

+ EMERGENCY ACTION GUIDELINES

BLUE-GREEN ALGAE POISONING

SUSPECTED/WITNESSED/CONFIRMED EXPOSURE

- Blue-green algae, also known as cyanobacteria thrive in a warm environment (typically from May to September) and **all cases should be reported to the Environment Agency.**
- They form blooms (excessive bacterial growth) in warm, stagnant water bodies e.g. lakes and ponds, often appearing as blue-green or greenish-brown scum/mats on the water surface. Blooms typically accumulate near shorelines making them more accessible to animals.^{1,4}
- Many (but not all) cyanobacteria species produce toxins (cyanotoxins) that are harmful to animals. The two main types of cyanotoxins are neurotoxins (anatoxins) and hepatotoxins (microcystins and nodularins).
- These toxins have a high acute toxicity. Any exposure requires immediate veterinary intervention.^{2,5}
- Exposure can occur through drinking or swimming in contaminated water, or by licking their fur after contact. Toxicity has been reported in dogs following ingestion of blue-green algae supplements.⁴
- As toxins are released after cell death, treatment of water to eliminate blue-green algae can temporarily increase the risk of toxicity to animals.⁴

ASYMPTOMATIC

GUT DECONTAMINATION

INDUCE EMESIS UNLESS CONTRAINDICATED

Only if ingestion was recent (< 1 hour) and the patient is asymptomatic.⁴

Dogs: Emedog @ 0.1mg/kg SC

Cats: alpha 2 agonist³

ADMINISTER ACTIVATED CHARCOAL (AC)

- Carbodote Prime:** (AC + sodium sulphate) once.

Due to potential enterohepatic recirculation,¹ this should be followed by:

- Carbodote Repeat** or **Carbodote Liquid** (AC only) every 4-6 hours for 24-48 hours.

(refer to packaging for instructions on how much to administer)¹

DERMAL DECONTAMINATION

- Stabilise the symptomatic patient first.
- Wash skin and fur thoroughly.
- Wear protective clothing (risk of dermatitis).

PROGNOSIS

- Prognosis is generally guarded. Toxicity is often fatal.^{2,5}
- Surviving patients may be left with chronic hepatitis or renal failure.⁴
- For patients with only dermatological signs prognosis is good.⁴

SYMPTOMATIC

CLINICAL SIGNS^{1,2,4,5}

Clinical signs depend on the type of cyanobacteria and toxin. More than one type could be involved at the same time.

It is not possible to identify the species by visual inspection. Confirmation of exposure (e.g. vomit or stool samples) is rarely performed due to the rapid onset of signs.

Gastrointestinal effects:

- Salivation, vomiting, haematemesis, abdominal pain, sometimes diarrhoea.

Dermal effects:

- Rarely dermatitis, pruritus, urticaria.

Neurotoxins:

- Rapid onset of signs (within minutes, up to 1 hour). Sudden death is possible.
- Muscle tremors, muscle rigidity, ataxia, paralysis, seizures, bradycardia, respiratory failure.

Hepatotoxins (most common):

- Signs usually within 24 hours. Dehydration, vomiting, inappetence, lethargy, hypotension, haemorrhage, pale or icteric mm., anuria, renal impairment, liver failure with coagulopathy. Death may occur within a few hours-days due to hypovolaemic shock.

LABORATORY FINDINGS^{2,4}

Establish baseline. Monitor regularly

- Elevated liver enzymes, BAs, bilirubin (within 24 hours)
- Prolonged clotting times, thrombocytopenia
- Hypoalbuminaemia
- Hypoglycaemia
- Elevated BUN, creatinine. Low USG

DIFFERENTIAL DIAGNOSES^{2,4}

Neurotoxins: metaldehyde, bromethalin, tremorgenic mycotoxins, theobromine, permethrin

Hepatotoxins: xylitol, paracetamol, aflatoxins, Death Cap mushroom (amatoxin)

TREATMENT

There is no specific antidote. Treatment is aimed at aggressive supportive care.^{2,4}

IV fluids: Rate based on signs of hypotension, hydration, shock and oliguria.

Antiemetics, gut protectants, nutritional support (as needed).

Analgesia: Avoid NSAIDs.

Urinary catheterisation: if oliguria / anuria

Neurotoxins:

- Mechanical ventilation:** for respiratory depression.
- Ziapam (Diazepam):** tremors (0.5-2mg/kg IV) or seizures (0.5mg/kg IV up to 3 times, 10 mins apart).
- Atropine:** If cholinergic signs e.g. hypersalivation, bradycardia.⁴

Hepatotoxins:

- Liver protectants:** Acetylcysteine (see paracetamol guideline) and/or SAMe 20mg/kg orally every 24 hours.^{4,6}
- Dextrose:** If hypoglycaemic. 0.5-1ml 50% dextrose slow IV over 10 mins then recheck.
- Vitamin K1:** if coagulopathy is present.
- Blood transfusion:** If required.

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 substances⁵
- 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.** CNITV (Centre National d'Informations Toxicologiques Vétérinaires). Monographie - Les intoxications animales aux cyanobactéries. 2023. **2.** Peterson ME, Talcott PA. (2006) Small Animal Toxicology. Second Edition. Saunders Elsevier, p.685-689. **3.** Harvey, A., & Tasker, S. (Eds.). (2013). BSAVA Manual of Feline Practice. Gloucester: British Small Animal Veterinary Association, p. 139. **4.** Cyanobacteria (blue-green algae) exposure in dogs. Bates, Nicola. 2021. The Veterinary Nurse, pp. 271-277. **5.** Blue-green algae exposure in dogs. BSAVA/VPIS Guide to Common Canine and Feline Poisons. S.I.: British Small Animal Veterinary Association, 2017. **6.** Allerton F. (2023) Small Animal Formulary, 11th Edition Part A: Canine and Feline. British Small Animal Veterinary Association