Can a baby?s smell help with depression?

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A newborn?s head has a distinctive smell. Could it be harnessed to treat mental illness? A team of Swedish scientists thinks the idea has promise.

New mothers and fathers have a special kind of love for their tiny newborn charges, not least when it comes to their smell.

It may seem funny to non-parents, but a baby’s head has a specific smell that actually has a positive effect on the brain's reward system. It can makes people feel happy and harmonious, research has shown.

Biologist Johan Lundström thought it was so wonderful to smell his daughter's head when she was born that he decided to investigate exactly how a baby's body odour affects people, according to an article published on an online Swedish popular science research magazine called forskning.se.

Lundström is a researcher who specializes in smell. He heads a research group on multisensory neuroscience at the Department of Clinical Neuroscience at Karolinska Institutet in Stockholm.

Similar to psychotropic drugs

Lundström and his colleagues conducted experiments with 30 women who were asked to smell the inside of hats that had been worn by newborns. At the same time, the researchers studied their brains with a magnetic camera.

The women were also given other smells. When the researchers compared the different images of the women’s brains, it appeared that the baby smell had a similar effect on the brain as drugs used to treat mental illness.

The researchers now hope that a nasal spray with this distinctive baby smell could be developed as new, safe treatment for mental illnesses such as depression.

150 chemicals

But don’t expect to get a prescription for this magic nasal spray anytime soon. Researchers have not yet managed to identify the all chemicals found in this distinctive smell.

“An infant's body odour contains on average about 150 chemicals. And we have yet to identify which of these have positive effects on the human brain," Lundström says.

The researchers have found patterns and circumstantial evidence, but the overall issue remains quite complex.

As a result, it could be years before they can test a chemically produced baby smell on humans.

Possible differences between women and men

The researchers also don’t know if the effect of the baby smell is the same in men as in women.

"So far, all the research has been done with women," Lundström said.

The researchers have now been awarded funding to study the effect on men. But Lundström believes there will be no difference between the sexes.

Fewer side effects

If researchers succeed in making an effective nasal spray out of the chemicals in a baby’s smell, it would be a revolutionary way of treating mental disorders.

Patients who are being treated for mental illnesses can suffer side effects from today's psychiatric drugs. Presumably, chemicals based on the smell of a baby would be far less likely to cause side effects.

The problem with all chemicals that used to treat the brain is that they have to pass through a blood-brain barrier that protects the brain. That means the drugs have to be given at high doses, which in turn can cause many side effects.

“The olfactory nerve, on the other hand, goes straight into the brain and can thus transport chemicals that way,” Lundström says.

One possible drawback with using an odour as a nasal spray may be that patients may become immune to the smell after a while. This is called adaption, and is due to an overload of both the cells that detect smells and of the sense of smell in the brain.

Nevertheless, olfactory cells can have a major impact on our health.

For example, you may feel like you can’t taste your food if you lose your sense of smell, either temporarily due to a cold, or permanently, due to ageing.

It is also known that the loss of the sense of smell and a diminished ability to distinguish between different smells can be a symptom of Alzheimer's.

Read the Norwegian version of this article at forskning.no. [5]

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