

Seasonal allergies could change your brain

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Credit: public domain

Hay fever may do more than give you a stuffy nose and itchy eyes, seasonal allergies may change the brain, says a study published in the open-access journal *Frontiers in Cellular Neuroscience*.

Scientists found that brains of mice exposed to allergen actually produced more neurons than controls, they did this using a model of grass pollen allergy.

The research team examined the hippocampus, the part of the brain

responsible for forming new memories, and the site where neurons continue be formed throughout life. During an allergic reaction, there was an increase in the numbers of new neurons in the hippocampus, raising the question: what could be the consequences of allergies on memory?

The formation and functioning of [neurons](#) is linked to the brain's [immune cells](#), the microglia.

To the scientists surprise, they found that the same allergic reaction that kicks the body's immune system in high gear, has opposite effect on resident immune cells of the brain. The microglia in the brain were deactivated in brains of these animals.

"It was highly unexpected to see the deactivation of microglia in the hippocampus," explained Barbara Klein, one of the authors of the study: "Partly because other studies have shown the reverse effect on microglia following bacterial infection.

"We know that the response of immune system in the body is different in case of an allergic reaction vs a [bacterial infection](#). What this tells us is that the effect on the brain depends on type of [immune reaction](#) in the body."

According to a report by the WHO, 10-30% of the population worldwide suffers from allergic rhinitis, commonly called hay fever.

Allergic reaction also causes an increase in neurogenesis, the growth and development of nervous tissue, which is known to decline with age. In individuals prone to allergies, would [brain](#) ageing progress differently than in those who are not allergic?

More information: Barbara Klein et al. Allergy Enhances

Neurogenesis and Modulates Microglial Activation in the Hippocampus,
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