

# Essential Oils Support Physical and Emotional Well-Being

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## By Dr. Mercola

Your sense of smell is your most primal sense and exerts surprising influence over your thoughts, emotions, moods, memories, and behaviors. Scents are experienced long before words.

This is why it's nearly impossible to describe them with language. Olfaction is different from your other senses, processed through different pathways in your brain.

For other sensations such as sounds and visual images, sensory input is delivered straight to your thalamus, which you can think of as "the big switchboard" in your head. From there, data goes out to your primary sensory cortices.

But smells are different. Before reaching your thalamus, they first wind their way through other regions of your brain, including areas controlling memory and emotion. So with scents, you have all this extra processing even before you have conscious awareness of the scent.<sup>1</sup>

For this reason, scents can have a powerful influence over how you think, feel, and behave. Aromatherapy allows you to harness the olfactory power of plants for healing, or simply to enhance your state of well-being.

[Essential oils](#) carry biologically active volatile compounds in a highly concentrated form that can provide therapeutic benefits in very small amounts. Please understand that I am referring to pure, therapeutic grade essential oils from plants, NOT synthetic fragrances and [perfumes](#), which can be toxic and are typically loaded with allergenic compounds.

## Aromatherapy Was Used to Treat the Plague

The use of fragrances has been around for thousands of years, although traditions and methodologies have changed through the ages. According to "The Smell Report,"<sup>2</sup> the process of extracting and preserving a flower's scent using alcohol distillation was discovered by Avicenna.

Avicenna was an 11<sup>th</sup> century Arabian alchemist and physician, who sort of stumbled upon it while "trying to isolate for Islam the soul of its holy rose." Before this, perfumes consisted only of thick resins, gums, and gooey unguents.

Back in the seventeenth and eighteenth centuries, physicians promoted the therapeutic use of scents, including Hippocrates, Galen, and Crito. Even the plague was treated with fragrances!<sup>3</sup>

It wasn't until the early nineteenth century that the medicinal use of aromatics was largely discredited by scientists who favored drugs. Fortunately, aromatherapy is now making a strong comeback, moving steadily in the direction of mainstream.

## How Essential Oils Can Help with Several Common Maladies

There are probably as many uses for aromatherapy as there are essential oils, but research shows particular promise in relieving stress, stabilizing your mood, improving sleep, pain, and nausea relief, and improving your memory and energy level.

An important element of aromatherapy is synergy, which is why using a combination of oils often creates a much more powerful effect than any one particular oil. With a skilled aromatherapist, the possibilities are nearly endless!

In order to give you an idea of the versatility of aromatherapy, the following table lists some of the therapeutic uses of several oils for a few of today's most common complaints. As you can see, there are some real "multitaskers," like [lavender](#) and [peppermint](#)—oils that treat more than one problem.<sup>4</sup>

Many of these are discussed in an excellent article in The Huffington Post<sup>5</sup> about scents that can enhance your well-being. For further information, refer to the resource section at the bottom of this article.

Complaint	Essential Oils
Stress	Lavender, lemon, bergamot, peppermint, vetiver, pine, and ylang ylang
Insomnia	Lavender, <sup>6</sup> chamomile, jasmine, benzoin, neroli, rose, sandalwood, sweet marjoram, and ylang ylang; lemon can wake you up <sup>7</sup>
<a href="#">Anxiety</a>	Lavender, bergamot, rose, clary sage, lemon, Roman chamomile, orange, sandalwood, rose-scented geranium, and pine <sup>8</sup>
Depressed mood	Peppermint, chamomile, lavender, and jasmine <sup>9</sup>
Pain	Lavender, chamomile, clary sage, juniper, eucalyptus, rosemary, peppermint, lavender, and green apple (especially for <a href="#">migraines</a> )
Nausea and vomiting	Mint, ginger, lemon, orange, ginger, dill, fennel, chamomile, clary sage, and lavender
<a href="#">Memory</a> and attention	Sage, peppermint, <sup>10</sup> and <a href="#">cinnamon</a>
Low energy	Black pepper, cardamom, cinnamon, clove, angelica, jasmine, tea tree, rosemary, sage, and citrus

# The Science of Smell

Why does the fishy scent of a beach make one person retch while evoking feelings of expansiveness and joy in another? These variations in responses to scents tie into the special brain pathways of your olfactory system. Olfactory information is stored or encoded with all sorts of memories and associations in your brain.

The neurological substrates of olfaction are especially geared for associative learning (in your hippocampus) and emotional processing (in your amygdala).<sup>11</sup> Kate Fox explains it well in "The Smell Report":<sup>12</sup>

*"Our olfactory receptors are directly connected to the limbic system, the most ancient and primitive part of the brain, which is thought to be the seat of emotion. Smell sensations are relayed to the cortex, where 'cognitive' recognition occurs, only after the deepest parts of our brains have been stimulated. Thus, by the time we correctly name a particular scent as, for example, 'vanilla,' the scent has already activated the limbic system, triggering more deep-seated emotional responses."*

A number of studies have shown that odor learning begins *before birth*. A fetus detects flavor/odor compounds in its amniotic fluid, from the mother's diet. In studies where a mother's consumption of distinctive smelling substances such as garlic, alcohol, or cigarette smoke were monitored during pregnancy, their infants were found to prefer these scents more than infants who had not been exposed to them.<sup>13</sup>

After birth, newborns locate their mothers' nipples by smell. [Breastfeeding](#) also influences scent preferences; babies will associate breastfeeding smells with maternal bonding and the comfort of their mothers' arms. According to a recent study<sup>14</sup>, babies can even smell their mothers' fears and learn the dangers of the world, just days after birth. When mother's experience stress, their body releases a scent that their baby detects and responds to.

Scent preferences change along with developmental stages. Studies show that three-year-olds have essentially the same likes and dislikes as adults. Children do not develop sensitivity to certain odors until they reach puberty. Researchers have also found that olfactory receptors differ by as much as 30 percent between any two individuals.<sup>15</sup> On tests of smelling ability, women consistently score higher than men, and this gender difference holds true even for newborns!<sup>16</sup>

In summary, your responses to scents are largely "learned" as a function of the emotional context in which they were first experienced, and then the association influences your mood and behavior later in life. Naturally, there are genetic differences as well. Do you LOVE the smell of cilantro—or do you think it smells like soap? If the latter is true, you may be an olfactory mutant... literally.<sup>17</sup>

## We Are MUCH Better Smellers Than We Thought

Since the 1920s, scientists have believed that the human nose was capable of detecting about 10,000 odors, but a new study published in the journal *Science* shows this estimate is way off the mark. In the first empirical study ever done, researchers at Rockefeller University discovered the human nose can discriminate *more than one trillion* olfactory stimuli!<sup>18</sup> The least successful smeller is now thought to be capable of smelling about 80 million unique scents, but if you're a super-sniffer, you can detect a spectacular one thousand trillion scents.<sup>19</sup>

This discovery begins to explain why studies are now finding that the human olfactory system is able to detect factors such as fear, disgust, age,<sup>20</sup> and gender.<sup>21</sup> Yes, studies show you can identify the age or gender of another person simply by his or her smell. A mother can identify an infant by smell alone after holding the child for just one hour, even others than her own.

It used to be thought that humans did not produce (or sense) [pheromones](#), but many scent scientists are revising their beliefs about this. A study out of New York's Stony Brook University found people who are scared do indeed give off "fear pheromones" in their sweat—hormones that trigger parts of your brain that are subconsciously associated with fear. This may explain why an individual with a fear of flying can trigger anxiety in other passengers who would not normally be afraid—the fear pheromone can trigger similar emotions in others who happen to catch a whiff.<sup>22</sup> The same researchers also found that disgust can be "contagious."<sup>23</sup>

## Scents Can Alter Your Nervous System

Scents can actually change your nervous system biochemistry. A Japanese study found that inhaling essential oils can modulate your sympathetic nervous system activity. Certain oils were found to be stimulating, while others were found to be calming. For example:<sup>24</sup>

- Black pepper, fennel, and grapefruit oil caused a 1.5-to 2.5-fold increase in sympathetic nervous system activity (as measured by an increase in systolic blood pressure)
- Rose and patchouli oil resulted in a 40 percent decrease in sympathetic nervous system activity
- Pepper oil induced a 1.7-fold increase in plasma adrenaline concentration, while rose oil caused adrenaline to drop by 30 percent
- Other oils have been shown to measurably [decrease stress hormones](#)—inhaling lavender and rosemary were shown to reduce cortisol levels.<sup>25</sup>

As mentioned earlier, scents play a powerful role in memories, especially emotional memories. Olfactory input is routed through your amygdala and hippocampus (which process emotion), but bypasses your brain's higher cortical areas, the "thinking parts."<sup>26</sup> This suggests aromatherapy might possibly be helpful to those with dementia, although research thus far has produced mixed results.

# From Onions to Cow Manure: Smell Is in the Nose of the Beholder

As you might expect, cultural differences contribute to what smells enhance your feelings of happiness, versus making you want to flee to the nearest open window. Scent preferences differ dramatically across cultural lines. In many non-Western cultures, smell is regarded with much more importance and even reverence. For example, among the Ongee of the Andaman Islands, the universe and everything in it is defined by smell.

Their calendar is based on the aromas of flowers that bloom at different times of the year. When greeting someone, the Ongee do not ask, "How are you?" but rather, "*Konyune onorange-tanka?*" which translates to, "How is your nose?"<sup>27</sup> For the cattle-raising Dassanetch of Ethiopia, no bouquet is more beautiful than a herd of cows. The men wash their hands in cattle urine and smear their bodies with manure to make themselves more attractive to the ladies. The Dogon of Mali rub fried onions all over their bodies, as it's the most highly desirable perfume!

Although we have convincing evidence that pleasant fragrances can improve your sense of well-being, some recent studies suggest it's your *expectation* about an odor, rather than the odor itself, that may be responsible for the mood and effects produced—essentially the [placebo effect](#). Could merely *thinking* about lavender oil make you calm? In one experiment, researchers found that just telling subjects that a pleasant or unpleasant odor was being administered, which they might not be able to smell, affected their mood, symptoms, and sense of well-being.<sup>28</sup>

## A Few Resources I've Sniffed Out for You

Aromatherapy can be a beneficial adjunct to your overall health plan. It's not a replacement for wise lifestyle choices like good nutrition and exercise, but it is an excellent way to further enhance your physical and emotional health. Aromatherapy is also one more tool you can keep in your tool bag for managing everyday stress, balancing out mood swings, and improving your sleep. Your nose is probably an underappreciated resource, so perhaps it's time to make some use of it! Whether you seek out a trained aromatherapist or adopt a DIY approach, the following are a few resources you might find useful.

- [National Association for Holistic Aromatherapy \(NAHA\)](#): Everything about the medicinal use of aromatic plants and the holistic practice of aromatherapy
- [Aroma Web](#): A directory of aromatherapy information, tips, recipes, sources, including a regional aromatherapy business directory
- [American Botanical Council](#): Herbal medicine information that includes an herb library and clinical guide to herbs
- [Herb Med](#): Interactive electronic herb database (some information is free, but full access requires a fee)