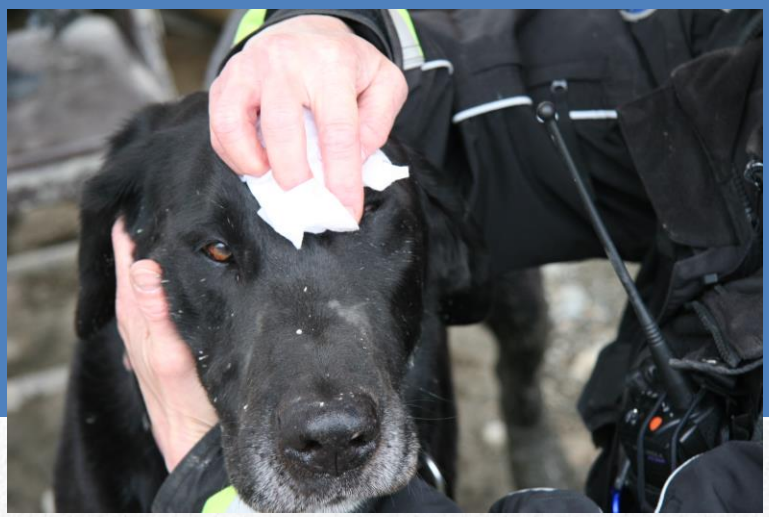


Search Canine Physical Examination Guide

Basic Canine Physical Examination Methods and Parameters for the Handler and Medic

These guidelines are designed to facilitate a detailed physical check of a canine during training, exercise, or deployment. These recommendations are to promote monitoring of canine health and detection of abnormalities so that veterinary professional attention can be sought for further evaluation, diagnostics and treatment.

Updated 2016 January

Guide to Physical Examination of the Search Canine

Lori E. Gordon, DVM

Why We Periodically Examine

Urban search and rescue canines may encounter many potential hazards during their search. Some of these hazards may result in minor problems or cause physical injuries that are easily missed with a brief observation or quick touch method of checking. A minor problem may develop into a major one if not recognized, assessed, and addressed properly.

More serious problems may be readily observed, like a bleeding wound or marked lameness. Other injuries may be more subtle in their signs, like a puncture wound of unknown depth which may only be seen as a small area of abnormal skin. Similarly, a corneal abrasion may appear only as a little eye tearing but the injury may have penetrated more deeply than can be observed with the naked eye.

These guidelines are designed for canine handlers to facilitate a detailed physical check of their dog. These recommendations are not intended to make a veterinarian or veterinary technician out of a handler, but to promote better detection of abnormalities so that proper attention can be sought for further diagnostics and treatment.

The first section will include details on performing each portion of the physical, expected normals, and examples of abnormal findings that may occur. The second section is a chart to use as a quick reference.

Knowledge Base

The most helpful and important rule of thumb in recognizing an abnormality is to know what is considered normal. This includes not only the average values for dogs in general, but the specific physical examination properties of your own dog. With a little practice this information will become second nature, and form part of your knowledge base to make recognizing something wrong a quick and easier process.

Also, with practice the examination process will take very little time yet you can be comfortable that it is complete and thorough, covering all systems. Most importantly, anything you observe which causes you concern can be noted for particular attention by a veterinarian during a follow-up check.

Quick Base Questions

Ask yourself if your dog has exhibited these signs, noting the character of any fluid and the frequency of any abnormality:

Coughing, sneezing, vomiting, diarrhea, lethargy, anorexia, depression
Abnormal urination (blood, malodor, often, frequency)
Abnormal defecation (blood, mucus, straining, frequency)

Body Temperature: 100.0-102.5° F, 38-39° C

A warm, dry nose certainly may indicate fever, but may also be normal. A cool, wet nose may be normal, but many sick animals have them, too.

The true test of temperature is taking a reading. This may be performed rectally using a soft plastic or rubber textured digital thermometer that is lubricated (K-Y or petroleum jelly preferred) or a veterinary-specific aural (ear) thermometer.

Also, keep in mind that body temperature may also be related to the ambient temperature and level of activity. For example, a temperature of 103.0 °F may be expected if a dog is working during a hot summer day and needs rest, water, and downtime to return to within a normal range. That reading for a rested dog on a cool day is considered a true fever.

Cell DNA begins to denature (break down) at 106.0 °F/41°C, and irreparable organ damage occurs at core temperatures of 109.0 °F/43°C. This is considered a danger no matter what the circumstances. Immediate cooling down to 103.0 °F is required. Be careful not to cool down too far, as the body continues to decrease in temperature after cooling measures have stopped and hypothermia may then become an issue.

Hypothermia is any profound decrease in body temperature. Frostbite is the actual freezing of body tissue, which occurs at temperatures below 93°F/34 °C. Most well-conditioned dogs will tolerate cold temperatures unless they are wet or immobile. If your dog is prone to becoming chilled be sure to take the appropriate preventative steps.

Mild is 90-99°F/32-37 °C
Moderate is 82-90°F/28-37°C
Severe is ≤ 82°F/28 °C

} The longer the animal is cold, and the colder they are, the less survival time there is

<u>Attitude</u>: Bright, Alert, Responsive

The typical answer is bright, alert, and responsive. After a hard search or prolonged work, quiet and tired are expected. You know your dog best. If they just aren't right then take it to heart, see if there might be something else going on as well.

<u>Hydration</u>: Moist Gums

There are a couple of ways to determine hydration. The most common is feeling the gums or inner lip for moisture. A dehydrated animal will often have dry, tacky (sticky to the touch) mucous membranes. But remember, if a dog has been panting their mouth may dry out from the constant passage of air and not be truly dehydrated. Also, a dog that has just lapped up water may have falsely moistened gums even if they are dehydrated. Give them a few moments after stopping panting or drinking, and then test again.

Another way is the elasticity of the skin. If you grab a bit of skin over the neck or shoulders, it should spring back into place. In a dehydrated dog the skin will tent, or hold that pinched shape for a moment and not spring back quickly, although this may take time to develop. But remember, older dogs have lost skin elasticity and even if they are hydrated their skin may not spring back well.

<u>Mucous Membranes</u>: Pink Color, Capillary Refill >1 and < 2 seconds

Besides using gums for hydration status, color and capillary refill time (CRT) are tools in the assessment of blood pressure and oxygenation. Many other factors are taken into consideration and other tests are needed to accurately assess these parameters. However, this is a quick way to confirm normalcy or suspect a problem.

Mucous membranes (MM) can be observed in the following locations: gums, inner lip, conjunctiva (inner eye lids), prepuce inner tip (covering the penis) and vulva. So, if a dog has dark pigmented oral mucosa (gums, lips), there are other places to check.

Ideally these areas are a nice pink color, and if you gently press down on the tissue in these areas the pink color should return within 1-2 seconds. Note that different lighting (sun, fluorescent, other) will reflect slightly different color tones.

Abnormalities in mucous membrane color are usually serious, and may include:

- Pale/white
  - Shock from hemorrhage
  - Shock from low circulating blood/fluid volume
  - Shock from heart failure
- **Blue/cyanotic**
  - Hypothermia
  - Respiratory or cardiac compromise leading to poor oxygen levels
- **Bright pink to red**
  - Hyperthermia (heat stroke)
  - Warm/septic/anaphylactic shock, often with CRT of <1 second
  - Carbon monoxide poisoning, often has red MM with normal CRT
- **Gray**
  - Cold shock

<u>Eyes</u>: Clear, Pupils Equal and Responsive

Observe the eyes for clarity, foreign object, tearing or other discharge. Note if your dog is squinting or rubbing their eyes. Check the conjunctiva, the mucous membrane surrounding the eye itself, for undue redness.

Exposure to dust and smoke conditions may cause conjunctivitis. If there is evidence of irritation or squinting, the cornea should be checked by a veterinarian with a fluorescent dye to make sure there are no ulcers. The use of steroid ointment should be delayed until an intact cornea can be confirmed, so as not to exacerbate a corneal ulcer. Liberal use of eye washes (saline flush) may be sufficient to prevent irritation and treat mild irritants. An Elizabethan collar may be used to prevent self trauma if the eye is irritated.

In any kind of head or neck trauma, the pupils should also be checked. They should be equal in size and in a normal position. If you shine a light, the pupil should get smaller, and then resume size once the light source is removed. This is called pupillary light response (PLR). In cases of trauma, especially involving the head or neck, a full veterinary examination is recommended.

<u>Ears</u>: Clean, Dry, No Odor or Discharge

The ears should be checked on the outside for wounds, which may be on the outer furred or inner hairless portion of the pinna (ear flap).

An ear infection, or otitis externa, may develop during the course of a deployment. There may be a bad odor or actual discharge. The dog may be painful, scratch at the ear or shake their head a lot.

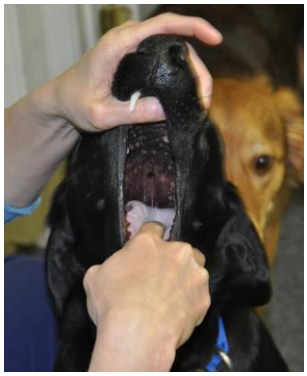
Nose: No Wounds, No Discharge, Symmetrical

Visually check the outer nose for symmetry (fracture is the concern) and wounds.

Check nostrils for bleeding, other discharge, and clear passage of air. Small amounts of blood that are hard to detect against the black pigment can be seen by dabbing a tissue or gauze against the area. Air passage can be checked by observing movement of a light strip of tissue placed in front of each nostril. Alternately, fogging of a glass or mirror placed in front of the nostril confirms patency. Use of eye wash will help flush and keep the nasal passages hydrated.

Mouth: No bleeding, Non-painful, Normal Closure, Symmetrical

Lift the lips, check teeth and tongue, observe or palpate the gums. Observe for broken teeth, lacerations, and foreign bodies. Symmetry and ability to close the mouth are checks for fractures or a jaw luxation.



A throat check may be done if there is concern for a foreign body stuck in the back of the throat. Place your thumb just behind the upper canine tooth (left thumb/right canine or right thumb/left canine) with fingers resting over the nose, gently lift up while your other hand is on the lower jaw with the ring and little fingers pressing downward on the small incisor teeth (between the lower canine teeth) and the forefinger pressing down on the tongue. This opens the mouth and allows visualization (usually a quick peak only, so be ready!) of the throat area.

Alternately, use a piece of gauze on the upper and lower jaw behind the canines to open the mouth without risking your fingers.

Peripheral Lymph Nodes: Not Prominent

Peripheral (external) lymph nodes are not usually checked as they are not normally palpable in sudden trauma or wounding situations. The lymph node draining a wounded area may enlarge and become palpable after several days of inflammation or infection.

There are instances where multiple lymph nodes in the body become enlarged. Infections, particularly from diseases carried by ticks, may lead to enlarged lymph nodes though these dogs typically have other signs of illness. Another cause of multiple lymph node enlargements is lymphoma, a cancer. Their locations, FYI, are as follows:

- Submandibular: under the angle of the jaw
- Prescapular: in front of the point of the shoulder joint
- Axillary: under the arm pits
- Inguinal: inner thigh where it meets the body
- Popliteal: just behind the knees

<u>Heart, Pulse</u>: 70-140 Beats per Minute, Synchronous

Most handlers will not be carrying a stethoscope, but you can take a heart rate by palpating the pulse. The most common spot is the femoral pulse, located along the upper aspect of the inner thigh, about midway of the width in a slight depression between muscle bellies.

You may be able to palpate the heart by placing your fingertips along the ribcage on the left side of the dog, just behind the elbow area. If you can feel this, every heartbeat should be accompanied by a pulse.

Athletic dogs at rest often have an irregular rhythm which slows down and speeds up with their breathing (a normal sinus arrhythmia that is described as regularly irregular). A very rapid and irregular rhythm warrants further investigation by a veterinarian.

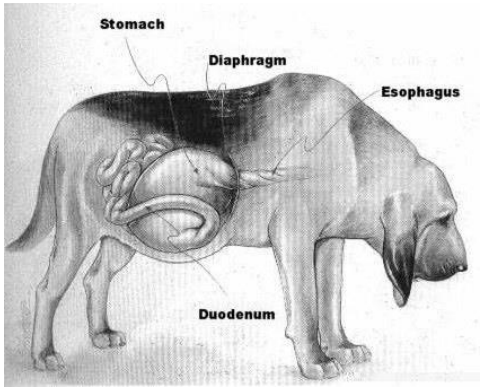
<u>Lungs, Respiration</u>: Clear, 15-30 Breaths per Minute, Not Labored

Even without a stethoscope, lungs can be evaluated by observing a dog's breathing. At rest, 15-30 is an average rate. There should be little effort by the rib cage involved in the act of respiration, and no odd sounds (wheezing, gurgling, dry rasping). Labored breathing is always a concern. Stop, and call for assistance.

<u>Abdomen</u>: Non-painful, Concave Shape (Not Bloated)

Observe your dog's abdomen for normal contour. Thinner dogs will have a concavity just behind the ribs and tuck up underneath. Gently place a hand on either side of their abdomen and gently push. It should feel soft and the dog non-painful. A sudden hardening of the abdomen may indicate pain, though often they tense out of surprise.

When trauma is not a factor, Gastric Dilatation-Volvulus syndrome, or GDV is the concern. In large breed deep chested dogs this is of particular concern. For various reasons the stomach twists on its own axis, blocking air and fluid movement into and out of the stomach. It begins to fill with air produced by fermenting bacteria. Without treatment this is fatal. Early recognition is the key to better success in treatment. Dogs with GDV are often agitated, painful, won't lie down, and try unsuccessfully to vomit. Most but not all dogs with GDV have a distended abdomen.



<u>Urogenital</u>: Normal Urination, No wounds

Urinary tract infections may occur under the stress of a deployment. Urination is often more frequent and there may be blood or a bad odor associated with it. Occasionally bladder stones are involved, so make sure they are urinating as these can lodge in the urethra and block urination.

♀ Check vulva and mammary glands in females

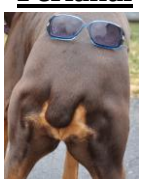
♂ Check the prepuce, penis, and scrotum in males

<u>Skin</u>: No Wounds, Bumps, Lumps, Redness

All along, as you palpate and observe and check all the prior body parts discussed, also be checking for wounds: cuts, lacerations, punctures, scrapes, masses, swellings, scabs, insects, and whatever else turns up out of the ordinary.

Search dogs especially need their feet checked in detail. You can perform this while they lie down or stand. Bring each front paw back by flexing the carpus (wrist) or hind paw by flexing the stifle (knee). Look between each toe pad, check the nails, and if you can't directly observe the area then palpate it for pain, blood, or foreign body.

<u>Perianal</u>



Take a peak. Make sure there are no wounds under the tail while you are there. If a rectal temperature is taken, observe area then.

<u>Musculoskeletal</u>: Normal Gait & Posture, No Lameness

Observe your dog's at the walk and trot. Lameness may be obvious or very subtle. It may be a strain, sprain, fracture, luxation, or a piece of glass in a toe pad. Further palpation by a veterinarian is recommended. Be aware of the pain and minimize it until further diagnostics and treatment are performed.

<u>Neurologic</u>: Head, Spine, and Peripheral Nerve Function

For the head, mental state, trauma (wound, fracture, asymmetry), seizures suggest head trauma. Dogs can develop seizures from toxins, epilepsy, or trauma. If a dog has a seizure, a full veterinary assessment is warranted.
For the spine, the ability to walk, signs of trauma (wound, fracture, asymmetry), or pain in neck or back may indicate a spinal abnormality. Detailed veterinary examination, diagnostics, and treatment are needed. Call for assistance with transport.

Physical Examination Normal Values Quick Guide

Temperature	Rectal/ Aural	100.0-102.5°F/38-39°C
Mentation	Observe, Handler opinion	'BAR' bright, alert, responds
Hydration	Feel gingival or lip MM Tent skin over neck or back	Moist mm Skin 'snaps' back
Mucous Membranes	Check color & CRT Gingival, inner lip, conjunctiva Prepuce, Vulva	Pink, >1 and < 2 seconds
Eyes	Chamber clarity, PLR Conjunctiva, Retinal exam	Clear, open, no discharge Pupils E/R (equal/responsive) D/I (direct, indirect)
Ears	Visual exam, odor Otoscopic exam (challenging)	No discharge or malodor Tympanic membrane intact
Nose	Visual, Glass/tissue test Place before each nostril	Symmetrical, no discharge Airflow from each nostril
Throat/Oral	Lift lips, check teeth/gums Open mouth, check tongue	Teeth/gums intact, no blood No pain, ✓tonsils, gag reflex
PLNs (Peripheral Lymph Nodes)	Palpate parotid, mandibular, prescap, axillary, popliteals	Small or non-palpable
Heart, Pulse	Auscultate heart left 5th rib Femoral pulse inner thigh	70-140 bpm, no murmur Strong, synchronous to heart
Lungs, Respiration	Auscultate thorax over ribs Observe breathing	Clear lung sounds 15-30 breaths/min, no effort
Abdomen	Palpate spleen, GI, bladder	Non-painful, concave shape
Urogenital	♀: vulva, mammary glands ♂: prepuce, penis, scrotum	No swelling, discharge, pain, wound, blood
Integument	Observe and palpate skin Include paw pads	Good coat, no pain, wounds, swelling, excessive heat/cold
Rectal/Perineum	Observe area	No swelling, wounding, pain ♀: vagina/urethra ventrally ♂: prostate, urethra ventrally
Musculoskeletal	Observe gait, posture Palpate abnormalities	No lameness, swelling, pain or stiffness
Neurological	Mental state, seizures, symmetry Spinal pain, Limb use	BAR, visual, no spinal pain Normal reflexes