

SENSE OF SMELL AND GUT BACTERIA



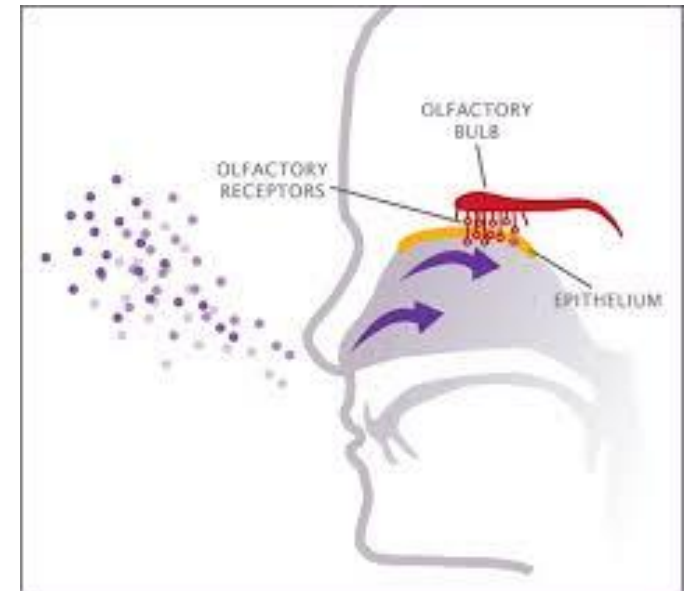
The plot thickens

- Our nose contains thousands of receptors
- When we smell – the brain responds to aromas that lock onto receptors
- Only specific molecules can lock on the specific receptors and when they do they trigger changes in cells
- In 1991 it was discovered that there are over 1000 genes involved in developing scent receptors
- Can these genes be modulated by gut bacteria?
 - too soon to know



Receptors

- In 2003, it was discovered that we have similar scent receptors all over our body (taste buds also have them)
- Short chain fatty acids can lock onto these receptors
- The working theory is that bacteria use these receptors to tell different organs what to do
- For example, bacteria can use the receptors to tell the kidneys to regulate blood pressure



Sense of Smell

- In a mouse study, mice missing recombinant activating gene (RAG) which controls the development of immune cells, had a poor sense of smell
- Scientists think this may mean that losing our sense of smell may be linked to poor health
- There is a lot more work for researchers to do but there is much more to the sense of smell and a possible connection to our gut bacteria



Study

- A study of chicks looked at performance (how they grew) and gut health when fed one of five herbs - thyme, yarrow, marjoram, rosemary or oregano added to their feed, either as a dried herb (10 g/kg) or an essential oil (1 g/kg)
- Gut bacteria levels increased and the chicks performed better with the essential oil and no difference was seen with the dried herb.
- Thyme and yarrow gave the best result



Essential Oils

- Essential oil when inhaled – enters the blood stream right away so this is different than ingesting the oil
- Enteric coated peppermint oil has been used as both a treatment for IBS and for SIBO and has shown a balancing effect on gut bacteria
- Many essential oils contain polyphenols and phenolic compounds which have a two way relationship with gut bacteria
- Gut bacteria modulate them and make them more bioavailable
- Polyphenols and phenolics also have a positive effect in levels of good gut bacteria and a protective effect against bad.



Essential Oils

- Essential oils inhaled have a direct connection to the brain
- Studies have shown they affect the hypothalamus and limbic system and can signal the body to release the serotonin, endorphins and noradrenaline which can calm the nervous system, lower stress levels
- Lavender, rose, frankincense, chamomile, vanilla, bergamot, lemon, cinnamon, geranium, fennel, marjoram all help reduce stress and anxiety
- Essential oils also help with mental clarity- rosemary, juniper, basil, peppermint and sage or clary sage



What Is Not Known

- Aromatherapy advocates suggest rubbing essential oil with beneficial phenolic compounds on the belly aid gut health
- It is not known if phenolics absorbed through the skin or sniffed (and entering into the bloodstream) can affect the gut
- It is known that essential oils can effect the brain and we know that the brain affects the gut
- What we do not know is if using essential oils to affect the brain can help aid the gut but since lowering stress, for example, anyway we can do it, has a beneficial effect on the gut...



In Conclusion...

- If ingesting essential oils, make sure they are food grade and use only a few drops
- Essential oils can be added to teas, water and recipes
- For using on the skin – mix with a carrier oil. Coconut makes a good one as it absorbs easily into the skin
- Essential oils can be a useful tool in a gut health protocol and are worth considering especially sniffing and applying topically
- Stay tune for more research...

