

Head Lice Management

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Head lice are tiny wingless insects (2-3 mm) that vary in colour from cream to brown. They are found attached to the hair near the scalp and are harder to see than nits. Nits is the common name for the small eggs that are laid by head lice. They are the size of a grain of salt, yellow-white in colour and are hard and gritty in texture. They are found glued to the hair near the scalp. Common places are behind the ears, back of the neck and the fringe. Dead nits are often black in colour and are found well away from the scalp.

Biological/life cycle facts about head lice infections

- Nits are laid within 1-2 mm of the human scalp.
- Nits take between 7-10 days to hatch.
- Newly hatched nymphs become adults nine to 12 days later.
- Nits will only hatch when kept at a high temperature and moist environment, as in the scalp.
- Nits die quickly on furniture, clothes and hairbrushes.
- Head lice spread from one person to another by close head-to-head contact in most cases.
- Head lice can spread by sharing hats and brushes, but this is less common.
- Head lice do not transmit HIV or hepatitis B infections.
- Rare diseases – such as typhus, trench and relapsing fever – can be transmitted by head lice.
- Head lice infections cause itching, which may in turn cause poor sleep and behaviour problems.
- Itching often causes scalp sores due to secondary bacterial infection.
- Head lice are most commonly found in primary school children due to close personal contact.
- Adults may have head lice without being aware of the infection.
- Cleanliness does not prevent head lice: anyone can catch them.
- Head lice infections do occur in cycles in the community.
- The last big outbreak in the Top End of Northern Territory was 1994-95.
- 50% of primary school children were affected in the last big outbreak.
- A warm and humid environment favours hatching and survival of head lice.
- Head lice are more common in the wet season and 'build-up'.

Head lice treatments

(Dodd CS. Interventions for treating head lice (Cochrane Review). In: The Cochrane Library, Issue 1, 2002.Oxford: Update Software)

- No evidence that one approved chemical lice treatment has any greater effect than another.
- Permethrin, synergised pyrethrin and malathion have all been shown to be effective in the treatment of head lice.
- Resistance to treatments has emerged since trials performed, and this varies with location.
- Physical treatment methods have been shown to be ineffective in completely treating head lice.
- Other 'natural' treatments have not been formally studied but are known to be more toxic.
- 'Rotation' model replaced by 'mosaic' model because of resistance and the fact that all treatments are available over the counter.

Reasoning/evidence for CARPA head lice management protocol

Head lice infestation is a very common problem in the NT and I feel that the existing five lines in the third edition (two are repeated!) does not give enough guidance. The reasons/evidence for each component of the suggested new edition section are given below. The management flow chart could be used as an adjunct or could replace the written section with some additions.

Asking about previous treatment and whether any other members of the family are affected is the initial step. This allows you to decide which lice treatment to use (permethrin or malathion) and also whether other members of the family need treatment. It makes most sense that all members of the family are treated at the same time, otherwise lice may spread back to the person who has already been treated.

Looking for live lice by combing with a fine tooth comb is the next step as this will tell you whether the person requires chemical treatment or not. We know that many people are over-treated with chemical treatments when only nits are found in their hair. If there is an ongoing infection requiring treatment then live lice should be present. Over-treatment with chemicals is known to cause irritation of the scalp and can be the cause of itching. It is important therefore to only use chemicals when they are needed. If nits only are found, many of these may be 'empty shells'. Those eggs that are viable are resistant to chemical treatment and only if they hatch and produce live lice should chemical treatment be commenced.

Looking for sores is important as these are usually infected with staphylococci or streptococci and are equivalent to 'impetigo'. They require treatment as post streptococcal glomerulonephritis may occur, as may acute rheumatic fever. Furthermore, the presence of sores may also cause itching and be mistaken for an ongoing head lice infection resulting in further chemical treatment and further irritation.

Do treat with 1% permethrin when live lice are found because this is the chemical treatment with the least likelihood of toxicity and is as effective as other chemical treatments. Lotions and shampoos require different application methods because of their differing physical properties and strengths.

Do perform fine tooth combing with hair conditioner if available. The hair conditioner allows the comb to slide through the hair more easily and

also 'stuns' the head lice making them easier to catch. The comb teeth should be 0.25 mm apart otherwise the lice will not be caught effectively. The double advantage of combing is that it allows confirmation of the need for chemical treatment and it allows the identification of resistance to chemical treatments and the need to change to another. There is some evidence that reducing the numbers of live lice assists cure by chemical treatment. If chemical treatment is performed without washing off hair conditioner, it is less effective at killing lice. Family members should be taught how to fine comb hair as this needs to be repeated every few days in those affected and the workload would be too great for clinic staff to do this.

Do advise parents to inform the school, as other children should be checked at the same time to avoid this child being reinfected. Lice checking days may be organised by the school in conjunction with parent groups.

Follow-up. A repeat treatment with 1% permethrin is essential at about seven days as more nits will have hatched since the previous treatment. Nits are not killed by the treatment so if the second treatment is not given at the right time, the infestation will recur.

[Editor: There were a wide range of experiences and opinions expressed in the editorial committee about the approach to head lice management in Aboriginal communities. We felt that it was a given that there was an Australia-wide long lasting epidemic of head lice, not confined to Aboriginal communities. Where there is an ongoing high prevalence, it is not realistic to expect to be able to eradicate head lice from a family as the originally proposed protocol had suggested. In these cases ongoing management (control) without eradication will be the goal.

Notifying the health service and school was removed, as it is not realistic for the school or health service to respond in a meaningful way in the CARPA regions. However, if a person lives in a community without locally endemic head lice, then there is a good case for taking measures to decrease spread to other people. The main practical application of this is in withdrawing a child from school or childcare until they have been treated.

If a person or family is moving from an endemic community to a non-endemic setting, then they should attempt to eradicate head lice before the move.

The result is that the head lice protocol in the STM has been significantly altered from that originally offered. It is included here for those seeking to eradicate head lice from an individual or family.]

Head lice protocol for eradication

Ask:

- About previous treatment.
- Other members of the family affected.

Look for:

- Live lice by combing thoroughly with a fine tooth comb.
- Finding nits (eggs) only does not require chemical treatment.
- Scalp sores.

Do

- Treat with 1% permethrin (pyriFoam, quellada, lyclear); follow packet instructions.
- Lotion should be rubbed in and washed out 12 hours later with regular shampoo.
- Head lice shampoo should be combed through the hair with a fine tooth metal comb and washed out 10 minutes later.
- Perform thorough hair combing with a fine tooth metal comb (teeth 0.25 mm apart).
- Teach family members how to do this.
- Head down over spread paper, one section at a time.
- Apply hair conditioner (if available) before combing.
- Repeat combing by family at home every few days until no more live lice found.
- Always wash out hair conditioner before using chemical head lice treatment.
- Treat scalp sores if present in the same way as impetigo
- Examine and treat other affected members of the family at the same time.

Advise on prevention issues:

- Weekly hair and scalp checks with nit combs for all the family.
- Do not share brushes, combs, hats or pillows.
- Keep long hair tied back or cut hair short.
- Inform school if a child is affected so that other children can be checked and treated.

Follow-up

Review after seven days and repeat 1% permethrin treatment. If live lice are still present, encourage family to continue combing every few days. Review after a further seven days, and if live lice are still present:

- Change treatment to 1% malathion or 0.5% malathion in an alcohol base.
- Recommend continued combing every second day.

Review after a further seven days, if live lice are still present:

- Check that treatment has been done correctly.
- Consider reinfection as cause.
- Contact medical officer for advice.

Head lice management flowchart (next page)

Head lice management flowchart

