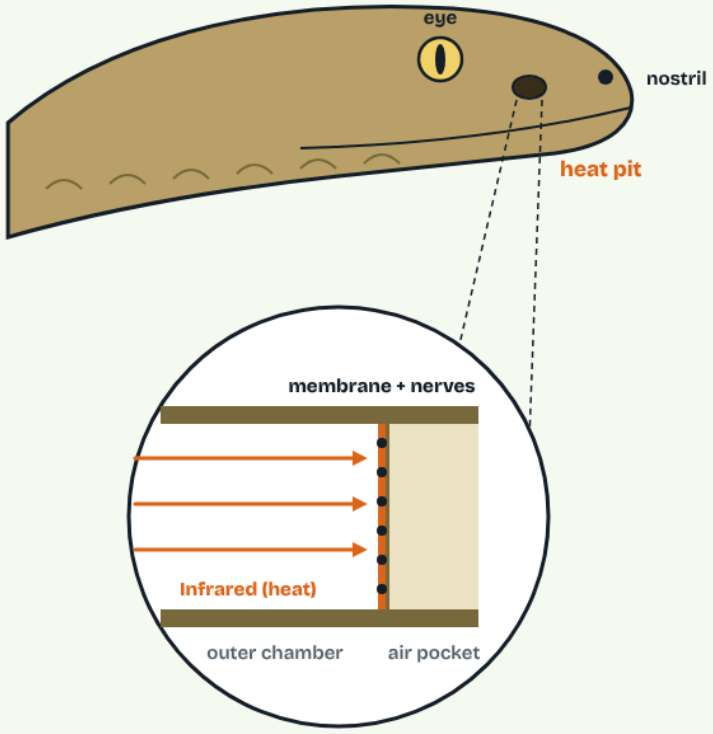
That is why

How do pit vipers sense heat?

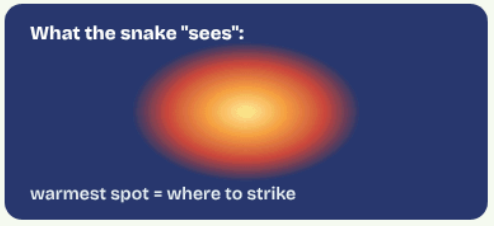
A pit between each eye and nostril holds a thin, heat-sensitive membrane that maps warm prey, even in darkness.

A The pit organ



B From warmth to a map

1. **Warmth reaches the pit**
   Infrared from a warm mouse warms the thin membrane.
2. **Nerves fire**
   A heat sensor called TRPA1 opens and nerves send signals.
3. **The brain builds a map**
   Heat signals join the parts of the brain that handle vision.



C Key facts

1. **Very sensitive**
   Rattlesnakes struck at objects only about 0.2 °C warmer than their surroundings.
2. **Short range**
   Warm prey can be sensed up to about a metre away.
3. **Not only vipers**
   Pythons and boas have simpler pits along the lips, about 5 to 10 times less sensitive.

They do not see heat: they map it.

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Diagram: https://thatiswhy.com/diagrams/why-pit-vipers-sense-heat/ · Full guide: https://thatiswhy.com/why-snakes-dont-see-heat-but-map-it/