Integrating Essential Oils in to an Osteopathic Family Medicine Clinic

Josie Conte, DO, Dipl. Integrative medicine AIHM
CMMC Family Medicine Residency Lewiston, ME
UNECOM Alumni Weekend Oct 8 2016
Objectives

Review the role of olfaction in health and wellness

Explore the basic pharmacology of the essential oils

Experience 6 essential oils

Describe three ways to apply essential oils
Disclaimer

I have no real or apparent conflicts of interest that may have a direct bearing on the subject matter of this continuing education program.
Osteopathy

- Founded by A. T. Still, M.D. 1874
  - A philosopher, frontiersman, naturalist, scientist
- A philosophy of medicine with the following 4 tenets
  - the Patient is an expression of Mind, Body and Spirit
  - The body has the inherent ability to heal itself
  - Structure and Function are inter-related
  - Rational treatment is based on these principles

A. T. Still, MD

http://www.atstill.com web 09/01/2016
"I have discovered that Nature is never without necessary remedies. I am better prepared today to say that God or Nature is the only doctor whom man should respect. Man should study and use the drugs of His drugstore."

A T Still in Autobiography 1908
Physiological Effects of (Plant) Odorants

I Olfactory Pathway
II Nasal or Pulmonary Pathway
III Oral- Gut pathway
IV Integumentary Pathway
Recent research of Olfaction include the discovery that olfactory receptors are not limited to the supratentorial region but include the heart, lungs and skin.

**nasal placodes** (primordia of the nose and nasal cavities) arise from neural crest cells. Nasal placodes appear to invaginate to form **nasal pits**.

Thus the placodes lie in pits, the primordia of the nostrils and nasal cavities.

The maxillary prominences proliferate and grow medially toward each other and the nasal prominences. Now the nasal prominences are moved closer to each other in the median plane. The maxillary prominence and the lateral nasal prominence are separated by the deep **nasolacrimal groove** (the medial nasal will fuse with the maxillary).
Figure 15.22 Frontal aspect of the face. A. 5-week embryo. B. 6-week embryo. The nasal prominences are gradually separated from the maxillary prominence by deep furrows. C. Scanning electron micrograph of a mouse embryo at a stage similar to that of B.
The sense of smell affects:

- Limbic system (emotions/memory)
- Hypothalamus (regulates pituitary)
- Pituitary (releases hormones/regulates the body)
- Olfactory cortex (identify odors)
- Thalamus (connects to neocortex)
- Neocortex (intellectual connection)
Aromatherapy is

The application of aromatic plant oils called essential oils:
- Concentrated plant hormones and immune modulating expressions
- EO’s enter blood stream and react with hormones and enzymes
- EO’s cause a physical reaction in body
- EO’s can enhance emotional and spiritual well-being

Therapeutic aromatherapy:
- Uses the antibacterial, antiviral, analgesic, anti-inflammatory, anti-depressant properties to bring the body in to harmony. It is a compliment not a replacement for medical treatment
Aromatherapy

- 3500 BC Egyptians were distilling volatile oils from plants for medicinal, cosmetic and religious uses
- The man who coined the term we know as “aromatherapy” was a Frenchman
- Dr. René-Maurice Gattefossé called it “aromathérapie”: the therapeutic use of aromatics
- 1990. Pierre Franchomme and Daniel Pénoël: *l'aromathérapie exactement*

There are two schools of practice for Western aromatherapy: British and French
“The external application of small quantities of essences rapidly stops the spread of gangrenous sores. In my personal experience, after a laboratory explosion covered me with burning substances which I extinguished by rolling on a grassy lawn, both my hands were covered with a rapidly developing gas gangrene. Just one rinse with lavender essence stopped “the gasification of the tissue”. This treatment was followed by profuse sweating, and healing began the next day”

Dr Renee Gattefosse, (July 1910).”
Energy from Plant Life

Certain existential features of plant life are sometimes forgotten in the technological culture. One such feature is that there is no life for mammals and humans without plant life.

Photosynthesis is the only process, which generates carbohydrates. No plants, no food!
How do essential oils work?

- Through pharmokinetics, EO’s are absorbed into the body through digestion, lining of orifices, olfaction and the external skin.
- Hypothalamus and thalamus: make up the diencephalon: which is involved in behavior, motivation and emotions.
- These brain structures regulate other body activities through exerting control on the neuroendocrine system and autonomic nervous system.
- With these pathways, EO’s can mediate our emotional response by inhalation alone.
<table>
<thead>
<tr>
<th>Chemical Group</th>
<th>Action</th>
<th>examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terpenes ie a-pinene</td>
<td>Antiviral, drying</td>
<td>Eucalyptus glob, Lemon, ginger,</td>
</tr>
<tr>
<td>Diterpene ie Phytol</td>
<td>aphrodisiac</td>
<td>orange</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jasmine</td>
</tr>
<tr>
<td>Sesquiterpenes</td>
<td>Anti-inflammatory</td>
<td>Pine, cypress, spruce, lemon</td>
</tr>
<tr>
<td>Alcohols</td>
<td>Energizing, tonifing</td>
<td>Coriander, peppermint, neroli</td>
</tr>
<tr>
<td>Ketones</td>
<td>Mucolytic, neurotoxic</td>
<td>Sage, dill, eucalyptus, hyssop,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>camphor, peppermint</td>
</tr>
<tr>
<td>Aldehydes</td>
<td>Sedative</td>
<td>Melissa, lemon verbena</td>
</tr>
<tr>
<td>Esters</td>
<td>Soothing, balancing</td>
<td>Geranium, ylang ylang, clary</td>
</tr>
<tr>
<td></td>
<td></td>
<td>sage, lavender</td>
</tr>
<tr>
<td>Oxides</td>
<td>Expectorant</td>
<td>hyssop, eucalyptus, peppermint</td>
</tr>
<tr>
<td>Phenols</td>
<td>Antibacterial,</td>
<td>Oregano, clove, thyme</td>
</tr>
<tr>
<td></td>
<td>stimulant</td>
<td></td>
</tr>
<tr>
<td>Ethers</td>
<td>Antispasmodic</td>
<td>Parsley, sassafras, basil,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>tarragon</td>
</tr>
</tbody>
</table>
GC-MS Lavender fines (*Lavandula angustifolia*)
GC MS from Himalayan grown *Lavandula angustifolia*
OMT

- Mechanical influences
  - Cranial somatic dysfunction
  - Cervical and suboccipital somatic dysfunction

- Lymphatic influences
  - Thoracic inlet
    - RIGHT side drains head, neck and right upper extremity
  - Cervical soft tissue/milking
  - Sinus drainage techniques (effleurage)

In addition, I will sometimes apply essential oils:

- warm or cool compress
- Direct application of one to two drops “neat” to my fingertips while treating
- A light dilution of essential oils mixed in a carrier of an organic oil such as almond to apply directly to the skin
5 model concept of osteopathy

- Biomechanical/postural
- Neurological integration
- Metabolic/Energy
- Respiratory Circulatory
- Behavioral/Psychosocial

2006 World Health Organization recognized the osteopathic five model concept as a unique osteopathic contribution to world health care. Jane Carreiro, D.O
*Eucalyptus globulus* strong, fresh and stimulating oil with a piercing balsamic aroma.

**Analgesic, Anti-bacterial, Anti-inflammatory, Anti-microbial, Anti-rheumatic, Anti-septic, Anti-viral, Decongestant, Expectorant, Mucolytic**

*Eucalyptus radiata* is best for children

---

**Eucalyptol**  
A monoterpane: a one of its many constituents- known to be antimicrobial, effective in rhinosinusitis. Reduces pain when applied topically
Active chemical constituents:
Gingerol
Zingerone
Paradol
Shogoal
Antioxidant, antitumor, anti-inflammatory

(Ramani, A. 2014)
Jasmine (Jasminum grandiflorum) **Anti-anxiety, Anti-depressant, Anti-septic, Anti-spasmodic, Aphrodisiac, Calming, Sedative, Strengthening, Uterine tonic.** Rapid narcotic effect, Acts as emotional rescue remedy

Main Constituent: phytol, Benzyl acetate, linalool
*Lavandula angustifolia* - light, clean and refreshing oil with a herby floral aroma.

Ideal in massage or the bath to soothe the skin and calm the mind, good for burns, rejuvenates the skin

Blends well with Rosemary, peppermint, orange

**Citrus reticulata** - Mandarin orange - uplifting, antiviral, relaxing. Blends well with lavender, ginger, Eucalyptus, jasmine

Chemical constituents:
Monoterpane- limonene
Coumarin- benzopyrone

Coumarins are sweet- in many plants including clover, licorice, cinnamon, Mullein, leaves of many cherry blossom
Mentha piperita - Peppermint

All types of headache, Mood uplifting, Helps relieve mental fatigue, Improves mental clarity, alertness, concentration, and memory. Sharpens the senses, Reviving and refreshing, Energizing. Helps with motion sickness, upset stomach, bad breath

Acts on the liver, can lower blood sugar, blood pressure, reduce rate the body breaks down cyclosporine

Chemical constituents
Alcohols: menthol, piperitoll
Ketones: menthone, piperitone
Oxides: 1,8-cineole, piperitone-oxide

Not for small children

Rich in research- Headaches
Reducing diarrhea in IBS
Post C section nausea
**Rosemarinus officinalis** - Rosemary

- Used to treat headaches with anxiety, depression
- Used to treat headaches and poor circulation because of its stimulating, anti-inflammatory and analgesic properties. It has a calming effect and improves personal orientation and alertness

**Chemical constituents:**

- Monoterpenes: A-pinene and B-pinene
- Oxides: 1,8 cineole
- Alcohols: *Borneol* - toxic levels! 1 tsp
- Ester: Bornyl acetate

[www.therosemarytree](http://www.therosemarytree), WEB, retrieved July 1, 2016
Two important reasons to dilute

1. to avoid skin reactions: irritation, sensitization and phototoxicity.
2. to avoid systemic toxicity, such as fetotoxicity, hepatotoxicity, carcinogenicity and neurotoxicity.

Adverse skin reactions are obvious when they happen, but systemic toxicities may not be

A carrier oil is a vegetable oil, organic preferred. Good choices: sunflower oil, Sesame oil (not toasted sesame), jojoba, almond oil
contraindications

- **People with epilepsy** should avoid fennel, rosemary and sage and large amounts of peppermint (because of the risk of over-stimulating the nervous system).
- **Children under 2 years of age** should avoid peppermint.
- **People with hypertension** should avoid hyssop, rosemary, sage and thyme.
- **Pregnant women** should avoid basil, laurel, angelica, thyme, cumin, aniseed, citronella and juniper. An aromatherapist should always be alerted if the patient is pregnant, because of potential teratogenic and uterine effects of the oils.
- **Those with sensitive skins** should avoid basil, laurel, coriander, tea tree, neroli, geranium, mint, yarrow, Roman and German chamomile, lemon balm, citronella, ginger, hops, jasmine, lemon, lemon grass (unless greatly diluted with a carrier oil), turmeric and valerian. Skin patch testing can be carried out beforehand if there are concerns. Care should be taken in those with a history of allergy or atopic conditions such as asthma, eczema or hay fever.
- **Oestrogen-dependent tumours** such as breast cancer or ovarian cancer, are a contra-indication to the use of oils with oestrogen-like compounds, such as fennel, aniseed, sage, and clary sage.
- There may be possible interactions of essential oils, with antibiotics, antihistamines and sedatives.
- **Cinnamon, turmeric, valerian, laurel, juniper, aniseed, coriander and eucalyptus** should not be used for longer than two weeks at a time because of concerns about toxicity.
- **Bitter almond, red thyme, common sage, rue, wormwood, tansy, savory, wintergreen and sassafras oils** should be avoided at all times by everyone as they can be poisonous.
If this is the reaction you get after introducing an oil, don’t use it.
Thank You

Josie Conte, D.O.
contejo1@cmhc.org

Special thanks to Pacific Institute of Aromatherapy
Sources of essential oils and information

- FEMA Flavor and Extract Manufacturers Association (FEMA) http://www.femaflavor.org/flavor/library
- Original Swiss Aromatics www.originalswissaromatics.com/index
- www.pacificinstituteofaromatherapy.com
- Stillpoint www.stillpointaromatics.com/index
- http://tisserandinstitute.org
References


- Haas, Monika Quick Reference Guide for 114 Important Essential Oils tierra Scent and Image San Rafael, CA 2013


- Jun, yang Suk et al Effect of Eucalyptus Oil Inhalation on Pain and Inflammatory Responses after Total Knee Replacement: A Randomized Clinical Trial Evid Based Complement Alternat Med. 2013
Koulivand, Peir Houssein et al. Lavender and the Nervous System Evid Based Complement Alternat Med. 2013

NIH National Center for Complimentary and Integrative Health https://nccih.nih.gov/health/pain/headachefacts.htm


http://umm.edu/health/medical/altmed