



Exhibit message

Different snakes have different types of fangs to bite prey and inject venom. Snakes with front, hinged fangs have their fangs folded back in their mouth. Then their fangs swing forward as the snake prepares to strike and bite.

Quick fact

All snakes have teeth, but not all snakes have fangs.

Recent research by Dr Bryan Fry shows that all snakes are venomous to some degree. Snakes previously thought to be non-venomous seem to have smaller quantities of venom and lack fangs, but they can still deliver their venom via many sharp teeth rather than through two fangs. The level of most venom toxicity to humans is also being researched.

Graphic panel text

Some snakes have hinged fangs that swing forward to bite prey and inject venom.

Venom flows through the fangs and into bite wound, causing the prey to die from internal bleeding.

After striking, the snake folds its fangs back into a pouch, so it does not puncture its own mouth. These fangs fall out and regrow several times a year.

Other snakes have small, fixed fangs at the front of their mouths, or hinged fangs that are stored further back in the mouth.

Want to know more about snake fangs?

Poison and venom are both toxic, but are delivered differently. Poison is toxin found in the skin or flesh of a poisonous animal. Poison is absorbed or ingested when an animal touches or eats the poisonous animal. Venom is injected into an animal through teeth or stings. Venom tends to be used to kill prey, while poison tends to be used in defence (where a predator will taste the poisonous prey and leave it alone).

Snake fangs are two sharp teeth. Snakes use fangs to inject venom into prey or an attacker. Their fangs puncture the victim's flesh and depending on the type of snake, venom either dribbles into the wound along grooved fangs or is squirted into the prey through hollow fangs (like a hypodermic needle). Fangs may be set in place (like human teeth) or can swing out and forward to strike prey.

Different snake species either:

1. keep biting or chewing into prey and let venom drip into the wound, or
2. bite prey in a stabbing motion, squirt venom into the prey's flesh and quickly withdraw their fangs to allow the prey to die. Snakes that strike prey like this, do so in a split second.

Snakes that chew into prey have grooved fangs located at the back of their mouth.

Snakes that strike prey have hollow fangs that swing forward from the front or back of the snake's mouth.

The grooves and hollow tubes of fangs are connected to a pair of venom glands inside the snake's head. Venom glands are muscular bulbs where venom is made and stored. The venom glands are usually found towards the back of the snake's upper jaw. Some snakes have venom glands that extend back to the middle of their body.



Depending on the snake species, venom kills prey by either:

- causing the prey to suffer painful tissue damage and internal bleeding (haemotoxic venom)
- paralysing the prey to stop its movement, breathing and heart beat (neurotoxic venom).

Snake venom is toxic saliva. Venom differs between snake species and contains a combination of 6–12 different enzymes selected from a range of 20 enzymes. These enzymes determine how toxic the venom will be and how the venom will kill the prey.

Newborn venomous snakes have fully operational fangs and venom and are almost as deadly as adult snakes. Snakes also lose and replace their teeth and fangs throughout their lives.

Extra for experts

All snakes have a basic type of tooth that is smooth (without grooves), cone shaped and slightly curved. These are called aglyphous teeth.

Snakes with fangs to inject venom, are broken into three different groups, based on the type of fangs they possess.

1. **Opisthoglyphous snakes** have fangs at the back of their mouth (*opistho* means behind). These fangs usually have a ‘groove’. When the snake is holding or biting into prey, venom flows down the groove and into the prey’s wound. They are mostly harmless or mildly venomous to humans.

The only Australian snakes that have grooved fangs are the brown tree snake (*Boiga irregularis*) and some freshwater snakes in northern Australia.

2. **Proteroglyphous snakes** have small fangs fixed in place at the front of their mouth. These snakes’ fangs do not move and are smaller than other types of fangs, so the snake does not puncture its lower lip when it closes its mouth. Fang size ranges from 3 to 10 millimetres long, depending on the size and species of snake.

When these snakes bite they hang on and ‘chew’ into the prey’s flesh to release venom. These are some of the deadliest snakes in the world. Examples of proteroglyphous snakes are cobras, taipans, coral snakes and sea snakes.

3. **Solenoglyphous snakes** have hollow fangs that are located at the front of the snake’s mouth. They are hinged, so they can swing forward, stab prey and quickly inject venom before withdrawing their fangs to avoid being injured by the struggling prey.

The fangs fold back into a pouch on the roof of the snake’s mouth until they are needed again. These snakes can also open their mouth almost 180 degrees with the fangs extended straight out.

Solenoglyphous snakes can rotate each fang independently, but when they swing forward to strike, the fangs are erected together.

When proteroglyphous and solenoglyphous snakes lose their fangs, they have five to seven replacement fangs waiting in their gums behind and above the original fang. Depending on the species of snake and how healthy or injured it is, fangs are replaced every ten days to ten weeks.

Further information

Australian Museum Front-fanged Venomous Snakes, Family Elapidae
http://www.livingharbour.net/reptiles/snakes_venomous.htm

Australian Museum Fangs of Deadly Venomous Snakes—how they evolved http://www.amonline.net.au/factsheets/snake_fangs.htm

Professor Kenneth Kardong, snake researcher
<http://www.wsu.edu/~kkardong/>

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California Academy of Sciences
<http://www.calacademy.org/exhibits/venoms/www.venomous.com>

Snakes in question: the Smithsonian answer book.
Carl H. Ernst. 1996.

Venom Hunt Finds ‘Harmless’ Snakes
A Potential Danger. Dr Brian Fry.
<http://www.sciencedaily.com/releases/2003/12/031216075937.htm>

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