

Dog Sense-Ability

How your dog's five senses shape his world.

Joan Capuzzi Giresi, VMD

Police took several hours to jackhammer their way to the body through a brick wall, then a carefully cemented layer of cinder blocks, a stratum of tile and debris, and, finally, a cinder-block tomb.

Amazingly, a 5-year-old cadaver dog named Azeem needed just a few minutes to sniff out the female murder victim wrapped in plastic, canvas, and duct tape through the solid wall of building materials.

Officer Paul Bryant, Azeem's handler, wasn't surprised. Of the five senses through which the dog navigates the complexities of his environment, the nose is what steers the canine ship. "It's the most important tool a dog has," says Bryant, senior trainer at the Philadelphia Police Canine Unit. "It's what keeps us in business at the police department."

Read on to learn more about the dog's remarkable sense of smell as well as his other primary senses.

Smell Your dog's nose is like man's opposable thumb that singular, stunning evolutionary gift that opens the beholder to a whole world the unendowed can never know.

Much of the dog's contact with his environment occurs through his sense of olfaction, or smell. Dogs use scent detection to locate prey, identify territories, and recognize their offspring.

Hair cells, olfactory receptors that detect odors, line the mucus membranes of the nasal channels. They dispatch signals to the brain, which integrates information from the various smells in your dog's environment.

Like many other animals, the dog also has a specialized patch of olfactory tissue (called the vomeronasal organ) embedded in the hard palate. This organ functions to detect olfactory messages associated with sexual cues.

Your dog's sense of smell is far superior to your own. Not only can he detect airborne substances in far lower concentrations than you ever could, but he can also parse out the various scent components: It's been said that when a dog walks into a bakery, he doesn't smell cake. Rather, he smells the flour, the eggs, the butter....

The olfactory lobe in your dog's brain is his smell center, pound for pound, larger than your own. Plus, differences in the surface area of the nasal mucus membranes bestow your dog with some 40 times more olfactory cells than you have. While "smell-ability" may vary among breeds depending on the size of their nasal passages (consider the muzzle length of the German Shepherd Dog vs. that of the Pug), the average dog's sense of smell is thought to be some 1,000 times stronger than ours. Humans have found many constructive uses for the dog's keen sense of smell. The most groundbreaking of these, perhaps, is the detection of cancers. There have been several reports of dogs sniffing out skin, breast, and, most recently, bladder cancers in people.