

## Using Aromatherapy for Anxiety due to Premature or Difficult Birth

Conditions: Babies and Children 0 - 2 Years - Josie Davenport, LMT, LCSW 5-1-11

### Introduction

My primary work for the past decade is the Anat Baniel Method for Children(sm), specifically children who are born with neurological challenges. Based on research and my own clinical experience, I believe that children who are born premature or who have difficult births can have the symptoms of PTSD (post traumatic stress disorder) (8). This shows up as symptoms of stress such as startling easily, difficulty feeding or sleeping, difficulty in calming themselves and difficulty learning which leads to learning delays. Through slow and gentle movement and informative touch, I help children learn. First, I help them to feel safe and teach them how to calm their system and get interested in themselves. Then I use their interest in themselves and people and objects around them to motivate movement. I use that interest and curiosity to help children learn to use their intention more easily and efficiently.

So what does that have to do with aromatherapy? Well, I took an intro course on the subject. I made an oil mixture for my aching back and shoulder, put the mixture on my skin as I got in my car to drive home and my pain was gone 15 minutes later as I arrived home. I made a cream for my husband's chronic chest pain, which consistently takes his pain down two notches and helps him go to sleep every time! So, I decided that this stuff works! Next I took the 200 hour Aromatherapy Certification Course from Aromahead Institute (6).

### I learned the following:

- Many essential oil components have been researched.
- Pure essential oil chemical components from reliable sources can have reliable effects.  
See information later in this document about buying essential oils.
- Some, but not all, essential oil makers test each essential oil, and every batch of each oil.  
Look for companies that use only organic or wild crafted oils.
- It is possible to test oils complete chemical make-up:  
We can find out if they are synthetic, grown with pesticides or if they have additives.
- Some oils have no side-effects. Some people are allergic to specific oils - do a patch test.
- For safe use of essential oils, DON'T take internally! Keep them away from children.  
DO inhale vapors, apply diluted with oil to the skin, add to bath in a carrier oil.
- Aroma vapors directly effect the nervous system -  
From patches of receptor cells in the nose to the limbic system & the temporal lobes.
- Some essential oils and carrier oils facilitate absorption into the skin, tissues and the blood.

### Essential Oil Transmission

Essential oils chemical effects can contact the body in several ways:

**Ingestion:** They can be ingested and go through the digestive system, however, this can be dangerous since **many oils that would be harmless when inhaled or applied to the skin, become poisons when ingested.** The pharmacological use of essential oils is practiced in Europe and requires a high degree of training and skill.

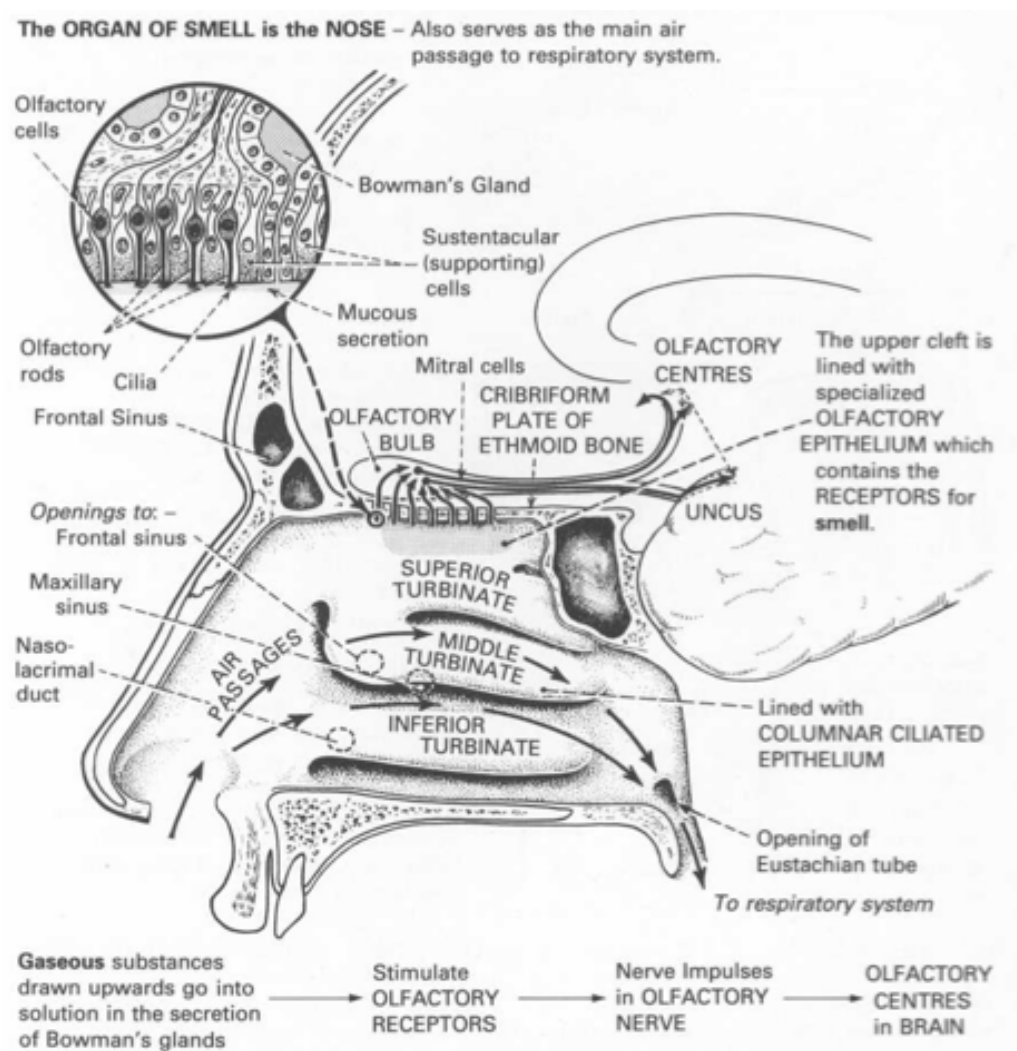
**Inhalation into the Lungs:** Oils may be inhaled through the mouth by leaning over hot water with drops of essential oil in a carrier oil added or by using a nebulizer where the mist is inhaled into the lungs. I do not recommend this for small children and babies, since it can give them **too high a dose** of the oil. The tiny alveoli in the lungs pick up the essential oils where they enter the blood stream.

## Inhalation and Sensors in the Nose & Absorption into the Skin.

### How Essential Oils Reach the Brain

In the following illustration, note that the sense of smell is chemical in nature. There is a patch of cells in the upper nose that are chemoreceptors. This means that they pick up scent molecules. The scent molecules are in a gaseous state and must be dissolved by the mucosa in order to be picked up by these sensor cells. These chemicals travel via the Olfactory Nerve (Cranial Nerve 1) which pass into the frontal lobes of the brain and then to the olfactory cortex where the scent is perceived, and recognized. Some of the connections from the Olfactory Nerve go to the Limbic System which affects emotion, learning and memory storage and retrieval. This whole process is almost instantaneous.

Olfaction or the sense of smell, is the only sense that connects directly with the cortex of the brain without going through the Thalamus which regulates what sensory information will become conscious. Although there is still a lot to understand about this whole process, the therapeutic use of essential oils can have a significant impact on the brain and the well-being of the individual. (1)



The above illustration comes from Mackenna, B.R., & Callander, R., Illustrated Physiology, Sixth Ed. (New York: Churchill Livingstone, 1997). Copy-write expired.(7)

## **How Essential Oils Enter the Skin (1)**

Essential oils can also be absorbed into the skin which is the largest organ of the body. Outer surface of the skin is primarily protective and made up of dead cells. This acts as a barrier against the elements of sun and rain and infection from outside sources. Under that layer are 3 layers of live skin cells: cells that make protective keratin or pigment, newly made cells, and cells that make the new cells. Under those skin cell layers is the dermis containing nerves, sweat glands, oil ducts, hair follicles and blood vessels. Absorption through the skin with access to the blood is another route for essential oils to enter the body. Some carrier oils and some essential oils act to facilitate absorption into the skin. (1)

## **Calming Down and Making Sense - Special Needs Kids and Stress**

Children with special needs often have had a difficult birth. Some of the children that I work with seem to be frightened or have difficulty trusting. Several articles that I found associated difficult birth experiences with PTSD (post traumatic stress disorder) in infants and ADD (Attention Deficit Disorder) in children. Since many oils are very safe when used properly and are known to be calming to the nervous system, I decided to find out how essential oils may be safely used by parents. Most of the children that have neurological challenges have two very basic issues to start with: Learning how to calm their system and learning how to bring order to the disorder. How to calm down enough to feel to use the levers of their body efficiently and to make sense - internally and in relationship to people and objects outside themselves.

A study by Botting et al (5) found that the low birth weight babies that they followed to age twelve, continued to suffer from psychological issues with greater risk for ADHD (Attention Deficit Hyperactivity Disorder), anxiety, and depression. Streech-Fischer and van der Kolk (10) believe that continued stress after birth, which preterm babies commonly endure, can disrupt the infants ability to organize sensing, feeling and thinking to the point that the child can exhibit disconnected and bizarre responses to future stressful situations. Dianne I. Maroney (8) makes the point that the period of time when these infants undergo such stress is "during a time when brain development is occurring at a profound rate, and a time when the brain is especially vulnerable." She continues, " the brain triples in size over the first 5 years of life. Much of this growth is in the myelination of neurons and their synaptic interconnections." Whatever we can do to help the child return to and even keel can have a profound impact on their functional capacity throughout their life.

So the first issue to address is safety, calming and what follows naturally is mental focus. Picture a healthy baby nursing. The baby is calm, content and the eyes go from the nipple to the mother's face - tracking - and the head and spine follow. Then the baby's hand goes from the breast to reach for the mother's mouth. The mother kisses the hand and the baby reaches again. This reaching brings in more connection of movement through the ribs and the beginnings of rolling or arching the lower back. All of this information is available in a calm and moveable system. When a child is frightened, on the other hand, contractions are normal and movement is at best, awkward. This can include movement of the head and extremities as well as sucking, swallowing, digestion and breathing.

Because one of the primary ways that infants can deal with stress is a calming and close relationship with the parents, my essential oil treatments also will focus on the parents. By nurturing and calming the parents, that sense of calm support is transferred to the infant. Since even the use of essential oils in very low dilution on newborn skin is questionable, the treatments are best "worn" by the parents. According to Tyler Woods, (11) essential oils that are useful for helping people with PTSD can include: bergamot, cypress, geranium, jasmine, lavender, melissa, neroli, rose, sandalwood, ylang-ylang. Please refer to the chart below for safe oils at different ages. As I will get to later, out of the oils just listed, I have chosen geranium, lavender, neroli, rose and sandal. That will not be the entire list though as you will see.

## Essential Oils for Calming Infants: Birth to 1 year

To be safe: (9, 12)

- **Don't Put Any Essential Oils on a Newborn's Skin.**  
Consult with your pediatrician about using oils.  
Aromahead Institute (1) recommends keeping essential oil mixtures away from babies skin until 1 year of age.
- **Don't Put straight undiluted essential oil on adult skin**  
Put the dilute essential oil mixture on yourself -  
Read the following paragraph for instructions.
- Use a **Diffuser** - A diffuser plugs into an electric outlet and forces dry air through oil on a filter.
- Use a **Hydrosol** around sleeping areas or clothing.
- **Keep Essential Oils Away from Eyes (baby's hands) and Mucus Membranes.**
- **Daily use of essential oils is not advised during breast feeding.**

Based on the information that I have gathered and by my own experience, I have become a convert about the effectiveness of essential oils. At the same time, I approach newborn babies with a great sense of care and delicacy. So, I would never recommend putting essential oils on the skin of a newborn. Also, I would only use the most gentle oils, listed later in detail, in the vicinity of a small child.

**Wear the oil on yourself:** Be sure to use a carrier oil, and use a 1% dilution( Don't exceed 3%). Never dilute in water alone since the oil and water don't mix - it's the same as putting undiluted oil on your skin. (6)

**Diluting Essential Oils:**( 6) A 1% dilution is 5 to 6 drops of essential oil in one ounce of carrier oil. If you are **breast-feeding, use only a 1% solution** and be sure that none of the essential oil is on the breast or where the infant can contact the oil. Avoid using peanut oil as a carrier oil around babies and small children since many children have sensitivities to peanuts. Of course if you are not breast-feeding, and wear essential oils, they should be worn away from possible contact by the infant.

**Carriers Oils:** (For more detail see Appendix A)

- Aloe Vera with Vitamin E
- Any vegetable oil, including nut oils (avoid peanut oil with babies)
- Jobba oil (a liquid wax, scent free)
- Cocoa butter
- Coconut oil
- Your favorite scent-free cream blend

Some oils and butters are better for skin, more nourishing and absorb better. The oils listed above are all excellent. Other possibilities include avocado oil and shea butter.

When your baby is over 2 months and cleared by your pediatrician for massage: Please be aware that you **don't make your baby too slippery!** Lotions may be a better choice for baby massage.

**Hydrosols:** The hydrosol is a byproduct of the steam distillation process. The steam picks up the oil from the plant material and then the water and oil are separated. The water will contain some of the chemical qualities of the plant as well and some aroma. Hydrosols are known to have their own therapeutic qualities. These may be ordered. Be sure to use an organic reliable source. Hydrosols are much milder and gentler than the pure oils. **They are safe to put directly on the skin and they are safe for children and animals.** Try lavender or sweetgrass.

**Humidifiers and Diffusers:** The humidifier is an electrical device that creates a cool mist in the air. The diffuser may use a candle under the oil or may be electrical. **See Appendix B.** See recipe below in "Blending Suggestions for Babies 2 months to 2 years".

**Buying Essential Oils:** Be sure to obtain oils from reliable sources. (6)  
Reliable means that through rigorous testing of every oil, the chemical components can be known.

1. Are the oils tested with Gas Chromatography - Mass Spectrometry reports?  
Is the chemist known and reliable?  
If this is done well, the GC/MS report an exact breakdown of all chemical components in that oil.
2. Do they test every batch of oil?
3. Can they provide a specific GC/MS report for every batch they sell?
4. Can they provide the season and year each batch of oil was distilled?
5. Can they provide a list of the current oils that are organic?

I recommend Aromatics International because they visit and know the producers of the oils, they use their nose to test the quality first, then they send every batch of oil to a known and reputable chemist in France to let them know if the oil is pure and the chemical breakdown for that specific batch. Weather and other environmental conditions can alter a plant's chemical makeup. This test let's them know. Below is the GC/MS from Aromatics International (2) for Batch #105 Lavandula angustifolia from India. As you can see, if you look at the numbers under the headings "Monoterpenols" and "Esters" that linalol (27%) and linalyl acetate (48%) make up a high percentage of this oil. The meaning of this will be explained more fully, later in this document.

## Aromatics International

www.AromaticsInternational.com

*LAVANDULA ANGUSTIFOLIA*  
LAVENDER  
Country of Origin: India

Stock # LAV-105  
Date: Summer 2010

### GAS CHROMATOGRAPHY ANALYSIS (%)

Monoterpenes		Monoterpenols		Esters	
$\alpha$ -pinene	0.16	$\alpha$ -terpineol	1.38	bornyl acetate	0.35
$\beta$ -myrcene	0.56	borneol	1.18	geranyl acetate	0.70
$\beta$ -phellandrene	0.19	geraniol	0.54	hexyl acetate	0.25
camphene	0.40	lavandulol	0.53	lavandulyl acetate	2.32
cis- $\beta$ -ocimene	0.49	linalol	27.03	linalyl acetate	48.02
d-limonene	0.70	nerol	0.25	neryl acetate	0.40
para-cymene	0.12	terpinen-4-ol	0.90	other esters	0.86
trans- $\beta$ -ocimene	0.87	<b>Ketones</b>		<b>Oxides</b>	
<b>Sesquiterpenes</b>		camphor	0.50	1,8-cineole	1.24
$\alpha$ -santalene	0.40	cryptone	0.34	linalol cis-oxide	0.22
$\alpha$ -trans-bergamotene	0.11	octanone	1.33		
$\beta$ -caryophyllene	2.60				
$\beta$ -farnesene	0.65				

### Infants and Children - 1 to 2 Years

After the first year, some of the gentle oils may be added to your child's bath, in a diffuser, or a very low dilution or hydrosol sprayed close to where your child will sleep - while the child is not present.

Valerie Ann Worwood (12) cautions against using the nebulizer at home, since the concentration that is emitted may be too high. She recommends the following breakdown of oils that may be used safely with infants and children.

Age	Oil	Carrier Oil	Small Additions
0 - 2 mo	German chamomile ( <i>Matricaria recutita</i> ) Roman chamomile ( <i>Chamaemelum nobile</i> ) Lavender ( <i>Lavandula angustifolia</i> ) Mandarin ( <i>Citrus reticulata</i> ) Dill ( <i>Anethum graveolens</i> )	Almond Oil	jojoba, wheatgerm oil
2-6 mo	Same as above plus: Eucalyptus radiata ( <i>Eucalyptus radiata</i> ) Neroli ( <i>Citrus aurantium</i> ) Tea tree ( <i>Melaleuca alternifolia</i> ) Geranium ( <i>Pelargonium graveolens</i> ) Rose otto ( <i>Rosa damascena</i> )	As above	As above
7 mo - 1 yr.	As all above plus: Palmarosa ( <i>Cymbopogon martini</i> ) Petigrain ( <i>Citrus aurantium</i> ) Naouli ( <i>Melaleuca quinquenervia</i> ) Tangerine ( <i>Citrus reticulata</i> ) Cardamom ( <i>Elettaria cardamomum</i> )	As above	As above plus: Calendula infusion

### Another Perspective:

In Shirley Price's book, Aromatherapy for Babies and Children (9), she mentions 19 oils that she considers to be safe for children in general. These oils are:

- Bergamot (*Citrus bergamia*)\*
- Cedarwood (*Cedrus atlantica*)\*\*
- Chamomile, Roman (*Chamaemelum nobile*)
- Cypress (*Cupressus sempervirens*)
- Frankincense (*Boswellia carterii*)
- Geranium (*Pelargonium graveolens*)
- Ginger (*Zingiber officinale*)
- Lavender (*Lavandula angustifolia*)
- Lemon (*Citrus limon*)\*
- Mandarin (*Citrus reticulata*)\*
- Marjoram (*Origanum majorana*)
- Melaleuca-Tea Tree (*Melaleuca alternifolia*)
- Orange (*Citrus aurantium*)\*
- Rose Otto (*Rosa damascena*)
- Rosemary (*Rosmarinus officinalis*)\*\*
- Rosewood (*Aniba rosaeodora*)
- Sandalwood (*Santalum album*)
- Thyme (*Thymus vulgaris CT linalol*)
- Ylang Ylang (*Cananga odorata*)

\*These oils are photosensitive; always dilute. To prevent a rash or pigmentation of the skin, do not use citrus oils when exposed to direct sunlight.

\*\*These oils should never be used undiluted on babies and children.

Remember: we recommend always diluting every oil before applying to skin of adults or children.

## Choosing Oils for Children with Developmental Delays

I will choose oils based on both their gentleness for the young and on the pure chemical components that have been shown through research to have the effect of calming the nervous system and also allowing clear cognitive processes. All of the oils that I use come from Aromatics International and are grown free of pesticides and all of the chemical components are known.

### Care of Essential Oils - Don't Leave Them in a Hot Car (1, 2, 6)

All therapeutic essential oils must be stored in a cool and dark area with tops on tight. This will protect the oils from changes to chemical structure that can be caused by heat, light or oxidation. This will give a more predictable outcome and to guard against ill effects that can come from adulteration. Heat and oxidation can cause some oils that would normally be gentle to skin to become harsh.

### Safety Guidelines Revisited - 1 to 2 years (6)

**Proper dilution** (Always dilute - see charts below)

Again: **Keep Essential Oils Away from Eyes** (baby's hands) and **Mucus Membranes**.

**Keep Essential Oils Out of Reach** - "gentle oils" can be poisonous if swallowed.

Give the child milk or ½ & ½ and call poison control immediately.

Again: Regular, daily use of essential oils is not advised during **breast feeding**.

### Safe Use of Photo-toxic Oils: (6)

Some oils intensify the effects of ultraviolet light and some do not. Most of these are cold pressed citrus oils. Notice that **Bergamot, a citrus, is the most photo-toxic cold pressed oil**, while you can use a lot of grapefruit before the blend becomes photo-toxic. Even so, 1 drop of bergamot per 1 ounce blend is not photo-toxic. Also we are using very low percentage blends. At the same time, babies skin will burn much more easily and will require greater care and protection.

Essential Oil	Extraction Method	Safe Number drops/1 ounce
Bergamot	cold pressed	1
Lime	"	4
Lemon	"	12
Grapefruit	"	24

**Not Photo-toxic:** Cold pressed sweet orange, mandarin, tangelo and tangerine. **Distilled lime and lemon** oils are also not photo-toxic.

### The Essential Oils That I Chose and Why (6)

**Cardamom** (*Elettaria cardamomum*) contains **32%** of the oxide **1,8-cineole** which is said to be energetically balancing as well as enhancing mental clarity. **Note: Do not use cardamom if you take barbiturates due to their chemical interactions.**

**German chamomile** (*Matricaria recutita*) - Though the primary chemical components of German chamomile have not been researched, 73% of those components belong to the Sesquiterpene family which are known to have the effects of being anti-inflammatory, anti spasmodic and are **sedative** in nature. Also, from clinical reports, German chamomile is effective in **reducing stress**.

**Roman chamomile** (*Chamaemelum nobile*) - Notice that German and Roman chamomile belong to different plant families. Roman chamomile's chemical components have not been specifically researched either. However, Roman chamomile's components are 69% in the Ester chemical family. This family has been researched to be antispasmodic and **calming to the nervous system**, they are also anti-infectious.

**Geranium** (*Pelargonium graveolens*) is another star with **29%** of the monoterpenol **citronellol**. The Monoterpene chemical family as a group are antiseptic and decongesting and they **assist penetration into the skin** and circulatory system. Geranium is also anti-depressant in nature. Avoid use in early pregnancy.

**Lavender** (*Lavindula angustifolia*) - This may not come as a surprise to you, but when I look for actual research, Lavender floats to the top of the list, possibly because two chemical components in Lavender are very high and have both been researched. I am speaking specifically about the essential oil from Aromatics International which has been tested to have **27%** of the monoterpenol, **linalol** and **48%** of the ester, **linalyl acetate**.

**Neroli** (*Citrus aurantium var. amara*), steam distilled from orange blossoms, is **36%** the monoterpenol **linalol**. Due to its high percentages of the monoterpenes **beta-pinene** and **delta-limonene**, Neroli is also has multiple therapeutic effects listed below.

**Palmarosa** (*Cymbopogon martini*) has 85% of its' chemical makeup in the Monoterpenol family. So even though there is not one primary chemical that has been researched, essential oils that have a high percentage Monoterpenol have the effect of being **emotionally balancing**. They are also anti-infectious, stimulate immunity over the long term and are healing for the skin. The fragrance is similar to roses! This would be a good replacement for rose absolute for nursing mothers. (See rose absolute below.)

**Rose absolute** (*Rosa damascena*) is **10% citronellol** and 64% phenylthylc alcohol which has not been researched (think of the effect of roses - it has to be good!). **Note: Because Rose absolute is removed by solvent extraction, it is contraindicated for topical use while a mother is breast-feeding.** Diffuse into the air or dab it under your collar instead!

**Sandalwood** (*Santalum album*) Sandalwood has 84% of its' make-up in the chemical family Sesquiterpenol. The family as a whole are anti-inflammatory and **grounding**. It is 72% **Santalols**.

**Sweet orange** (*Citrus sinensis*) contains 92% **delta-limonene**. I include this because the citrus are uplifting. Unlike other citrus oils, sweet orange is not photo-toxic (does not cause the skin to burn more easily in the sun). The other citrus are also high in limonene and are all emotionally uplifting - use in diffusion methods or dab on wristband. Try **lemon** or **grapefruit**.

**Here is the breakdown of therapeutic effects based on research data as stated by Essential Education International (6):**

- 1,8-Cineole** Airborne antimicrobial, analgesic, antibacterial, anti-inflammatory, anti-oxidant, anti-spasmodic, antiviral, mucolytic, **skin penetration enhancer**. **1,8-Cineole is also a CNS sedative, dopaminergic, hypotensive, and increases cerebral blood flow.**
  
- Citronellol** Anti-anxiety, anticonvulsant, anti-fungal, anti-inflammatory, antioxidant, & kills dust mites. **Citronellol is also a CNS sedative and hypotensive.**
  
- Linalol** Besides being an airborne antimicrobial, analgesic, antibacterial, anticonvulsant, anti-fungal, anti-inflammatory, antioxidant, antispasmodic, antitumoral, antiviral and immunostimulant, **Linalol is also for anti-anxiety, CNS sedative, and hypotensive.**

- Linalyl acetate** Besides being an analgesic, anti-inflammatory and preventing bone loss, and stimulates immune response,  
**Linalyl acetate is also a CNS sedative.**
- Delta-limonene** Activates white blood cells, analgesic, antibacterial, anti-inflammatory, anti-obesity, anti-oxidant, anti-tumoral, immunostimulant, inhibits gastric lesions, liver support/protector, **skin penetration enhancer.**
- Beta-pinene** Anti-inflammatory, antioxidant, anti-spasmodic, prevents bone loss.
- Santalols** Analgesic, antibacterial, anti-fungal, antimicrobial, antitumoral, **CNS sedative, improves mood**, neuroleptic, supports prevention of skin cancer.

### Suggestions for Blending for Babies 1 - 2 years

#### Carrier Oil

#### 5 to 6 drops total Essential Oil

Day: 1 oz. Almond Oil + ¼ tsp. Vit. E      2 drops Sandal, 2 drops Lavender, 2 drops Sweet Orange

Night: 1 oz. Almond Oil + ¼ tsp. Vit. E      2 drops Sandal, 1 drop G. Chamomile, 2 drops Palmarosa

These are two examples that I made up - I invite you to play with the above oils.

Most of the above oils are middle notes, Sandal is a base with means that it lingers longer, the citrus are top notes which means, you smell them right away and then they back off leaving the other scents. Try using other citrus such as lemon or grapefruit to replace the orange.

### Using Essential Oil Dilutions (from Valerie Ann Worwood) (12):

#### For a Bath

Dilute in 1 ounce of carrier oil:

2-6 mo      1 drop & use ¼ of this amount

6 mo-2 yrs.      1 drop & use ½ of this amount

**Diffusers** - A candle heats water - drops of essential oil are added.

Up to 2 yrs.      1 or 2 drops

#### Humidifier

Any age      1 to 4 drops per pint of water

#### For Massage

Dilute in 1 oz of lotion or carrier oil:

2-6 mo      0 to 1 drop

6-12 mo      1 to 2 drops

1-4 years      1 to 5 drops

### Creativity = Mohdoh

One frustrated mother added lavender to her hyperactive child's modeling clay. This worked so well to calm him down a company in Europe sells the product based on her discovery and they call it mohdoh. This idea will only work when the child is at the age where they no longer will eat the clay. However, I do want to let parents know about the possibilities out there. Here is the company's web address: <http://www.mohdoh.co.uk/>

### Summary

Essential oils can be effective therapeutic assets when used properly. Based on research and my own clinical experience, I believe that children who are born premature or who have difficult births can have the symptoms of PTSD (post traumatic stress disorder). (9) This shows up as symptoms of stress such as startling easily, difficulty feeding or sleeping, difficulty in calming themselves and difficulty

learning which leads to learning delays. The oils listed above can be calming, sedative, grounding and uplifting. I have chosen oils that are safe for babies.

It is my hope that through the research that I have done with this paper, that the parents that I work with will have a better understanding of this tool as a possible aid for them and their child's well-being. I also will, with the permission of parents, look for ways to adapt this information to the specific needs of each child that I see. I already find great joy in my experience with the pure essential oils and feel fortunate to have access to them and to this information.

## **Appendix A: Carrier Oils**

### **Almond, Sweet**

Good for all skin types. Buy organic expeller pressed oil from raw almond kernels.

### **Aloe Vera Gel**

Mix about 10 drops of skin nourishing carrier oil into 1 oz. aloe vera gel. For best results, choose an organically grown gel that is cold pressed.

### **Avocado Oil**

Excellent for penetrating into the skin, this oil nourishes and softens. Blend with other carrier oils. This oil is anti-inflammatory and good for stretch marks.

From Aromatics International web site (2):

- Prevents chapping, cracks and stretch marks
- Strong UV absorption properties make it an ideal oil to offer light UV protection for the skin
- Excellent moisturizer for the skin
- High degree of penetration into the epidermis
- Promotes cell regeneration
- Used for skin inflammation
- Used to clean the skin
- Has a high sterol content (about 10%) and is used as a carrier for arthritis pain blends
- Has a high % of Vitamin D and is useful for people living in low sunshine areas
- Used for post menopausal women who have aging skin

Don't refrigerate, store in a cool dark place, the shelf life is 1-2 years.

### **Baobab Seed Oil**

This oil is also deeply penetrating and nourishing. It has a rich nutty aroma.

From Aromatics International web site (2):

- Moisturizing for dry skin and hair
- Absorbs easily and quickly
- Improves the skin's elasticity & tone
- Cell regenerator
- Relieves Eczema
- Relieves Psoriasis
- Alleviates pain from burns and regenerates epithelial tissue quickly

"Baobab is an extremely stable oil, and should be a golden yellow color. It has a shelf life of 4-5 years."

### **Coconut Oil**

From Aromatics International web site (2):

"Virgin Coconut oil. . . cold-pressed, pure, natural and unrefined . . . is one of the most effective natural body moisturizers available. Coconut oil is excellent as a carrier oil for dry, itchy, sensitive skin and does not clog pores. Coconut oil is mild and generally safe for people with inflamed, irritated and sensitive skin.

It has a high percentage of lauric acid.

- Softens and lubricates the skin
- Great base for sensitive skin
- Cooling properties
- Prevents dry hair and lips
- Nail and cuticle treatment
- Antifungal
- Healing for dry, itchy skin

Coconut oil is resistant to rancidity and has a 2 year shelf life. "

### **Hemp Seed Oil (2)**

"Hemp Seed Oil is anti-inflammatory, used for healing skin infections, has anti-oxidants properties, and is moisturizing for the skin. The oil is soft, not greasy, and absorbs into the skin easily. It is also known to protect the skin. Hemp can be used as a warm oil treatment for the hair as well. Hemp Seed Oil has a high percentage of Essential Fatty Acids. It contains both Omega-6 and Omega-3 Essential Fatty Acids, in a proportion of 3:1. This proportion is the recommended balance of Omega-6 to Omega-3 acids. Fatty Acids support healthy skin and hair. It has a shelf life 18 months or more. Best kept cold and ideally refrigerated."

### **Jjoba Oil (3)**

Jjoba is a wax similar to our skin's sebum. It is anti-inflammatory and does not leave an oily residue.

### **Shea Butter (3)**

Shea butter comes Karite Tree and can be found organic and unrefined quality. This butter leaves a protective waxy film on the skin that is water resistant and moisturizing.

### **Unscented Lotion From Aromatics International (2):**

"A light, moisturizing lotion that deeply soothes and replenishes the natural oils of the skin. This is one of the few lotions on the market that is made without any synthetic chemicals. We have been using it for years at our aromatherapy school, Aromahead Institute, with great success!

The composition of the lotion is as follows:

Distilled water, aloe vera, cold pressed vegetable oils of safflower (*Carthamus tinctorius*), apricot (*Prunus armeniaca*), and sesame (*Sesamum indicum*), plant emulsifying wax, almond glycerides, vitamin E, and grapefruit seed extract."

## **Appendix B: Devices**

### **Humidifier:**



The Vapor-Eze 2760 room humidifier adds both moisture and essential oil to the air when operating. A 25 ML Bottle of pure Menthol Eucalyptus Oil with no additives is included. (Note: They do not give the genus and species of Eucalyptus. The different species have very different effects. Please visit Aromatics International for information and safety cautions for oils.) This humidifier can operate for up to 10 hours and features an auto shutoff function when the water runs out. The cost is approx. \$35.

### From aromaweb (3) Candle Diffusers

- A candle diffuser is a diffuser that utilizes a tea light or other candle to gently heat the essential oil to promote diffusion into a room. A candle diffuser is usually ceramic or metal. The diffuser has an opening or space for a candle and a little bowl or tray for storing a tiny quantity of essential oil. Candle diffusers come in many shapes and colors from the modest functional piece to the piece that acts both as a work of art and as a candle diffuser.
- Advantages: Candle diffusers can be inexpensive, depending on the style and design. Candle diffusers do not require electricity or batteries.
- Disadvantages: One needs to be as careful with using a candle diffuser as with using candles in general. Also, one must be sure to keep replacement candles on hand. The aroma generally diffused by a candle diffuser is very light and it does not usually diffuse an entire room. The heat may alter or destroy certain constituents of the oils and thus the therapeutic benefit may not be as optimal as using cold-air diffusion methods.



### Fan Diffusers

- Fan diffusers come in a variety of sizes, shapes and styles. A fan diffuser uses a fan to blow the essential oils into the air. To use a fan diffuser, essential oils are usually placed onto a disposable absorbent pad or into a tray. The pad or tray is placed into the unit and then powered on. The fan then blows air across this pad or tray and carries the aroma throughout the room. Since fan diffusers come in a variety of sizes, some fan diffusers will only diffuse a

small room whereas others can diffuse very large areas. Some fan diffusers require the use of an absorbent pad (the pads can usually be reordered from the retailer or directly from the manufacturer). In others, the use of absorbent pads is optional.

- Advantages: Fan diffusers are available in a wide variety of brands and styles. Depending on the brand and model, fan diffusers can fragrance a large area. Fan diffusers are generally easy to use. Some fan diffusers are powered by both electricity and batteries making them quite portable.
- Disadvantages: Some fan diffusers, depending on the brand and model, require the purchase of replacement absorbent pads. Some fan diffusers are noisy.

### **Electric Heat Diffusers**

- Similar to a fan diffuser, heat diffusers use heat and a fan to gently heat the oil and disperse the aroma into a room.
- Advantages: Electric heat diffusers may fragrance larger areas, depending on the brand and style. They can also help to more efficiently disperse the aromas of thicker oils such as Sandalwood and Patchouli.
- Disadvantages: Heat may alter or destroy certain constituents of the oils and thus the therapeutic benefit may not be as optimal as using cold-air diffusion methods.

### **Plug in Diffuser:**



This diffuser warms essential oils from a replaceable cotton pad. Use it to diffuse into any smaller space. It will not burn oils, can be left on throughout the night.

### **From Aromatics International site (2) H2EO® AirCare ultrasonic diffuser**



This diffuser utilizes quiet, "cold mist" with no heat or air pumps (which can seriously damage the chemistry of essential oils), and safe low voltage direct current operation.

High frequency sound (100 times beyond human hearing) generates patterns of movement that

create "sonic bubbles" in the water in the diffuser's bowl. When these bubbles implode, nano-droplets of water are released from the surface. Each is enveloped by a fine coating of essential oil, floating up and rapidly becoming part of your room's atmosphere.

### **Appendix C: The following breakdown of each oil comes from Aromaweb (3): Cardamom Essential Oil**

Botanical Name: *Elettaria cardamomum*

Common Method of Extraction: Steam Distilled

Color: Clear

Consistency: Thin

Perfumery Note: Middle

Strength of Initial Aroma: Medium

Aromatic Description: Spicy, woody, rich, sweet.



Cardamom Seeds

**Possible Uses:** Appetite (loss of), colic, **fatigue**, halitosis, **stress**. [Julia Lawless, The Illustrated Encyclopedia of Essential Oils (Rockport, MA: Element Books, 1995), 63-67.]

**Constituents:** Terpinyl acetate, cineol, limonene, sabinene, linalool, linalyl acetate, pinene, zingiberene. [Julia Lawless, The Illustrated Encyclopedia of Essential Oils (Rockport, MA: Element Books, 1995), 138.]

**Safety Information:** Essential Oil Safety by Robert Tisserand does not indicate any special precautions when using this oil. [Robert Tisserand, Essential Oil Safety (United Kingdom: Churchill Livingstone, 1995), 204.]

### **German Chamomile Essential Oil**



Botanical Name: *Matricaria recutita*

Common Method of Extraction: Steam Distilled

Color: Deep Blue

Consistency: Thin

Perfumery Note: Middle

Strength of Initial Aroma: Medium

Aromatic Description: Sweet, fruity, herbaceous.

**Possible Uses:** Abscesses, allergies, arthritis, boils, colic, cuts, cystitis, dermatitis, dysmenorrhea, earache, flatulence, hair, headache, inflamed skin, insect bites, insomnia, nausea, neuralgia, PMS, rheumatism, sores, sprains, strains, **stress**, wounds. [Julia Lawless, *The Illustrated Encyclopedia of Essential Oils* (Rockport, MA: Element Books, 1995), 56-67.]

**Constituents:** Bisabolol, Farnesol, Azulene, Farnasene, Thujanol [Shirley Price, *The Aromatherapy Workbook* (Hammersmith, London: Thorsons, 1993), 54-5.]

**Safety Information:** May cause dermatitis in some. [Julia Lawless, *The Illustrated Encyclopedia of Essential Oils* (Rockport, MA: Element Books, 1995), 168.]

Essential Oil Safety by Robert Tisserand does not indicate any special precautions when using this oil. [Robert Tisserand, *Essential Oil Safety* (United Kingdom: Churchill Livingstone, 1995), 204.]

### **Roman Chamomile Essential Oil**

Botanical Name: *Anthemis nobilis*

Common Method of Extraction: Steam Distilled

Color: Gray/Very Pale Blue

Consistency: Thin

Perfumery Note: Middle

Strength of Initial Aroma: Medium - Strong  
Aromatic Description: Bright, crisp, sweet, fruity, herbaceous.

**Possible Uses:** Abscesses, allergies, arthritis, boils, colic, cuts, cystitis, dermatitis, dysmenorrhea, earache, flatulence, hair, headache, inflamed skin, insect bites, **insomnia**, nausea, neuralgia, PMS, rheumatism, sores, sprains, strains, **stress**, wounds. [Julia Lawless, *The Illustrated Encyclopedia of*

Essential Oils (Rockport, MA: Element Books, 1995), 56-67.]

**Constituents:** High Ester Content, Pinocarvone, Pinene, Bisabolol, Farnesol, Pinocarveol, Cineole, Azulene, Beta-caryophyllene, Camphene, Myrcene [Shirley Price, The Aromatherapy Workbook (Hammersmith, London: Thorsons, 1993), 54-5.]

**Safety Information:** May cause dermatitis in some. [Julia Lawless, The Illustrated Encyclopedia of Essential Oils (Rockport, MA: Element Books, 1995), 109.]

Essential Oil Safety by Robert Tisserand does not indicate any special precautions when using this oil. [Robert Tisserand, Essential Oil Safety (United Kingdom: Churchill Livingstone, 1995), 204.]

## Geranium Essential Oil

Botanical Name: *Pelargonium graveolens*

Common Method of Extraction: Steam Distilled

Color: Ranges in Color From Clear to Amber

Consistency: Thin

Perfumery Note: Middle

Strength of Initial Aroma: Very Strong

Aromatic Description: Floral, fresh, sweet, with a fruity note.



Geranium Leaves

## Traditional Knowledge (from Aromatics International) (2)

- **Antidepressant** - can help to prevent and alleviate depression
- **Antiseptic** - assists in fighting germs/infections (urinary, pulmonary)
- **Anti-fungal** - inhibits growth of fungus (Candida, athlete's foot)
- **Anti-inflammatory** - alleviates inflammation, cooling
- **Antispasmodic** - relieves spasms and cramps
- **Astringent** - contracts and tightens tissue
- **Antiviral**
- **Bactericidal** - destructive to bacteria
- **Diuretic** - reduction of fluids
- **Cicatrisant** - cell-regenerative for skin, healing for scars
- **Tonic** - strengthens and restores vitality to various body systems

**Possible Uses:** Acne, cellulites, dull skin, lice, menopause, oily skin. [Julia Lawless, The Illustrated Encyclopedia of Essential Oils (Rockport, MA: Element Books, 1995), 57-65.]

**Constituents:** Citronellol, Geraniol, Citronellyl Acetate, Geranyl Acetate, Linalyl Acetate, Beta-Caryophyllene [Shirley Price, The Aromatherapy Workbook (Hammersmith, London: Thorsons, 1993), 54-5.]

**Safety Information:** Use caution to avoid dermatitis in hypersensitive persons. Avoid during pregnancy. [Julia Lawless, The Illustrated Encyclopedia of Essential Oils (Rockport, MA: Element Books, 1995), 190.] **NOTE:** This warning is based on a high dosage taken internally only. For safety, however, avoid use during pregnancy, especially the first trimester.

Essential Oil Safety by Robert Tisserand does not indicate any special precautions when using this oil. [Robert Tisserand, Essential Oil Safety (United Kingdom: Churchill Livingstone, 1995), 206.]

## Lavender Essential Oil

Botanical Name: *Lavendula officinalis*

Common Method of Extraction: Steam Distilled

Color: Clear with a Tinge of Yellow

Consistency: Thin

Perfumery Note: Top/Middle

Strength of Initial Aroma: Medium

Aromatic Description: Lavender Oil is fresh, sweet, floral, herbaceous, slightly fruity.



Lavender Field

**Possible Uses:** Acne, allergies, **anxiety**, asthma, athlete's foot, bruises, burns, chicken pox, colic, cuts, cystitis, **depression**, dermatitis, dysmenorrhea, earache, flatulence, headache, **hypertension**, insect bites, insect repellent, itching, labor pains, migraine, oily skin, rheumatism, scabies, scars, sores, sprains, strains, **stress**, stretch marks, vertigo, whooping cough. [Julia Lawless, The Illustrated Encyclopedia of Essential Oils (Rockport, MA: Element Books, 1995), 56-67.]

**Constituents:** Linalyl Acetate, Linalol, Terpinenol, Cineole, Beta-Caryophyllene, Farnasene [Shirley Price, The Aromatherapy Workbook (Hammersmith, London: Thorsons, 1993), 54-5.]

**Safety Information:** Essential Oil Safety by Robert Tisserand does not indicate any special precautions when using lavender Oil. [Robert Tisserand, Essential Oil Safety (United Kingdom:

Churchill Livingstone, 1995), 207.]

## **Neroli Essential Oil**

Name: *Citrus aurantium*

Common Method of Extraction: Steam Distilled

Color: Coffee Brown

Consistency: Medium

Perfumery Note: Middle

Strength of Initial Aroma: Strong

Aromatic Description: Intensely floral, citrusy, sweet and exotic.



Orange Blossoms  
(Neroli)

**Possible Uses:** Depression, frigidity, insomnia, mature skin, scars, **shock, stress**, stretch marks. [Julia Lawless, The Illustrated Encyclopedia of Essential Oils (Rockport, MA: Element Books, 1995), 59-67.]

**Constituents:** Linalyl Acetate, Limonene, Linalol, Nerolidol, Geraniol, Alpha-Terpineol, Geranyl Acetate, Neryl Acetate [Shirley Price, The Aromatherapy Workbook (Hammersmith, London: Thorsons, 1993), 54-5.]

**Safety Information:** Essential Oil Safety by Robert Tisserand does not indicate any special precautions when using this oil. [Robert Tisserand, Essential Oil Safety (United Kingdom: Churchill Livingstone, 1995), 208.]

Unlike many other citrus oils, Neroli Essential Oil is not considered phototoxic.

## Palmarosa Essential Oil

Botanical Name: *Cymbopogon martini*

Common Method of Extraction: Steam Distilled

Color: Pale Yellow

Consistency: Thin

Perfumery Note: Middle

Strength of Initial Aroma: Strong

Aromatic Description: Fresh, floral, sweet, somewhat similar to geranium oil.

## Rose Essential Oil

Botanical Name: *Rosa damascena*

Common Method of Extraction: SSteam Distilled (called Rose Otto)

Color: Deep Red for the Absolute, Light Yellow for the Steam Distillate

Consistency: Thick for the Absolute, Thin for the Steam Distillate

Perfumery Note: Middle

Strength of Initial Aroma: Strong

Aromatic Description: strongly floral, sweet.



Roses

**Possible Uses:** **Depression**, eczema, frigidity, mature skin, menopause, **stress**. [Julia Lawless, The Illustrated Encyclopedia of Essential Oils (Rockport, MA: Element Books, 1995), 57-67.]

**Constituents of Rose Otto:** Citronellol, Geraniol, Nerol, Farnesol, Esters, Rose Oxide, Limonene, Myrcene, Pinene [Shirley Price, The Aromatherapy Workbook (Hammersmith, London: Thorsons, 1993), 54-5.]

**Safety Information:** Essential Oil Safety by Robert Tisserand does not indicate any special precautions when using this oil. [Robert Tisserand, Essential Oil Safety (United Kingdom: Churchill Livingstone, 1995), 210.]

## Sandalwood Essential Oil

Botanical Name: *Santalum album*

Common Method of Extraction: Steam Distilled

Color: Clear with a Yellow Tinge

Consistency: Medium - Thick

Perfumery Note: Base

Strength of Initial Aroma: Medium

Aromatic Description: Rich, sweet, fragrant yet delicate, woody, floral.



Sandalwood Shavings

**Possible Uses:** Bronchitis, chapped skin, **depression**, dry skin, laryngitis, leucorrhea, oily skin, scars, sensitive skin, **stress**, stretch marks. [Julia Lawless, *The Illustrated Encyclopedia of Essential Oils* (Rockport, MA: Element Books, 1995), 56-67.]

**Constituents:** Santalols, santyl acetate, santalenes. [J. Chana, "Sandalwood Production," *International Journal of Aromatherapy*, Winter 1994, 11-3, cited in Salvatore Battaglia, *The Complete Guide to Aromatherapy* (Australia: The Perfect Potion, 1997), 200.]

**Safety Information:** Essential Oil Safety by Robert Tisserand does not indicate any special precautions when using this oil. [Robert Tisserand, *Essential Oil Safety* (United Kingdom: Churchill Livingstone, 1995), 210.]

## Sweet Orange Essential Oil

Botanical Name: *Citrus sinensis*

Common Method of Extraction: Cold Pressed/Expressed

Color: Greenish Orange

Consistency: Thin

Perfumery Note: Top

Strength of Initial Aroma: Medium - Strong

Aromatic Description: Citrusy, sweet, reminiscent of orange peels, but more concentrated.



Oranges

**Possible Uses:** Colds, constipation, dull skin, flatulence, flatulence, flu, gums, mouth, slow digestion, stress. [Julia Lawless, *The Illustrated Encyclopedia of Essential Oils* (Rockport, MA: Element Books, 1995), 57-67.]

**Constituents:** Limonene [Shirley Price, *The Aromatherapy Workbook* (Hammersmith, London: Thorsons, 1993), 54-5.]

**Safety Information:** Lawless reports that a few people have experienced dermatitis from the limonene content of Sweet Orange. [Julia Lawless, *The Illustrated Encyclopedia of Essential Oils* (Rockport, MA: Element Books, 1995), 122.]

Essential Oil Safety by Robert Tisserand does not indicate any special precautions when using this oil. [Robert Tisserand, *Essential Oil Safety* (United Kingdom: Churchill Livingstone, 1995), 209.]

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