

+ EMERGENCY ACTION GUIDELINES

CANNABINOID POISONING

SUSPECTED/WITNESSED/CONFIRMED EXPOSURE

Owners might be reluctant to admit/or ignorant of exposure. See below for communication tips and diagnosis

INTERVENTION REQUIRED

- In most cases, cannabinoid intoxication is benign.
- The level of intervention required should be adapted to each patient based on the following:**
- Low ingested dose, or mild to moderate clinical signs: Rest in a quiet environment and provide water and activated charcoal.
- High ingested dose, marked clinical signs, or a very young patient: hospitalisation for treatment and monitoring.

ASYMPTOMATIC

INDUCE EMESIS

IN CASE OF RECENT INGESTION AND UNALTERED MENTAL STATUS

THC may have a significant anti-emetic effect
Dogs: Emedog @ 0.1mg/kg SC
Cats: alpha 2 agonist¹⁷

PERFORM GASTRIC LAVAGE

IF EMESIS IS CONTRAINDICATED/UNSUCCESSFUL OR LARGE DOSE INGESTED

Under general anaesthesia followed by **Carbodote** administration via stomach tube

ADMINISTER ACTIVATED CHARCOAL (AC)

ORALLY IN CONSCIOUS ANIMALS ONLY, OR VIA NASOGASTRIC TUBE

Carbodote Prime: (AC + sodium sulphate), single oral administration.

Due to enterohepatic recirculation¹, this should be followed by:

Carbodote Repeat: (AC only), orally every 4-6 hours for 24-48 hours.

Consider **Carbodote Liquid:** (AC only), via nasogastric tube when necessary.

(Refer to packaging for instructions on how much to administer).

SYMPTOMATIC

SUPPORTIVE CARE AND MONITORING

Thermoregulation and nursing care:

- Keep the patient in an environment with reduced stimuli and risk of injury.
- Marijuana tends to cause hypothermia, synthetic cannabinoids tend to cause hyperthermia³.
- Seizures can further increase the temperature and lead to heat stroke. Patients may require active cooling.
- If the patient is obtunded or profoundly sedated: rotate body and lubricate eyes every 4-6 hours.
- Place a urinary catheter and monitor urine output in cases of urinary incontinence.

In more severely affected patients:

- Monitor vitals including pulse and respiratory rate, blood pressure and temperature every 1-6 hours.
- Monitor neurological function.
- Obtain baseline blood parameters (incl. electrolytes/ acid base status).

MEDICATION

1. Anti-emetics (as needed):

Be careful if the patient is at risk of foreign body obstruction.

2. IV fluids:

Administer IV crystalloids @ 1-1.5x the maintenance rate. Adapt rate to the patient's hydration status.

3. Tremors:

Ziapam (diazepam) 0.5-2mg/kg IV **OR** Methocarbamol 55-220 mg/kg, slow IV³ (no more than 2ml/min) or 20-45mg/kg PO⁵ q8h. Do not exceed 330mg/kg/day.

4. Seizures:

Ziapam (diazepam) 0.5mg/kg slowly IV (up to 3 times, at least 10 minutes apart). Phenobarbital or injectable anaesthetics may be required based on severity.

5. Bradycardia:

Atropine⁶ (0.01-0.03mg/kg IV).

6. Agitation:

In case of severe agitation, consider sedating the patient (e.g. butorphanol) or using benzodiazepines.

7. Consider the use of Intravenous Lipid Emulsions (IVLEs) for the most severe cases:

20% lipid emulsion: 1.5 ml/kg IV bolus followed by 0.25 ml/kg/min for 30-60 minutes.

Can be repeated after approx. 4 hrs (check for lipaemia).

CLINICAL SIGNS^{1,3,4,8}

Clinical signs typically occur:

- 6-12 mins following inhalation.
- 30 mins-3 hours following ingestion

Neurological clinical signs predominate:

- Apathy, CNS depression, ataxia, urinary incontinence, hyperaesthesia, mydriasis, bradycardia, increased sensitivity to motion or sound.

Less often:

- Agitation, aggression, bradypnoea, hypotension, tachycardia, nystagmus.

Rarely:

- Seizures and coma, death.

Also:

- Gastrointestinal signs (vomiting, ptialism).
- Pancreatitis (ingestion of baked goods containing cannabis oil/butter).

Synthetic cannabinoids have more potent psychotropic effects than naturally occurring cannabinoids.

Occasionally, clinical signs can alternate between CNS depression and CNS stimulation.

DIFFERENTIAL DIAGNOSIS¹

CNS depression:

alcohols, opiates, benzodiazepines, muscle relaxants, alphachloralose, macrocyclic lactones

GI and CNS signs:

ethylene glycol

CNS stimulation:

bromethalin, macrocyclic lactones, other illicit drugs, metaldehyde, organophosphates, carbamates, nicotine, amphetamines, tremorgenic mycotoxins

Urinary incontinence is rarely seen in other intoxications.

DIAGNOSIS

The diagnosis is based on history of ingestion/inhalation, clinical signs and/or demonstration of the toxin in blood, urine or faeces.

Human OTC urine test kits detect a metabolite, THC-COOH, produced in low or negligible amounts by dogs, making those tests unreliable².

The LC/MS analysis method can detect THC and several of its metabolites in serum. False negatives are more frequent when testing urine with LC/MS².

TIPS FOR COMMUNICATING WITH THE OWNER

- Ask them privately about possible exposure [inhalation/ingestion] to cannabinoids (at home or in public places such as parks, concert venues, social places).
- Ask about possible cannabinoid use by neighbours, children, etc.
- Do not judge or blame and remind them that you are not the police.
- Clarify that for them to be honest is in their pet's best interest and recovery.
- Educate about intoxication risk of cannabinoids after recovery/diagnosis.

CANNABINOIDS KEY FACTS

- Toxicity can occur via ingestion or inhalation.

Common sources:

- fresh and dried plant material (concentration of toxins depends on part of the plant i.e. flowers > leaves > stalk)
- smoke
- baked goods
- oils
- vape liquids

- Baked goods can also contain other harmful substances (chocolate, sweeteners, nicotine, raisins,...).

- Cannabinoids are lipophilic substances. Several case reports suggest a benefit of IVLE therapy in cannabis poisoning¹.

Toxic doses:

- Dog oral >84.7mg dried leaves/kg⁸
- Dog oral >3g THC/kg^{4,8}

- Cannabinoids undergo enterohepatic recirculation so consider repeated activated charcoal.

- When ingested, cannabinoids undergo a first pass effect. Inhalation is unaffected by this.

- Cannabinoids rapidly distribute in fatty tissue and are eliminated quickly from peripheral blood.

- Clinical signs are common but mortality is low. Recovery takes 24-36 hours, up to 72 hours in the most severe cases¹.

- The prognosis is usually favourable to good.

THIS DOCUMENT IS INTENDED FOR USE AS A GUIDELINE ONLY. DOSES ARE REFERENCED AS AT THE PUBLICATION DATE. INDIVIDUAL CASES AND TOXIC DOSES MAY VARY.

+ USEFUL CONTACTS

DÔMES PHARMA

Your partner in poisoning.

www.domespharma.co.uk | T 0800 0385868 | E help@domespharma.com

VETERINARY PATHOLOGY GROUP

Toxicology testing.

www.thevpg.co.uk | T 0113 2870175

VETERINARY POISONS INFORMATION SERVICE (VPIS)

Dedicated poisoning information service.

www.vpisglobal.com | T 0207 30 55 055

TOX BOX/ELIXIR SERVICE

Immediate access to emergency poisoning products.

www.vpisglobal.com | T 0207 30 55 055

+ PRODUCTS

EMEDOG

- Veterinary licensed apomorphine for dogs
- Packs of 5 or 20x 1ml vials, with a 4-year, unopened shelf life



ZIAPAM

- The first veterinary licensed injectable diazepam for dogs and cats
- Packs contain 6 x 2ml vials of 5mg/ml



DON'T FORGET ACTIVATED CHARCOAL!

- Activated charcoal helps in the adsorption of multiple undesirable substances⁹
- Available as liquid or gel
- Repeated administrations will be required for substances that are enterohepatically recycled
- Take a look at our range of activated charcoals

THE **CARBODOTE** RANGE

Carbodote is a complementary feed.

THE **ANTI-TOX** RANGE
BE PREPARED FOR POISONING

TO FIND OUT MORE ABOUT THE ANTI-TOX RANGE FROM DÔMES PHARMA, VISIT WWW.DOMESPHARMA.CO.UK

DP DÔMES PHARMA

Carbodote is a complementary feed. **Emedog, 1 mg/ml, solution for injection for dogs** contains Apomorphine. Legal category POM-V. For the induction of emesis in dogs. **Ziapam 5mg/ml solution for injection for cats and dogs** contains Diazepam. Legal category POM-V. In cats and dogs for the short-term management for convulsive disorders and skeletal muscle spasms of central and peripheral origin. As part of a pre-anaesthetic or sedation guidelines. **Use Medicines Responsibly. www.noah.co.uk/responsible.** For further information and to view the full Summary of Product Characteristics, please contact TVM-UK Animal Health Ltd, Kirtlington Business Centre, Slade Farm, Kirtlington, Oxfordshire, UK. OX5 3JA. Tel. 0800 0385868. Email help@domespharma.co.uk. Dômes Pharma is the trading name of TVM UK Animal Health Ltd. Prescription decisions are for the person issuing the prescription alone.

References: 1. Brutlag, A. G.; Hommerding, H. (2018) Toxicology of Marijuana, Synthetic Cannabinoids, and Cannabidiol in Dogs and Cats. In: Vet Clin North Am Small Anim Pract, vol.48, n°6, p.1087-1102. 2. Fitzgerald, Alyson H.; Zhang, Yuntao; Fritz, Scott; Whitehouse, William H.; Brabson, Tamera; Pohlman, Lisa et al. (2021) Detecting and quantifying marijuana metabolites in serum and urine of 19 dogs affected by marijuana toxicity. In: Journal of Veterinary Diagnostic Investigation : Official Publication of the American Association of Veterinary Laboratory Diagnosticians, Inc.vol.33, n°5, p.1002-1007. 3. Ramesh C. Gupta, éd. (2018) Veterinary toxicology, Basic and clinical principles. 3e édition. London, United Kingdom:Elsevier/Academic Press. 4. Janeczko, Agnieszka; Zawadzki, Marcin; Szpot, Pawel; Niedzwiedz, Artur (2018) Marijuana intoxication in a cat. In: Acta Veterinaria Scandinavica, vol.60, n°1, p.44. 5. Allerton, F. (2023). Small Animal Formulary, 11th Edition. Part A: Canine and Feline. *British Small Animal Veterinary Association*. 6. TVM329CarbAd. 7. Harvey, A, Tasker, S (eds.) (2013) BSAVA Manual of Feline Practice. Gloucester: British Small Animal Veterinary Association Pp. 139. 8. Janczyk, Pawel, Caroline W. Donaldson, and Sharon Gwaltney. "Two hundred and thirteen cases of marijuana toxicoses in dogs." *Veterinary and human toxicology* 46.1 (2004): 19-20.