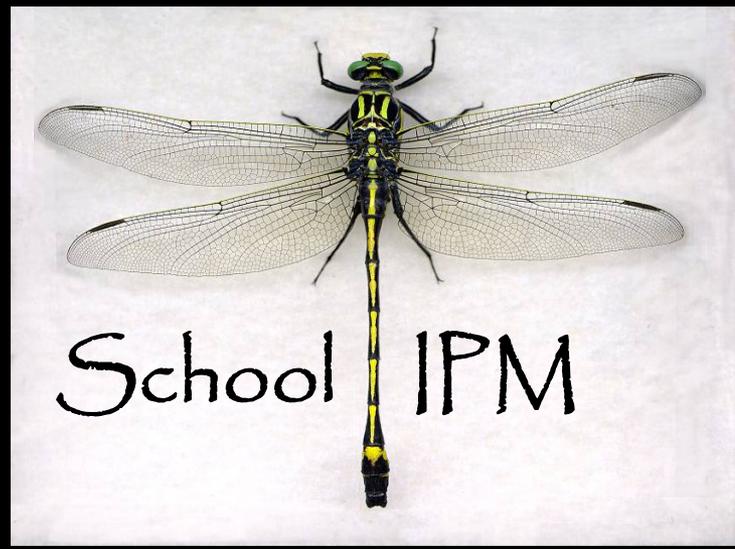




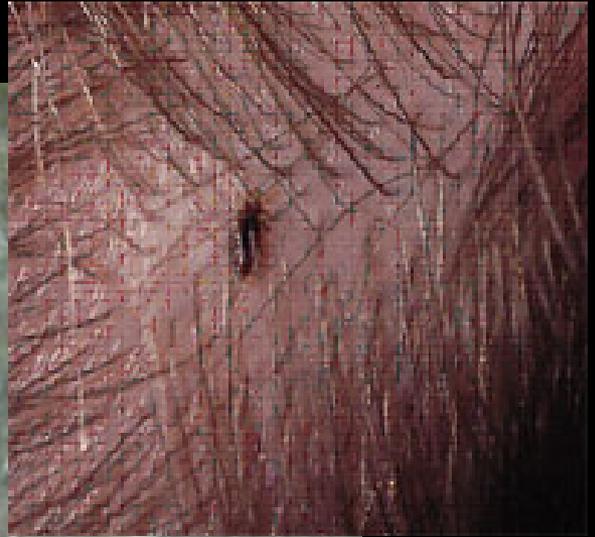
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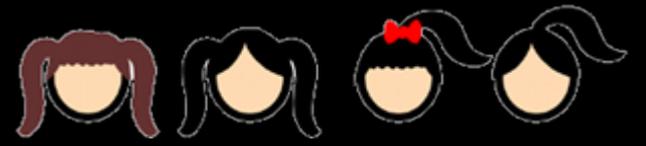
Dawn H.
Gouge

*Pediculosis
capitis*



School IPM





Common among children 3 to 12 years of age.

The most common symptoms are itching and sleeplessness.

Scratching leads to secondary bacterial skin infection.



Head lice: embarrassment; unnecessary days lost from school; pesticide exposure; millions of dollars spent on remedies.

Adults are 2 to 3 mm long, color varies.

The female lives up to 3 to 4 weeks and lays 10 eggs, a day.

Eggs are attached to the hair shaft close to the scalp.

Nits are camouflaged with pigment to match the hair color of the infested person.

Most easily seen at the posterior hairline.

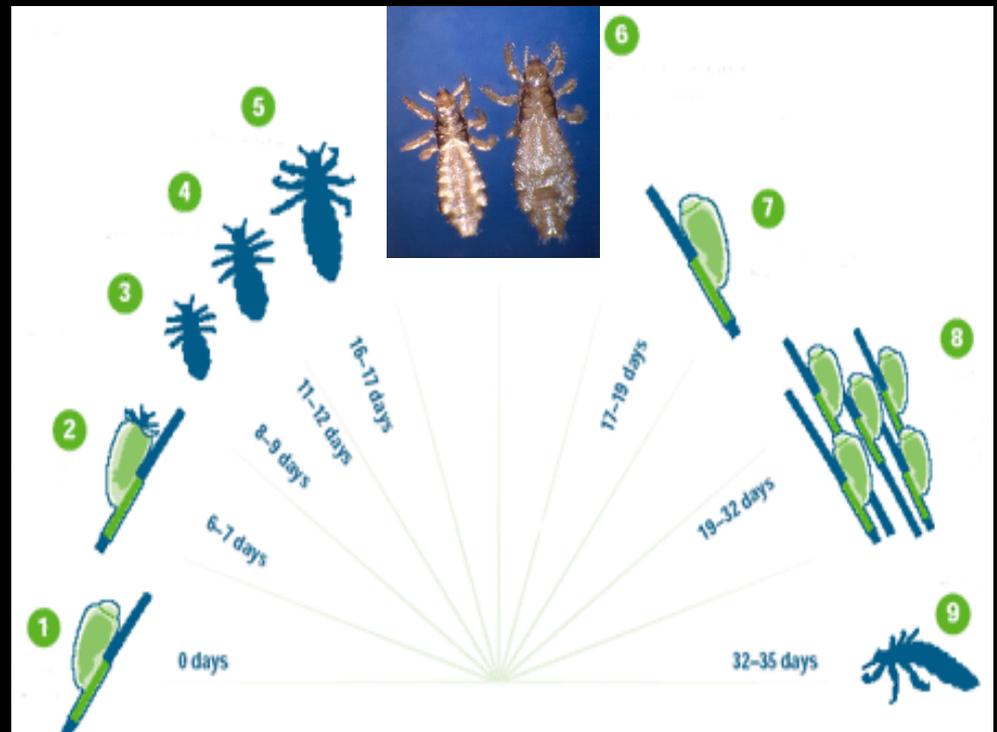
Empty nit casings are easier to see, white against darker hair.



The eggs are incubated by body heat and hatch in 10 to 14 days.

Once the eggs hatch, nymphs leave the shell casing, grow for about 9 to 12 days, and mate, and then females lay eggs.

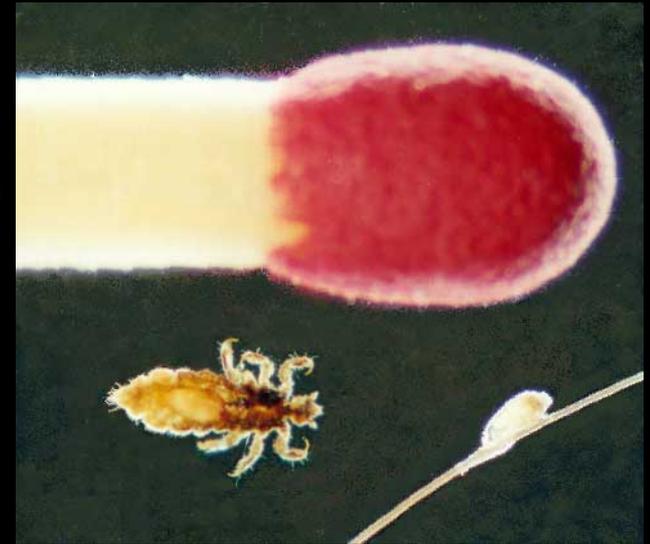
If not treated, this cycle may repeat itself every 3 weeks.



Lice feed by injecting small amounts of saliva and taking tiny amounts of blood from the scalp every few hours.

This saliva may create an itchy irritation.

With a first case of head lice, itching may not develop for 4 to 6 weeks, because it takes time to develop a sensitivity to louse saliva.



Head lice usually survive for less than 2 days away from the scalp at normal room temperature, and their eggs cannot hatch at an ambient temperature lower than that near the scalp.

Laundry and dry on a high heat, 130°F.



A louse can crawl quickly! Up to 30 cm per minute, which makes them difficult to catch. You can slow them down considerably, blowing dry hair with a blow dryer.

Nits are easier to spot, especially at the nape of the neck or behind the ears, within 1 cm of the scalp.

Nits found more than 1 cm from the scalp are unlikely to be viable.



Pediculicides

Pyrethrins Plus Piperonyl Butoxide

Natural extracts from the chrysanthemum, (e.g. RID).

Neurotoxic to lice.

Possible allergic reaction in patients who are sensitive to ragweed, or chrysanthemums.

Mostly shampoos that are applied to dry hair and left on for 10 minutes before rinsing out, over a sink rather than in the shower to limit exposure, and with cool rather than hot water to minimize absorption.

Not ovicidal (newly laid eggs do not have a nervous system for several days); 20% to 30% of the eggs remain viable after treatment. This necessitates a second treatment after 7 to 10 days.

Resistance of adult lice to these products has been reported.

Permethrin (1%)

A synthetic pyrethroid, 1% permethrin (e.g. Nix) is currently the recommended treatment of choice for head lice by pediatricians.

It has a lower mammalian toxicity than pyrethrins.

Does not cause allergic reactions in individuals with plant allergies.

The product is a cream rinse applied to hair that is first shampooed with a non-conditioning shampoo and then towel dried. It is left on for 10 minutes and then rinsed off, and it leaves a residue on the hair that is designed to kill nymphs emerging.

20% to 30% of eggs not killed with the first application. It is suggested that the application be repeated if live lice are seen 7 to 10 days later.

Resistance to 1% permethrin has been reported.

Lindane (1%)

Lindane (e.g. Kwell) is an organochloride that has central nervous system toxicity in humans; several cases of severe seizures in children using lindane have been reported.

Prescription shampoo that should be left on for no more than 10 minutes with repeated application in 7 to 10 days.

It has low ovicidal activity (30% to 50% of eggs are not killed), and resistance has been reported worldwide for many years.

Personally, I do not think it should ever be used.

Malathion (0.5%)

The organophosphate (cholinesterase inhibitor) 0.5% malathion (e.g. Ovide).

Prescription lotion that is applied to the hair, left to air dry, then washed off after 8 to 12 hours.

Malathion has a high ovicidal activity, but the product should be reapplied if live lice are seen in 7 to 10 days.

The major concerns are the high alcohol content of the product, making it highly flammable, and the risk of severe respiratory depression.

Personally, I do not think this should be used.

Occlusive Agents

A "petrolatum shampoo" consisting of 30 to 40 g of standard petroleum jelly massaged on the entire surface of the hair and scalp and left on overnight with a shower cap has been suggested.

Diligent shampooing is usually necessary for at least the next 7 to 10 days to remove the residue.

Other occlusive substances have been suggested (mayonnaise, tub margarine, herbal oils, olive oil), but we have not had good results.



Manual Removal

None of the pediculicides are 100% ovicidal.

Manual removal of nits (especially the ones within 1 cm of the scalp) after treatment with any product is recommended.

Fine-toothed "nit combs" are available.



Combing and brushing wet hair damages lice. Hair drying injures adults and nymphs.

Nit removal aids are designed to loosen the attachment of the nit to the hair shaft.

Vinegar or vinegar-based products (e.g. Clear Lice Egg Remover Gel) are applied to the hair for 3 minutes before combing out the nits. No clinical benefit has been demonstrated.





Head lice are not a sign of uncleanliness and do not vector disease organisms.

School Management Plan

Screening for nits is not an accurate way of predicting which children will become infested.

Approximately 18% of kids with nits alone, will convert to an active infestation.

Children having 5 nits or more within 1 cm² of the scalp are significantly more likely to develop an infestation, still only 1/3 of these higher-risk children convert.

Generally, around 30% of school children with nits will have concomitant lice.



Should classroom or school-wide screening be discouraged?

Providing information to families on the diagnosis, treatment, and prevention of head lice is a good plan.

Parents and the school nurses should be encouraged to check their children's heads for lice if the child is symptomatic.



DON'T PANIC



The American Academy of Pediatrics and the National Association of School Nurses (www.nasn.org/positions/nitfree.htm)

