

Women's brains recognize, encode smell of male sexual sweat

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A new Rice University study published in the *Journal of Neuroscience* found that socioemotional meanings, including sexual ones, are conveyed in human sweat.

Denise Chen, assistant professor of psychology at Rice, looked at how the brains of female volunteers processed and encoded the smell of sexual sweat from men. The results of the experiment indicated the brain recognizes chemosensory communication, including human sexual sweat.

Scientists have long known that animals use scent to communicate. Chen's study represents an effort to expand knowledge of how humans' sense of smell complement their more powerful senses of sight and hearing.

The experiment directly studied natural human sexual sweat using functional magnetic resonance imaging (fMRI). Nineteen healthy female subjects inhaled olfactory stimuli from four sources, one of which was sweat gathered from sexually aroused males.

The research showed that several parts of the brain are involved in processing the emotional value of the olfactory information. These include the right fusiform region, the right orbitofrontal cortex and the right hypothalamus.

"With the exception of the hypothalamus, neither the orbitofrontal



cortex nor the fusiform region is considered to be associated with sexual motivation and behavior," Chen said. "Our results imply that the chemosensory information from natural human sexual sweat is encoded more holistically in the brain rather than specifically for its sexual quality."

Humans are evolved to respond to salient socioemotional information.

Distinctive neural mechanisms underlie the processing of emotions in facial and vocal expressions. The findings help explain the neural mechanism for human social chemosignals.

The understanding of human smell at the neural level is still at the beginning stage. The present work is the first fMRI study of human social chemosignals.

The research, co-authored by Chen and Wen Zhou, graduate student in the Psychology Department, appeared in the December 31 issue of *Journal of Neuroscience*.

Source: Rice University

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