

SNEEZING, REVERSE SNEEZING, GAGGING

BASICS

OVERVIEW

- “Sneezing” is the forceful expelling of air (expiratory effort) through the nose, usually caused by irritation of the lining of the nose and nasal passages; it is a normal, protective reflex and commonly is associated with discharge from the nose
- “Reverse sneezing” is a sudden attack or spasm of noisy intake of air (inspiratory effort) to clear irritating materials or accumulated discharge from the back of the nasal passages; it is a normal, repetitive, protective reflex
- “Gagging” is a “heaving” or “choking” response due to contraction of the muscles of the throat; it is a normal, protective reflex to clear discharges from the voice box (larynx), upper windpipe (trachea), throat (pharynx) or esophagus (the tube running from the throat to the stomach); it is also called “retching” and is frequently misinterpreted as vomiting
- “Upper respiratory tract” or “upper airways” includes the nose, nasal passages, throat, and windpipe (trachea)
- “Lower respiratory tract” or “lower airways” includes the bronchi, bronchioles, and alveoli (the terminal portion of the airways, in which oxygen and carbon dioxide are exchanged)

SIGNALMENT/DESCRIPTION of ANIMAL

Species

- Dogs and cats

Mean Age and Range

- Sneezing, reverse sneezing, and gagging are not associated with any specific age, but rather with conditions which cause them
- Young animals—examples include infections and cleft palate
- Older animals—examples include nasal tumors and dental disease

SIGNS/OBSERVED CHANGES in the ANIMAL

- Head and mouth position may help determine which of these reflexes is present
- Sneezing typically results in sudden, explosive expiratory effort(s), with the mouth closed and head thrown downward; may result in the animal’s nose hitting the ground
- Reverse sneezing is a sudden inspiratory effort, that frequently occurs as an “attack” or “spasm,” with the head pulled back, mouth closed and lips sucked in
- Gagging typically occurs with the head and neck extended, mouth held open and usually ends with the animal swallowing (with little to nothing expelled)
- Sneezing—often accompanied by discharge from the nose

CAUSES

- Any irritation or inflammation of the lining of the nose, voice box (larynx), or throat can elicit these reflexes; the same irritating agent in the nasal passages might elicit a sneeze, but when placed into the back of the throat would result in a reverse sneeze
- Common causes of sneezing and reverse sneezing include excess nasal discharge, foreign body (especially if signs are sudden [acute] and violent in onset), allergy, tumors and parasites (dogs—*Pneumonyssoides*; dogs and cats—*Cuterebra* and *Capillaria*; cats—*Linguatula*)
- Diseases outside of the nasal passages—pneumonia, enlarged esophagus (known as “megaesophagus”), long-term (chronic) vomiting, cricopharyngeal achalasia (a condition of the nerves and muscles in the upper esophagus, in which the muscles do not relax adequately to allow swallowing); discharge from these conditions may be forced up into the back of the throat, resulting in reverse sneezing, sneezing, and/or discharge from the nose
- Gagging is often due to discharges being coughed up from the lower airways and into the voice box (larynx) or upper windpipe (trachea); to dysfunction of the voice box (larynx) resulting in airway aspiration; or to vomiting from diseases of the esophagus (the tube running from the throat to the stomach) and gastrointestinal tract (stomach and intestines)

RISK FACTORS

- Poorly vaccinated animals may develop infection/inflammation of the upper airways (nose, nasal passages, and upper windpipe) and sneezing (for example, kittens with upper respiratory infections caused by viruses, puppies with kennel cough)
- Coughing may move discharges into the back of the throat and lead to reverse sneezing
- Long-term (chronic) dental disease may cause inflammation of the nose (known as “rhinitis”) and either sneezing or reverse sneezing
- Mites (type of parasite) in the nose may cause both sneezing and reverse sneezing in dogs (but not in cats)
- Foreign bodies in the nose will elicit sneezing and/or reverse sneezing, depending on their location; outdoor animals perhaps more at risk

TREATMENT

HEALTH CARE

- Removal of the agent that is irritating the lining of the nose, voice box (larynx), or throat (where and when possible) will result in relief from these reflexes

SURGERY

- Depending on the underlying cause, anesthesia for surgery or use of a special lighted instrument called an “endoscope” (general term for procedure is “endoscopy”) may be needed to remove a foreign body causing discharge from the nose
- Anesthesia and dental surgery may be needed to remove an abscessed tooth
- Surgery may be necessary to treat disease of the voice box (larynx); however, risk of aspiration pneumonia should be considered when gagging is a prominent feature of the disease, due to an increased risk of aspiration pneumonia

MEDICATIONS

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

- No drug specifically suppresses these reflexes—treatment is directed at the underlying irritating agent
- Nasal bacterial infections (secondary to foreign body, dental disease, tumor) are best treated with antibiotics directed against gram-positive bacteria (most common)
- When no underlying nasal condition is found, long-term, non-specific treatment with doxycycline and piroxicam may be tried
- Nasal mites (type of parasite) are treated with ivermectin or milbemycin; all dogs in the household should be treated to prevent reinfection
- Lower airway diseases with excess discharge are treated with gram-negative spectrum antibiotics, if bacterial infection is confirmed
- For non-specific airway inflammation, use an anti-inflammatory (such as prednisolone or piroxicam), if no infection is confirmed
- Decongestants (such as ephedrine) or antihistamines may reduce discharges and sneezing in some cases

FOLLOW-UP CARE

PATIENT MONITORING

- Depends on underlying cause

PREVENTIONS AND AVOIDANCE

- Depends on underlying cause
- Vaccinate against diseases that infect the upper respiratory tract (such as upper respiratory infections caused by viruses in kittens and cats, kennel cough in puppies and dogs)

POSSIBLE COMPLICATIONS

- Serious aspiration pneumonia may develop in some cases of gagging due to disease of the voice box (larynx)

EXPECTED COURSE AND PROGNOSIS

- Nasal mites (type of parasite) should respond within 3 weeks of treatment
- Gagging and reverse sneezing secondary to non-infectious causes resolve slowly

KEY POINTS

- Sneezing, reverse sneezing, and gagging are normal reflexes; diagnostics testing is required to determine the underlying cause and to allow appropriate treatment
- Close contact with other animals should be limited until treatment for the underlying cause is completed
- Episodes of paroxysmal reverse sneezing may be decreased by stimulating the dog to swallow (such as by rubbing the throat, giving water)