

Recording Vital Signs

Reading Assignment: Tasks for the Veterinary Assistant, pages 8-12, 255-265, Appendix L

ASPCA Cat Care Manual, pages 96-97

ASPCA Dog Care Manual, pages 132-133

Veterinary **vital signs** are an index of an animal's essential bodily functions including temperature, pulse, respiratory rate, and body weight. The veterinary assistant will commonly be responsible for monitoring and recording these parameters. A patient's vital signs are recorded each time they visit the veterinary clinic and recurrently during hospitalization. It is extremely important that vital signs are monitored and recorded accurately and using the correct systems of measurement. To keep the patient from becoming stressed and raising their respiratory, heart, and pulse rates, it is recommended that you record the patient's weight first, then move to the examination room and record the respiration rate while they rest comfortably in the carrier or in the room. Next, you should speak to the patient soothingly while you record the pulse and heart rate, allowing them to remain calm. The temperature is taken last. Review Appendix L for a table of normal vital signs and become familiar with the average readings for commonly treated species.

Weight

A patient's weight is commonly determined before they enter the examination room as scales are often located outside of the room. The veterinary assistant should complete this task before showing the client and patient to the examination room to be seen by the veterinarian. A patient's weight can help to determine what types and dosages of medications should be given, and it can also help the veterinary staff to track the health of a returning patient. For example, if a patient has lost a significant amount of weight since her last visit but has not changed her eating habits, this would be a sign of possible illness.

There are several types of scales habitually used in veterinary facilities – digital floor scales, portable baby scales, and smaller digital mail-type scales for smaller patients. Digital scales are calibrated to zero before the patient is placed on the platform to be weighed. Because there can be such a wide range of weights in veterinary patients (ranging from a pound or two to over 100 pounds), there are a variety of scales meant to assist in weighing a variety of patients. Make



sure to become familiar with where the scales are located and which one is used for each weight range.



Canine patients that are on a leash are usually weighed on a digital floor scale outside of the examination room if the facility has one. To weigh a cat or rabbit without moving them from their carrier, you can weigh the cat or rabbit and the carrier on the digital floor scale at once. Once inside the exam room, the cat or rabbit can be removed from the carrier, leaving any accompanying towels and/or blankets inside. The carrier can then be taken back out to the reception area and weighed. Subtract the weight of the empty carrier from the weight of the cat or rabbit inside the carrier. The difference between the carrier with the animal and the carrier without the animal is the actual weight.



Photo Courtesy of Animal Care Equipment and Services

For example, let's say a cat in a carrier with a blanket weighs 21 pounds. If the cat is removed from the carrier and the carrier and blanket weigh 5.5 lbs, then the weight of the cat is 15.5 pounds.

$$\begin{aligned} \text{Cat + Blanket + Carrier} &= 21 \text{ lbs} \\ \text{Blanket + Carrier} &= 5.5 \text{ lbs} \\ 21 \text{ lbs} - 5.5 \text{ lbs} &= 15.5 \text{ lbs} \\ \text{Cat} &= 15.5 \text{ lbs} \end{aligned}$$

This is a convenient way to acquire the weight of cats if the scale is in the reception room. This technique will minimize the risk of them becoming frightened and stressed in the reception area when being pulled from their carrier (their safe place) especially if other animals are present. Some clinics keep human baby scales available to bring into the exam rooms to weigh very small dogs, cats, kittens and rabbits. Weighing the patient in the examination room reduces the risk of the patient escaping.

Weight can be measured in both kilograms (kg) and pounds (lb). Kilograms, which are metric, are used widely around the world. The United States is one of the only countries that use the standard or English system, which measures weight in pounds. The specific veterinary facility

may use both or either; determine which system is preferred before recording a patient's weight. In veterinary formularies, the drug dosages are usually indicated in kilograms, therefore, when you write the weight in the patient's record, you should record it in both pounds and kilograms.

Here is the conversion formula for converting from metric to standard and vice versa.

Kilograms to Pounds Lbs = kg x 2.2	Pounds to Kilograms Kg = lbs ÷ 2.2
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Respiratory Rate

Determining a patient's **respiratory rate** means counting the amount of times the patient breathes within a minute. The inhalation-exhalation cycle is counted as one breath. This process also involves using a wrist watch to count the repetitions within a minute. If the patient is a cat or rabbit in a carrier or a bird in a cage, you can simply observe the patient through the carrier or cage and watch as they inhale and exhale. Observe the patient's abdomen area behind the rib cage. You should see the patient's sides rising and falling as the lungs are inflating and deflating. Count the amount of times that they breathe within a minute and record this information in the record as "respirations per minute". You can also watch them breathe for thirty seconds and multiply the amount of breaths by two. This can help you to expedite the process. If the patient is panting, note this in the record and do not attempt to determine the respiratory rate. A panting patient's respiratory rate is too difficult to perceive.

Pulse or Heart Rate

A patient's **pulse** is the rhythmical throbbing of arteries produced by the regular contractions of the heart.* This reading will help the veterinarian to determine the status of the patient's circulation and if blood is sufficiently reaching the limbs. As discussed in the Office Etiquette and Hospital Procedures stage, the veterinary assistant should always wear a wrist watch with a second hand; this tool will be useful in determining a patient's pulse.



* *The American Heritage Dictionary at www.dictionary.com*

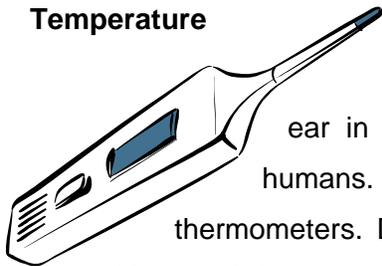
It is recommended that you move down on the floor to the patient's level as opposed to placing them on the examination table. This can cause them to become stressed, creating an inaccurate reading. To find a small animal's pulse, the patient should be standing or in lateral recumbency. If the patient is lying in lateral recumbency, slide your hand under whichever hind leg is on top while petting them to let them know that you are there and to keep them calm. If they are standing, use your index and middle finger to find the crease that separates the leg from the animal's body deep within the groin area. The chief artery of the thigh, called the **femoral artery**, is located here. Apply pressure with your index and middle finger to find the pulse. You will feel a throbbing sensation coming from the artery. Keep in mind that your thumb has a pulse, so this finger cannot be used. Now, look at your wrist watch and count the number of times the heart beats within a minute. If you are having trouble keeping the patient still, you can count the amount of times that it beats within thirty seconds and multiply the result by two, or count the amount of times it beats within twenty seconds and multiply the result by three. Record this information in the patient's record as "pulses per minute." If you are unsure of the result, take a second reading.

By palpating the pulse of ill patients and healthy old and young patients, you will soon feel the difference of a strong pulse and a weak or thread-like pulse and will be able to record the abnormalities in the record. The pulse should have the same pulsations per minute as the beats per minute of the heart. When the pulse is pumping in sync with the heart, it is normal. If the heart beats and the pulse lags behind, that is abnormal. If the circulatory system is functioning properly, the count of the pulse and the heart rate should be the same. An example of an ill animal might be the lack of a pulse in the femoral artery. Usually the legs will be cold and the patient will have little use of their leg or legs. In this case, the lack of a femoral pulse the cold limb(s) and immobility of the patient could possibly point towards a blood clot in the groin area blocking the blood to the leg(s). This would be a simple but important parameter to monitor in a patient who cannot use their back legs.

If you are having trouble locating the femoral artery, you can also **auscultate**, or listen to, the heart. This procedure requires a stethoscope and is recorded as the patient's **heart rate** instead of pulse rate. To accomplish this, place the bell of the stethoscope in the space behind the patient's left front leg, close to the body. The bell should lie near the **costochondral** junction, which is where the rib cage meets the sternum. The heart rests in the chest cavity at about the sixth rib; also, if you bend the patient's elbow up to their chest, the point of the chest

parallel to the elbow would be the most accurate placement of the heart. Listen for a heart beat (which should be two beats, a “lubb-dubb” sound) and count the amount of times the heart beats within a minute. If the patient is anxious or squirming, you can multiply the amount of heart beats in thirty seconds by two equaling 60 seconds or in twenty seconds by three, also equaling 60 seconds. It is most accurate to count for the longer period of time for accuracy but a lot of patients will not be still while you are using a stethoscope. Record this information in the patient’s record as the heart beat.

Temperature



A patient’s body temperature is determined rectally, or via the ear in smaller animals, using the same type of thermometers used in humans. Thus, the veterinary practice may choose to utilize digital or glass thermometers. Digital thermometers can record temperature faster and with less waiting, and they conveniently sound off with a beep or flash a light to signify when the temperature has been determined. Glass, bulb-type thermometers are more time-consuming and require a three-minute wait to properly decipher body temperature. The upside of glass thermometers is that they are cheaper and easier to replace when broken. However, they pose a hazard if broken as mercury is used inside glass thermometers. Mercury is a hazardous waste, and clean-up requires a special spill-kit.

- *NOTE: with glass thermometers, one must take care that the thermometer does not get stuck in the rectum of the patient where it can either break or need to be removed when the patient is sedated. Either way, harm is caused to the patient.*

Temperature can be measured in either the Fahrenheit or Celsius scale. While the majority of the world uses the Celsius scale, the United States uses the Fahrenheit scale. Many thermometers will show both, and the temperature should be recorded in the patient’s record using the scale that the veterinary staff is accustomed to using. Don’t forget to write “F” or “C” next to the reading to denote which scale is being used. Normal temperature for canines is between 101.0° and 102.0° Fahrenheit (38.33° to 38.88° Celsius). The normal body temperature for felines is between 101.5° and 102.5° Fahrenheit (38.61° to 39.16° Celsius).