*), and spikenard (*Nardostachys jatamansi*) were used for anointing and healing the sick.<sup>xxxix</sup>

There are also numerous references to essential oils in Shakespearean literature.

By the 13<sup>th</sup> century, the “perfumes of Arabia” mentioned by Shakespeare had spread to Europe and England. Arabia added many new aromatics such as camphor (*Cinnamomum camphora*), tamarind, nutmeg (*Myristica fragrans*), and cloves (*Eugenia caryophyllata*) to the list of medicinal plants, and was important in developing herbal and aromatic medicine. Royal glovemakers in London impregnated gloves with essential oils, and legend has it this is why so many glovemakers and perfumers survived the Great Plague.<sup>xl</sup> In the prologue to *The Canterbury Tales*, Chaucer describes four Arabic physicians. One of these physicians, Avicenna of Persia, played a large part in refining the distillation process of essential oils.

During the 18<sup>th</sup> century, essential oils being were widely used. In William Salmon’s *The Compleat Physician*, oils of cinnamon (*Cinnamomum zeylanicum*), lavender (*Lavandula officinalis*), lemon (*Citrus limonum*), clove (*Eugenia caryophyllata*), and rue (*Ruta graveolens*) are listed in a recipe to “cheer and comfort all the spirits, natural, vital, and animal.”<sup>xli</sup> Much research was being done into the therapeutic benefits of essential oils by the 20<sup>th</sup> century. In 1910, a chemist named Rene-Maurice Gattefosse was working in



his lab when an explosion burned him severely. The burns became infected with gangrene. Gattefosse stated that “one rinse of essential oil of lavender stopped the gassification of the tissue.”<sup>xlii</sup> During World War I, he used essential oils extensively on wounded soldiers. Some of these oils were thyme (*Thymus vulgaris*), chamomile (*Anthemis nobilis*), clove (*Eugenia caryophyllata*), and lemon (*Citrus limonum*). His 1937 French publication, *Aromatherapie: The Essential Oils – Vegetable Hormones*, gives detailed medical cases of various physicians using essential oils. Gattefosse is known as the “father of aromatherapy.”

Another influential biochemist of this time was Madame Marguerite Maury. She studied the therapeutic benefits of essential oils in skincare. Dr. Jean Valnet, a French army physician, did extensive research on aromatherapy. He also used essential oils in the battlefield on wounded soldiers, and his 1937 publication, *Aromatherapie*, also lists full case studies using essential oils. Research is still being conducted today proving the therapeutic effectiveness of essential oils.

In the 1970's, studies were conducted using essential oils for treating imbalances of the autonomic nervous system. In a double blind study, over 80% of patients reported good to very good results using essential oil therapy

for nervousness, anxiety, depression, tension, headaches, dizziness, exhaustion, fatigue, insomnia, and loss of appetite.<sup>xliii</sup> The essential oils used were an old traditional remedy called Klosterfrau Melissengeist ( which means “spirit of Melissa”). Some of the oils included in the blend were clove (*Eugenia caryophyllata*), melissa (*Melissa officinalis*), laurel (*Lauris nobilis*), lavender (*Lavandula officinalis*), neroli (*Citrus aurantium var. bigaradia*), cajuput (*Melaleuca leucadendron*), geranium (*Pelargonium graveolens*), clary sage (*Salvia sclarea*), and rose (*Rosa damascena*).<sup>xliv</sup>

In 1986, patients suffering from hypertension, hyperlipidaemia, and coronary heart disease were administered garlic essential oil (*Allium sativum*) orally in capsules. Garlic essential oil significantly reduced serum cholesterol, triglyceride, and  $\beta$ -lipoprotein levels. It also raised serum levels of high-density lipoprotein cholesterol, and reduced plasma fibrinogen, platelet aggregation rate, and blood pressure. Angina pectoris, palpitations, and headaches were relieved. No harmful side effects were found.<sup>xlv</sup>

In a 1987 study of essential oil of anise (*Pimpinella anisum*), it was found to kill 28 species of fungi at a dilution of 1000 parts per million.<sup>xlvi</sup> Eucalyptus oil (*Eucalyptus globulus*) was studied for its antibacterial effects in 1988. Its effects were comparable with commonly used antibiotics, despite the fact that

the dosage of essential oil was much lower than the dosage of the commonly used antibiotics.<sup>xlvi</sup>

Case studies in 1988 show jasmine (*Jasmine officinale*) essential oil to be psychologically stimulating, as well as 1993 studies listing the oils of lemon (*Citrus limonum*), lemongrass (*Cymbopogon flexuosus*), peppermint (*Mentha piperata*), and basil (*Ocimum basilicum*) to be stimulating. Bergamot (*Citrus aurantium* var. *bergamia*), chamomile (*Anthemis nobilis*), sandalwood (*Santalum album*), rose (*Rosa damascena*), and lavender (*Lavandula officinalis*) were found to be relaxing in 1991 clinical studies.<sup>xlvi</sup>

In a 1996 study, clove (*Eugenia caryophyllata*) essential oil showed activity against human cancer cells in vitro.<sup>xli</sup> In 1998 studies, sweet orange oil (*Citrus aurantium*) was effective in children for induction of anesthesia and surgery recovery. Bergamot (*Citrus aurantium* var. *bergamia*) was studied in 1999 for its effectiveness against two types of bacteria, *Staphylococcus aureus* and *Pseudomonas aeruginosa*. By using bergamot essential oil in a 2-3% dilution, the bacteria were killed after 2 hours.<sup>1</sup> In 1999, the oils of peppermint (*Mentha piperata*) and lavender (*Lavandula officinalis*) were found to improve the efficiency of proofreaders.<sup>li</sup>

Research has also been conducted using essential oils on menopausal women, aged 47 to 56. A 5% dilution of clary sage (*Salvia sclarea*) and geranium (*Pelargonium graveolens*) was applied to the feet and produced useful changes in hot flash intensity. One subject reported two nights after stopping clary sage, the flashes returned to the original intensity.<sup>lii</sup>

The studies referenced here are only a few of the thousands of case studies documenting the effectiveness of essential oils. The therapeutic effectiveness of aromatherapy has been proven from earliest recorded history to present-day ongoing research. These therapeutic benefits can be achieved by absorbing essential oils into the body to achieve health.

## **Physiology of Aromatherapy in the Body**

Essential oils are absorbed into the body in many different ways. Once inside the body, essential oils have the ability to enter the bloodstream and therapeutic benefits can be achieved. They can enter the body through inhalation, ingestion, or absorption through the mucous membranes and skin.

Essential oils can enter the bloodstream by being inhaled through the nose, which is the fastest direct route into the body. Researchers Gatti and Cajola noted that odors produced an immediate effect on respiration, pulse, and blood pressure, and concluded that odors had produced by reflex action a dramatic effect on the functioning of the nervous system.<sup>liii</sup>

The olfactory system allows the sense of smell. The nose is the first part of the olfactory system. . Smell is a chemical reaction – receptors in the brain respond to chemicals in the essential oil.<sup>liv</sup> The process of olfaction consists of five stages – detection, transmission, perception, analysis, and storage. An aroma must pass through all five stages in order to be stored in the brain for future recall.

## The Olfactory and Limbic Systems

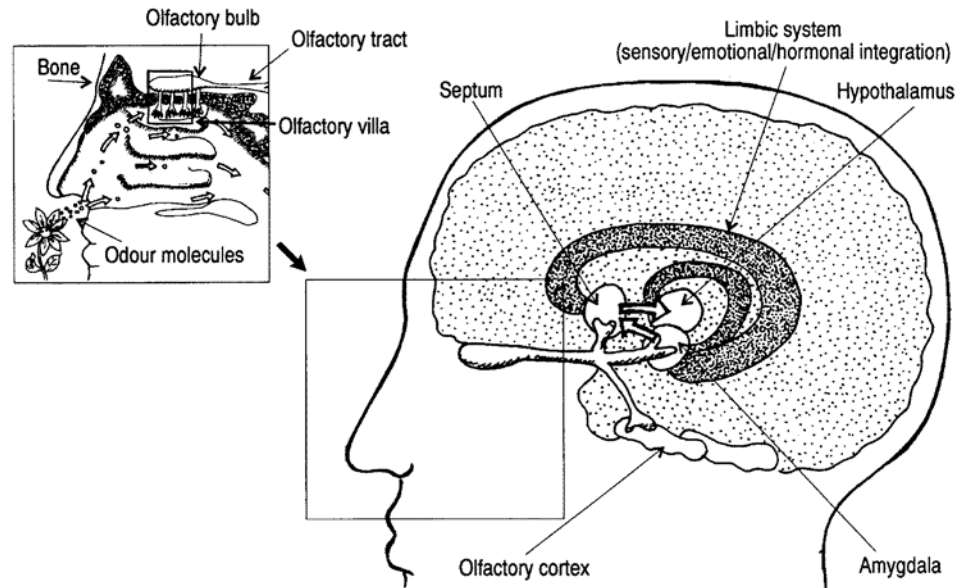


Figure 3.1

(From Battaglia S. 1995. A schematic of the olfactory system with its primary and secondary paths to other regions in the brain. In Battaglia, S (ed.), *The Complete Guide to Aromatherapy*, Australia: The Perfect Potion, p. 101)

During detection, a scent is carried into the nostril and the molecules move up the nose to the olfactory epithelium. Here the molecules attach to millions of hairlike receptors that are connected to the olfactory bulb. Different scents bind to different receptors.

Once the scent binds to a receptor, it is transmitted into an electromagnetic impulse and travels to the two olfactory bulbs. These bulbs connect directly to the limbic system of the brain where the scent is perceived. The limbic system is comprised of the amygdala, septum, hippocampus, anterior thalamus, and hypothalamus. The limbic system influences emotions, motivation, instinctive behaviors, learning, and memory.<sup>lv</sup> It can activate emotional reactions from aromas, and send these coded aroma messages to other parts of the brain.

Once the aroma is perceived, the mind and body analyze the scent. This is accomplished by the reticular system of the brain, which integrates emotions with memories. The hypothalamus, the brain's basic center for drives and emotions may be activated, which stimulates the pituitary gland. The pituitary gland produces hormones that affect the body's other glands. These hormones trigger physiological, psychological, and emotional reactions that influence feelings and behavior.

The brain will then store the aroma. It may compare input about the aroma with other senses in the body. The brain will form a conclusion as to what the aroma is, and store the information for future recall.

In this manner, certain aromas or scents will trigger particular emotional reactions. Once an aroma is stored in the brain, each subsequent time it is inhaled the brain and the body will evoke the same response. By directly inhaling an essential oil, the brain is able to analyze and store the scent, as well as the responses in the body the scent invokes. In this way, essential oils are therapeutic by inhalation.

Essential oils are also effective through inhalation if the desired therapeutic effect concerns the respiratory system, as the oils will travel down the trachea and into the lungs when inhaled. Once in the respiratory system, the oils can have dramatic effects on respiratory disorders as they come in contact with the mucous membranes in the nose, as well as the tissue of the lungs and bronchi. Essential oils can be inhaled using an atomizer, diffuser, vaporizer, through steam vapor, or directly from the bottle.

Essential oils are lipid soluble and can be absorbed directly into the bloodstream through the skin. The study of where essential oils go when they



are absorbed into the body and how they are absorbed and eliminated is called pharmacokinetics. Straehli, who researched pharmacokinetics in 1940, found that all the essential oils appear in the breath following absorption through the skin, although the time interval differs with each essential oil.<sup>lvi</sup> The lipophilic nature of essential oils means they can pass the blood brain barrier. Their affinity for lipid rich tissues like those of the central nervous system facilitates an exchange of essential oil constituents from the blood into the nervous system.<sup>lvii</sup> Once the oils have reached the central nervous system, their effects can travel through the body very quickly.

When essential oils are applied to the skin surface, they are absorbed into the epidermis, the stratum corneum, and to the lower layers of the dermis. The oils can travel down into the dermis via the sweat glands or the hair follicles. Once in the dermis, the oils move into the capillaries located here and travel into the bloodstream. Once in the blood stream, they are able to quickly travel through the body.

## The Skin

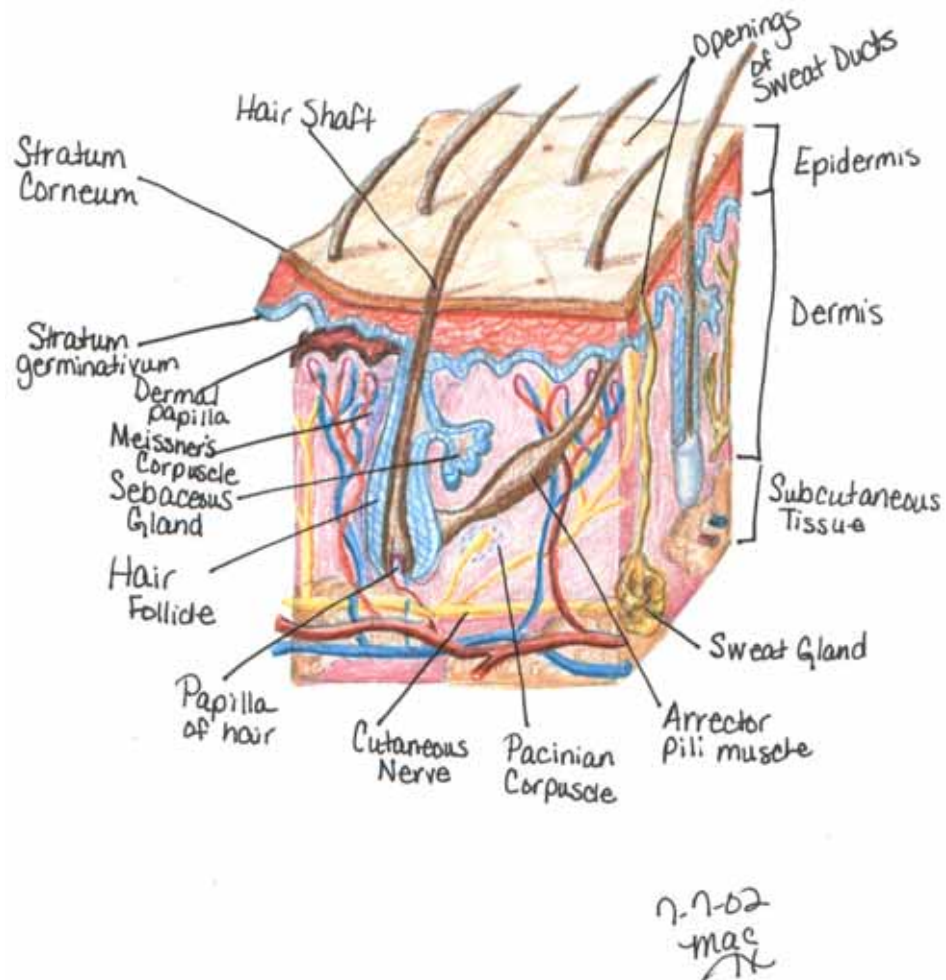
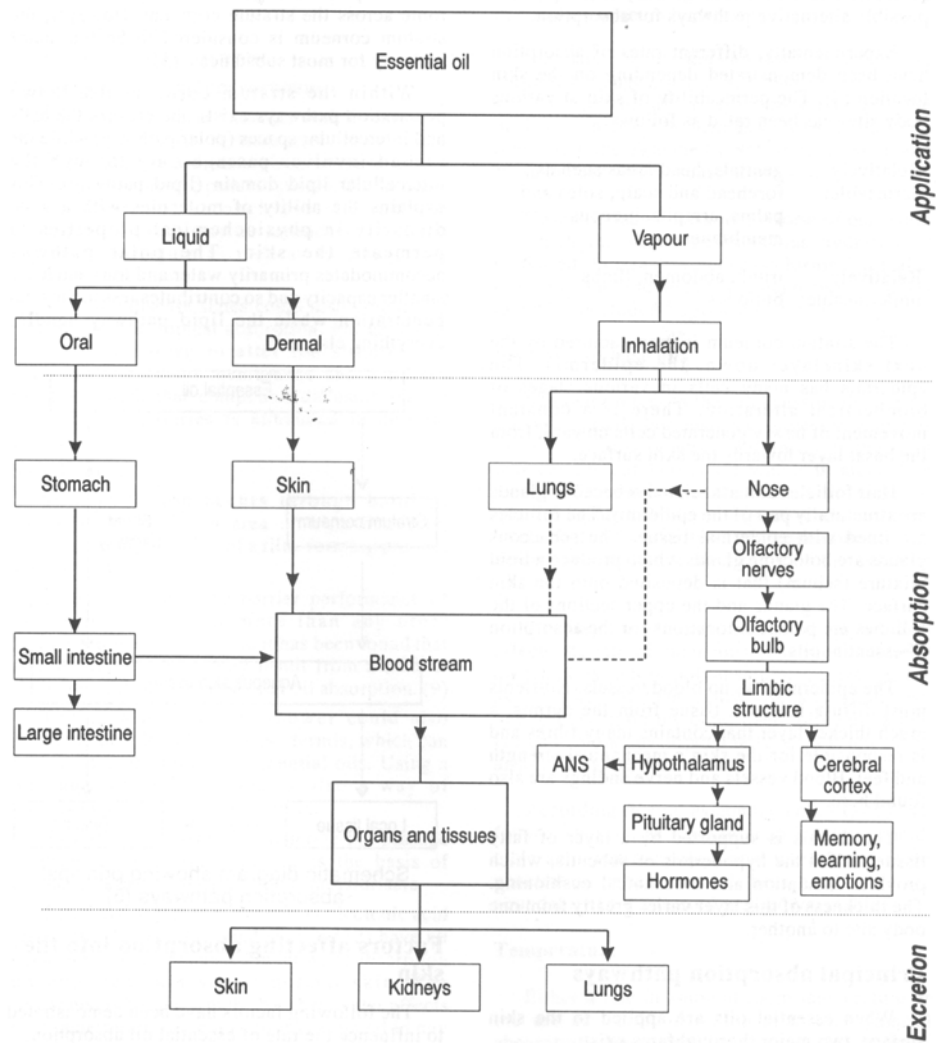


Figure 4.1

## Essential Oil Absorption



Pathway to illustrate how essential oils are absorbed into the body. The dotted lines indicate only trace amounts of essential oils being absorbed.

Figure 4.2

(From Battaglia, Salvatore. (1997) Pathway to illustrate how essential oils are absorbed into the body. In Battaglia, S (ed.), *The Complete Guide to Aromatherapy*, Australia: The Perfect Potion)

Essential oils must be administered in the proper dilutions. The oils must be diluted in appropriate carriers such as vegetable oil, honey, alcohol, Epsom salts, or apple cider vinegar. One to two- percent dilutions are appropriate for children and the elderly. Two- percent dilutions are also appropriate for massage oils or oils being used on the whole body. A four- percent dilution is appropriate for a local area needing treatment, such as the abdomen. A one- percent dilution consists of 3 drops of essential oil in one tablespoon of carrier; 6 drops in one tablespoon of carrier for a two- percent dilution; or 12 drops in one tablespoon of carrier for a four- percent dilution.

Skin patch tests should always be performed before using an essential oil on the skin. A few drops of the oil or blend of oils should be placed on the skin and covered with a bandage. After 24 hours, the skin should be checked for any reactions to ensure the oil is not an irritant for the individual. If a reaction occurs, the subject is sensitive to the oil, and it should not be used.

There are many methods to administer essential oils externally through the skin. Essential oils can be directly applied to the skin in a dilution, or to the skin via water, such as a bath or compress. They can also be absorbed through the skin using floral waters, perfumes, massage oils, soaps, lotions, shampoos, ointments, and creams.

Compresses can be effective ways to absorb essential oils. Cloth soaked in water with the appropriate oils added can be very beneficial. Heat appears to enhance penetration, and hot water may speed up absorption into the skin by dilating the capillaries in the dermis allowing increased blood flow. Studies have shown penetration of the dermis is increased 100 fold as essential oils are dispersed in a bath.<sup>lviii</sup>

Essential oils added to personal care products can also have therapeutic benefits upon absorption into the blood stream. By using massage oils, body oils, soaps, shampoos, lotions, creams, ointments, body sprays and perfumes, the healing benefits can be achieved.

The oral ingestion of essential oils is dangerous, unless administered by a qualified licensed health care professional, and carries risks that are absent when the oils are applied to the skin or inhaled. Almost all recorded cases of serious poisoning by essential oils has occurred by oral self dosing or small quantities of undiluted essential oils.<sup>lix</sup>

The therapeutic benefit of essential oils is evident upon absorption into the body. These benefits occur due to specific chemicals occurring in the essential oils. Each essential oil has a unique array of chemical compounds that act in

different ways in the body. Recognizing and understanding these compounds gives an understanding of the therapeutic benefits that occur in the body.

## Essential Oil Chemistry

Each essential oil is composed of a complex mixture of chemical constituents. The nature and proportions of the constituents determine the essential oil's therapeutic properties. The natural chemical complexity of essential oils derived from plants makes them an ideal form of pharmacological therapy. Pharmacology is the science that deals with the origin, nature, chemistry, effects, and uses of drugs.<sup>lx</sup> The synergy of essential oil constituents in their natural state are easily adapted to human physiology, and when safely and well prescribed, are free from undesirable side effects.<sup>lxi</sup>

Essential oil constituents are made up mainly of hydrocarbons such as monoterpenes, sesquiterpenes, and oxygenated compounds. These oxygenated compounds are derived from hydrocarbons. The amount and types of constituents vary with each essential oil. In some plants, one constituent may dominate the essential oil.

Most of the constituents in essential oils are terpenoid molecules. The word terpenoid is derived from the French word *terebinth*, which means “resin”. Terpenoid compounds are chemical compounds whose carbon makeup consists of 10, 15, 20, or 30 carbon atoms.<sup>lxii</sup> These compounds in turn make

up the functional groups of essential oils, each of which has specific therapeutic properties. These functional groups include alcohols, aldehydes, esters, ethers, ketones, phenols, oxides, lactones and coumarins.

Monoterpenes are hydrocarbons that contain 10 carbon atoms. Monoterpenes act as general tonics and stimulants, particularly for mucous glands.

Limonene, a monoterpene found in many oils, has been shown to prevent the initiation, promotion and progression of certain cancers.<sup>lxiii</sup> Some common terpenes are alpha-pinene and beta-pinene. Alpha-pinene is found in many oils, some of which are pine essential oil (*Pinus sylvestris*), juniper berry essential oil (*Juniperus communis*), and eucalyptus essential oil (*Eucalyptus globulus*). Beta-pinene is found in lemon essential oil (*Citrus limonum*), pine essential oil (*Pinus sylvestris*), and many other essential oils.

Sesquiterpenes are hydrocarbons that contain 15 carbon atoms.

Sesquiterpenes act as anti-inflammatory agents. Some common sesquiterpenes are beta-caryophyllene and alpha-cedrene. Beta-caryophyllene is found in numerous oils, including black pepper essential oil (*Piper nigrum*) and clove bud essential oil (*Eugenia caryophyllata*). Alpha-cedrene is found in Texas cedarwood essential oil (*Juniperus mexicana*), Virginia cedarwood essential oil (*Juniperus virginiana*) and other essential oils.



Monoterpenols, or monoterpene alcohols, are monoterpenes with an –OH, or hydroxyl chemical group attached. Alcohols are considered the most beneficial molecules found in essential oils. Some alcohols are remarkably germicidal, yet exhibit zero toxicity.<sup>lxiv</sup> Monoterpenols exhibit several properties. They have strong antibacterial and antifungal properties, and some like menthol, found in peppermint (*Mentha piperata*), act as anesthetics. They also have tonifying and stimulant properties. Linalool found in lavender (*Lavandula officinalis*), exhibits sedative properties. Some common monoterpene alcohols include geraniol and terpinen-4-ol. Geraniol is found in palmarosa (*Cymbopogon martinii*), geranium (*Pelargonium graveolens*), and citronella (*Cymbopogon nardus*), and other oils. Terpinen-4-ol is found in tea tree (*Melaleuca alternifolia*), sweet marjoram (*Origanum marjorana*), nutmeg (*Myristica fragrans*), and numerous other oils.

Sesquiterpenols, or sesquiterpene alcohols, are sesquiterpenes combined with a hydroxyl group. Properties of sesquiterpenols vary and include antiallergenic, liver stimulant, antiphlogistic, glandular stimulant, and anti-inflammatory.<sup>lxv</sup> Some sesquiterpenols have unique qualities and may occur only in a specific oil. Viridoflorol, found in naouli oil (*Melaleuca qui. viridiflora*), has an estrogen effect, and santalol in sandalwood oil (*Santalum*

*album*) is a cardio tonic.<sup>lxvi</sup> Sesquiterpenols also show tonic and antiviral properties. Farnesol is a sesquiterpenol found in jasmine (*Jasmine officinale*), ylang ylang (*Cananga odorata*), and rose (*Rosa damascena*) oils.

Phenols are benzene rings with an alcohol, or hydroxyl, group attached.

Phenols act as tonics, general stimulants, and antiinfectious agents. Some common phenols are thymol and eugenol. Thymol is found in many oils, including thyme (*Thymus vulgaris*) and oregano (*Origanum vulgare*) oils. Eugenol is found in cinnamon (*Cinnamomum zeylanicum*), clove bud (*Eugenia caryophyllata*), and other oils.

Aldehydes are partially oxidized primary alcohols. Aldehydes have calming properties, and are anti-inflammatory and antiinfectious agents. A common aldehyde is neral found in melissa (*Melissa officinalis*), lemongrass (*Cymbopogon citratus*), ginger (*Zinger officinale*), lemon (*Citrus limonum*), and other oils.

Ketones are similar to aldehydes and result from the oxidation of a secondary alcohol. Ketones act as mucolytic agents, and have wound healing, antihematoma, and antiviral properties. Common ketones are camphor and thujone. Camphor is found in many oils, such as rosemary (*Rosmarinus*

*officinalis*), sage (*Salvia officinalis*), and yarrow (*Achillea millefolium*) oils.

Thujone is also found in several oils, including sage (*Salvia officinalis*) and tansy (*Tanacetum vulgare*) oils.

Esters are derived from alcohols and acids. They have antispasmodic and sedating properties. Esters exhibit a direct calming effect on the central nervous system.<sup>lxvii</sup> Common esters are linalyl acetate and benzyl benzoate. Linalyl acetate is found in clary sage (*Salvia sclarea*), lavender (*Lavandula officinalis*), and other oils. Benzyl benzoate is found in many oils, including jasmine (*Jasmine officinale*) and ylang ylang (*Cananga odorata*).

Ethers are derived from the alcohol group of a phenol. They are antispasmodic, analgesic, and antiinfectious. They also have spasmolytic and carminative effects on the body organs below the diaphragm.<sup>lxviii</sup> Common ethers include methyl chavicol and trans-anethole. Methyl chavicol is found in basil (*Ocimum basilicum*), fennel (*Foeniculum vulgare*), tarragon (*Artemesia dracunculus*), and other oils. Trans-anethole is found in oils such as anise seed (*Pimpinella anisum*) and sweet fennel (*Foeniculum vulgare*) oils.

Oxides are similar to ethers, but include a carbon ring. They have strong expectorant effects on the respiratory tract. 1,8-cineole is a common oxide

found in a variety of oils, including eucalyptus (*Eucalyptus globulus*), sage (*Salvia officinale*), and rosemary (*Rosmarinus officinalis*) oils. Rose oxide is found in geranium (*Pelargonium graveolens*) and rose (*Rosa damascena*) oils.

Lactones resemble ketones, esters, and ethers. They are mucolytic, expectorant, and anti-inflammatory. Nepetalactone is a lactone found in catnip oil (*Nepeta cataria*). Lactones are not common in most essential oils.

Coumarins are a type of lactone and have sedative effects. Auraptene is a coumarin found in grapefruit oil (*Citrus paradisi*).

Essential oils containing high amounts of a particular group of these compounds will exhibit strong therapeutic effects of that group. Eucalyptus oil (*Eucalyptus globulus*) contains a high percentage of oxides and is a very strong expectorant. Oils containing a variety of groups may show an array of properties. Clary sage oil (*Salvia sclarea*) contains high amounts of esters and monoterpenols, and has strong antispasmodic, sedative, and tonifying properties. The composition of an essential oil can therefore determine the therapeutic properties of the oil. These therapeutic properties include alterative, anti-inflammatory, antibacterial, antifungal, astringent, carminative, diaphoretic, diuretic, emmenagogue, expectorant, nervine, rubefacient, sedative, spasmolytic, stimulant, and tonic effects. An essential oil usually

exhibits more than one of these properties. These compounds can cause toxic effects in the body if misused or used in high amounts.

## Functional Effects of Essential Oil Groups

Essential oil constituent classification	Example of essential oil constituent	Example of essential oils containing the constituents	Property	Naming
Monoterpene alcohols	linalool, geraniol, terpineol-4-ol, menthol	lavender, peppermint, petitgrain, rosewood, tea tree, sweet marjoram	antiseptic, bactericidal, antiviral, diuretic, immunostimulant	-ol
Aldehydes	citronellal, geranial, neral	lemongrass, citronella, melissa, eucalyptus citriodora	anti-inflammatory, sedative, antifungal	-al
Esters	linalyl acetate, geranyl acetate, methyl salicylate	Roman chamomile, clary sage, lavender	spasmolytic, sedative, antifungal, mildly anti-inflammatory	-yl -ate
Ethers	eugenol, anethol, methyl chavicol	tarragon, aniseed, basil	balancing, spasmolytic and carminative	-ol
Ketones	pinocamphone, thujone, pulegone, camphor, verbenone	everlasting, sage, hyssop, pennyroyal, thuja, wormwood	promote tissue formation, mucolytic, potentially neurotoxic	-one
Lactones	bergaptene, coumarin	bergamot	phototoxic, mucolytic	-
Oxides	1,8-cineole, 1,4-cineole	Eucalyptus oil and most oils belonging to the myrtaceae family.	expectorants, immuno-stimulants	-ole
Monoterpene hydrocarbons	limonene, pinene, myrcene, terpinene, p-cymene	most citrus oils eg lemon, grapefruit, orange and juniper, pine	antiseptic, possible skin irritants	-ene
Phenols	thymol, carvacrol	thyme, oregano, savory	bactericidal, immunostimulants, skin irritants, potentially toxic, tonifying, warming	-ol
Sesquiterpene hydrocarbons	chamazulene, caryophyllene, bisabolene, farnesene	German chamomile, yarrow, everlasting	anti-inflammatory, antiviral, anti-allergenic, cooling	-ene
Sesquiterpene alcohols	bisabolol, santalol, farnesol	German chamomile, sandalwood, rose	bactericidal, anti-inflammatory, anti-allergenic, possibly immunostimulant	-ol

Table 4.1

(From Battaglia S. (1995). Summary of essential oil constituents. In Battaglia, S (ed.), The Complete Guide to Aromatherapy, Australia: The Perfect Potion, p. 86.)

## Pharmacological Risks of Essential Oils

Essential oils represent little or no risk when correctly used in aromatherapy.

When administered in the correct blends and dosages using the appropriate dilutions, there are rarely health risks or side effects. However, some essential oils are contraindicated with certain illnesses or ailments. There are also toxic essential oils that are not used in aromatherapy, such as bitter almond oil (*Prunus amygdalus var. amara*), which contains cyanide. Other toxic oils not used in aromatherapy include armoise (*Artemisia herba-alba*), artemisia (*Artemisia arborescens*), boldo (*Peumus boldus*), cade (*Juniperus oxycedrus*), calamus (*Acorus calamus var. angustatus*), brown and yellow camphor (*Cinnamomum camphora*), costus (*Saussurea costus*), elecampane (*Inula helenium*), horseradish (*Cochlearia armoracia*), mustard (*Brassica nigra*), pennyroyal (*Mentha pulegium*), and wormwood (*Artemisia absinthium*) essential oils.

There have been deaths from accidental ingestion of large amounts of essential oils. Toxins are present in essential oils, just as in foods, and in most cases the toxins exist in very small amounts. All essential oils are toxic to the body if administered in extremely higher than normal dosages. Ingestion of essential oils is not recommended, except under the care of a qualified licensed health

care professional. All cases of serious poisoning by essential oils have occurred from oral ingestion. The amount ingested was substantially greater than is used normally orally, topically, or by inhalation.

Ingestion of 2 teaspoons of cinnamon oil (*Cinnamomum zeylanicum*) caused poisoning in a 7-year-old boy. A 21-month-old child died after ingesting 2 teaspoons of citronella oil (*Cymbopogon nardus*). A 7-month-old child was poisoned after ingesting 1 teaspoon of clove oil (*Eugenia caryophyllata*). There are also numerous cases of poisoning after ingestion of eucalyptus oil (*Eucalyptus globulus*) in doses from 1 teaspoon to 3 tablespoons. Some of these poisonings resulted in death. Hyssop essential oil (*Hyssopus officinalis*) caused convulsions in a woman after ingestion of 30 drops. Methyl salicylate, present in sweet birch (*Betula lenta*) and wintergreen (*Gaultheria procumbens*) oils at around 98%, has been a frequent cause of serious poisoning in children. Most of these cases of essential oil poisoning have occurred in children.<sup>lxix</sup>

Inhaled essential oils are not likely to produce a toxic reaction.

Hypothetically, a toxic reaction could occur if a person was confined to a nonventilated room, the temperature was very high, and the air was saturated



with essential oil.<sup>lxx</sup> This is an extremely unlikely scenario, and there are no documented cases of essential oil toxicity by inhalation.

Oils containing large amounts of certain compounds can be irritating. Oils containing large amounts of phenols are mucous membrane irritants, and must be significantly diluted. Some of these oils are thyme (*Thymus vulgaris*), oregano (*Origanum vulgare*), and cinnamon (*Cinnamomum zeylanicum*).

Skin reactions can occur with essential oils. Some essential oils are skin irritants, mainly those with high amounts of phenols. Aldehyde-rich oils may also irritate the skin. Some of these oils are cinnamon (*Cinnamomum zeylanicum*), clove (*Eugenia caryophyllata*), fennel (*Foeniculum vulgare*), oregano (*Origanum vulgare*), savory (*Satureja montana*), thyme (*Thymus vulgaris*), and wintergreen (*Gaultheria procumbens*). These oils should be used only in dilutions of one percent or less.

A skin reaction can occur to any essential oil, and usually produces a red itchy wheal, heat, and burning. It has been theorized that adverse reactions to pure unadulterated essential oils (that are not known irritants) may happen with patients who are already on multiple drug regimens or are allergy prone.<sup>lxxi</sup> Patch tests should always be performed before using an essential oil topically.

Skin sensitivity can occur to an essential oil. Sensitization is an allergic immune reaction in the skin that appears as a rash, sneezing, or shortness of breath. Sensitization can occur immediately or after prolonged use of an essential oil. The immune system may interpret the compound as a threat and attack it, causing an allergic reaction. Sensitization is a permanent immune system reaction, and subsequent exposures will trigger the same reaction. Any oil can cause sensitization, but the most likely sensitizers are oils that have oxidized, and the oils of cassia (*Cinnamomum cassia*), cinnamon (*Cinnamomum zeylanicum*), garlic (*Allium sativum*), and verbena (*Lippia citriodora*). These oils must be diluted to less than 0.1%.<sup>lxxii</sup>

Phototoxicity can occur with specific oils. It is an interaction with furocoumarins (present in some essential oils), the skin, and ultraviolet light. Furocoumarins cause an excessive reaction to ultraviolet light. Reactions can vary from pigmentation of the skin to severe burns. Phototoxic oils include bergamot (*Citrus aurantium* var. *bergamia*), lime (*Citrus aurantifolia*), and the expressed oils of orange (*Citrus aurantium*), lemon (*Citrus limonum*), and grapefruit (*Citrus paradisi*). Skin treated with dilutions of these oils should not be exposed to ultraviolet light or sunlight for twelve to twenty four hours. Inhalation of these oils will not cause phototoxicity.

Undiluted essential oils applied topically can be dangerous. All essential oils should be diluted in an appropriate carrier before application. Dilutions vary depending on the oils being used, the health of the individual, and the method of administration. Undiluted essential oils are appropriate for inhalations, or if recommended topically by a qualified aromatherapist. Oils should be used with care and in greater dilutions on damaged or diseased skin because the skin is more absorbent of chemicals. Older skin is thinner, and greater dilutions should be used. Most essential oils have no risk if used in the proper blends, dilutions, and administrations. Essential oils are highly flammable should also be stored away from children.

Some essential oils are contraindicated with certain health conditions. There are essential oils that should be used with caution in patients with hypertension, although there is no published report of blood pressure being substantially raised by essential oils. These oils include rosemary (*Rosmarinus officinalis*), spike lavender (*Lavandula latifolia*), hyssop (*Hyssopus officinalis*), juniper (*Juniperus communis*), thyme (*Thymus vulgaris*), and clove (*Eugenia caryophyllata*).

Contraindicated in epileptic patients are hyssop (*Hyssopus officinalis*), fennel (*Foeniculum vulgare*), peppermint (*Mentha piperata*), and rosemary (*Rosmarinus officinalis*) oils, although there is no published report of any these oils triggering a seizure.<sup>lxxiii</sup>

Pregnant women should avoid certain essential oils that have emmenagogue and stimulant effects. These oils are anise (*Pimpinella anisum*), basil (*Ocimum basilicum*), sweet birch (*Betula lenta*), cedarwood (*Cedrus atlantica*), clary sage (*Salvia sclarea*), sweet marjoram (*Origanum majorana*), myrrh (*Commiphora myrrha*), peppermint (*Mentha piperata*), rosemary (*Rosmarinus officinalis*), sage (*Salvia officinalis*), and thyme (*Thymus officinalis*).<sup>lxxiv</sup>

Patients on blood thinners should not use wintergreen (*Gaultheria procumbens*) or sweet birch (*Betula lenta*) oils. These oils can increase the blood thinning effect. Individuals with asthma should not use yarrow (*Achillea millefolium*), marjoram (*Origanum majorana*), oregano (*Origanum vulgare*), or rosemary (*Rosmarinus officinalis*) oils. These oils can trigger an asthma attack. Essential oils with estrogen-like properties should be avoided with estrogen dependent cancers. These oils include cypress (*Cupressus sempervirens*), angelica (*Archangelica officinalis*), sage (*Salvia officinalis*),

fennel (*Foeniculum vulgare*), anise (*Pimpinella anisum*), caraway (*Carum carvi*), clary sage (*Salvia sclarea*), and naouli (*Melaleuca qui. viridiflora*).

Glaucoma patients should not use thyme (*Thymus vulgaris*), hyssop (*Hyssopus officinalis*), cypress (*Cupressus sempervirens*), or tarragon (*Artemisia dracunculus*) oils. Individuals with insomnia should avoid peppermint (*Mentha piperata*) and pine (*Pinus sylvestris*). Black pepper (*Piper nigrum*) and juniper (*Juniperus communis*) oils should be avoided in those with kidney problems. Patients with a history of melanoma should avoid the topical use of citrus peel oils.<sup>lxxv</sup> Table 5.1 lists known essential oil contraindications.

Taking into consideration these contraindications, appropriate oils used in the proper dilutions and administrations have no health risks, side effects, or dangers. Recommendations of appropriate essential oils can help relieve menopausal symptoms.

## Other Known Contraindications of Essential Oils

KNOWN CONTRAINDICATIONS	
Condition	Do not use
Abdominal pain	clove
Asthma	yarrow, marjoram, oregano, rosemary
Breast cancer	cypress, angelica, sage, fennel, anise, caraway
Epilepsy	hyssop, sage, fennel, parsley, nutmeg, anise
Glaucoma	thyme, hyssop, cypress, tarragon
Hemorrhaging	lavender in combination with an anticoagulant
High blood pressure	lemon, hyssop
Hypothyroidism	fennel
Insomnia	peppermint, pine
Menstrual complaints	cypress, sage, angelica, anise, caraway
Prostate cancer	<i>Thymus serpyllum</i> , cypress, angelica, hyssop
Tumors	fennel, anise, caraway
Urinary tract infection	juniper, eucalyptus

Table 5.1

Known contraindications. (From Schnaubelt, K. (1998). Known contraindications of essential oils. In Schnaubelt K (ed.), Advanced Aromatherapy, Rochester, VT: Healing Arts Press, p. 49

## **Chapter 5 – Aromatherapy and Menopause**

### **Essential Oils Useful for Menopausal Symptoms**

It has been previously stated that the symptoms of menopause occur due to the imbalance of estrogen and progesterone in the body. By implementing the use of essential oils that have specific properties, menopausal symptoms can be eased and balanced. Oils that have hormonal, tonifying, nervine, stimulant, and emmenagogue properties would be useful for menopausal symptoms. Essential oils containing compounds with these properties would be beneficial for specific symptoms.

Sesquiterpenols are glandular stimulants, and esters are calming to the nervous system. Ethers are balancing, and monoterpenols are tonifying. Essential oils containing all or some of these compounds would be therapeutic in easing the most common symptoms.

Menopausal symptoms of hot flashes, headaches, fatigue, mood and mental imbalance, irregular menstrual cycles, and bloating can be eased with a

combination of essential oils that have tonifying, hormonal, nervine, stimulant, and emmenagogue properties.

Hot flashes and irregular menstrual cycles can be alleviated by balancing hormonal levels. Mood and mental imbalances can be balanced using oils that have nervine properties. Headaches and fatigue would benefit from tonifying and stimulating oils, which would help balance the body. Essential oils high in monoterpenes, monoterpenols, esters, ethers and sesquiterpenols exhibit these properties. These oils are bergamot (*Citrus aurantium var. bergamia*), German chamomile (*Matricaria chamomilla*), clary sage (*Salvia sclarea*), fennel (*Foeniculum vulgare*), geranium (*Pelargonium graveolens*), jasmine (*Jasmine officinale*), lavender (*Lavandula officinalis*), melissa (*Melissa officinalis*), cypress (*Cupressus sempervirens*), and rose (*Rosa damascena*).

Bergamot (*Citrus aurantium var. bergamia*) has sedating properties and would be beneficial for depression, anxiety, and insomnia. German chamomile (*Matricaria chamomilla*) has hormonal properties and is calming and antidepressant. Clary sage (*Salvia sclarea*) is a nerve tonic. It also has an estrogen-like quality and would be helpful in balancing hormone levels. It is believed to act on the pituitary gland having a harmonizing effect in most menstrual disorders.<sup>lxxvi</sup>



Fennel (*Foeniculum vulgare*) stimulates the production of estrogen by the adrenal glands after the ovaries have stopped functioning.<sup>lxxvii</sup> It is a hormone balancer, and has been used for thousands of years for its effects on the female reproductive system. Geranium (*Pelargonium graveolens*) is a tonic and antidepressant. It has been used for generations to balance fluctuating hormonal levels during menopause through its action on the adrenal cortex, and helps regulate the hormonal system.<sup>lxxviii</sup>

Jasmine (*Jasmine officinale*) is an antidepressant and a hormonal balancer. It is effective for menstrual problems. Lavender (*Lavandula officinalis*) is a tonic, sedative, antidepressant, and is useful in balancing the body. Melissa (*Melissa officinalis*) is a nervine, tonic, and antidepressant, and is useful for menstrual problems. Cypress (*Cupressus sempervirens*) has been used historically for menstrual problems. It has a regulating effect on the menstrual cycle, as it stimulates estrogen secretion and reduces abnormally heavy blood loss during menopause.<sup>lxxix</sup> Rose (*Rosa damascena*) has been used historically for menstrual problems. It tones the uterus, and regulates the menstrual cycle.

All of these oils can be used to treat menopausal symptoms. There are a few contraindications when using these oils. Bergamot (*Citrus aurantium* var.

*bergamia*) should not be used topically as it is phototoxic, but can be used in an inhalation or bath blend. Clary sage (*Salvia sclarea*) and fennel (*Foeniculum vulgare*) should not be used with estrogen dependent cancers. Fennel (*Foeniculum vulgare*) should not be used if epileptic. There are several blends of these oils that will be beneficial for easing menopausal symptoms.

## **Recommended Blends for Menopausal Symptoms**

Several aromatherapy blends may be used for different menopausal complaints. These blends include an inhalation blend for insomnia and night sweats; a local rub for bloating, headaches, and hormonal imbalances; a bath blend to balance hormones and promote relaxation; an inhalation blend for mental and mood imbalances; a body spray for hot flash relief; and a vaginal cream for vaginal dryness.

An inhalation blend to be used at night for insomnia and night sweats consists of the oils of lavender (*Lavendula officinalis*), clary sage (*Salvia sclarea*), bergamot (*Citrus aurantium var. bergamia*), and German chamomile (*Matricaria chamomilla*). All of these oils are calming, and lavender and bergamot can act as sedatives. German chamomile and clary sage will help balance hormones.

### **Insomnia and Night Sweats Inhalation**

3 parts lavender essential oil

2 parts bergamot essential oil

1 part German chamomile essential oil

1 part clary sage essential oil

Measure out each amount of essential oil by drops. Place in a diffuser to be diffused shortly before bedtime or during sleep. A few drops of this blend can also be placed on a tissue or cloth and placed in the bed. To make a larger amount of the blend, measure appropriate amounts of each oil and place in an amber glass bottle. Label and store in a cool dark place.

A bath blend consisting of clary sage (*Salvia sclarea*), cypress (*Cupressus sempervirens*), and geranium (*Pelargonium graveolens*) would be helpful to balance the hormones, as well as help with headaches and mood disturbances.

### **Menopause Bath Blend**

1 cup Epsom salts

2 drops clary sage essential oil

5 drops geranium essential oil

3 drops cypress essential oil

Add all ingredients together and mix well. Pour into a full bath and disperse.

Soak for 20 to 30 minutes.

A 4% local massage blend of lavender (*Lavandula officinalis*), cypress (*Cupressus sempervirens*), and fennel (*Foeniculum vulgare*) diluted with sweet almond oil and evening primrose oil would be helpful in balancing hormones, and relieving bloating and headaches which are caused from water retention. Evening primrose oil is rich in GLA, gamma linolenic acid. GLA effects the enzyme activity in the body and helps production of prostaglandins. Prostaglandins help regulate estrogen, progesterone, and prolactin in the body.<sup>lxxx</sup>

### **Hormone Balancing Oil**

6 tablespoons extra virgin olive oil

2 tablespoons evening primrose oil

40 drops lavender essential oil

40 drops cypress essential oil

16 drops fennel essential oil

Pour essential oils into a 4-ounce amber glass bottle. Add olive oil and evening primrose oil and shake well. Label and store in a cool dark place.

Apply one teaspoon daily or as needed to the abdominal and neck areas.

An inhalation blend useful for mental imbalance would be beneficial for symptoms of mood swings, depression, anxiety, irritability, and forgetfulness. A blend of geranium (*Pelargonium graveolens*), melissa (*Melissa officinalis*), rose (*Rosa damascena*), and jasmine (*Jasmine officinale*) would help balance the nervous system.

### **Mood Balancing Inhalation**

3 parts geranium essential oil

2 parts melissa essential oil

1 part rose essential oil

1 part jasmine essential oil

Measure each amount by drops. Use in a diffuser or place on a tissue or cloth and inhale. The oils may also be mixed in appropriate portions into a glass amber bottle for larger amounts.

A body spray consisting of lavender (*Lavandula officinalis*), melissa (*Melissa officinalis*), and geranium (*Pelargonium graveolens*) would be helpful for alleviating hot flashes. The spray is cooling to the body and helps balance the nervous system.

### **Hot Flash Spray**

7 ½ ounces distilled water

½ ounce ethyl alcohol or apple cider vinegar

30 drops lavender essential oil

20 drops geranium essential oil

10 drops melissa essential oil

In an 8 ounce sterile or very clean spray bottle, add alcohol or vinegar. Add essential oils and shake. Add water. Label and refrigerate. This spray can be sprayed on the face and body whenever hot flashes occur.

A vaginal cream consisting of lavender (*Lavandula officinalis*) and clary sage (*Salvia sclarea*) would be useful for vaginal dryness. The natural ingredients would help soothe the membranes, as well as help balance the acid/alkaline levels in the vagina. Avocado oil is useful for undernourished skin and is very soothing. Wheatgerm oil is high in vitamin E and is helpful for irritated skin.

### **Vaginal Balancing Cream**

½ cup avocado oil

½ cup wheatgerm oil

1 tsp. beeswax

12 drops lavender essential oil

3 drops clary sage essential oil

3 vitamin E capsules

Combine avocado oil, wheatgerm oil, beeswax, and vitamin E in the top of a double boiler and melt. Remove from heat and allow to cool. When mixture is cooled somewhat, add essential oils and stir well. Pour into a sterile or very clean glass jar, cap tightly, and label. A tongue depressor can be used to remove the necessary amount. Apply a small amount as needed.

Any of these blends can be used as needed to help alleviate menopausal symptoms. Although none of these essential oils are irritants, a patch test should be performed with any of the topical blends before using them to ensure there is no reaction.

These blends used as directed have no health risks or side effects. Inhalation blends should not be used topically, as the mixture is not diluted for use on the skin. Blends may be stored in the refrigerator or in a cool, dark place. All of the ingredients for these blends are available and can be purchased through reputable essential oil suppliers. These finished blends are also easily available for a reasonable price through a qualified aromatherapist.



## Cost of Essential Oil Blends

The price of essential oils vary, from as little as \$3.00 for a ½ ounce for lavender (*Lavandula officinalis*) to almost \$300.00 for a ½ ounce for jasmine (*Jasmine officinale*). Lavender is much more abundant and requires much less material to produce the essential oil than jasmine (*Jasmine officinale*) or rose oil (*Rosa damascena*). It takes 60,000 roses to make one ounce of essential oil, and rose is also very expensive at about \$250.00 an ounce. Oils that are easier to produce, are more abundant, and require less material are much less expensive than absolutes, exotic, and rare oils.

Aromatherapy and essential oils are not covered under insurance plans in the United States. The recommended menopausal blends can be purchased through a qualified aromatherapist. The ingredients of the blends can also be purchased from a reputable essential oil supplier.

The blends can be purchased from a qualified aromatherapist who will create, bottle, and label the blend. The cost of the Insomnia and Night Sweats Inhalation is \$22.00 for a ¼ ounce bottle, which consists of 150 drops of undiluted essential oil. German chamomile essential oil (*Matricaria*

*chamomilla*) is expensive at approximately 63¢ a drop. If this blend is used a few drops at a time for an inhalation, the bottle contains over 70 uses.

The cost of the Menopause Bath Blend is \$6.00 for a ¼ ounce bottle of undiluted essential oils. This blend would be used as 10 drops added to each cup of Epsom salts. The Epsom salts would be purchased separately by the individual purchasing the blend, thereby lowering the cost. This blend includes 150 drops of essential oil, which is enough for 15 baths.

The cost of the Hormone Balancing Local Oil is \$15.00. This is a 4-ounce blend to be used as one-teaspoon applications. This blend includes enough oil for 24 applications.

The cost of the Mood Balancing Inhalation is the most expensive of the blends. The cost is \$50.00 for a ¼ ounce bottle of 150 drops of undiluted essential oil. Rose (*Rosa damascena*) and jasmine (*Jasmine officinale*) are very expensive and cost approximately \$1.00 a drop, and this blend includes 21 drops of each jasmine and rose. If this blend is used a few drops at a time for inhalation, the blend contains over 70 uses.

The cost of the Hot Flash Body Spray is \$5.00. This is the least expensive of the blends. This 8-ounce body spray would last for months. The cost of the Vaginal Balancing Cream is \$16.00 for a 2-ounce jar. This blend consists of approximately 12 one-teaspoon applications.<sup>lxxxi</sup>

The total cost of all of these blends would be approximately \$98.00.

Depending on how often the blends are used, they could last anywhere from a few weeks to several months. Alternately, an individual could prepare the blends themselves by purchasing all the materials and ingredients needed, and following the preparation instructions listed for each blend. There would be an initial expense of approximately \$200.00 to purchase all of these materials.

## **Chapter 6 – Conclusions:**

### **Allopathic or Aromatherapy?**

Menopause is a normal transition of the female body. For many women, this transition is accompanied by a host of somewhat uncomfortable and sometimes severe physiological symptoms. These symptoms are due to hormonal changes and imbalances occurring in the body.

Menopausal symptoms are often severe enough that women require treatment to help ease the symptoms. Physicians regularly prescribe hormone replacement therapy drugs to help ease these symptoms. These drugs ease the symptoms, but carry health risks and side effects.

These side effects and health risks include increased risk of breast and uterine cancer, increased stroke risk, gallstones, fluid retention, hypertension, hypoglycemia, bloating, thrombophlebitis, depression, headaches, anxiety, breast tenderness, heart disease, and weight gain. Hormone replacement therapy can also aggravate preexisting conditions including liver disease, gallbladder disease, migraine headaches, hypertension, and endometriosis.

Most hormone replacement therapy drugs are very inexpensive and are covered under most health insurance plans. The financial cost of these drugs is irrelevant however, upon consideration of the cost to an individual's health. Aromatherapy, an alternative natural method of easing menopausal symptoms, has greater benefits with minimal side effects and health risks.

Aromatherapy is a natural plant based method of healing that has been used for thousands of years. Research concerning the therapeutic benefits of essential oils has been proven throughout history. In many cases, they are much more effective than prescription medications. The chemical compounds in essential oils react quickly in the body providing therapeutic benefits.

Aromatherapy has no side effects or health risks unless administered or blended incorrectly. Toxic essential oils are not used in aromatherapy, and poisoning only occurs when ingested or used in improper combinations or dilutions. As with prescriptives, certain essential oils are contraindicated with particular health issues.

Using aromatherapy for treatment of menopausal symptoms requires the knowledge of a trained and qualified aromatherapist. It is a more expensive

method of easing menopausal symptoms, but does not carry the health risks or side effects incurred with prescription hormone replacement therapy.

In conclusion, this author feels the financial expense of aromatherapy is insignificant when compared to the health cost of using prescriptives.

Prescription hormone replacement therapy is much too dangerous and causes too many health risks and side effects. Menopausal symptoms are best treated using natural remedies, such as aromatherapy, with much more benefit to the body and much less risk to health.

## **GLOSSARY**

**Acne** – An inflammatory disease of the skin with the formation of pustules.

**Adrenal glands** – Hormonal glands that rest on the kidneys.

**Alcohols** – Organic compounds containing the hydroxyl (-OH) functional group.

**Aldehydes** – Organic compounds containing a carbonyl group located at the end of the carbon chain.

**Alterative** – Cleanses and purifies the blood.

**Alveoli** – Small sac in the breast that stores milk.

**Amenorrhea** – Absence of menses.

**Amygdala** – The corpus amygdaloideum area of the brain.

**Analgesic** – Pain relieving.

**Anesthetic** – Pain relieving, analgesic.

**Angina pectoris** – Pain in the chest radiating out to the arms due to lack of oxygen to the heart.

**Anterior thalamus** – Front or ventral area of the hypothalamus.

**Anti inflammatory** – Counteracts inflammation.

**Antiallergenic** – Prevents allergic reactions.

**Antibacterial** – Destroys bacteria or inhibits their growth.

**Antifungal** – Destroys fungi or inhibits their growth.

**Antiinfectious** – Prevents or destroys infectious organisms.

**Antiphlogistic** – Anti-inflammatory, counteracts inflammation.

**Antispasmodic** – Prevents or eases spasms or cramps.

**Anxiety** – A feeling of apprehension and fear associated with sweating, irregular heartbeat, and tremors.

**Areola** – Colored area surrounding the nipple of the breast.

**Aromatherapist** – Therapist who practices natural therapeutic treatment using essential oils.

**Aromatherapy** – The use of pure essential oils for therapeutic purposes in the body.

**Asthma** – Recurrent attacks of difficult breathing due to bronchial contraction.

**Astringent** – Causes contraction of tissues; makes tissues denser, firmer, and decreases discharges.

**Atrophy** – Wasting away of a tissue, organ, cell, or other part of the body.

**Autonomic nervous system** – Part of the human nervous system that regulates involuntary actions.

**Capillaries** – Tiny blood vessels that connect arterioles and venules.

**Carminative** – Stimulates the digestive system; relieves flatulence.

**Central nervous system** – The brain and spinal cord.

**Cervical erosions** – Ulceration of the cervix.



**Chemical compound** – A substance consisting of two or more chemical elements in unison.

**Chemistry** – The science dealing with elements and the compounds of those elements.

**Cholesterol** – A sterol that is the precursor of bile and steroid hormones; key constituent of all cell membranes.

**Chorionic gonadotropin** – Hormone secreted by the placenta as the uterus develops during pregnancy.

**Corpus luteum** – A hormone secreting structure that is produced after ovulation from a ruptured follicle; it secretes progesterone.

**Corticosteroids** – Steroids, except for the sex hormones, secreted by the adrenal cortex.

**Cortisol** – The major steroid secreted by the adrenal cortex; it affects the metabolism of glucose, proteins, and fat.

**Coumarin** – Chemical compound that is a type of lactone that has photosensitizing effects.

**D&C - Dilation** and curettage; removal of the uterine contents, after dilating the cervix, by means of a hollow curet.

**Dementia** – A general loss of cognitive abilities, including impairment of memory.

**Dermis** – The deeper of the two major layers of skin containing glands, nerve endings, and blood vessels.

**Diaphoretic** – Produces increased perspiration and sweat plus increased elimination.

**Diuretic** – Increases the flow and excretion of urine.

**Embryo** – A baby in the first 3 months of development in the uterus.

**Emmenagogue** – Stimulates or normalizes menstruation.

**Endocrine system** – System of ductless glands in the body.

**Endometriosis** – The appearance of uterine endometrial tissue in other areas of the pelvic cavity and the body.

**Endorphins** – Central nervous system chemical that influences pain perception.

**Epidermis** – Outermost layer of skin.

**Epilepsy** – Syndrome caused by disturbances of the electrical activity of the brain; it is characterized by disturbances of brain function such as impairment, loss of consciousness, abnormal motor function, and sensory disturbances.

**Epinephrine** – Adrenaline; secreted by the adrenal medulla.

**Essential Oil** – A plant oil obtained from natural raw materials by distillation or expression.

**Ester** – A compound formed from an alcohol and an acid by removal of water.

**Estrogen** – The female sex hormone.

**Ether** – Organic compound characterized by the linkage of hydrocarbon groups by an oxygen atom bonded to two carbon atoms.

**Expectorant** – Helps remove mucous from the respiratory system.

**Follicle stimulating hormone** – FSH; hormone that stimulates the ovarian follicles to mature, and follicle cells to secrete estrogen.

**Gangrene** – Death of tissue followed by bacterial invasion.

**Germicidal** – Destroys pathogenic micro-organisms.

**Glandular stimulant** – Stimulates glandular and hormonal activity.

**Glaucoma** – Eye disease characterized by increased intraocular pressure, causing vision defects.

**Hippocampus** – A functional component of the limbic system.

**Hormonal** – Glandular stimulant.

**Hormones** – Chemical substances secreted by an endocrine gland.

**Hydrocarbon** – Organic compound that contains only hydrogen and carbon.

**Hyperlipidaemia** – elevated concentrations of lipids in the plasma; high cholesterol.

**Hypertension** – High arterial blood pressure.

**Hypothalamus** – Vital endocrine and autonomic nervous system control center; located beneath the thalamus.

**Hysterectomy** – Excision of the uterus and /or fallopian tubes and ovaries.

**In vitro** – Within a test tube or artificial environment.

**Insomnia** – Inability to sleep.

**Jaundice** – Yellowness of the skin, eyes, and mucous membranes due to increased bile pigments in the liver.

**Ketones** – Organic compounds containing the carbonyl group, whose carbon atom is joined to two other carbon atoms, with the carbonyl group occurring with the carbon chain.

**Lactation** – The secretion of milk from the breasts.

**Lactiferous duct** – Duct that drains the milk secreting glands in the breast.

**Lactone** – Organic compound that is cyclic; the chain is closed by an ester located between a carboxyl and a hydroxyl group in the same molecule.

**Libido** – Sexual desire.

**Limbic system** – Small regions of the brain that act together to produce emotion and emotional response.

**Lipids** – Fats.

**Luteinization** – The formation of the corpus luteum in the ruptured follicle.

**Luteinizing hormone** – LH; the hormone that acts with FSH to stimulate follicle and ovum maturation and release of estrogen and ovulation.

**Melatonin** – Hormone produced by the pineal gland believed to regulate the onset of puberty; responds to levels of light and is involved with the body's internal clock.

**Menarche** – Onset of the first menses.

**Monoterpene** – Hydrocarbon molecule containing 10 carbon atoms with at least one double bond.

**Monoterpenol** – Monoterpene bonded with an alcohol.

**Multiparity** – The production of more than one offspring during a pregnancy.

**Myocardial infarction** – An area of cell death that occurs when circulation to an area of the heart is obstructed.

**Nervine** – Tones and heals the nervous system.

**Osteoarthritis** – Non-inflammatory degenerative joint disease that affects the cartilage.

**Osteoporosis** – Abnormal loss of bone mass.

**Oxide** – Compound of oxygen with an element.

**Oxidize** – To cause to combine with oxygen.

**Oxytocin** – Hormone secreted by the pituitary gland before and after delivering a baby.

**Phenol** – Organic compound containing one or more hydroxyl groups attached to a carbon ring.

**Physiology** – The study of body function.

**Pineal gland** – Endocrine gland in the brain that produces melatonin.

**Pituitary gland** – Endocrine gland in the skull.

**Placenta** – Anchors the fetus to the uterus and provides the exchange of nutrients and waste products.

**Progesterone** – Hormone produced by the corpus luteum; stimulates secretion of the uterine lining.

**Prolactin** – Hormone secreted by the pituitary gland during pregnancy to stimulate breast development and lactation.

**Prostaglandin** – Naturally occurring fatty acid that affects many body functions.

**Rubefacient** – Stimulates capillary dilation; draws blood from tissues and organs, relieving congestion and inflammation.

**Sedative** – Calms and tranquilizes the nerves.

**Seizure** – Single episode of epilepsy.

**SERM** – Selective Estrogen Receptor Modulator; form of hormone replacement therapy

**Sesquiterpene** – Hydrocarbon molecule that has 15 carbon atoms and varying hydrogen atoms.

**Sesquiterpenol** – Sesquiterpene alcohol.

**Stimulant** – Stimulates the mind/body.

**Stratum corneum** – Outer layer of the epidermis.

**Terpenoid** – Chemical compound whose backbone contains 10, 15, 20, or 30 carbon atoms; made up of isoprene units.

**Testosterone** – Male sex hormone.

**Thromboembolism** – Obstruction of a blood vessel; blood clot.

**Thrombophlebitis** – Inflammation of a vein associated with a blood clot or thromboembolism.

**Tonifying** – Tonic; strengthens a specific organ or the whole body.

**Toxicity** – Quality of being poisonous.

**Tropic hormone** – Hormone that stimulates another endocrine gland to grow and secrete its hormones.

**Wheal** – Localized area of swelling accompanied by severe itching.

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