Wake up and smell the sweat

Some people are oblivious to the odor in the locker room after a game, while others wrinkle their noses at the slightest whiff of sweat. Research by Prof. Doron Lancet and research student Idan Menashe of the Molecular Genetics Department, which appeared recently in *PLoS Biology*, has now shown that this difference is at least partly genetic.

Our sense of smell often takes a back seat to our other senses, but humans can perceive up to 10,000 different odors. Like mice, which boast a highly-developed sense of smell, we have about 1000 different genes for the smell-detecting receptors in our olfactory 'retinas.' In humans, however, over half of these genes have, in the last few million years, become defunct – some in all people, while others in just parts of the population.

Lancet and his team had their experimental volunteers sniff varying concentrations of compounds that smelled like banana, eucalyptus, spearmint or sweat, and noted the sensitivity with which the subject was able to detect the odor. They then compared the results with genetic patterns of receptor gene loss and found that one gene (OR11H7P) appeared to be associated with the capacity for smelling sweat. When participants had two genes with disrupting mutations, they were likely to be impervious to the offending odor, while those that were hypersensitive to the smell had at least one intact gene.

The scientists noted, however, that while having at least one intact OR11H7P gene might determine whether you can tell by the smell that your loved one has just come from the gym, this is not the entire story. Women were generally slightly more sensitive to many smells than men, and some individuals of both sexes were better or worse in across-the-board acuity to all odorants. Finally (as is always the case), not all was in the genes – environmental factors were seen to play a role as well.

Source: Weizmann Institute of Science