

RACE-Approved, 1.5-Hour CE Course

SNIFFING YOUR WAY TO BETTER HOSPITAL EXPERIENCES

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THE NOSE KNOWS

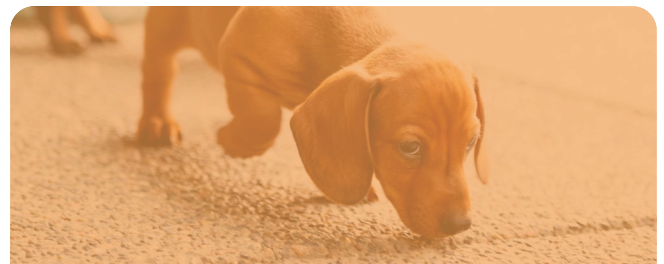
Close your eyes and take a few very slow, deep breaths and imagine for a minute your most favorite dessert at the very moment it comes out of the oven, steaming and crackling with the most scrumptious aroma filling the air around you. You wait in anticipation, fork in hand, nearly drooling for that first bite. Do you feel something different about yourself right now? Is your mouth watering and are you suddenly craving that special dessert?

Just think if that craving was magnified times 10,000. The fact is, dogs have olfactory abilities unmatched among any other species in the animal kingdom. Dogs' sense of smell overpowers our own by orders of magnitude estimated to be 10,000 to 100,000 times as acute. Dr. James Walker, former director of the Sensory Research Institute at Florida State University, explained it this way,

“If you make the analogy to vision, what you and I can see at a third of a mile, a dog could see more than 3,000 miles away and still see as well.”

(Walker, 2003)

It is with this special sense of smell that dogs are able to detect the most minute amount of a scent whether it be tracking the scent of a bird on the hunt, helping ATF agents screen luggage for contraband and even detecting early biochemical signals of cancers.



FUN FACT 1: Overpowering Olfactories

“Dogs’ sense of smell overpowers our own by orders of magnitude estimated to be 10,000 to 100,000 times as acute.”

(Walker, 2003) Walker, J.C. et al. 2003. “Human odor detectability: New methodology used to determine threshold and variation.” *Chemical Senses* 28: 817-826.



THE SNIFF TEST

Let's do one more quick exercise before we nose dive into this learning module. I'd like you to take an olfactory inventory of the different zones of your veterinary hospital. This can be an enlightening experience.

As you sniff your way around, try to organize your observations for the following areas:

- **The Animal Zone** – Which includes kennel, grooming areas, dog wards and cat wards.
- **The Pet Owner Zone** – Including the lobby & waiting area, bathroom, retail area and exam rooms.
- **The Staff Zone** – Including the laboratory, laundry, conference room and pack/scrub and treatment areas.

For each of these areas, consider how your clients, your staff and your patients experience your hospital by simply using their sense of smell.



FUN FACT 2: The Fifth Sense

“Imagine what your patients and clients experience when they step into your hospital. It could be overwhelming to their senses and stimulate their emotions and behaviors in both positive and negative manifestations.”

Start by sniffing your way over to the front counter of your hospital. Pay close attention to the smells as you navigate through the hospital and make note of the differences you encounter. Now, kneel down on the floor and take a good close sniff of the floor and walls at the level in which your patients experience your hospital. Did you notice anything? Did your clients think you were crazy? Or did you perhaps explain that you were doing some research as part of your continuing veterinary education? You probably noticed something new about your hospital.



Was it fresh and clean? Or was it stale or worse yet, kind of stinky? Just imagine what your patients and clients experience when they step into your hospital. It could be overwhelming to their senses and stimulate their emotions and behaviors in both positive and negative manifestations. Remember, what you smell could be amplified by as much as 10,000 times for the scents picked up by your patients.

For the dogs who spend their first holiday away from home boarding at your hospital, what are the smells and sounds they experience? How many patients rotate through each exam room daily and how many different foot (and paw) prints mark the area around your front desk and lobby area? Imagine how many different odors and scents are introduced into the hospital environment every day. Understanding smell from your patient's perspective can provide you important insights into how they experience your practice. In this learning module we will explore the form and function of the amazing olfactory sensory system in pets and provide suggestions for ways to implement hospital enhancing solutions that will surely heighten your patients' and clients' hospital experience.

BORN TO SMELL



FUN FACT 3: You Are What You Eat

"A cat's sense of smell guides her to her prey and tells her if the food is edible or toxic."

Dogs and cats are born to smell. A cat's nose is often regarded as her most important sense organ, having nearly 80 million receptors in the epithelium of their nostrils. Olfaction, the act or process of smelling, is also a dog's primary special sense. With dogs having more than 220 million olfactory receptors in their nose, compared to humans having only 5 million, it should be no surprise they have a significantly heightened sense of smell. Some dog breeds, like the bloodhound have nearly 300 million scent receptors! The sense of smell and the sense of touch are the predominant senses for a dog and they are fully functioning at birth, unlike hearing and sight, which develop later, and taste which although present at birth and connected to smell takes a back seat.



The sense of smell is a highly developed sense at birth in puppies and kittens. Newborn kittens establish a nipple preference on the nursing queen, and smell is used to guide a kitten back to his chosen site. If a young kitten wanders from his nesting area, olfactory cues will be guide him back until vision becomes the main guide at 3 weeks of age. During the weaning process, from 4-6 weeks of age, a kitten will utilize smell to find food, and distinguish between edible and inedible objects. The same goes for puppies.

Did you know dogs and cats have “nose prints,” and no two are the same? Every dog and cat nose has a unique pattern of bumps and ridges, just like humans’ fingerprints. There has apparently been some talk about using nose prints as a form of identification. This would definitely take facial recognition to a whole new level.

A cat’s sense of smell guides her to prey and tells her if food is edible or toxic. A cat’s sense of smell also stimulates her appetite. Cats have less than 500 taste buds on their tongues whereas humans have around 9000, so it’s often the smell rather than the flavor that stimulates her sense of hunger. That’s a big part of the reason why cats with respiratory infections or other nasal blockages stop eating: If they can’t smell their food, they won’t have an appetite.

Cats not only utilize their nose to locate food, but also use it as a medium to communicate. Cats have scent glands around their mouth and on the sides of their head, the pads of their front paws, and in the perianal areas near the base of their tail. These glands contain one-of-a-kind pheromones unique to each cat. Whenever they rub their head or paws against an object, it is as if they are leaving their business card for other felines to recognize and translate. We’ll explore more about pheromones later in the course.

DESIGNED TO SNIFF - OLFACTORY BULBS

While the total size of a dog’s brain is approximately one tenth the size of the human brain... the portion devoted to smell is about 40 times larger than ours. A human’s brain is dominated by a large visual cortex while a dog’s brain is dominated by the olfactory cortex.

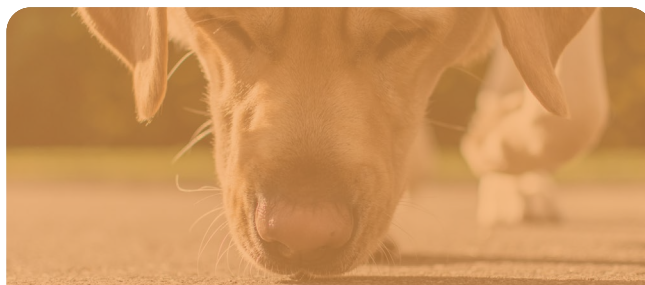


In her book, *Inside of a Dog*, cognitive scientist Dr. Alexandra Horowitz describes it this way,

“As we see the world, the dog smells it. The world of scents is at least as rich as the world of sight.” (Horowitz, 2009)

The nose is the fastest, most direct route by which information can get to the brain. While visual or auditory data goes through an intermediate staging ground on the way to the cortex, the highest level of processing, the receptors in the nose connect directly to nerves in specialized olfactory “bulbs” in the brain. The olfactory receptor cells in a dog’s nose extend throughout the entire layer of specialized olfactory epithelium found on the ethmo-turbinate bones of the nasal cavity. The olfactory bulbs account for one eighth of the dog’s brain. It is located in the fore-brain and is responsible for processing scents detected by cells in the nasal cavity.

The olfactory bulb is extremely important to the dog due to its function of processing scent. Scent information travels from the olfactory bulb to the limbic system which is the most primitive part of the brain (dealing with emotions, memory and behavior). It also travels to the cortex, the outer part of the brain that has to do with conscious thought. In addition to these two areas, information also travels to the taste sensory cortex to create the sense of flavor. Because olfactory information goes to both the primitive and complex part of the brain it effects dogs’ actions in more ways than we may readily observe.



FUN FACT 4: Portion Control

“While the total size of a dog’s brain is approximately one tenth the size of the human brain, the portion devoted to smell is about 40 times larger than ours.”



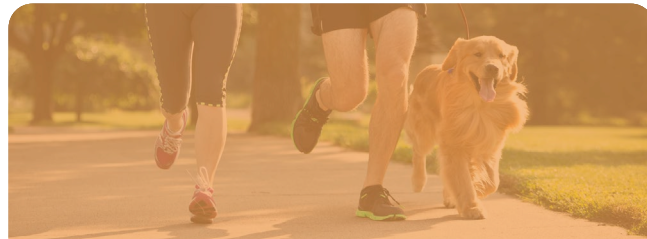
YOU’VE GOT THIS!

Way to go! You’ve made it 25% of the way through this course.
(Don’t worry, there are some pretty short pages coming up.)

DESIGNED TO SNIFF – TURBINATES

In humans, the sense of smell is relegated to a small region on the roof of our nasal cavity, which happens to be along the main airflow path. So the air we smell just goes in and out with the air we breathe. When we inhale, we smell and breathe through the same airways within our nose.

We can't wiggle our nostrils independently. Dogs can. When dogs inhale, a fold of tissue just inside their nostril helps to separate these two functions.



FUN FACT 5: Don't Sweat the Small Stuff

"In his book *The Dog's Mind*, Dr. Bruce Fogle cites studies from the 1970's that showed dogs can detect butyric acid – one of the components of human perspiration – at up to a million times' lower than we can." (Fogle, 1990)

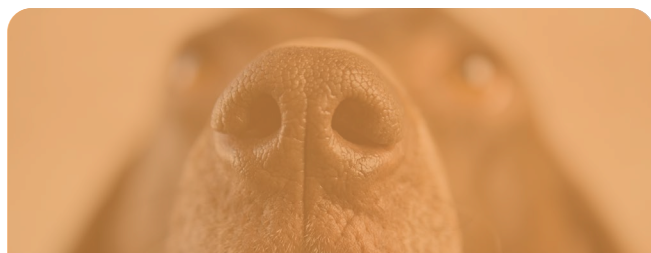
Dr. Brent Craven, a bioengineer at Pennsylvania State University who modeled airflow and odor transport using high-resolution MRI scans of the canine nose found that when airflow enters the nose it splits into two different flow paths, one for olfaction and one for respiration. Craven's team also found that in dogs about 12 percent of the inspired air, detours into a recessed area in the back of the nose that is dedicated to olfaction, while the rest of the incoming air sweeps past that recess and flows down through the pharynx to the lungs. Within the recessed area, the air filters through a labyrinth of scroll-like bony structures called turbinates that sieves odor molecules based on different chemical properties. Olfactory receptors within the turbinates, in turn, "recognize" these odor molecules by their shape and dispatch electrical signals to the brain for analysis. Craven and colleagues are working to reverse-engineer the canine nose, in part to aid in the design of artificial "noses" that can sniff out odors with the same level of acuity as our canine companions. **(Craven, 2010)**

(Craven, 2010) Craven, B.A. et al. 2010. "The fluid dynamics of canine olfaction: unique nasal airflow patterns as an explanation of macrosmia." *Journal of the Royal Society Interface*, 6 June 2010, 7(47): 933-943.



A dog can even smell adrenaline and pheromones that we cannot; this allows them to anticipate a fight or flight response from a person or another dog before we have a clue.

“In his book *The Dog’s Mind*, Dr. Bruce Fogle cites studies from the 1970’s that showed dogs can detect butyric acid – one of the components of human perspiration – at up to a million times’ lower than we can.” (Fogle, 1990)



FUN FACT 6: Wiggle, Wiggle, Wiggle,
Wiggle, Wiggle, YEAH!

“We can’t wiggle our nostrils independently. Dogs can. When dogs inhale, a fold of tissue just inside their nostril helps to separate these two functions.”

Although it should be noted – a dog cannot rationalize and distinguish why a person is emitting adrenaline in their presence. It may be that the human is terrified of dogs, but the dog won’t know this, only that this person is gearing up to fight or flee and should be carefully watched for any sign of an attack. The dog’s olfactory system appears to be more sensitive than anything we can replicate with modern technology.

With this keen sense of smell, dogs have a remarkable ability to detect and discriminate scents. As such, this has enabled dogs to be trained as service dogs for detecting drugs, explosives, landmines,

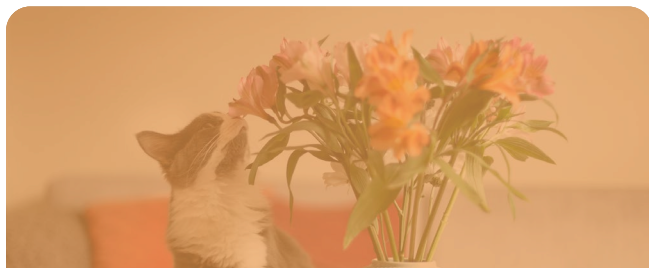
agricultural products, and even more esoteric things like bedbugs and termites. Recently, dogs have been used to identify criminals via a process called a “scent lineup” and are able to locate everything from forensic cadaver material to disaster survivors buried underneath piles of rubble.

MAKING SENSE OF SCENTS AND EMOTIONS

The dog’s brain is built around the information it gets from scent and as smell is so closely linked to emotions, this provides even more evidence that the dog’s emotional experience might be even greater than we could ever imagine.



Olfaction is much more important to cats than was formerly thought and maybe as important as vision. Cats investigate odors several hundred times per hour and are as avid in this respect as dogs. A large majority of feline behavior is predominantly centered on a cat's olfactory sense of territorial containment.



FUN FACT 7: Smell You Later

"Cats investigate odors several hundred times per hour and are as avid in this respect as dogs. A large majority of feline behavior is predominantly centered on a cat's olfactory sense of territorial containment."

Areas of communication in which olfaction plays a role are:

- **Scent marking with facial pheromones** - perioral and cheeks (cats) and ears (dogs)
- **Scent marking with urine**
- **Scent marking with feces**
- **Anal gland secretions** - epithelium of the anal sacs contains sebaceous tissue that can give off oils unique to the dog or cat
- **Clawing/scratching** - pheromone production in foot pads
- **Flehmen response** (vomeronasal organ)

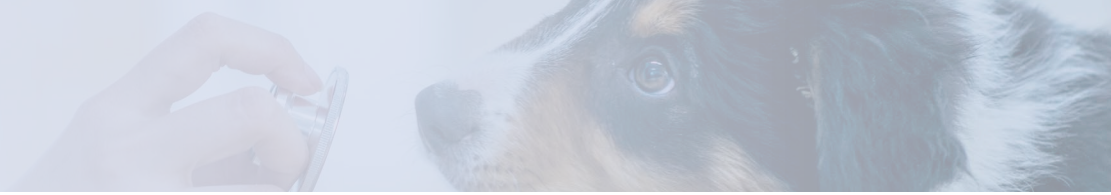
A SECONDARY OLFACTORY SYSTEM

In addition to having an extraordinary primary sense of smell, dogs and cats also have a second olfactory capability that we don't have, made possible by the vomeronasal organ (VNO), also known as Jacobson's organ.

FUN FACT 8: VNO You Didn't

"A cat exhibiting Flehmen will raise its head, draw its lips back, wrinkle his nose, and hold his mouth partially open. This allows the odors to enter the oral canals and reach the VNO."





Located in the bottom of their nasal passage, the vomeronasal organ picks up pheromones, the chemical communicators unique to each animal species that advertise territorial markings, mating readiness, and other sex-related details.

Social interaction between cats starts with the olfactory information obtained when cats first approach face-to-face, and then face-to-tail. When cats encounter pheromones they have what is referred to as Flehmen response. In cats, the Flehmen response enhances perception of sexual pheromones, by opening the incisive ducts and aspirating the pheromones into the VNO. In dogs, tonguing (flicking the tongue against the incisive papilla) likely aids in the perception of pheromones. **(Pagaet, 2003)**

The olfactory receptors in the nasal cavity are anatomically distinct from those in the vomeronasal organ. Each receptor neuron in the olfactory epithelium of the nasal cavity has a dendrite that ends in a knob with several thin cilia covered by mucus. Receptor neurons in the vomeronasal organ typically lack cilia but have microvilli on the cell surface. The pheromone molecules that the organ detects—and their analysis by the brain—do not get mixed up with odor molecules or their analysis, because the organ has its own nerves leading to a part of the brain devoted entirely to interpreting its signals.

A cat exhibiting Flehmen will raise its head, draw its lips back, wrinkle his nose, and hold his mouth partially open. This allows the odors to enter the oral canals and reach the VNO. This can be initiated by a variety of circumstances such as smelling urine of an unfamiliar cat, being around a female cat in heat, or smelling where another cat has rubbed and left his oily secretions. A cat will identify familiar cats and greet non-hostile, unfamiliar cats this way. When a cat is greeting a person, the same behavior pattern can be observed. The cat will approach and smell the person, then turn and present her hind end. We should consider it an honor that cats respect us enough to greet us like they do other cats.

DECIPHERING WHAT PHEROMONES ARE SAYING

A few examples where pheromone detection stimulates response in cats and dogs are:

- **Territorial Lines:** Male cats mark their territory with urine or with pheromones from glands in their face and feet. They will travel their territorial boundaries frequently, sniffing at their markings, and reapplying when the odor diminishes. Other male cats will smell the markings and either respect the territory, or attempt to take it over by introducing their own scent markings.



FUN FACT 9: SSSafety First

“Have you ever observed a dog or cat entering the outdoors with head held alert, whiskers twitching, and nostrils wide open? They are sniffing out potential harm. Often using all of their senses to identify threats and preparing a plan of action.”

- **Clear and Present Danger:** Have you ever observed a dog or cat entering the outdoors with head held alert, whiskers twitching, and nostrils wide open? They are sniffing out potential harm. Often using all of their senses to identify threats and preparing a plan of action.
- **To Locate a Mate:** Female cats and dogs in their estrus cycle exude a powerful sexual pheromone that can be scented by a male for great distances. If you've ever been entertained by choruses of lusty Toms outside your home while your intact female cat tries every means of escape, you'll appreciate this phenomenon. Female cats and dogs can also scent out a preferred mate by his territorial markings.



HALFWAY THERE!

You're 50% through this course and halfway to earning 1.5 hours of CE credit. **(Keep going, you can't stop now!)**



EMOTIONAL TRIGGERS

Have you ever smelled something that evoked a memory? A simple scent can have a host of complex meanings, memories and emotional ties for dogs and cats as scent is directly linked to both memory and emotion via the limbic system. When a dog or human inhales, scent molecules stimulate chemical messages that bypass other areas of the brain and go straight to the amygdala, the brain's emotional center. The amygdala passes emotional judgments to other structures that collate memories and these are passed onto the cortex. Emotionally appropriate hormones are then released into the body, which also affect mood. Because a dog's dominant sense is smell and so much of the brain is dedicated to processing scent, this is again strong evidence that dogs could be even more driven by their emotions than humans.



FUN FACT 10: Once More With Feeling

“Have you ever smelled something that evoked a memory? A simple scent can have a host of complex meanings, memories and emotional ties for dogs and cats as scent is directly linked to both memory and emotion via the limbic system.”

It is an undisputed fact that emotions drive behavior, drawing a dog or cat towards comfort and pleasure, or away from discomfort and pain. Behavior is influenced by physiological processes including the activity of neurotransmitters and hormones. Neurotransmitters, such as serotonin and dopamine, transmit chemical messages in the brains and bodies of dogs and humans and as a result both have the same physiological reactions to behavioral states such as joy, excitement, fear and pain. Dopamine, for example, helps to focus attention, promoting feelings of satisfaction. A lack of these neurotransmitters causes irritability, over reactivity, anxiety and greater sensitivity to pain. Serotonin has a profound affect over emotions and is responsible for regulating mood, enhancing a positive feeling and inhibiting aggressive response. (Landsberg, 1997) While the physical reaction may be similar across species, the way emotions are processed in the brain could potentially be where the emotional experience of species differ.



Because human emotions flood through a cortex that is five times bigger than that of a dog it might mean that while a dog still has impressive cognitive abilities, processing emotion is simpler, unadulterated by a humans' ability to analyze. Simply put, when a dog emotes, the feeling is very pure and not complicated by complex human thought.

FEARING FEAR ITSELF

One of the more common emotions we think about for pets is fear. Patients that are frightened from the moment they enter the veterinary hospital are not only unlikely to clearly display the same behavioral signs of illness that they have been displaying at home, but also

any samples collected are likely to be altered by their stress response. The release of stress hormones, such as adrenaline, results in the immediate availability of energy and oxygen intake and decreases blood flow to areas not critical for movement. This can also inhibit digestion, growth, immune function, reproduction and pain perception. When a pet is under stress, the memories of any events occurring during that time will be very powerful, and how a pet is handled during veterinary visits may have long-standing consequences for our future ability to handle him or her. **Dr. Valarie Tynes, a board certified veterinary behaviorist, describes it like this,**



FUN FACT 11: Bedside Manner

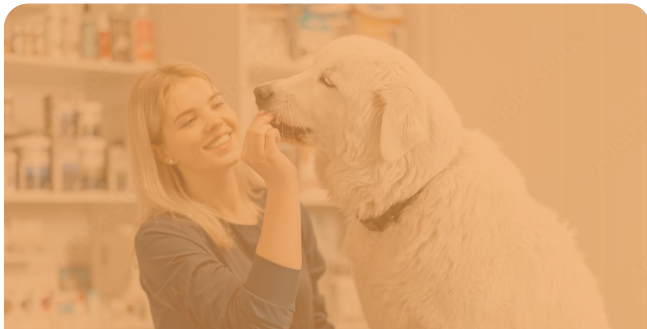
“When a pet is under stress, the memories of any events occurring during that time will be very powerful, and how a pet is handled during veterinary visits may have long-standing consequences for our future ability to handle him or her.”

When pets show subtle signs of fear or anxiety during a veterinary visit, if we proceed without attempting to ameliorate the stress, we may not change the pet's behavior at that time, but the animal will learn from the experience and will likely behave in a more fractious manner at the next visit. Anything we do to relieve the stress of the visit will pay off in future visits being less difficult for your pet. **(Tynes, 2014)**

THE FOOD/BRAIN RELATIONSHIP – STIFLING FEAR

Understanding the relationship between food and the brain provides us with crucial information not just on how the brain works, but how we can use the knowledge to help dogs learn and modify behavioral states such as anxiety and fear. Stimulating a dog's sense of smell with food, for example, not only motivates a dog to learn, but is a valuable tool in changing the way the brain works. Some people think that using food as a reward is tantamount to bribery but what they do not understand is just how powerful food is, not just as a motivator, but because food is incompatible with fear.

When a dog is fearful, a number of changes happen in the body. The heart beats faster, blood pressure rises and blood flow is diverted to muscles that prepare for fight or flight. If food is presented before the dog reaches a high level of stress, a positive emotional response can occur in the presentation or anticipation of the food.



FUN FACT 12: Food Over Fear

“When you stimulate a dog’s seeker system, by presenting him with a tasty treat or a toy filled with food, and encourage him to play a game in the presence of something he fears, this activity will turn on his seeker system and shut off his fear.”

There are circuits in the dog’s brain that encourage seeking or hunting behavior and circuits that elicit a fear response. When you stimulate a dog’s seeker system, by presenting him with a tasty treat or a toy filled with food, and encourage him to play a game in the presence of something he fears, this activity will turn on his seeker system and shut off his fear. This is one reason why activities such as scent work is so valuable for fearful dogs. Cognitive scientists have described this phenomenon in dogs whereby turning on the “thinking brain” deactivates the “emotional brain,” enhancing a dog’s attention with positive motivation and allowing him to move into a calmer state where learning can take place.



COMMUNICATING THROUGH SCENT

Each dog and cat emits a personal olfactory profile that imparts a wealth of information to other dogs and cats. The act of marking deposits information about age, sex, mood, health status, diet, size of pack and rank. A well socialized dog and cat will engage in mutual sniffing with another as a polite greeting.

A cat's nose tells her about other cats in the surrounding area. We see this through outdoor cats marking their territory with urine or feces. This natural tendency can be a real nuisance for the owner of an indoor dog and cat. Urine and fecal odor buildup can be important factors in house soiling. A dog may continually soil an area in the house where other dogs have soiled before. A cat may find his own odors offensive when a litter box is not kept clean, and then choose another location to eliminate. In a multiple cat household, several litter boxes are usually needed to prevent smells from discouraging litter box use. Because cats' noses are so sensitive, very strong odors can be distasteful. The scent of the litter itself can affect litter box usage. Most cats detest perfumed litter and prefer the plain types. This is one reason I recommend against using scented cat litter. The smell might be nice to you, but it could be overwhelming for your feline friend's nose.

FUN FACT 13: Paging Doctor Dog

“Dog's superior olfactory sensitivity can also be used in medical detection including early detection of melanomas, lung, breast, bladder, prostate and colorectal cancers. They are also able to predict seizures in epileptic patients, Clostridium difficile in stool samples and hospital patients and even detect low blood glucose in diabetic patients.”



If dogs' basic smelling skills amaze us, what they manage to achieve with those skills is truly astounding. In addition to providing a sophisticated detection device for sniffing out the minutest of odors, dog's superior olfactory sensitivity can also be used in medical detection including early detection of melanomas, lung, breast, bladder, prostate and colorectal cancers.



They are also able to predict seizures in epileptic patients, Clostridium difficile in stool samples and hospital patients and even detect low blood glucose in diabetic patients. A recent study in Diabetes Therapy revealed that diabetes alert dogs had an 87.5% accuracy rate in detecting hypoglycemia in people. Researchers showed dogs could detect hypoglycemia by sniffing sweat samples of people, without experiencing any behavioral clues. (Hardin, 2015) It is really kind of mind-boggling, that they're able to detect such minute odor discriminations and act as medical detectors with sensitivities comparable and often superior to some of the most sophisticated medical diagnostic analyzers.



YOU'RE IN THE HOME STRETCH

You're 75% finished! You're nearly done with this CE course.
(You've come so far! Just a few pages left.)

HOW TO PASS THE SNIFF TEST

A veterinary hospital can be a really smelly place. The causes can range from the unpleasantness of the typical "accidents", to the alpha-dog who marks anything and everything he comes in contact with, to odors from relieving compacted anal glands and your everyday laundry room and kennel area stench. And those aren't even the gross things we experience in every-day practice. To those of us working in this environment our sense of smell might even get accustomed to the odors. To our patients who encounter this potpourri of odors for the first time, it can be quite overwhelming.

Relating back to the "sniff test" you completed earlier, think about the different zones of your hospital (Animal, Pet Owner & Staff) that you might improve upon to neutralize any sense of fear or anxiety by removing offensive scents. Sometimes it's easy to forget that our senses become biased to our surroundings. While we may see that the exam table was thoroughly cleaned with germicidal sprays, what we don't see are those scents that our canine and feline patients are able to detect.

By first evaluating the environment from the pet's point of view (smell) you can easily identify areas that could use some special attention.

(Hardin, 2015) Hardin DS, Anderson W, Cattet J 2015. "Dogs Can Be Successfully Trained to Alert to Hypoglycemia Samples from Patients with Type 1 Diabetes." Diabetes Therapy. 1-9.



Common areas include the lobby sitting area where clients and patients first encounter your hospital. The floors, walls and furniture should be regularly cleaned and scents neutralized by using products specifically shown to neutralize odors. The same approach should be taken in the exam rooms and treatment areas of the hospital.

While daily cleaning can take care of the messes

and keep the hospital aesthetics appealing to your healthcare team and clients, special attention must be taken to ensure you aren't covering up or masking scents that trigger unwanted behaviors by your patients. The scent of a lemon infused chlorine-based cleaning solution might signal to us that the floors have been cleaned, but that same scent may trigger disgust to a feline patient who is turned off by both the smell of chlorine and the underlying uric acid compounds left behind by the tomcat who sprayed each corner of the exam room. Most cleaning chemicals, including chlorine, will not remove the problem-causing components of urine. You need specifically designed products to deal with the uric acid salts left when urine dries. Products that remove the stain and neutralize the odors are key.



FUN FACT 14: Eliminate Odors

“Floors, walls and furniture should be regularly cleaned and scents neutralized by using products specifically shown to neutralize odors. The same approach should be taken in the exam rooms and treatment areas of the hospital.”

ENHANCING THE PATIENT EXPERIENCE

The One, Two Punch...Establishing an Olfactory Friendly Hospital Environment

The equation for an olfactory friendly hospital is as simple as neutralizing the ODORS and activating the PHEROMONES.

- **Step 1** - Use cleaners and neutralizers to remove any negative olfactory stimuli.
- **Step 2** - Freshen the air and activate pheromones as positive olfactory stimuli.



Creating a clean and low-stress environment will not only make your patients and clients happy, but will also help decrease the risk of injury to you and your staff.



FUN FACT 15: Keep Calm and Clean

“Creating a clean and low-stress environment will not only make your patients and clients happy, but will also help decrease the risk of injury to you and your staff.”

A few really simple steps to get started include

using the right combination of disinfectants, odor neutralizers, air fresheners and stress-reducing pheromones. Neutralizing urine odors helps eliminate behavioral soiling. Although this may not stop the problem, it will reduce the factor stimulating a cat to return to the same location. A cat’s or dog’s sensitive sense of smell will draw him back to a previous site unless sufficient neutralization is achieved.

There are numerous products on the market with claims to address this problem. Look for

products that destroy the odor molecule’s ability to emit vapor. Ideally, it is best to control an odor at its source before it becomes airborne. However, once the malodor is airborne it may become necessary to treat or freshen the air as well as eliminate the source. There are also enzymatic-based odor neutralizers that have shown benefit, however you have to be careful to avoid products that simply mask odors or enzymes that counteract the benefits of detergents and germicides.

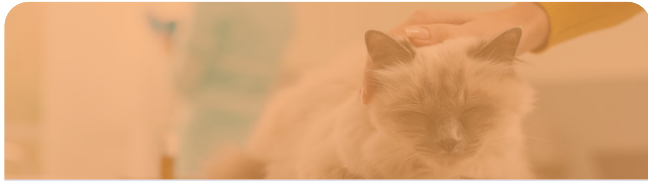
COMBATING COMMON PROBLEMS

A fairly common problem both in hospital and at home is urine saturation. Since urine has high concentrations of ammonia if you clean with products containing ammonia, you will actually intensify the urine odor. It’s also important to identify which products are compatible with detergents and germicides that you routinely use to clean your hospital. Some enzyme based products may not be compatible so be sure to check with the manufacturer to ensure they do.



In addition to cleaning and neutralizing odors many veterinary healthcare teams have found that utilizing calming pheromones is an excellent way to

create a low-stress environment for their canine and feline patients. There is a wealth of scientific studies and practical experience relating to the use of the various pheromone fractions for the management of a range of behavior problems. These products are available in various forms including sprays, collars, wipes and plug-in diffuser forms to help reduce the stress a patient may feel during a veterinary exam, making it easier for you to handle and exam patients. Pheromone therapy should be fully integrated into everyday practice to minimize the impact of the inevitable stressors to which pets are exposed.



FUN FACT 16: Faring Well With Pheromones

“There is a wealth of scientific studies and practical experience relating to the use of the various pheromone fractions for the management of a range of behavior problems.”

The things you do on the surface to keep your hospital environment clean and tidy will readily be seen by all, however taking those extra steps to enhance your hospital aesthetics from both a primary and secondary olfactory perspective has the potential to offer great benefits for all of your patients, clients and healthcare teams.

CONCLUSIONS

In addition to delivering top quality medical care, progressive healthcare teams today are placing attention on enhancing the overall hospital experience for their patients and clients.

We offer ready-to-make coffee machines and fresh baked cookies in the waiting area, we scrub the kennel areas with industrial strength antiseptic solutions and we send our patients home with a spray of “pet perfume” to reinforce the top quality of care and service offered at our hospital. These are all fantastic measures to reinforce with our clients, however, we can also benefit from taking steps to neutralize offending scents and minimize stress to help ease our patients’ senses during their hospital stays. By implementing a few very simple measures we can transform our hospitals into olfactory friendly environments that enhance the overall in-hospital experience and help strengthen our patient-client-healthcare team bonds.



FUN FACT 17: Congenial Care

“By implementing a few very simple measures we can transform our hospitals into olfactory friendly environments that enhance the overall in-hospital experience and help strengthen our patient-client-healthcare team bonds.”

KEY POINTS

- **A dog's sense of smell** is estimated to be 10,000 times more sensitive than humans.
- Dogs and cats have both **primary and secondary** olfactory systems.
- **Scents can directly trigger** emotions and behaviors; some good, some bad.
- **Neutralizing odors** can decrease stress stimulators in your hospital.
- **Pheromone use** is proven to ease stress for dogs and cats.
- **A heightened client and patient experience** can be achieved through use of odor neutralizers and pheromones.



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