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Excreted Odor of Asparagus

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As an everyday observation some people note an unpleasant sulfurous odor like rotten cabbage from their urine after an asparagus meal whereas others do not. This dichotomy could be explained by assuming a polymorphism in the production of the odorant such that only some people exrete the odor. Alternatively, everyone produces the odor but not all perceive it. Pelchat *et al.* used two-alternative forced-choice methods to examine individual differences in both the production and perception of the unpleasant odor. They found that individuals differ in the urinary excretion of the odorant as well as in their ability to smell the asparagus odor. Whereas the biological basis of the production of the odorant remains unknown, a single nucleotide polymorphism in a cluster of 50 odorant receptor genes was associated with subjects' ability to perceive the asparagus odor.

Olfactory Impairment and Mortality

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Previous studies suggested substantial loss of olfactory function in various types of neurodegenerative diseases and old age as well as a wide variability in olfactory performance across aged people ranging from subtle defects to profound anosmia. Wilson et al. now examined the association of olfactory dysfunction with mortality in 1162 older persons without any signs of dementia or Parkinson's disease. Subjects completed a 12-item odor identification test and were then followed for more than 4 years during which 321 individuals died. Analyses of the relation of olfactory score to risk of death revealed that subjects having a low score had a 36% higher mortality risk than those having a high score. Risk of death decreased by 6% for each additional odor correctly identified. The authors conclude that olfactory dysfunction likely predicts mortality because it is an early marker of neurodegenerative conditions and suggest that olfactory testing may be indicated in older persons with suspected cognitive or motor impairments.

Goα and Sugar Perception in Flies

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Whereas in mammals one G protein-coupled receptor consisting of the two subunits, T1R2 and T1R3, mediates the responses to sugars and other sweeteners, flies appear to use several transduction mechanisms for sugar detection. Distinct combinations of heptahelical gustatory receptors (GRs) are involved in the perception of different sugars. Moreover, it is not entirely clear if GRs act through G proteins or, like *Drosophila* odorant receptors, function as ion channels. Using different strains of mutant flies for the alpha subunits of heterotrimeric G proteins Bredendiek *et al* investigated the intracellular gustatory transduction cascade in sugar sensing neurons. They found that Goα plays an important role in sugar detection. Strains of flies with reduced levels of this G protein showed behavioral and neural deficits to stimulation with sucrose, fructose and glucose over a wide concentration range, whereas they maintained normal responses to trehalose and maltose. Thus the present study supports the existence of various sugar detection pathways in *Drosophila* and confirms a role of other G protein alpha subunits such as Gs*a* and Gq*a* in the detection of trehalose. Whether Goα is activated directly by GRs or plays a modulatory role remains to be solved in the future.

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