

Botanical Benefits to the Brain: Plants and Emotion

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A field of lavender



Essential oils

Emotional Responses to Plants

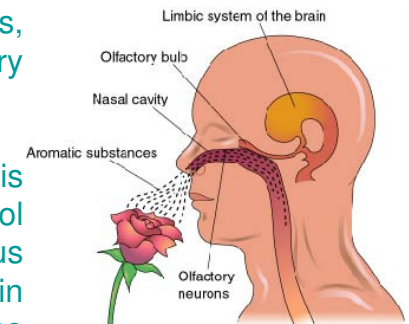
Plants can have a great impact upon how we feel. Just the sight of **colourful flowers** is enough to make us feel **happier**, but plants can have another more subtle effect on our **mood** through **smell**.

For centuries different cultures have tried to harness this effect through the extraction of essential oils from plants. These oils are the odorous component in plants that we react to. Generally there are some essential oils that are said to **relax** us, such as **lavender**, and others that are said to **stimulate** us, such as **lemon**.

Our reactions to these different odours have been shown in many studies. For example, one study found that people felt **less anger or frustration** when a **lavender** scent was used in their bath for two weeks¹, and another found that people reported feeling **happier** after being exposed to a **lemon** scent².

How it works

The sense of smell is called the **olfactory system**. Odorous substances are breathed in through the nose where they bind to the fine hair-like endings of the olfactory nerves. A chemical change occurs in the nerve cells and this change triggers a signal which carries up the nerves to the 'Olfactory bulb' in the brain. This message is then passed on to different areas of the brain, such as the limbic system, the hypothalamus, and the pituitary gland.



The Olfactory Pathway.
(<http://www.herbal-treatments.com.au>)

The limbic system is thought to control various subconscious processes, and in particular the amygdala is held responsible for our mood states, such as fear. In olfactory perception, the **amygdala decides if a smell is pleasant or unpleasant**, and therefore drives our reaction to that smell.

References:

- 1 Morris, N. (2002). *Complementary Therapies in Medicine*, 10, 223-228.
2 Kiecolt-Glaser, J. K., et al (2008). *Psychoneuroendocrinology*, 33, 328-339.