Vomiting in Dogs

Drs. Foster & Smith Educational Staff

What is vomiting?
Vomiting is the forceful expulsion of stomach contents through the mouth.

What is the difference between vomiting and regurgitation?
In regurgitation, the food that is expelled comes from the mouth or esophagus, versus the stomach. Vomiting involves the forceful contraction of stomach muscles; regurgitation does not. Both vomiting and regurgitation can occur right after eating or drinking, or up to several hours later.

If my dog is vomiting, when should I call my veterinarian?
If your dog is bright and alert, and only vomits once, it is probably not necessary to call your veterinarian. Many dogs will vomit after eating grass, for instance. If your dog vomits more than once or appears sick, call your veterinarian. Your veterinarian will ask you a series of questions to determine how severe the vomiting is. It will be helpful for your veterinarian to know when the vomiting started, how many times your dog has vomited, what the vomit looks like, and if your dog is uncomfortable. It is especially important that you call your veterinarian immediately if:

- There is blood in the vomit
- Your dog acts like he wants to vomit, but nothing is expelled
- Your dog appears bloated or has a swollen abdomen
- You suspect your dog may have eaten something toxic or poisonous
- Your dog has a fever or is depressed
- Your dog's gums are pale or yellow
- Your dog is a puppy or has not received all his vaccinations
- Your dog appears to be in pain
- Your dog also has diarrhea

Do not give your dog any medications, including over-the-counter human medications unless advised by your veterinarian to do so.

How is the cause of vomiting diagnosed?
There are many causes of vomiting (See Table 1: Causes, Diagnosis and Treatment of Vomiting in Dogs). It is important to determine the cause so the appropriate treatment can be given. Your veterinarian will combine information from you, the physical exam, and possibly laboratory and other diagnostic tests to determine the cause of the vomiting.

When dogs and cats vomit, their abdominal muscles contract very strongly multiple times before the food is actually ejected from the mouth. It may appear as though the whole body is involved in the effort. Often they will go through this process several times in a row.

Onset of symptoms - How suddenly the symptoms appeared is a good clue to what the cause of the vomiting may be. If the symptoms appeared suddenly, the condition is called "acute". If the symptoms remain over a long period of time (weeks), the vomiting is called "chronic".

Appearance of vomit - Distinguish vomiting from regurgitation (expelling food that has not yet reached the stomach), whether the vomit contains food or just fluid, color of vomit, presence of blood or bile in the vomit.

Degree of nausea - As shown by such signs as licking or smacking of lips, drooling, swallowing, or gulping. Timing of vomiting in relation to meals or drinking should also be noted.

Severity - How often the vomiting occurs and whether it is projectile.

Presence of other signs - Fever, pain, dehydration, urinary changes, depression, weakness, diarrhea, or weight loss. Vomiting is often caused by diseases not directly related to conditions of the digestive tract, such as hepatitis, pancreatitis, diabetes, and kidney disease.

Medical History - Your veterinarian will ask about your dog's medical history including vaccinations, what type of wormer the dog has received and how often, contact with other dogs, diet, any access to garbage or toxins, and any medications. The more information you can offer, the easier it will be to make a diagnosis.

Physical examination - Your veterinarian will do a complete physical exam including taking your dog's weight and temperature, checking the heart and respiration, looking in the mouth, palpating the abdomen, checking for dehydration, and performing a rectal exam.

Laboratory and diagnostic tests - In some cases of vomiting, your veterinarian will recommend a fecal flotation. This is a test to check for parasites such as intestinal worms or Giardia. If a bacterial infection is suspected, a fecal culture and sensitivity are performed. In cases of certain viral diseases, such as parvovirus, other tests on the feces may aid in the diagnosis.

If the dog is showing signs of illness, a complete blood count and chemistry panel are often recommended. Special blood tests may also be conducted if certain diseases are suspected.

Radiographs (x-rays) are appropriate if a tumor, foreign body, or anatomical problem is suspected. Other diagnostic imaging such as a barium study or ultrasound may also be helpful. Examinations using an endoscope or colonoscopy may be indicated.

For some diseases, the only way to make an accurate diagnosis is to obtain a surgical biopsy and have it examined microscopically.

How is vomiting treated?
Because there are so many causes of vomiting, the treatment will vary (See Table 1: Causes, Diagnosis and Treatment of Vomiting in Dogs).

In many cases of vomiting in dogs, it is recommended to withhold food for at least 24 hours, and provide small amounts of water frequently. Then, a bland diet such as boiled hamburger and rice is offered in small amounts. If the vomiting does not recur, the dog is slowly switched back to his normal diet or a special diet over the course of several days.

For some cases of vomiting, it may be necessary to modify the diet permanently. Special foods may need to be given as a way to avoid certain ingredients, add fiber to the diet, decrease the fat intake, or increase digestibility.

If intestinal worms are present, the appropriate wormer will be prescribed. Few wormers kill every kind of intestinal worm, so it is very important that the appropriate wormer be selected. In most cases, it is necessary to repeat the wormer one or more times over several weeks or months. It is also important to try to remove the worm eggs from the environment. The fecal flotation test looks for worm eggs, and if no eggs are being produced, the test could be negative even though adult worms or larvae could be present. For this reason, in some cases, even if the fecal flotation test is negative, a wormer may still be prescribed.

If dehydration is present, it is usually necessary to give the animal intravenous or subcutaneous fluids. Oral fluids are often inadequate during vomiting or diarrhea since they may pass through the animal too quickly to be sufficiently absorbed.

Antibiotics are given if the vomiting is caused by bacteria. They may also be given if the stomach or intestine has been damaged (eg., blood in the stool or vomit would indicate an injured intestine or stomach) and there is a chance that the injury could allow bacteria from the digestive tract into the blood stream.

In some cases, medications may be given to decrease vomiting. As a general rule, these drugs should not be given if the dog could have ingested a toxin or may have a bacterial infection. Therefore, it is always important to have an accurate diagnosis before use of these drugs.

Table 1: Causes, Diagnosis and Treatment of Vomiting in Dogs

Cause	Example	Dogs Most at Risk	Symptoms	Diagnosis	Treatment
Gastric dilitation and volvulus (bloat)		Deep chested, large breed dogs	Vomiting, retching, bloated abdomen	History; physical exam; radiographs	Surgery; supportive care; this is an emergency condition and requires immediate treatment

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Benign gastric outflow obstruction	Pyloric stenosis, polyps	Boxers, Bulldogs, Boston Terriers, young animals	Intermittent vomiting, weight loss, dehydration	History, physical exam, radiographs, endoscopy	Surgery to correct outflow obstruction; antacids
Diet change	Changing dog food brand or feeding a high fat meal	Those switching from a consistent diet	Usually no other signs of being ill	History and physical exam; tests (eg., fecal flotation) to rule out other causes	Withhold food as needed then switch to bland diet and then slowly back to normal diet
Food intolerance or sensitivity	Sensitivity to or inability to digest or absorb certain foods such as milk or gluten	Gluten hypersensitivity: Irish setters and soft coated Wheaton terriers	Sudden onset of diarrhea, sometimes with gas	Monitor response to removing ingredient from diet and then adding it again (food trial)	Withhold food as needed then switch to diet without the offending ingredient
Intestinal parasites	Hookworms	Young dogs	Diarrhea, vomiting, weakness, pale gums, dehydration, anemia, swollen abdomen, black and tarry stools	Fecal flotation exam	Multiple treatments with appropriate wormer; decontaminate environment; supportive care
	Giardia	Usually young animals or those who are immunosuppressed	Mild to severe soft diarrhea with mucus and a bad odor; weight loss, abdominal pain and vomiting; often intermittent	ELISA test on feces; fecal flotation exam or microscopic exam of feces; difficult to diagnose - often need multiple samples over several days	Metronidazole, albendazole or febantel; bathing and sanitation to remove Giardia from coat and environment. Reinfection commonly occurs.
Garbage ingestion		Those left unattended or unsupervised	Diarrhea, vomiting	History and physical exam	Withhold food as needed then switch to bland diet and then slowly back to normal diet
Bacterial infection	*Salmonella, E. coli, Clostridia*	Young kenneled dogs or those who are immunosuppressed	Mild to severe bloody diarrhea with loss of appetite, depression, fever and vomiting	Fecal culture and sensitivity; microscopic exam of feces	Antibiotics; intravenous fluids and supportive care in more serious conditions
Viral infections	Parvovirus	Young dogs who have not received full series of parvo vaccinations	Loss of appetite, fever, depression, vomiting, diarrhea, dehydration, abdominal pain	History, physical exam, fecal test for presence of parvovirus, white blood cell count	Intravenous fluids, antibiotics to prevent secondary bacterial infection, withhold food and water
	Distemper	Young dogs who have not received full series of distemper vaccinations	Loss of appetite, fever, depression, cough, vomiting, diarrhea; later see neurological signs	History and physical exam; tests (eg., fecal flotation) to rule out other causes; viral testing on blood, urine, or other body fluids	Intravenous fluids if dehydrated; antibiotics to prevent secondary bacterial infections. Prognosis is poor

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	Coronavirus	More severe in very young dogs, especially those with other intestinal diseases; more of a problem in animal shelters or where there are large numbers of stressed dogs	Diarrhea, poor appetite, lethargy, sometimes vomiting	Virus isolation or electron microscopy of biopsy	Intravenous fluids if dehydrated; antibiotics to prevent secondary bacterial infections
Toxins	Strychnine, ethylene glycol, lead, zinc	Those left unattended or unsupervised	Loss of appetite, depression, vomiting, dehydration, abdominal pain	History and physical exam; tests (eg., fecal flotation) to rule out other causes; testing of blood, feces or vomit for presence of toxin; x-rays	Depends on toxin
Idiopathic Hemorrhagic Gastroenteritis		Small breed dogs	Sudden onset of bloody vomiting and diarrhea, depression, abdominal pain, black and tarry stools, shock	History; physical exam; complete blood count; tests (eg., fecal flotation) to rule out other causes	Intravenous fluids, antibiotics to prevent secondary bacterial infection, withhold food and water as needed
Small intestinal bacterial overgrowth (SIBO); also called antibiotic resistant diarrhea		German shepherds, dogs with other intestinal diseases	Intermittent watery diarrhea, poor growth or weight loss, increased gas, sometimes vomiting	History; physical exam; intestinal biopsy; tests (eg., fecal flotation) to rule out other causes; ultrasound; blood tests (eg., serum folate and cobalamin, bile acids)	Antibiotics (at least 4-6 weeks); modify diet
Tumors	Lymphoma, adenocarcinoma	Middle-age or older	Chronic diarrhea, weight loss, poor appetite; may see vomiting and dark, tarry stools	History; physical exam; intestinal biopsy	Chemotherapy or surgery depending upon the type of tumor
Idiopathic inflammatory bowel disease	Granulomatous enteritis, eosinophilic gastroenterocolitis, or lymphocytic/ plasmacytic enteritis (LPE)	Middle-age; LPE in German Shepherds and Basenjis	Chronic vomiting and diarrhea possibly with blood and/or mucus; sometimes straining, mild weight loss, and/or black and tarry stools	History; physical exam; intestinal biopsy; tests (eg., fecal flotation) to rule out other causes	Modify diet, wormers and antibiotics to treat or prevent hidden infections; probiotics; anti-inflammatory drugs; immuno-suppressing drugs if no response to other treatment

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Histoplasma enteritis or colitis		Those living in the central US along the Mississippi, Ohio, and Missouri Rivers	Loss of appetite, mild fever, depression, severe weight loss, vomiting, blood in stool, straining; may also have respiratory signs	Endoscopy and biopsy	Itraconazole, ketoconazole or amphotericin B
Obstruction	Foreign body, intussusception, pyloric stenosis, splenic torsion		Diarrhea, vomiting, loss of appetite; as progresses see depression and/or possible abdominal pain	History; physical exam; x-rays; barium series; ultrasound; exploratory surgery	Surgery
Pancreatitis		Dogs eating a high-fat meal; Schnauzers and Yorkshire terriers; middle-aged dogs	Vomiting, dehydration, painful abdomen	History; physical exam;chemistry panel; other blood tests (e.g., PLI or pancreatic lipase immunoreactivity)	Restrict oral intake as needed; administer fluids; provide pain control and other supportive care; medications to control vomiting; maintain on low fat diet
Liver or Biliary Disease	Hepatitis, biliary obstruction		Vomiting; yellow discoloration of gums and whites of the eyes	History; physical exam; chemistry panel; other blood tests; x-rays and/or ultrasound; biopsy	Medications and fluids to control effects of vomiting and liver disease; possible surgery depending on cause
Kidney Disease	Pyelonephritis, glomerulonephritis, urinary obstruction	Older dogs	Vomiting, increased thirst and urination; decreased or no urination if obstructed	History; physical exam; chemistry panel; urinalysis; x-rays and/or ultrasound	Diet changes; medications and fluids to control effects of vomiting and kidney disease; remove any obstruction
Peritonitis	Perforated intestine		Vomiting, painful abdomen; sometimes fever	History; physical exam; chemistry panel; complete blood count; x-rays and/or ultrasound	Antibiotics, fluids; medications to control vomiting; possible surgery depending upon cause
Pyometra (infection of the uterus)		Unspayed dogs who have recently had an estrus (heat)	Vomiting; increased thirst and urination	History; physical exam; complete blood count; x-rays and/or ultrasound	Surgical removal of uterus; medical treatment
Diabetes mellitus		Older and female dogs; Schnauzers and Poodles	Vomiting; increased thirst and urination; sometimes depression	History; physical exam; chemistry panel; urinalysis	Insulin therapy; dietary management; supportive care
Vestibular disease or brain disease		Older dogs	Incoordination; vomiting	History; physical exam; possibly MRI	Medications to control vomiting; depends on specific condition

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Medications	Digoxin, erythromycin, chemotherapy		Vomiting	History; physical exam; drug levels	Medications to control vomiting; change drug therapy
Septicemia			Vomiting, fever	History; physical exam; blood culture	Antibiotics; supportive care
Hypo-adrenocorticism (Addison's disease)		Young to middle-age female dogs	Vomiting	History; physical exam; chemistry panel; complete blood count	Medications to control effects of hypo-adrenocorticism
Gastritis	*Helicobacter* infection; high blood urea nitrogen (BUN); stomach worm		Vomiting	History; physical exam; endoscopy	Medications to control vomiting and protect stomach; treat underlying cause; fluids, if necessary
Ulcers			Vomiting; blood in vomit; black, tarry stools	History; physical exam; endoscopy or barium series	Medications to control vomiting and protect lining of stomach and intestines; treat underlying cause; fluids, if necessary
Gastroesophageal reflux		More common in brachycephalic breeds (eg, bulldogs and pugs)	Drooling, licking of lips, vomiting or regurgitation, bad breath	History; physical exam; endoscopy or barium series	Feed small, low-fat meals; medications to help protect esophagus, reduce stomach acid and increase movement of food out of stomach
Bilious vomiting syndrome		May be more common in dogs with giardiasis or inflammatory bowel disease	Vomiting of bile on an empty stomach (usually late at night or early morning)	History; physical exam; endoscopy or barium series	Feed a late night meal; medications to help protect the stomach and increase movement of food out of stomach
Motion sickness			Drooling, vomiting while riding in a vehicle	History; physical exam	Medications to control vomiting

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