

How to Count Respirations and Monitor Respiratory Effort

BACKGROUND

In dogs and cats, as in people, the effort of breathing can be an important clue about well-being and health. This is especially important when monitoring pets with respiratory disease and heart disease.

A *respiration* is defined as one breath in and out. Pets with increased respiratory rates, increased respiratory effort, or both, may be showing this type of symptom as a first sign of illness, or a sign of relapse of long-standing illness. Counting respirations and assessing respiratory effort can be very useful and becomes easy with practice.

GETTING STARTED

Equipment/materials needed:

- Phone or watch that counts seconds

TROUBLESHOOTING BEFOREHAND

Your pet should be resting in order to determine an accurate respiratory rate (breaths per minute). This means lying down and not having been running or excited for at least 10 minutes. It is even better to count when the pet is asleep. One breath includes one inhalation (breath in) and one exhalation (breath out). If the pet should get up while you are counting, or otherwise be interrupted (such as starting to sniff something, which will increase the breaths per minute by a great deal and produce a misleadingly high breath count), you should start over.

Respiratory effort is something that requires looking at the whole pet from more than an arm's length away. As a general rule, you should not notice the breathing in a healthy dog or cat. If you find yourself worried that your pet's breathing is abnormal, there is a good chance that it is indeed abnormal.

Normal respiratory effort in a resting dog or cat means the sides of the chest rise and fall at a regular rhythm. Remember that it is normal for pets to breathe harder or faster if they are hot, or if they were just running or playing hard, or other condition expected to increase respiratory rate and effort even in healthy individuals. Importantly, normal respiratory effort takes place in a comfortable animal: he/she is able and willing to lie down, the facial expression is a normal and calm one at rest, and general behavior is normal. This is in stark contrast to labored breathing or respiratory distress, where an animal is unwilling or unable to lie down because doing so creates a feeling of suffocation; there is an anxious or distressed facial expression; and breathing is often deeper (sides of chest

move more with each breath) and possibly gasp-like, all in a setting without obvious immediate cause in the surroundings. Other signs of labored breathing include an outstretched neck, flaring nostrils, or abnormal sounds associated with breathing. Importantly, when these symptoms are medically important, they tend to be present persistently, meaning continuously for minutes to hours, not just for a few breaths. Profound discomfort and anxiety, together with breathing that is deeper and requiring much more effort, may indicate respiratory distress and are always a good reason for a prompt visit to the veterinarian.

These guidelines describe measuring the respiratory rate and effort at rest. This is to avoid falsely elevated results right after exercise or other physical activity. However, animals in distress may not be willing to rest, and the point is simply to assess breathing at the time of least physical activity and external stimulation.

PROCEDURE

- The purpose is to count the number of breaths per minute at rest and to evaluate the respiratory effort.
- Your pet should be in a position where you can observe his/her inhalation and exhalation easily. Avoid interfering with the natural actions of your pet at this time. For example, if you place your hand on your pet, it may cause him or her to get up and stretch, which falsely increases the respiratory rate and depth. Before continuing, you will need to let your pet return to a relaxed position.
- Count the number of breaths in 15 seconds, with one inhalation and one exhalation counting as one breath. Multiply the number of breaths in 15 seconds by 4 to have the respiratory rate per minute.

AFTERWARDS

The normal respiratory rate for dogs at rest is 15 to 32 breaths per minute and for cats it is 20 to 30 breaths per minute. If the rate is higher than normal, if the respiratory effort seems excessive at rest, or both, you should contact your veterinarian promptly. Keep in mind that this excludes panting in dogs (which can produce a respiratory rate of 100 breaths/minute or more, but is normal: the dog is comfortable, may lie down without distress, and shows no anxiety related to breathing). Likewise, sniffing or smelling by inquisitive dogs or cats may produce a high respiratory rate count, but you should ignore this and evaluate the respiratory rate again when the sniffing has stopped.

FREQUENTLY ASKED QUESTIONS

My cat is breathing with her mouth open. Is this normal?

It is not normal for cats to breathe with their mouths open, and this can indicate a severe respiratory problem that may be an emergency. The only exception is when some cats breathe with the mouth open as part of anxiety (for example, during a car ride). If your cat is open-mouth breathing, meaning panting like a dog, without an obvious source of stress to account for it, you should call your veterinarian to discuss whether an emergency warrants an immediate visit. Dogs normally breathe with their mouths open (panting); this is a natural cooling mechanism for them and is usually not a cause for concern in dogs.

My pet has labored breathing and is also coughing. What should I do?

The combination of rapid breathing, ongoing fits of coughing, and labored breathing all occurring together are suspicious for an active respiratory problem that could worsen quickly (days or even less). Such a collection of symptoms warrants a call to your veterinarian without delay to determine the likelihood of an emergency and whether an immediate veterinary visit is needed.



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