

The image displays four bottles of Hedrin 15 head lice treatment. The first bottle on the left is a 100mL e bottle of Liquid Gel. It features a purple and white design with a girl jumping and a boy lying down. The text includes 'Hedrin 15 15 minutes', 'LIQUID GEL', '100mL e', 'ARTG 198623', and '15 MINUTE APPLICATION'. A circular badge states 'KILLS HEAD LICE & THEIR EGGS'. A small icon indicates 'CONTAINS DIMETICONE & PENETROL'. The second bottle is a 100mL e bottle of Spray Gel, also with a purple and white design, featuring a girl jumping and a boy lying down. The text includes 'Hedrin 15 15 minutes', 'LIQUID GEL', '100mL e', 'ARTG 198623', and '15 MINUTE APPLICATION'. A circular badge states 'KILLS HEAD LICE & THEIR EGGS'. A small icon indicates 'CONTAINS DIMETICONE & PENETROL'. The third bottle is a 100mL e bottle of Spray Gel, with a purple and white design, featuring a girl jumping and a boy lying down. The text includes 'Hedrin 15 15 minutes', 'SPRAY GEL', '100mL e', 'ARTG 198623', and '15 MINUTE APPLICATION'. A circular badge states 'KILLS HEAD LICE & THEIR EGGS'. A small icon indicates 'CONTAINS DIMETICONE & PENETROL'. The fourth bottle is a 100mL e bottle of Spray Gel, with a purple and white design, featuring a girl jumping and a boy lying down. The text includes 'Hedrin 15 15 minutes', 'SPRAY GEL', '100mL e', 'ARTG 198623', and '15 MINUTE APPLICATION'. A circular badge states 'KILLS HEAD LICE & THEIR EGGS'. A small icon indicates 'CONTAINS DIMETICONE & PENETROL'.



# What is Head Lice?

# Head Lice

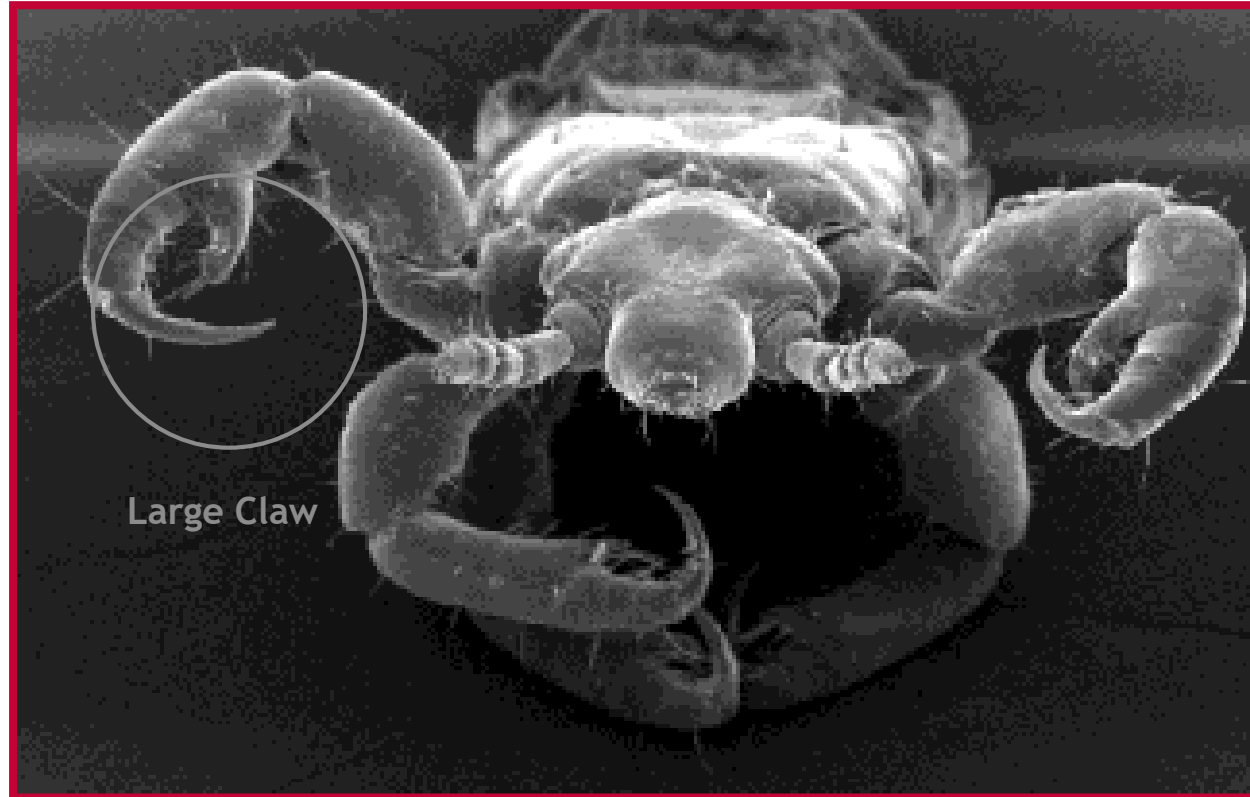
- ▶ Head lice are small insect creatures that live on the scalp of human heads.
- ▶ They live by feeding off the blood from the scalp. Lice will normally feed 2-3 times a day.
- ▶ They can be found at the base of the hair follicle and normally latch onto the hair strands.
- ▶ The size varies depending on their maturity. The largest louse is normally the size of a sesame seed.
- ▶ Head lice are a greyish brown colour



# Some facts about the problem

- ▶ Don't have wings - can not jump, hop or fly
- ▶ Spread by head to head contact only
- ▶ Only takes 30 seconds to transfer
- ▶ Prevalent in children aged 4 - 11 years
- ▶ More common in girls than boys

# Head Lice



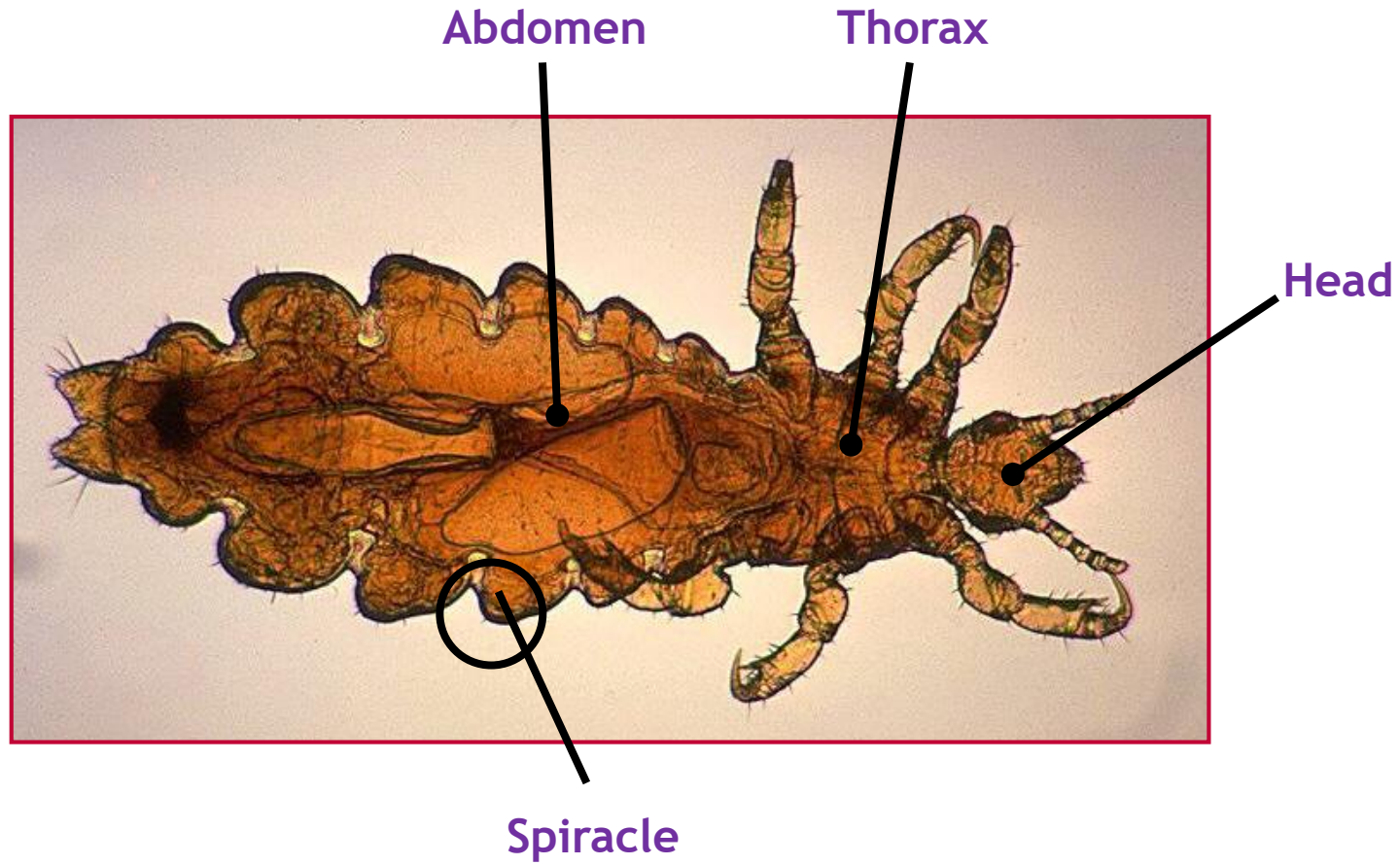
- Strong legs and large claws to climb through hair

# More facts about head lice

- ▶ Live only on humans
  - ▶ Can't live on pets
  - ▶ Can't live on bedding, upholstery, hair brushes or hats
  - ▶ Will die 1-2 days after leaving a human
- ▶ Live in head hair
  - ▶ Close to the scalp
  - ▶ No preference of hair type or length
- ▶ They feed on human blood
  - ▶ Bites may cause itching of the scalp

[http://www.liceworld.com/uk/biologi\\_levevis\\_fode.htm](http://www.liceworld.com/uk/biologi_levevis_fode.htm)

# Anatomy of a Louse

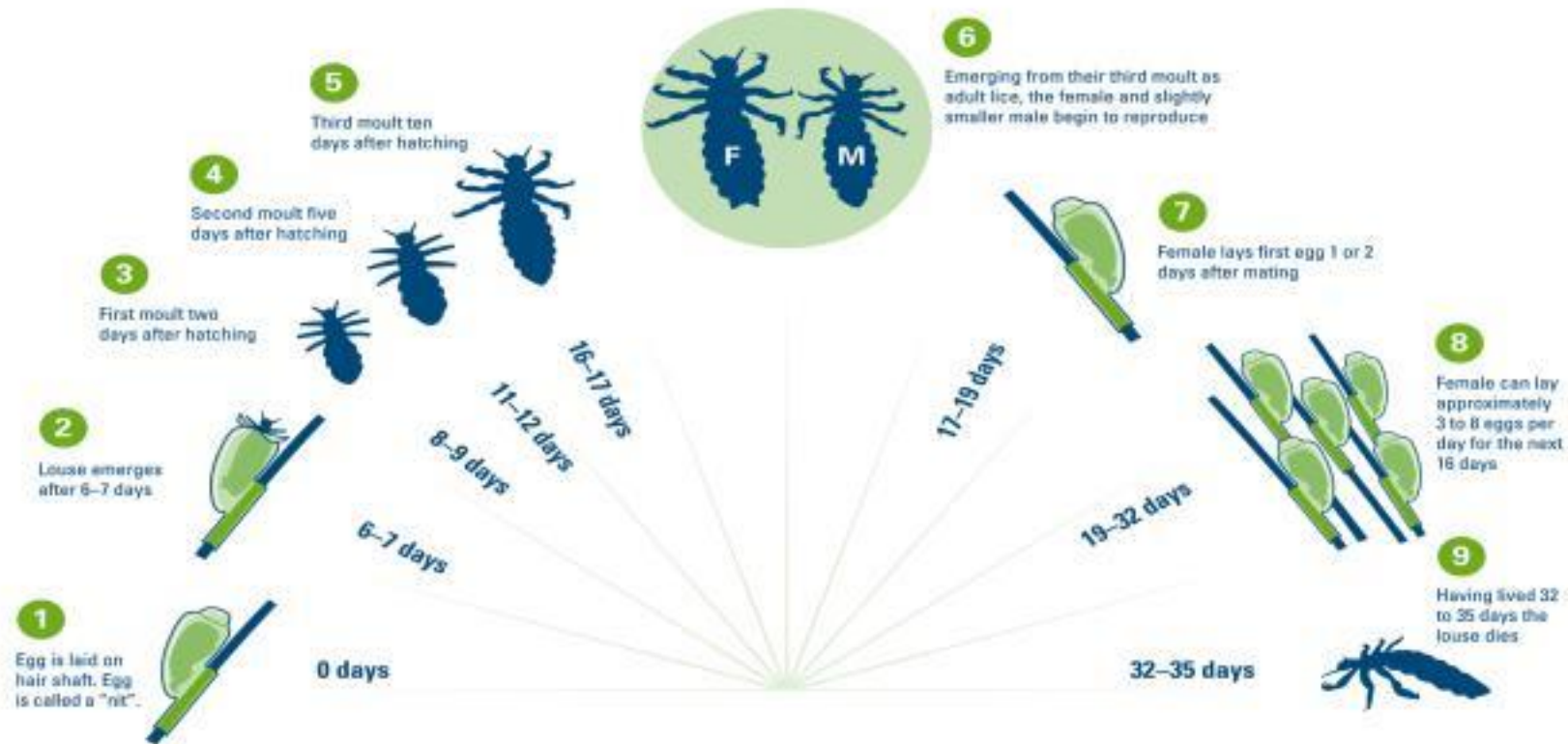


# Fluid Balance

- ▶ Head lice quickly become dehydrated
- ▶ They have a different fluid balance to most other blood sucking insects
- ▶ Normally, bloodsucking insects get rid of their surplus water via their urine or faeces - this is not the case for the head louse as it produces only dry faeces.
- ▶ Water is excreted through the spiracles
- ▶ This makes it more exposed should it become separated from its host
- ▶ If the louse is removed from its host for more than three hours, it will be incapable of sucking blood should it come back to a host.
- ▶ Probably because it gets too dehydrated to be able to produce sufficient saliva to prevent the blood from clotting while it is sucking blood.

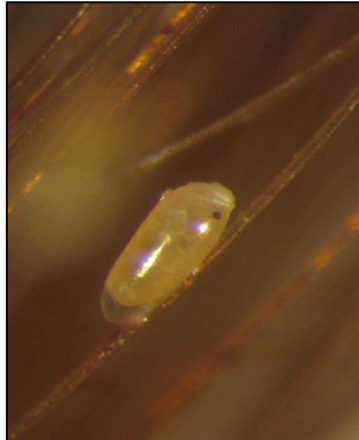


# The lifecycle of the head louse



# Life cycle of a Louse

Egg



Egg Hatches  
(6-7 days)



# 1 nymph



# 2 nymph



# 3 nymph



Adult louse



# Nymph

Virtually colourless until it takes its first blood meal!



Less than 1mm when hatched



# Head Lice - Myths

- ▶ Lice jump or fly from head to head
- ▶ Lice live in carpets, beds, clothes and school buses
- ▶ Head Lice are selective about their home
- ▶ Head Lice can only be found in dirty hair and not clean hair.

# Head Lice - Facts

- ▶ Head Lice do not carry or transmit disease
- ▶ They are about the size of a sesame seed
- ▶ They feed on human blood 3-4 times daily
- ▶ Females can lay up to 100-150 eggs
- ▶ They live for approx 28-32 days



# Hedrin 15min



# Hedrin 15min

- ▶ Hedrin uses a patented new technology for head lice treatment based on a combination of two silicones :
  - ▶ Dimeticone 4% (Active ingredient)
  - ▶ Penetrol 2% (Carrying agent)
  - ▶ Excipients 96%
- ▶ Hedrin 15min is a non-irritant, transparent, colourless & odourless liquid
- ▶ Gentle on skin and hair
- ▶ Easy application using unbreakable squeeze bottle and trigger spray.
- ▶ Hedrin has been **Clinically Proven to Kill 100% of Lice and Eggs**



# What makes Hedrin different?

- ▶ Instead of using an insecticide to poison the head lice, Hedrin uses a physical action which has been proven to eradicate lice both in vitro and in clinical trials
- ▶ Hedrin is not absorbed by the skin -making it safe for everyone in the family over 6 months old.
- ▶ Hedrin is suitable for use by asthmatics and those with sensitive skin and can also be used during pregnancy and breast feeding
- ▶ The “carrier” agent for Hedrin 15 is Penetrol which evaporates leaving the active ingredient Dimeticone coating the louse.
- ▶ After application the treated hair shows no sign of a treatment being undertaken - Hair is undamaged



# How Hedrin 15min works!

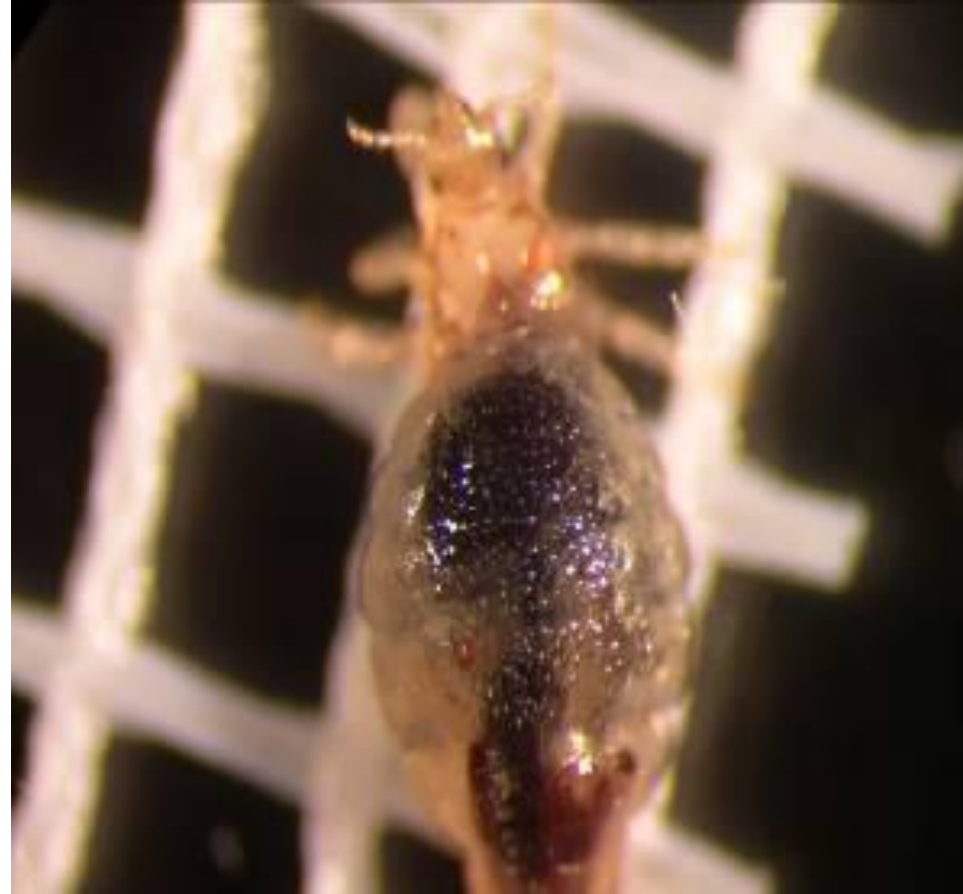
- ▶ Lice and eggs are fully encapsulated in a layer of Dimeticone, and are immobilised after **10 seconds** of contact.
- ▶ Hedrin 15 blocks the spiracles (breathing holes) stopping the flow of air. Dimeticone penetrates beyond the atrium into the trachea. Suffocation
- ▶ Lice cannot excrete fluid due to the spiracles being blocked, resulting in death by gut rupture in recently fed lice.
- ▶ Unfed lice die as a result of immobilisation, killing them by either:
  - ▶ A. starvation
  - ▶ B. Gut Rupture
  - ▶ C. Suffocation
- ▶ The Penetrol transports the Dimeticone through the lips of the eggs to fill the chamber thereby blocking all functions of aeropyles and preventing eggs from developing.

# How Hedrin it works!

Before treatment with Hedrin®



After treatment with Hedrin®

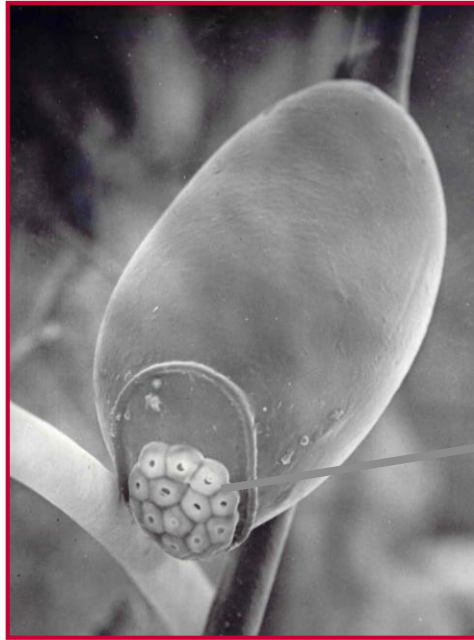


# Magnified Louse



- Breathes and expels water & waste through spiracles

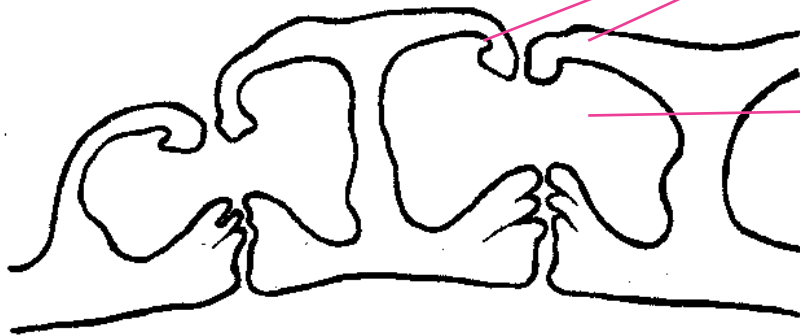
# Why Hedrin 15 is effective against eggs



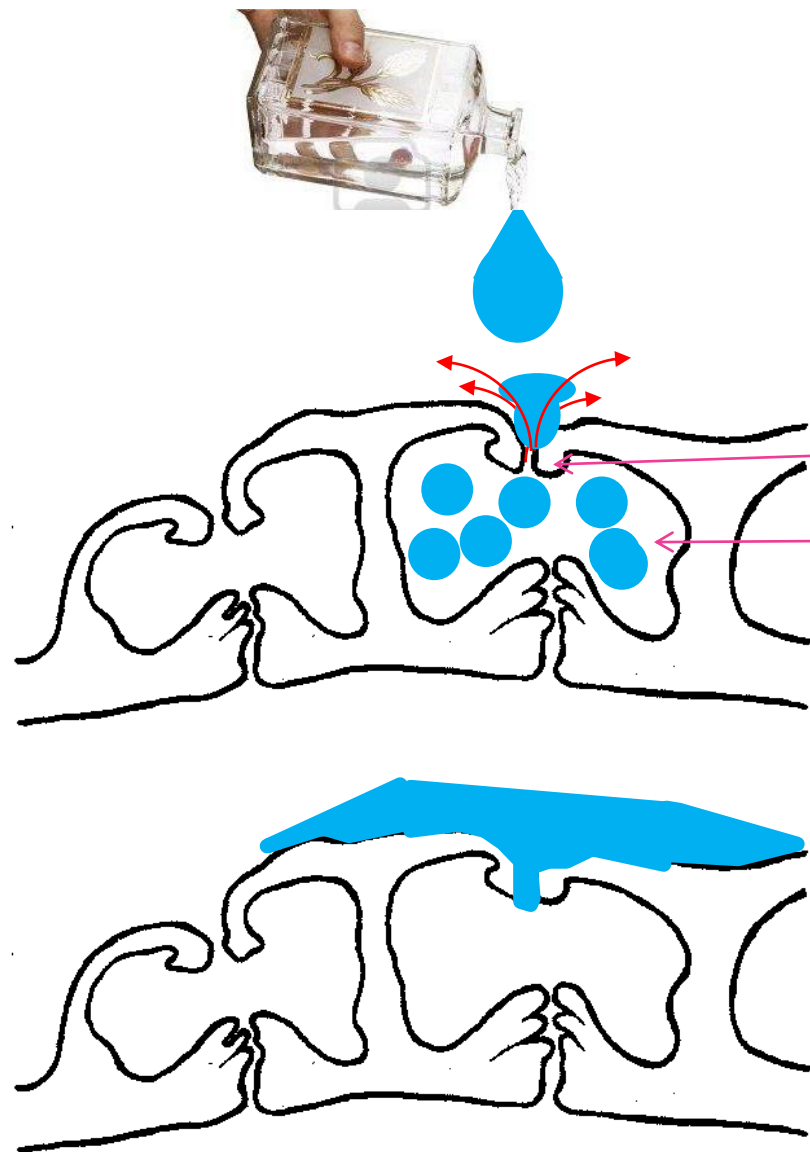
Air holes

Lips (chitin)

Chamber (encircled by chitin)



# How it works!



## Dimeticone alone

Chitin (white part)

Only small amounts of Dimeticone can get inside of the breathing hole because:

- Repelling from lips
- Even penetrated Dimeticone has difficulties to touch chitin material of aeropyles

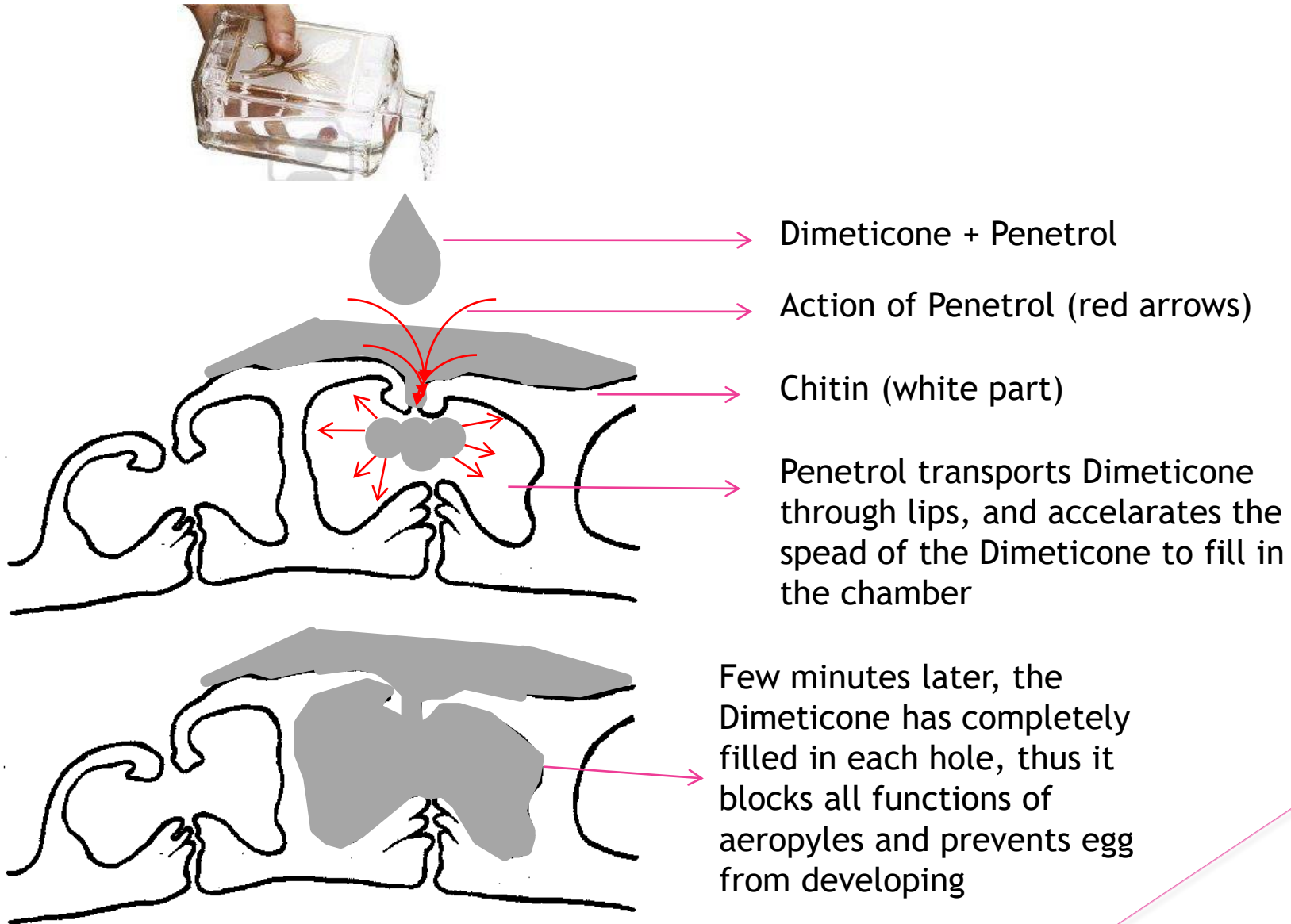
1 hour later, small mounts of Dimeticone can get into direct contact with chitin material of aeropyles

40-60% of louse eggs killed after 1 treatment of 1 hour, a second treatment is necessary to kill 100% of louse eggs

Hedrin<sup>®</sup>  
15

15  
minutes

# How it works!



Hedrin

15

15  
minutes



# How to apply!

- ▶ Apply to dry hair with enough to fully cover the scalp. Massage the product through the hair spreading it evenly from the roots to the tips.
- ▶ Leave the product in the hair for 15 minutes and wash it out with normal shampoo. Apply the shampoo onto the head first before getting the hair wet.
- ▶ Hedrin formulation is not absorbed into the skin and contains no solvents which could be problematic for asthmatics and those with sensitive skin

# Consumer advise

Consumer Product Purchase Criteria	
Effective	✓ 100% lice kill rate 100% egg kill rate– gives results
Ease of Use	✓ Apply - <u>Leave 15 minutes</u> - Wash (NO nit comb requirement)
No Odour	✓ Chemical free, no smells to mask
Fast Acting	✓ Immobilisation after <b><u>10 seconds</u></b>
Safe	✓ Single product – no mosaic treatments
Reasonable Price	✓ Yes - under \$20
Kid Safe	✓ Use from 6 months of age
Clinically Proven	✓ Yes – 100% kill rate

Pharmacy aims to deliver effective health outcomes to the consumer



# Quiz

1. How many legs has a louse got?

- a. 4
- b. 6
- c. 8

2. Roughly how long does it take for a louse egg to hatch?

- a. 7 days
- b. 14 days
- c. 21 days

3. How does Hedrin work?

- a. Nerve Poison
- b. Suffocates lice
- c. Prevents water loss by blocking spiracles

4. What is the active ingredient in Hedrin 15?

- a. cyclomethicone
- b. permethrin
- c. Dimeticone

5. From what age can Hedrin be used?

- a. 6 years
- b. 2 years
- c. 6 months

6. Can Hedrin be used in pregnancy?

- a. yes
- b. No

7. Does Hedrin treat insecticide resistant lice?

- a. No because it poisons them
- b. Yes, because it has a physical mode of action that immobilises the lice

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