REPTILES · SAFETY & FIRST AID

Snake Venoms of Zimbabwe

Neurotoxic, cytotoxic and haemotoxic — how the main venom types work, which Zimbabwean snakes carry them, and what to do if someone is bitten.

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READ THIS FIRST

This note is for guiding talks and general awareness. It is **not a substitute for first-aid training or medical advice**, and does not replace a recognised first-aid or snakebite course. Always follow the guidance of your local medical services and your company's emergency procedures.

> Zimbabwe has 72 snake species, and most are harmless or only mildly venomous. But a handful carry venom that can kill, and every guide should know which is which, what their venom does, and — most importantly — what to do and what *not* to do after a bite.

01 The big picture

WORLDWIDE (WHO)

4.5–5.4 million

people bitten each year; 1.8–2.7 million become ill and 81,000–138,000 die. Many more are left with permanent disability.

ZIMBABWE (AFRICAN SNAKEBITE INSTITUTE)

8,000+

bites reported a year, with over 1,000 people hospitalised — most in the hot, wet east of the country.

Of Zimbabwe's 72 species, the African Snakebite Institute rates **12 as highly venomous** and 9 as venomous. Not every bite injects venom: it estimates that around **40% are "dry bites"** with no symptoms. Most bites happen in the **early evening during the warm, wet months**, and around **84% are well below the knee** (a figure given alongside South African survey data).

02 The three main venom types

Snake venoms are complex mixtures, but doctors group their effects into syndromes. Knowing which one you're dealing with shapes the first aid.

NEUROTOXIC

Attacks the nerves

Progressive weakness and **paralysis**, which can stop breathing.

Effects within 30 min–4 h.

e.g. black mamba

CYTOTOXIC

Destroys tissue

Severe pain, **progressive swelling**, blistering and tissue death around the bite.

Serious effects may develop over 6–24 h.

e.g. puff adder, Mozambique spitting cobra

HAEMOTOXIC

Stops blood clotting

Interferes with clotting, leading to **uncontrolled bleeding**.

e.g. boomslang, twig (vine) snakes

Some species are **mixed**. Zimbabwe's non-spitting cobras (snouted, Anchieta's and forest cobra) have venom that is both neurotoxic and cytotoxic; snouted and Anchieta's cobra bites often cause swelling and blistering. The green mamba causes local pain and swelling with milder neurotoxic effects, and the berg adder is both cytotoxic and neurotoxic.

Onset times are from the Tygerberg Poison Information Centre (Stellenbosch University).

03 The dangerous snakes of Zimbabwe

All the species below appear on the African Snakebite Institute's *Dangerous Snakes of Zimbabwe* chart.

SNAKE	VENOM	NOTES	ANTIVENOM
Black mamba *Dendroaspis polylepis*	NEUROTOXIC	May cause breathing difficulty **within half an hour**. Shy and quick to escape, but strikes repeatedly if cornered. Gapes to show a black mouth lining.	Polyvalent — often 10–15 vials
Eastern green mamba	NEUROTOXIC	Can also cause swelling. Shy tree snake; bites are rare.	Polyvalent
Snouted cobra *Naja annulifera*	NEURO + CYTO	Bushveld cobra, about 1.6 m. Bites uncommon.	Polyvalent
Forest cobra *Naja subfulva*	NEURO + CYTO	Africa's largest cobra, up to 2.7 m. Shy; bites rare in southern Africa.	Polyvalent
Anchieta's cobra *Naja anchietae*	NEURO + CYTO	In Zimbabwe, found in the north-west.	—
Mozambique spitting cobra *Naja mossambica*	CYTOTOXIC	About 1.2 m. Quick to spit; enters houses at night and may **bite sleeping people**.	Polyvalent
Rinkhals	CYTO / MIXED	A spitting species. Sources differ on whether to class it cytotoxic or mixed.	Polyvalent
Puff adder *Bitis arietans*	CYTOTOXIC	Thought to cause **most serious bites** in eastern and southern Africa. Relies on camouflage and is reluctant to move away, so it is easy to step on.	Polyvalent
Gaboon adder *Bitis gabonica*	CYTOTOXIC	Eastern Zimbabwe. Averages 90–120 cm in southern Africa; surprisingly placid.	Polyvalent

SNAKE	VENOM	NOTES	ANTIVENOM
Berg adder	CYTO + NEURO	A small adder.	Polyvalent **not effective**
Bibron's stiletto snake	CYTOTOXIC	Potently cytotoxic: pain, swelling, blistering.	**None available**
Boomslang *Dispholidus typus*	HAEMOTOXIC	Tree snake; may exceed 2 m. **Extremely reluctant to bite.**	Boomslang monovalent
Twig (vine) snakes *Thelotornis spp.*	HAEMOTOXIC	Two species in Zimbabwe. Very still and well camouflaged; most bites are to snake handlers.	**None exists**

Antivenom column: South African Vaccine Producers (SAVP) products as listed in South African clinical guidance. "—" means the sources consulted did not list this species either way.

SPITTING COBRAS

Spitting is a **defence**: the cobra sprays venom — up to about **3 metres** — to temporarily blind an attacker so it can escape. Spitting cobras can also **bite**. Venom on intact skin is harmless and can simply be washed off; in the eyes it is a different matter (see section 05).

04 First aid for snakebite

There is only one specific treatment for envenoming: **antivenom**, given in hospital. First aid is about keeping the patient alive and getting them there fast.

1. **Move away from the snake.** If you can, note a good description of it — without going closer.
2. **Keep the patient calm and still.** Movement can speed up the spread of venom. Don't let them walk or run if it can be avoided.
3. **Remove anything tight** — rings, watches, bracelets, anklets — before swelling starts.
4. **Immobilise the bitten limb** with a splint.
5. **Get to hospital as fast as safely possible,** and phone ahead so staff are ready. Know where your nearest facility with antivenom is *before* you head out.
6. **Watch the breathing.** If the patient stops breathing, give artificial respiration — a bag-valve mask is best. If vomiting, place them on their **left side** in the recovery position.
7. **Pain relief:** paracetamol may be given for local pain.

NEVER DO THIS

- ✕ Apply a tight (arterial) tourniquet
- ✕ Apply ice or very hot water
- ✕ Use traditional or herbal remedies, or "black stones"
- ✕ Inject antivenom outside a hospital — it must be given by a doctor
- ✕ Cut, suck or "bleed" the bite
- ✕ Use electric shock
- ✕ Give the patient alcohol
- ✕ Waste time — delay is the real enemy

THE PRESSURE BANDAGE QUESTION

Pressure bandaging is the one step where the type of snake matters most.

NEUROTOXIC BITES ONLY

Black mamba

The African Snakebite Institute advises one **only for suspected black mamba bites** (and Cape cobra, not found in Zimbabwe); WHO limits it to neurotoxic bites without local swelling. Tygerberg: a **firm, wide crepe bandage** above the bite, as tight as for a sprained ankle. Splint the limb, and don't delay the trip to hospital for it.

Zimbabwe's non-spitting cobras and the green mamba can also cause local swelling, so guidance for them is less clear-cut — follow your course training.

NOT FOR CYTOTOXIC BITES

Puff adder, Gaboon adder, spitting cobras

Do not bandage. The African Snakebite Institute advises against it for adder and spitting-cobra bites, where major swelling is expected; it can worsen tissue damage. Don't use one for haemotoxic bites (boomslang, twig snakes) either.

Advice on pressure bandaging is not identical across all organisations, which is exactly why it should be learnt and practised on a recognised snakebite first-aid course rather than from a handout.

For neurotoxic bites, Tygerberg notes that symptoms can develop within 30 minutes to 4 hours, so if you are **more than 2 hours from medical help**, be ready to support the patient's breathing on the way.

05 Venom in the eyes

SPITTING COBRA OR RINKHALS — VENOM IN THE EYES

1. **Flush immediately** with plenty of water — a gently running tap is ideal. Water works best; only if there is none, use another bland liquid.
2. **Keep rinsing for at least 15–20 minutes.**
3. **See a doctor** — every case should be checked, ideally by an eye specialist.

Discomfort usually settles within a few days. Rinse pets' eyes the same way.

06 Antivenom: what guests should know

- Southern African **polyvalent** antivenom covers the black and green mambas, the snouted, forest and Mozambique spitting cobras, the rinkhals, and the puff and Gaboon adders.
- **Boomslang** bites need a separate **monovalent** antivenom.
- There is **no antivenom for twig (vine) snakes**, and polyvalent does not work for the berg adder.
- Antivenom causes reactions in more than a third of patients, which is why it is only given in hospital, with resuscitation equipment on hand.

07 Key terms

Envenoming	When a bite actually injects enough venom to cause illness.

Dry bite	A bite from a venomous snake that injects little or no venom.
Neurotoxic	Venom that affects the nervous system, causing weakness and paralysis.
Cytotoxic	Venom that destroys cells and tissue, causing swelling, blistering and necrosis.
Haemotoxic	Venom that disrupts blood clotting, causing bleeding.
Polyvalent antivenom	Antivenom made to work against several species' venoms.
Monovalent antivenom	Antivenom for a single species, such as the boomslang.

GUEST BRIEFING — HOW TO SAY IT

"Most of our snakes are shy and would rather get out of our way. Most bites are below the knee, and they usually happen in the early evening in the warm, wet months. So: closed shoes, a torch after dark, and never try to pick one up. If anyone is bitten, we keep them still and calm and get them to hospital — no cutting, no sucking, no tourniquets. That's what saves lives."

AT A SIGHTING

"That puff adder isn't going to move for us — it relies on camouflage. That's why it's the main cause of serious snakebites in this part of Africa — it's easy to step on."

In summary

- Three main venom types: **neurotoxic** (paralysis), **cytotoxic** (tissue damage), **haemotoxic** (bleeding) — some snakes are mixed.
- **Puff adder:** thought to cause most serious bites. **Black mamba:** can affect breathing within 30 min.
- First aid: **calm, still, splint, remove tight items, hospital fast**. Support breathing if needed.
- **Never** cut, suck, use a tourniquet, ice, electric shock or traditional remedies.
- Pressure bandage **only** for suspected black mamba bites — never for cytotoxic ones.
- Eyes: **flush with water for at least 15–20 minutes**, then see a doctor.
- Antivenom is given **only in hospital**. None exists for twig snakes.

SOURCES

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- SAVP polyvalent snake antivenom product information (MAVIN, Poison Centre Munich). antivenoms.toxinfo.med.tum.de