

Integrating Essential Oils in to an Osteopathic Family Medicine Clinic

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<http://winkgo.com/17-adorable-animals-smelling-flowers/> WEB, June 26, 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

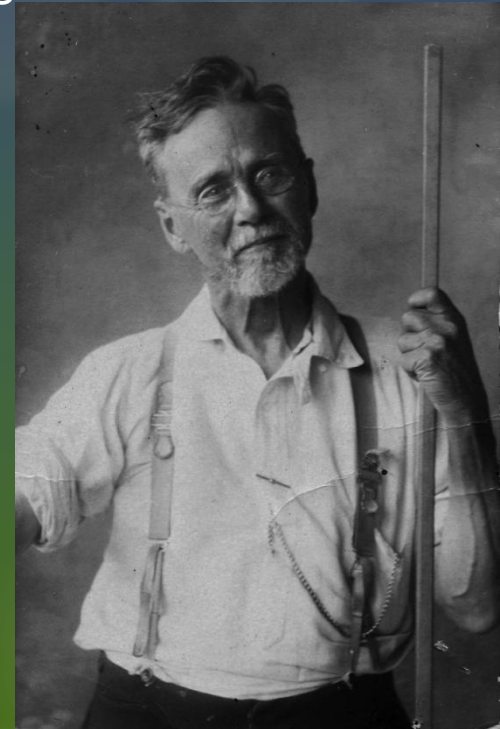
I have no real or apparent conflicts of interest that may have a direct bearing on the subject matter of this continuing education program.



ikeeki.com700 web 9/1/2016

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

"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





http://www.lovethepic.com/uploaded_images/79964-Squirrel-Smelling-A-Flower.jpg 7/20/16



[in.pinterest.com600](https://www.pinterest.com/600) web 9/1/2016



[wildlifeinsider.com620](https://www.wildlifeinsider.com/620) web 9/1/2016



a.



b



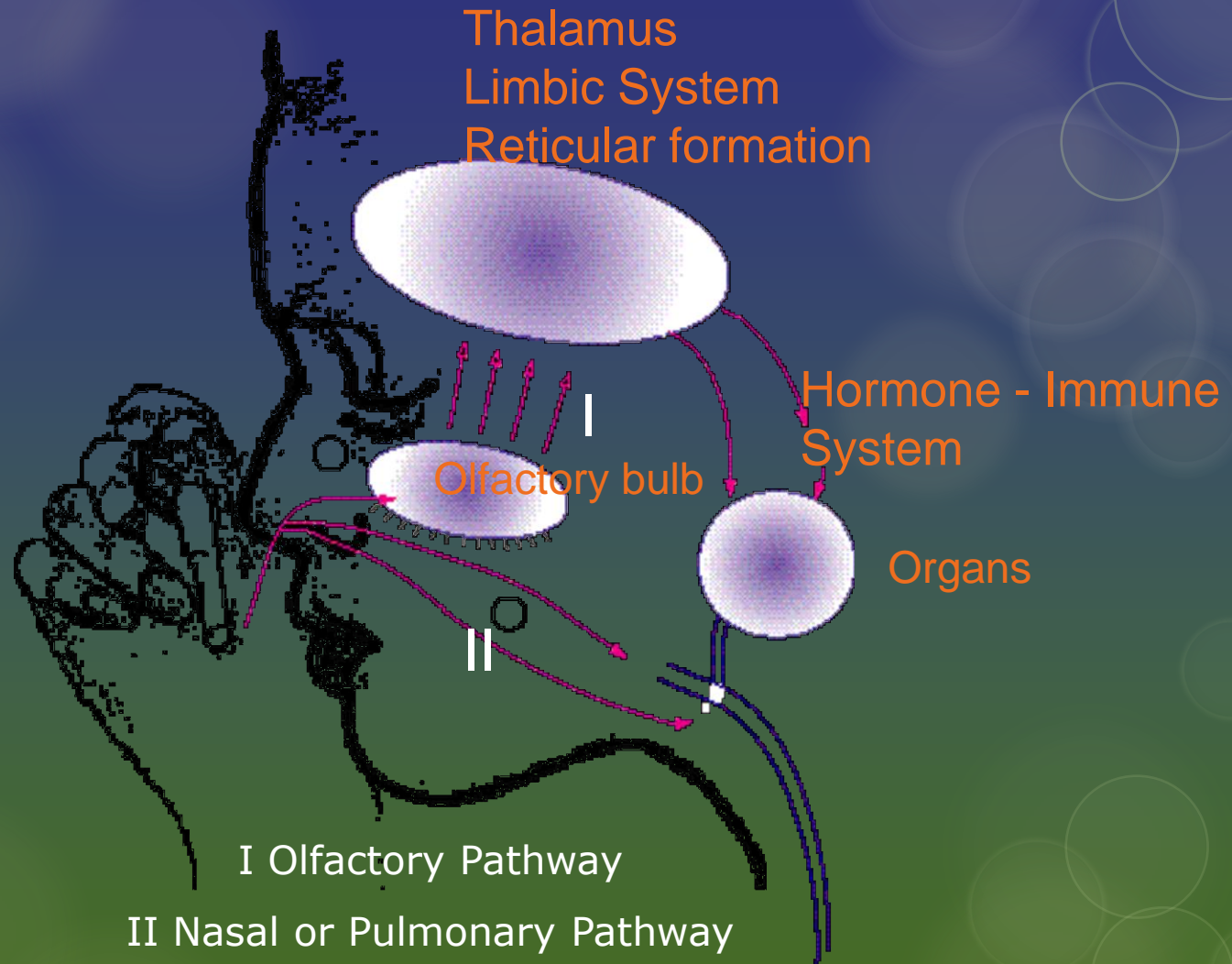
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a. babyreference.com, Web,6/27/2016

b. Time.com, Getty images, Web 6/27/2016

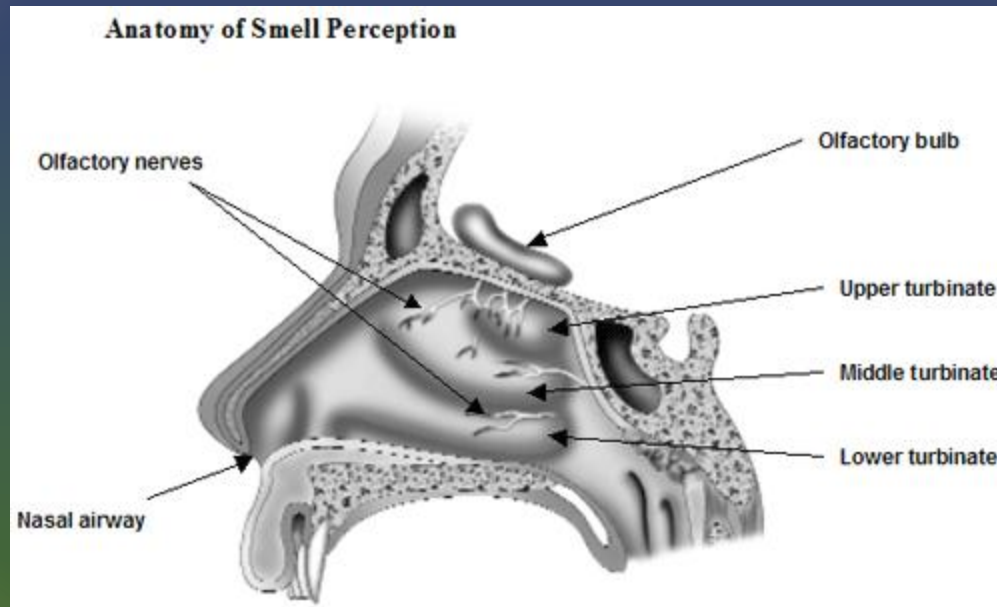
c. www.gettyimages.com, Web, 6/26/2016

Physiological Effects of (Plant) Odorants



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



<http://www.theasthmacenter.org/index.phpweb> 9/1/2016

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).

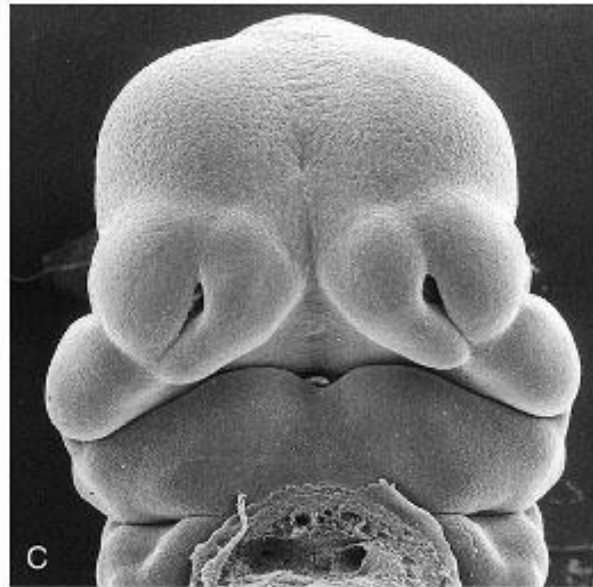
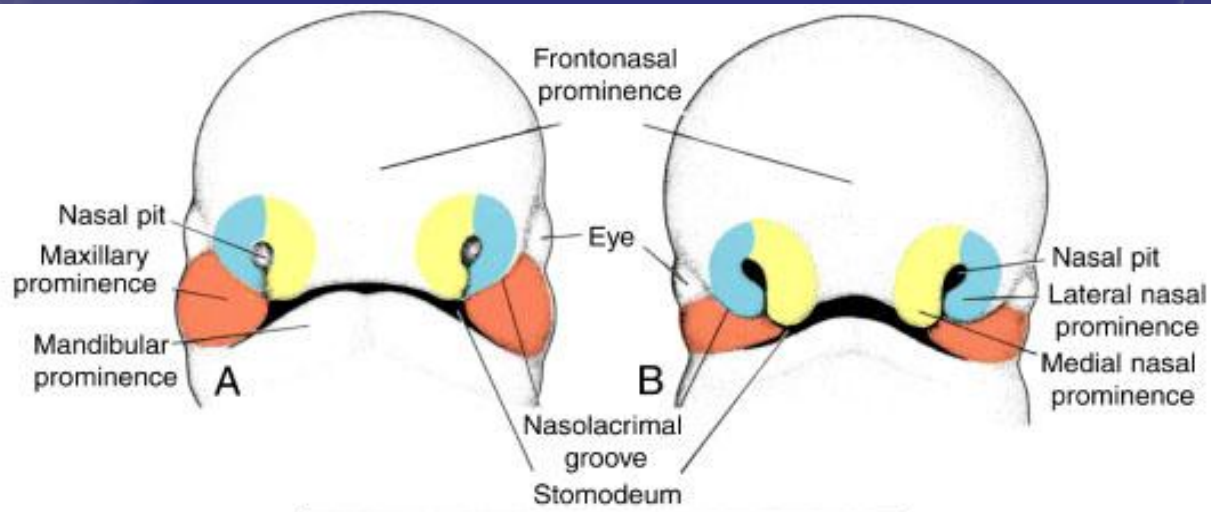
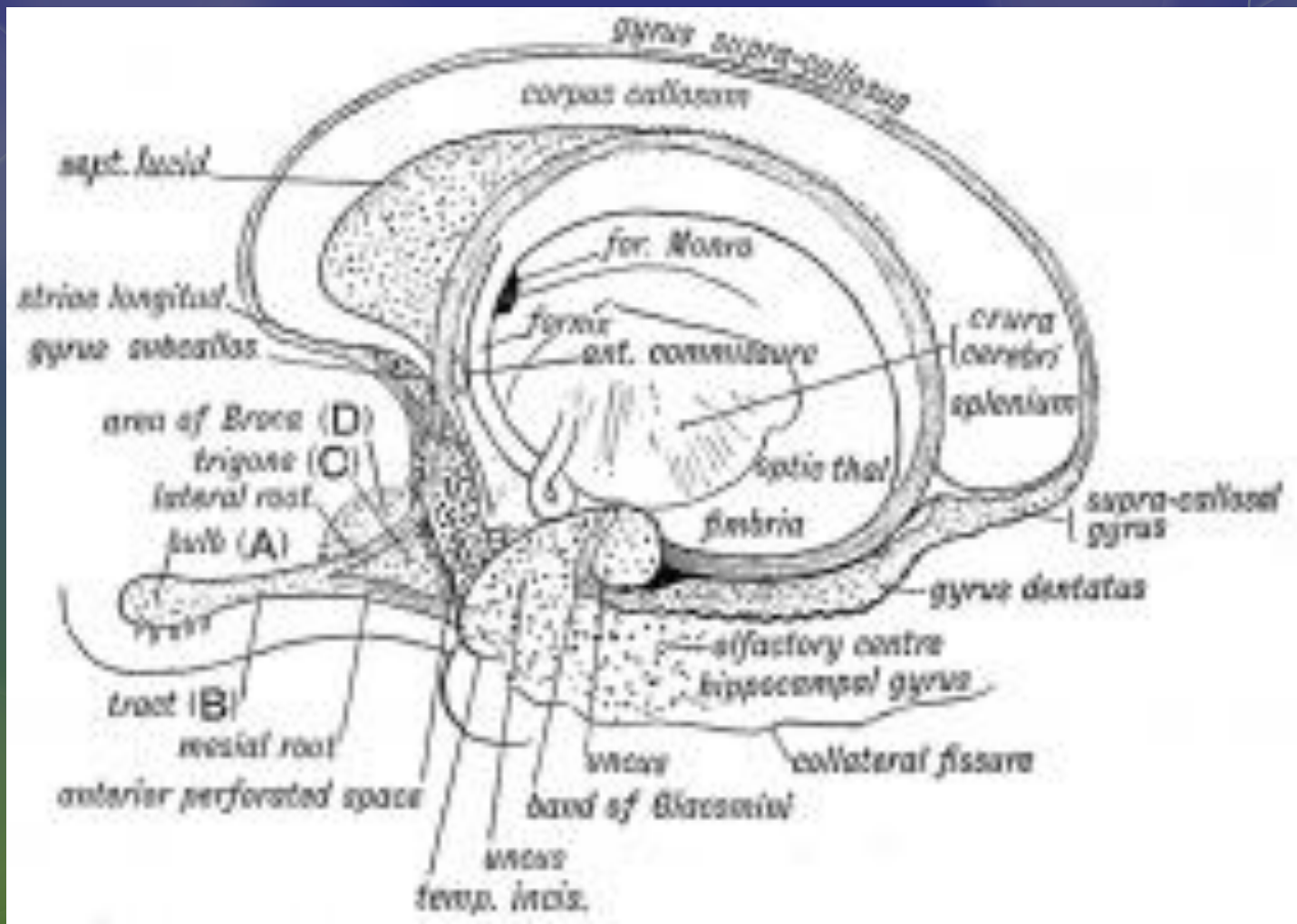
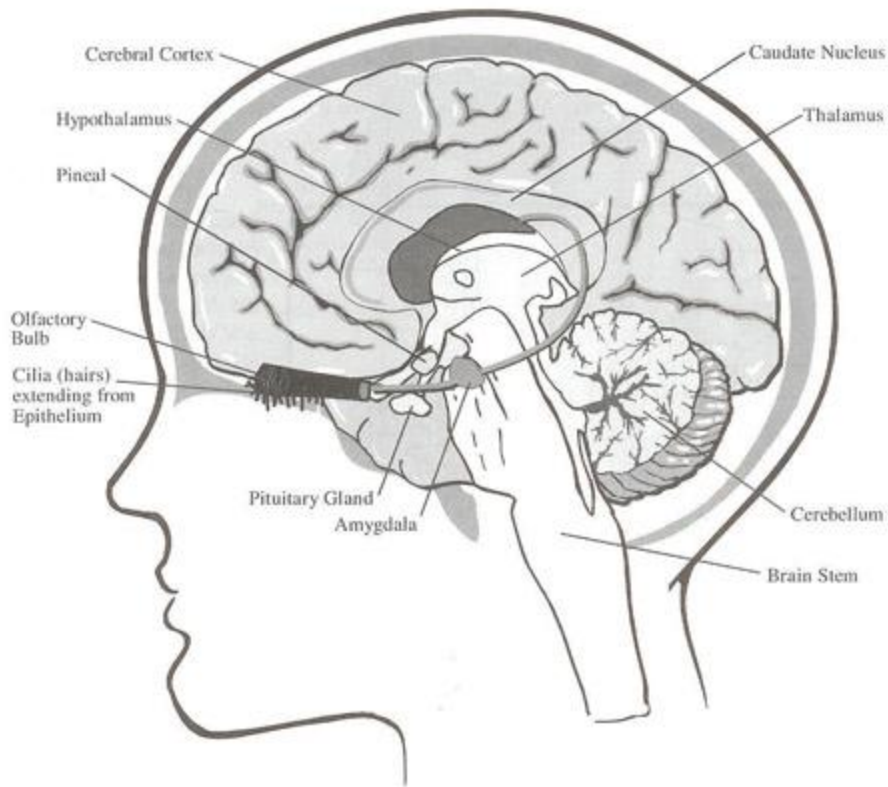


Figure 15.22 Frontal aspect of the face. **A.** 5-week embryo. **B.** 6-week embryo. The nasal prominences are gradually separated from the maxillary prominence by deep furrows. **C.** Scanning electron micrograph of a mouse embryo at a stage similar to that of **B.**



NOSE AND OLFACTORY SYSTEM



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

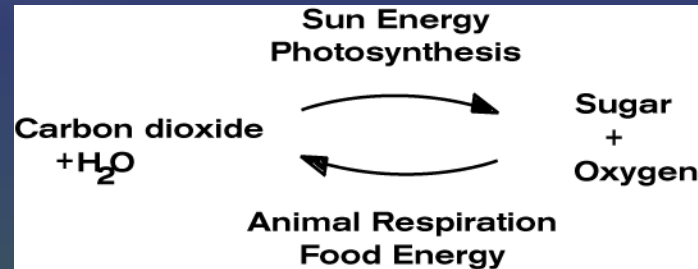
- 3500 BC Egyptians were distilling volatile oils from plants for medicinal, cosmetic and religious uses
- The man who coined the term we know as “aromatherapy” was a Frenchman
- Dr. René-Maurice Gattefossé called it “aromathérapie”: the therapeutic use of aromatics
- 1990. Pierre Franchomme and Daniel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

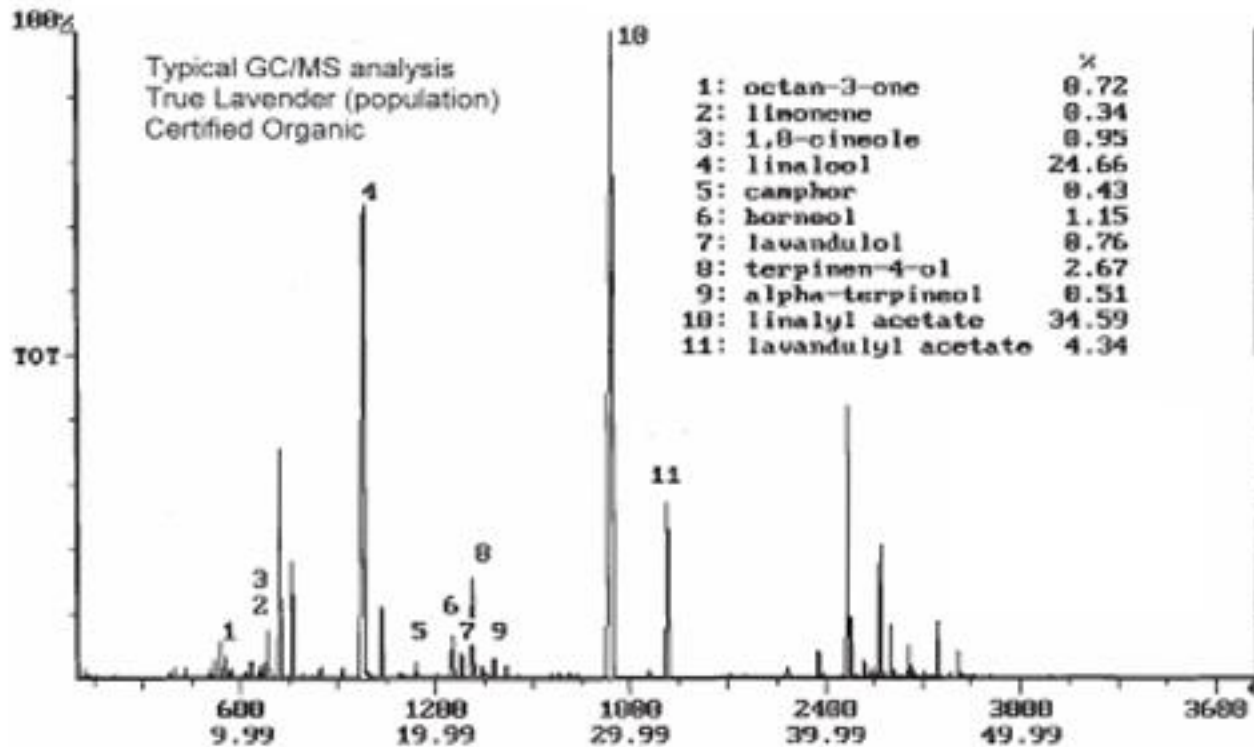
How do essential oils work?

- Through pharmacokinetics, 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**

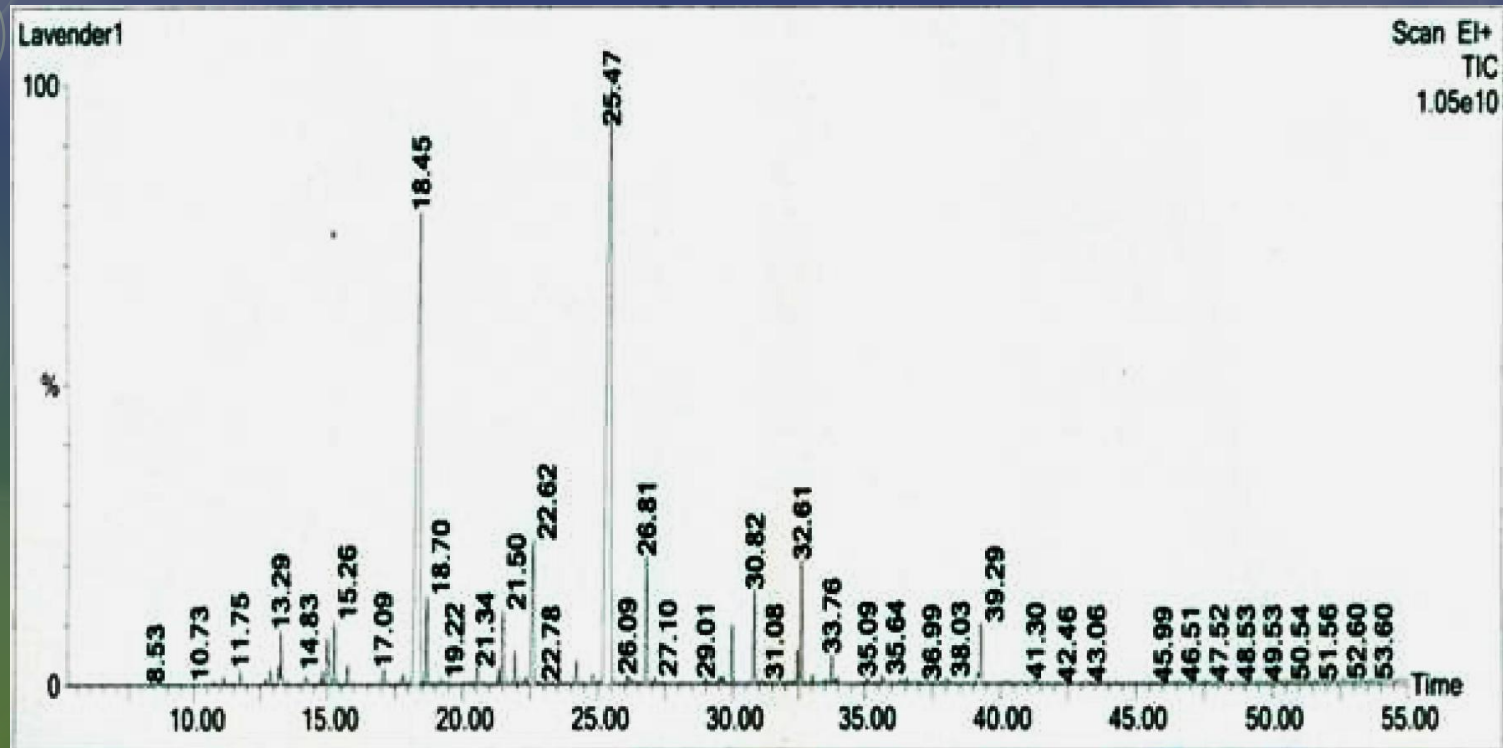
Chemical Group	Action	examples
Terpenes ie a-pinene Diterpene ie Phytol	Antiviral, drying aphrodisiac	Eucalyptus glob, Lemon, ginger, orange Jasmine
Sesquiterpenes	Anti-inflammatory	Pine, cypress, spruce, lemon
Alcohols	Energizing, tonifying	Coriander, peppermint, neroli
Ketones	Mucolytic, neurotoxic	Sage, dill, eucalyptus, hyssop, camphor, peppermint
Aldehydes	Sedative	Melissa, lemon verbena
Esters	Soothing, balancing	Geranium, ylang ylang, clary sage, lavender
Oxides	Expectorant	hyssop, eucalyptus, peppermint
Phenols	Antibacterial, stimulant	Oregano, clove, thyme
Ethers	Antispasmodic	Parsley, sassafras, basil, tarragon



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 monoterpene: a one of its many constituents- known to be antimicrobial, effective in rhinosinusitis. Reduces pain when applied topically





Olwoman.com, Web, 6/27/2016

Active chemical constituents:

Gingerol

Zingerone

Paradol

Shogoal

Antioxidant, antitumor, anti-inflammatory

(Ramani, A. 2014)

Zingiber officinale- Ginger is a cheering, stimulating and comforting oil with a hot spicy aroma.

Ideal in massage or the bath to cheer the heart and warm the body.

Very helpful for nausea

Blends well with Mandarin [Geranium](#) and [Rosemary](#).



www.specialtyproduce.com, Web, 6/27/2016



http://ancientwaysbotanicals.com/wp-content/uploads/2012/05/Jasmine_grandiflorum.jpg9/23/2016

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



En.wikipedia.org; lavender field Sutton jpeg Web 6/27/2016

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



@Stephen Foster nccih.nih.gov Web, 6/27/2016



Chemical constituents:
Monoterpene- limonene
Coumarin- benzopyrone

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

By 4028mdk09 - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/W/index.php?curid=25423079> 09/23/2016

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



www.thebathtubdiva.com, Wikimedia commons, Web, 6/15/2016

Rich in research-
Headaches
Reducing diarrhea
in IBS
Post C section
nausea

Chemical constituents

Alcohols: menthol,
piperitol

Ketones: menthone,
piperitone

Oxides: 1,8-cineole,
piperitone-oxide

Not for small children

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:

Monoterpenes-

A-pinene and B-pinene

Oxides-

1,8 cineole

Alcohols

*Borneol- toxic levels! 1 tsp

Ester:

Bornyl acetate

www.therosemarytree.com, WEB, retrieved July 1, 2016

Rosmarinus officinalis- **Rosemary** -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

1% DILUTION

AGES 6+, PREGNANT WOMEN, ELDERLY ADULTS,
THOSE WITH SENSITIVE SKIN, COMPROMISED
IMMUNE SYSTEMS, OR OTHER SERIOUS HEALTH
ISSUES.

This is also the dilution you want when you are
massaging over a large area of the body.

(1% = 1 drop per 1 teaspoon of carrier oil)

LearningAboutEOs.com/dilute

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 saffras 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

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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
- PubChem <https://pubchem.ncbi.nlm.nih.gov>
- [Stillpoint www.stillpointaromatics.com/index](http://www.stillpointaromatics.com/index)
- <http://tisserandinstitute.org>



References

- Alexander, Joshua. Resolution of New Daily Persistent Headache After Osteopathic Manipulative Treatment. JAOA March 2016, Vol 116 No 3, 182-5. Am Fam Physician 2005 Mar 15;71(6):1219
- Gattefossé R-M, Tisserand RB (ed.) 1993 Gattefossé's aromatherapy: the first book on aromatherapy. CW Daniel, Saffron Walden, p 87
- Göbel H, et al. Effect of peppermint and eucalyptus oil preparations on neurophysiological and experimental algometric headache parameters. Cephalalgia. 1994, Jun;14(3):228-34
- Göbel H, et al. Nervenarzt. 1996. Effectiveness of Oleum menthae piperitae and paracetamol in therapy of headache of the tension type. Nervenarzt. 1996 Aug;67(8):672-81.
- Haas, Monika Quick Reference Guide for 114 Important Essential Oils tierra Scent and Image San Rafael, CA 2013
- Hitscherich, Kyle, et al. The Glymphatic-Lymphatic Continuum: Opportunities for Osteopathic Manipulative Medicine. JAOA March 2016, Vol 116, NO 3, 170-177
- 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

- <http://roberttisserand.com/general-articles/>
- 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>
- Rakel, David. Integrative Medicine, third edition Elsevier Saunders Philadelphia PA 2012
- Ramani, A. et al. Int J Physiol Pathophysiol Pharmacol 2014;6(2):125-136
- Sasannejad P, et al. Lavender essential oil in the treatment of migraine headache: a placebo-controlled clinical trial. Eur Neurol. 2012; 67(5):288-91
- [Solhi](#), Hassan et al. Beneficial Effects of *Rosmarinus officinalis* for Treatment of Opium Withdrawal Syndrome during Addiction Treatment Programs: A Clinical Trial Addict Health. 2013 Summer-Autumn; 5(3-4): 90-94.
- Wei, Feng huan Gas Chromatographic-Mass Spectrometric Analysis of Essential Oil of *Jasminum officinale* L var *Grandiflorum* Flower Tropical Journal of Pharmaceutical Research January 2015; 14 (1): 149-152
- <http://umm.edu/health/medical/altmed>