



Chocolate Poisoning

Basics

OVERVIEW

- Sudden (acute) gastrointestinal, nervous system, and heart problems caused by excessive intake of chemicals (known as methylxanthine alkaloids, such as theobromine and caffeine) present in chocolate and cocoa bean hulls, used for mulch
- Dogs are poisoned most frequently based on their non-selective appetite, their access to chocolate or chocolate-containing products, and their ability to consume large amounts of chocolate
- Other species may be affected, but they have a more limited access to chocolate and cocoa bean hull mulch than dogs; cocoa bean hulls may be a source of poisoning in horses and poultry
- Theobromine is the chemical that is in the highest concentration of methylxanthines in chocolate products and in cocoa bean hull mulch; caffeine is in a much lower concentration in these products
- Theobromine has a longer half-life in dogs than in people, meaning that it stays in the dog's body for a longer time period than it does in people
- Cocoa bean hull mulch is an increasingly popular product for using around gardens; it is composed of the shells (or hulls) of the cocoa bean and is produced during processing of the bean for chocolate

SIGNALMENT/DESCRIPTION OF PET

- Dogs and rarely cats
- Small dogs—may be more at risk (amount of chocolate available compared to dog's body weight)
- Puppies and young dogs—may be more likely to ingest large amounts of unusual foods, such as chocolate or chocolate-containing foods, or cocoa bean hull mulch

SIGNS/OBSERVED CHANGES IN THE PET

- Signs are seen after recent chocolate or cocoa bean hull ingestion (family may find evidence of chewed containers or remnants of packaging from chocolate or chocolate-containing products)
- Vomiting and diarrhea—often the first reported signs; occur 2–4 hours after ingestion
- Early restlessness and increased activity or nervousness
- Frequent urination (known as “polyuria”)—may result from diuretic action of chemicals in chocolate
- Blood in the urine (known as “hematuria”)—occasional sign
- Advanced signs—stiffness; excitement; seizures
- Increased body temperature (known as “hyperthermia”)
- Exaggerated reflexes (known as “hyperreflexia”)
- Muscle rigidity
- Dilated pupils (known as “mydriasis”)
- Rapid breathing (known as “tachypnea”)

- Rapid heart rate (known as “tachycardia”)—heart rate may reach 200 beats per minute or more
- Irregular heartbeats (known as “arrhythmias”)
- High blood pressure (known as “hypertension”)
- Increased thirst (known as “polydipsia”)
- Death—12–48 hours after ingestion

CAUSES

- Usually some form of processed chocolate (used for baking and candies, such as milk chocolate)—contain high concentrations of theobromine and caffeine
- Dogs—eating cocoa bean hulls used as garden mulch

RISK FACTORS

- Dogs—most commonly affected because they consume large amounts of many foods quickly
- Chocolate—highly palatable or tasty and attractive; often readily available and unprotected in homes and kitchens, especially around the holidays when chocolate products and candies are common
- Use of cocoa bean hull mulch in the garden

Treatment

HEALTH CARE

- Describe the type of chocolate and amount of exposure to your veterinarian; take your pet to a veterinary hospital as a potential poisoning emergency
- Fluid therapy—prevent dehydration and promote production of urine; correct electrolyte disturbances caused by vomiting, as necessary
- Control seizures
- Detoxification (if not having seizures or seizures are controlled)—your veterinarian may induce vomiting (known as “emesis”), flush the stomach with fluids (known as “gastric lavage”), and administer activated charcoal
- Control overheating (hyperthermia)
- Treat rapid heart rate (tachycardia)
- Allow pet to urinate frequently or catheterize the bladder to remove urine to reduce the possibility of the methylxanthines being reabsorbed into the body from the urine

ACTIVITY

- Avoid stress and excitement as these could make nervous system signs (hyperreflexia or seizures) worse

DIET

- Suddenly (acutely) affected pet—do not feed
- Recovering or convalescent pet—bland diet for several days to allow recovery from gastrointestinal problems

SURGERY

- Rarely, a solid mass or hard lump of chocolate could form, which must be removed surgically

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

- Induce vomiting (emesis)—*only if the pet is not having seizures*—apomorphine, syrup of ipecac, or 3% hydrogen peroxide
- Flush the stomach (gastric lavage)—only before onset of vomiting and other clinical signs or vomiting has been controlled, if drugs to induce vomiting are not effective, seizures are controlled, and an endotracheal tube is in place
- Once vomiting is controlled—activated charcoal to attract and keep the remaining alkaloids in the gastrointestinal tract
- Osmotic cathartic—sodium sulfate or sorbitol 70% promotes gastrointestinal elimination of chocolate

- Hyperactivity and seizures—controlled with diazepam
- Ventricular rapid heart rate (known as “tachycardia”) in dogs—lidocaine (without epinephrine); lidocaine is not recommended in cats
- Serious abnormal heart rhythms (arrhythmias) that persist after medical treatment—metoprolol or propranolol; metoprolol preferred but may be difficult to obtain; may use oral therapy once the pet is stable; monitor electrocardiogram (ECG) and watch for hypotension (a possible complication to this treatment)
- In rare cases of slow heart rate (known as “bradycardia”)—atropine
- Control may be obtained with methocarbamol
- If response to diazepam inadequate—consider phenobarbital
- For refractory seizures—pentobarbital; “refractory seizures” are seizures that do not respond or are not controlled with treatment

Follow-Up Care

PATIENT MONITORING

- Electrocardiogram (ECG) to evaluate and monitor abnormal heart rhythms or irregular heartbeats (arrhythmias)
- Watch for mild to moderate kidney disease (known as “nephrosis”) in recovering pets

PREVENTIONS AND AVOIDANCE

- Chocolate is among the 20 most common poisonings reported in recent literature, by small animal veterinary practices, animal poison control centers, and human poison control centers Keep chocolate in a secure location, out of reach of pets
- Do not use cocoa bean hull mulch in areas accessible to pets

POSSIBLE COMPLICATIONS

- Pregnant pet—risk for abnormal development of fetus leading to birth defects of newborns
- Nursing pets—overstimulation of nervous system in nursing newborns

EXPECTED COURSE AND PROGNOSIS

- Expected course—12–36 hours, depending on dosage of chocolate and effectiveness of decontamination and treatment
- Successfully treated pets—usually recover completely
- Prognosis—good if oral decontamination occurs within 2–4 hours of ingestion; guarded with advanced signs of seizures and irregular heartbeats (arrhythmias)

Key Points

- Chocolate ingestion is hazardous to pets; if you suspect your pet has eaten chocolate, chocolate-containing products, or cocoa bean hull mulch, contact your veterinarian immediately
- Describe the type of chocolate and amount of exposure to your veterinarian; take your pet to a veterinary hospital as a potential poisoning emergency
- Chocolate is among the 20 most common poisonings reported in recent literature by small animal veterinary practices, animal poison control centers, and human poison control centers
- Keep chocolate in a secure location, out of reach of pets
- Be especially careful around holidays when chocolate products and candies are readily available
- Do not use cocoa bean hull mulch in areas accessible to pets

Notes

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