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Humans and other primates have evolved less sensitive noses

Study finds two scent receptors for musk and body odor with mutations that make scents less or more intense

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Variations in the genes for the newly discovered scent receptors for musk and underarm odor add to a growing body of research suggesting that humans' sense of smell is gradually becoming less sensitive. Sijia Wang of the Chinese Academy of Sciences and Joel Mainland of the Monell Chemical Senses Center report these findings in a new study publishing February 3rd in the journal *PLOS Genetics*.

Everyone experiences smells in their own unique way – the same scent can be pleasant, too intense or even undetectable to different noses. Scientists can combine these differences in scent perception with a person's genetics to discover the role of various scent receptors. In a new study, researchers screened the genomes of 1,000 Han Chinese people to find genetic variations linked to how the participants perceived 10 different scents. Then they repeated the experiment for six odors in an ethnically diverse population of 364 people to confirm their results. The team identified two new receptors, one that detects a synthetic musk used in fragrances and another for a compound in human underarm odor.

Participants carried different versions of the musk and underarm odor receptor genes, and those genetic variations affected how the person perceived the scents. In combination with previously published results, the researchers find that people with the ancestral versions (the version shared with other non-human primates) of the scent receptors tend to rate the corresponding odor as more intense. These findings support the hypothesis that the sensitivity of humans' and other primates' sense of smell has degraded over time due to changes in the set of genes that code for our smell receptors.

The genetic analysis also identified three associations between genes for scent receptors and specific odors that scientists had previously reported. These earlier studies include primarily Caucasian participants. The new results from East Asian and diverse populations suggest that the genetics underlying the ability to detect odors remains constant across people from different backgrounds.

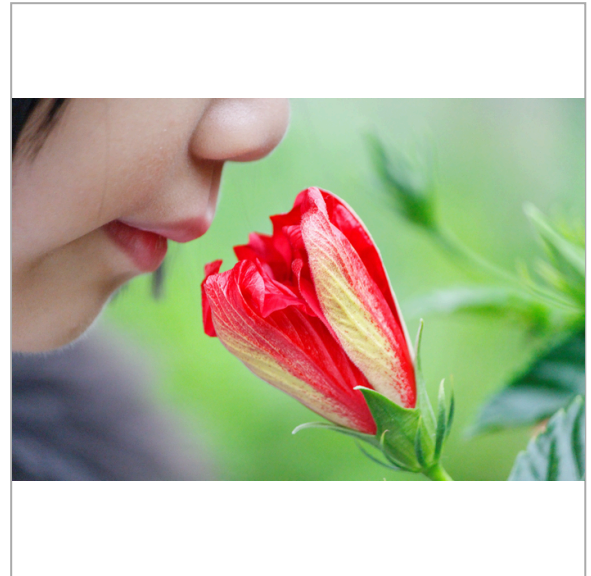


IMAGE: SMELL [view more >](#)

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The authors add, "Genome-wide scans identified novel genetic variants associated with odor perception, providing support for the hypothesis that the primate olfactory receptor repertoire has degenerated over time."

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Author Countries: China, United States, United Kingdom, The Netherlands

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METHOD OF RESEARCH

Experimental study

SUBJECT OF RESEARCH

People

COI STATEMENT

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Media Contact

Claire Turner
PLOS
plosgeneticspress@plos.org

Expert Contact

Sijia Wang
Chinese Academy of Sciences
wangsijia@picb.ac.cn
Office: +86 21 54920559
