



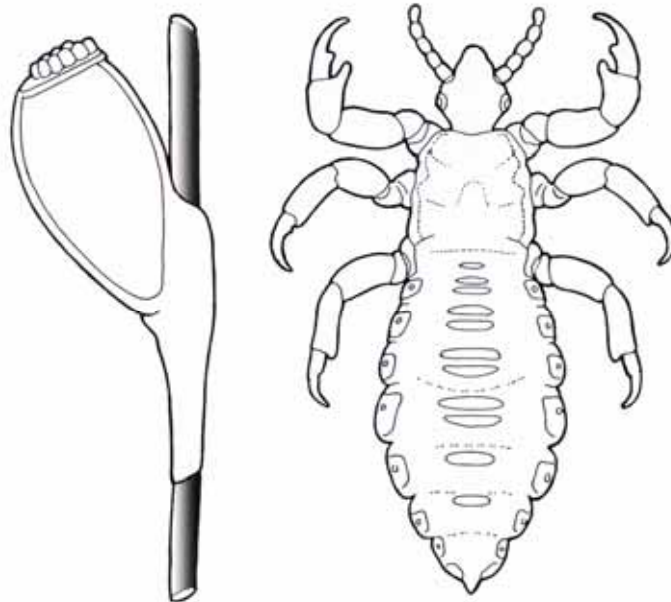
Government of South Australia

Department of Health

HEALTHY HEADS

without headlice

Management guidelines for the control of headlice in South Australia



Healthy heads without headlice- Management guidelines for the control of headlice in South Australia.

This publication was originally produced in 2002 by the Department of Human Services in collaboration with the Department of Education and Children's Services, the Yankalilla District Council and the City of Onkaparinga.

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Material from this publication may be copied to use in supporting households, schools, local councils, general practitioners, pharmacists, hairdressers and health agencies in the management of headlice. A person or organisation shall not sell, hire or otherwise derive revenue from copies of the material. Permission to copy this material may be sought from the Environmental Health Service of the Department of Health.

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Sections on Definitions, Natural history, Epidemiology, Use of pediculicides and Non-chemical control are revised from *Headlice- A guide to their natural history and management (1992)* by Philip Weinstein, currently Associate Professor at the University of Otago, New Zealand.

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The headlice control information in this booklet was accurate at the time of printing. Readers are encouraged to check with their general practitioner, pharmacist or the Local Council environmental health officer for more recent information.

More information can be obtained from:

- Local Council Environmental Health Officer
- Community Health Centre
- Pharmacies and general practitioners
- Environmental Health Service of the Department of Health
- Child and Youth Health Parent Helpline 1300 364 100.

Websites

- Environmental Health Service, Department of Health, Adelaide
<http://www.dh.sa.gov.au/pehs/environ-health-index.htm>
- Child and Youth Health, Adelaide
<http://www.cyh.com>

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1. Introduction

Headlice are rarely a threat to health but their presence can have social, economic, psychological and educational repercussions. The problem is compounded by reports of treatment failure and repeat treatments. Headlice problems in schools are currently occurring at a rate which is causing many children, parents, teachers and healthcare workers a great deal of anxiety. There appear to be two major problems:

- there is a lack of uniform, scientifically-based treatment guidelines which are consistently followed by all individuals involved in the management of headlice. A large number of treatment failures appear to result from reinfestation where contacts have been inadequately or inappropriately treated. This may be due to the fact that parents, teachers and health workers do not have access to accurate information about what constitutes adequate and appropriate treatment.
- the inappropriate and excessive use of pediculicides has contributed to the development of headlice resistance to some of the chemicals commonly used in treatment.

Reports of headlice resistant to pediculicides are widespread in the overseas literature, and there is now considerable evidence that resistance has evolved also in Australia. The overuse and misuse of pediculicides leaves South Australia open to the widespread development of headlice that are resistant to the chemicals commonly used in treatment.

Other treatment techniques (with varying effectiveness) have recently been developed as alternatives to these traditional treatments.

The purpose of this document is to provide factual information and consistent advice to the various organisations and individuals involved in the management of headlice. It outlines the two more common methods of dealing with infestations on the basis of the life cycle of the headlouse and recommends using the wet-combing and/or the chemical treatment procedures.

Common myths

The facts are that headlice . . .

- do NOT jump. Their legs are designed for climbing, not jumping.
- do NOT swim
- do NOT infest only dirty people. They feed on blood not dirt
- do NOT prefer one hair colour or hair type
- do NOT prefer one blood group over another
- do NOT live in carpets or on animals. They only live on human heads.

Information in languages other than English

Headlice information is available in Albanian, Amharic, Arabic, Bosnian, Bulgarian, Cambodian, Chinese, Croatian, Filipino, Greek, Italian, Japanese, Khmer, Kurdish, Laotian, Macedonian, Persian, Polish, Romanian, Russian, Serbian, Samoan, Serbian, Somalian, Spanish, Tagalog, Tigrigna, Turkish and Vietnamese from either Environmental Health Service of the South Australian Department of Health on (08) 8226-7100 or on the Victorian Department of Human Services website:

<http://www.dhs.vic.gov.au/phd/headlice/language.htm>

2. Definitions

louse:	(the singular form of 'lice') is a small (2-3 mm long) wingless insect
nit:	is the egg of the louse
nymph:	the juvenile form of the louse, intermediate between the egg and the sexually mature adult
ovicidal activity:	is able to kill eggs as well as nymphs and adult headlice
pediculicide:	a chemical used to kill headlice and eggs
resistance:	ability of headlice or eggs to survive a dose of pediculicide which would usually be considered lethal.

3. Natural history

Types of lice that affect humans

The insect order Phthiraptera (lice) contains at least a dozen families of parasites that feed on the blood, feathers, scales or skin of their bird or mammal hosts. They spend their entire lives on the host and are known as obligate parasites. Most are highly species specific, meaning that they live on only one species of animal.

The headlouse is a small (2-3 mm long) wingless insect and has a claw at the end of each of its six legs. These claws enable the louse to grasp and climb in hair. The body is flat and long and varies in colour from cream to brown.

The body louse is virtually identical in appearance but can be easily distinguished from the headlouse because its habits are so different. Body lice live in clothing, not in the hair, and are far less common in Australia than headlice.

The crab louse as its name suggests, looks very much like a tiny crab. It is somewhat smaller than the headlouse (1-2 mm long) and its body is very much rounder. It lives predominantly on the pubic hair and is therefore easy to differentiate from other human lice both by its appearance and by where it is found.

Only the headlouse will be discussed further.

Life cycle of the headlouse (*Pediculus humanus capitis*)

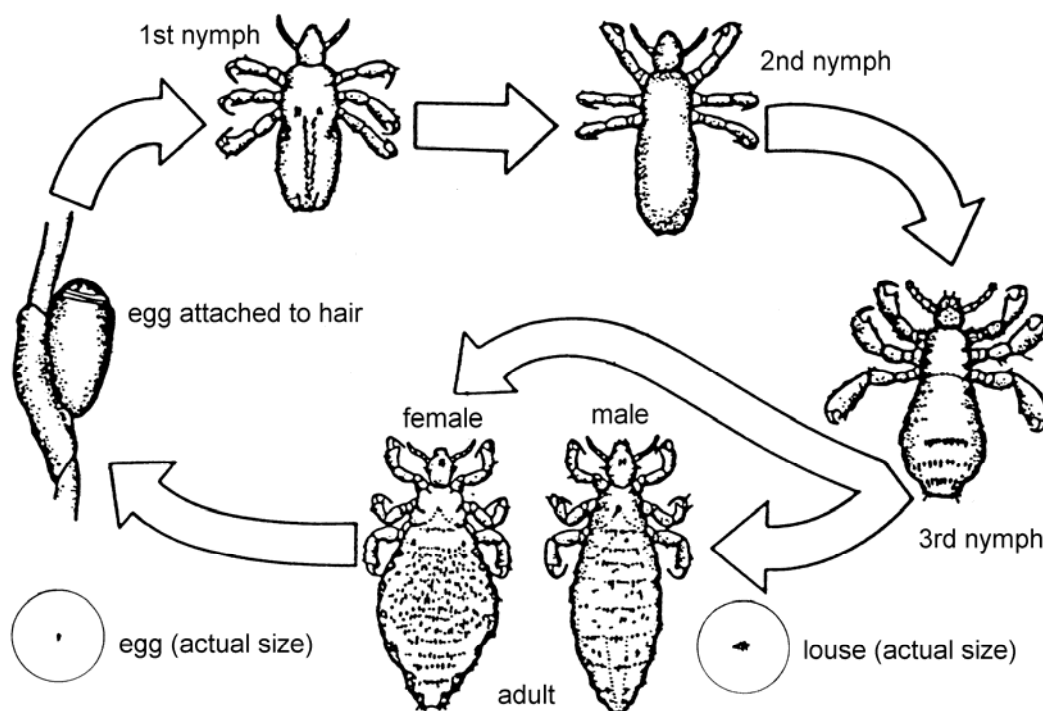
The headlouse starts out as a small egg about the size of a grain of salt (approx. 0.8 mm) which the female glues to the hair shaft right at the base and often touching the scalp. The eggs are hard, yellow-white and non-transparent giving a gritty feel when running one's fingers through the hair. They are most often found in the hair behind the ears, but can also be found at the nape of the neck, around the crown and under fringes. They can be seen with the help of a bright light and a magnifying lens.

Eggs take about 7-10 days to hatch, and will only hatch if kept at a temperature of 25-30°C in a relatively moist environment such as the scalp. Therefore, eggs are unlikely to hatch if they are on hair that has fallen out onto the floor or bedding, or if attached to hair which has come out in a brush.

If eggs are attached to the hair shaft more than 10-15 mm from the scalp, they will be too old, too cold and too dry to hatch. Hair grows at about 10 mm a month, and it is safe to assume that any egg found more than 10-15 mm from the scalp has either hatched or is dead. This is a very important point because many people who find eggs

anywhere in the hair conclude wrongly that there is still an active infestation of headlice.

Figure 1: Life cycle of the headlouse



When the eggs do hatch, the egg shells become shiny, translucent and flat. They still remain firmly glued to the hair shaft, and can only be removed by picking off with fingernails or with a fine toothed comb. It is not necessary to remove hatched or dead eggs, but most people prefer to do so.

Headlice have piercing mouthparts which they use to suck blood from the scalp in much the same way that mosquitoes do. The newly hatched headlouse (nymph) immediately seeks a blood meal and needs about six meals a day. The saliva of the headlouse contains an anaesthetic, so the bite is usually painless. It is only several weeks after the first infestation that the bite becomes itchy. This is because the person's immune system reacts to substances in the louse's saliva such as anticoagulants and digestive enzymes. Not everyone gets itchy.

The nymph sheds its skin three times to grow during the two weeks it takes to reach adulthood. The discarded skins are often to be found on the pillow together with the black sandy excrement of the headlice and are sometimes the first clue to their presence.

The adult headlice, like the eggs, can only survive at a temperature of about 25-30°C in the humid environment of the scalp with a food supply (blood) nearby. Therefore they are unlikely to stray far from the scalp and hair.

If headlice fall off or accidentally crawl onto towels, brushes, hats or clothing that has been in contact with the hair, they are most likely to be unwell or damaged, and even if healthy they are unable to survive for more than a day or two away from the scalp.

At the next stage of their life cycle, the adult headlice mate and each female proceeds to lay eggs and glue them to the hair shaft right at the base and often touching the scalp, thus continuing the infestation. Each adult female lays 150-300 eggs in her lifespan of three weeks or so.

The headlouse survives only on humans. Its life cycle cannot be completed on pets or other animals. Likewise the lice of other animals may bite people, but do not infest them.

Modes of transmission

The usual way in which a person gets headlice is from direct hair-to-hair contact with another person. Such contact is likely amongst children playing, or in children or adults hugging. Therefore, contact with household members, friends and classmates is the most common means of transmission in our society. All close contacts should be carefully checked in the event of someone contracting headlice.

Headlice in the environment

Headlice eggs and adult lice can only survive 1-2 days without the right temperature, humidity and a food source. They will die if stranded away from the scalp on shared combs and brushes, hats and bedding, so these items are only a minor risk factor for transmission.

Combs and brushes should be washed in hot water over 60°C. Bedlinen and pillowcases should be washed and can be dried in a clothes dryer or ironed. If an item is difficult to wash, it can be sealed a plastic bag for three or four days. House carpets can be vacuumed as a precautionary measure. Children can also be discouraged from sharing bicycle helmets, hats or hairbrushes.

There is no need to steam clean or iron carpets or use pesticide 'bombs'.

4. Epidemiology- who is likely to be affected, when and where?

In South Australia anecdotal evidence indicates that enquiries about headlice infestations are received throughout the year with a reduction in enquiries during school holidays and in the cooler months.

Headlice can infest a person of any age, sex, race and socioeconomic status, but they are most frequently identified in primary school children. This is because primary school children are likely to have close personal contact, providing the opportunity for headlice to transfer from head to head. Homes, playgrounds, kindergartens and child care centres are other examples of places where this close contact takes place.

Close living communities are also at risk. In some villages in Mexico, for example, 80% of people are infested with headlice.

It is important to remember that adults who have been desensitised to irritation from the bites may have an infestation without being aware of it, and may be a source of infestation to others (See section, *Treatment failure*).

Disease transmission

Headlice do not transmit HIV or Hepatitis B. The few diseases that they are capable of transmitting (typhus, trench and relapsing fever) do not occur in Australia.

Bites are only a problem when the skin is scratched because of itching, and these scratches then become infected. The best way to minimise this is to avoid scratching, but if scratches do become infected, treatment with antibiotics may be required and a doctor should be consulted.

5. Treatment

The two common methods used for the treatment of headlice are treating with *chemical pediculicides* and *non-chemical wet-combing*. The chemical treatment uses pediculicides which can kill the headlice and some nits (eggs), whereas the wet-combing treatment involves saturating the hair and scalp with hair conditioner to stun the lice and then combing the headlice and nits out. Both methods are effective but it is recommended, especially in heavy infestations, to use both chemical treatment and the wet-combing treatment.

The wet-combing method or use of hair conditioner (or a 2-in-1 conditioner/ shampoo) should be avoided for at least one day *before and after* using a chemical treatment. Some chemical treatment manufacturers may recommend more than a day's gap, so always read the manufacturer's directions. This is because conditioners or conditioner-shampoos could neutralise the action of the chemical treatment.

Never use chemical treatments more than recommended in the manufacturers' directions. Misuse could cause scalp irritation and make headlice resistant to that treatment (see section, *Recommended frequency of use and resistance*).

Other treatments such as manual combing, electrical combs, herbal/essential oil and enzyme treatments can be used to treat headlice and should be used in accordance with the manufacturers' instructions for best results.



6. Use of pediculicides - insecticides that kill lice

It is important to note that pregnant women, people with sensitive skin and the parents of infants less than 12 months of age should consult a medical practitioner before applying pediculicides.

To prevent unnecessary or repeated exposure to pediculicides the person applying the treatment chemical should wear protective gloves.

The Department of Health supports using a comb to remove headlice and their eggs if you are using a chemical treatment. Combing with the wet-combing technique may be best for this unless the manufacturer states that conditioners or shampoos should not be used for a period of time before or after the chemical treatment.

Over the years a large number of different products have been used in the treatment of headlice. Two types of pediculicides stand out as the most effective - those with maldison and those with pyrethrins as the active ingredient. The following guidelines give information on each product, how to use it and what to do in the case of treatment failure.

Maldison (Malathion)

Maldison blocks the action of an enzyme in the nervous system of headlice so that some messages are sent repeatedly, leaving parts of the nervous system permanently switched on. The resulting twitches and spasms are fatal to headlice. Because of differences in the enzyme on which it acts, maldison is far more toxic to insects than it is to mammals, including humans.

In humans, maldison is rapidly broken down and excreted. Nevertheless, as with any insecticide, maldison should only be used in accordance with the manufacturer's recommendations and care should be taken to avoid ingestion and contact with the eyes and nasal passages.

NEVER use garden strength maldison or malathion. Use only maldison preparations formulated for human headlice control, purchased from a pharmacy, school or authorised health professional. Pregnant and lactating women and children less than 12 months old should avoid the use of maldison products and should consult a doctor for advice about treating headlice.

There are several formulations of maldison available for headlice treatment, with the most common being alcohol (ethanol) base. The alcohol based preparations work by evaporating rapidly from the hair, leaving only a residue of maldison in the hair.

A hairdryer should *not* be used, as the heat produced may inactivate this residue.

Maldison is available:

- as a lotion containing 0.5% maldison to be applied to the hair and washed out after 12 hours with any regular shampoo. The lotion may be sold by pharmacists, schools, community health nurses and other agencies. It is sold to schools by Supply SA under the brand name KP24 and other brands.
- as a shampoo or foam containing 1% maldison to be applied to the hair, rinsed out after 10 minutes and the hair dried without heat. These 1% maldison preparations can only be purchased from pharmacies.

Pyrethrins/Permethrins

Pyrethrins are naturally occurring compounds extracted from chrysanthemum plants. They are absorbed through the shell of the louse and block nerve impulse transmission resulting in paralysis and death. Insects possess mechanisms to break down pyrethrins so a synergist, piperonyl butoxide, is usually added to the formula which inhibits the insect's ability to break down the pyrethrins. Pyrethrins are one of the safest of all insecticides, and break down rapidly in sunlight without leaving any residue.

Permethrin is in the pyrethroid category of treatments and this means that it is synthetically made with the same basic chemical make-up as pyrethrin but is enhanced to be more effective. Permethrin has much longer residual activity and does not require the use of a synergist.

Despite low toxicity to humans, some people are allergic to pyrethrins and permethrins in much the same way that some people suffer from hayfever. They can cause some itching and redness. Pyrethrins can also irritate the eyes, nose and throat and contact

with these parts of the body should be avoided. They should only be used according to the manufacturers' recommendations.

A large number of pyrethrin formulations are available, with many of these containing piperonyl butoxide. The most common formulations contain 0.165% or 0.66% pyrethrins and are available as a spray or a mousse. Pyrethrin shampoo is applied to the hair, left for 10 minutes, then rinsed out. Hair should be dried gently with a towel. Do not use a hairdryer as the heat may inactivate the pediculicide. The permethrin treatments usually come as a lotion with 1% permethrin.

These treatments are readily accepted, particularly by children, and pyrethrin shampoos have been made available through schools in South Australia for many years.

The permethrin products available in Australia include Quellada and Pyrifoam. The pyrethrin products include Banlice and Paralice.

KP24 is a registered trade name of Pharm-a-care Laboratory Ltd, Quellada is a registered trade name of GlaxoSmithKline Aust. Pty Ltd, Pyrifoam is a registered trade name of DermaTech Laboratories Pty Ltd, Banlice is a registered trade name of Pfizer Pty Ltd, Paralice is a registered trade name of C. B. Fleet Co. (Australia) Pty Ltd.

Disclaimer: Use of trade names in this document for identification only and does not constitute endorsement by the Department of Health.

Recommended frequency of use and resistance

Pediculicides should be applied twice, with the second application 7 - 10 days after the first. The second application will kill any headlice that may have emerged from eggs that survived the first treatment.

When applied as a single treatment, maldison based products are probably more effective than others, possibly because maldison has greater ovicidal activity (it can kill some unhatched eggs but should still be re-applied after 7-10 days).

It is recommended that you use the wet-combing technique in conjunction with the pediculicide to ensure that any headlice or eggs not killed by the chemical pediculicide will be removed manually by a comb. Wet-combing should not be used for at least a day following chemical treatment unless recommended otherwise by the pediculicide manufacturer.

Sometimes an appropriately used pediculicide fails to eradicate headlice. There are a number of possible causes for such failure and these must be excluded before it can be assumed that the product is ineffective:

- Inadequate application of the product
- Use of a hair dryer following treatment or using conditioner within 24 hours of treatment
- Failure to re-treat to kill nymphs that have emerged since the initial treatment
- Reinfestation.

If the product is ineffective it may be because the headlice have developed resistance to the active ingredient. There is nothing surprising in this. Any species of insect is likely to develop resistance to a particular insecticide if it is used frequently.

Overseas, and to a limited extent in Australia, headlice resistant to any one of the above pediculicides have been reported, but because these pediculicides work in different ways it is very unlikely that the headlice will be resistant to more than one type of active ingredient.

If the treatment is carried out correctly and still appears to be ineffective, then the simple solution is to change the pediculicide to one that has a different insecticide base.

Resistant headlice can usually be eradicated by switching to a pediculicide with a different active ingredient.

Widespread haphazard application of pediculicides will encourage headlice to become resistant and may, in the long term, contribute to adverse health effects. Pediculicides should not be used to *prevent* headlice infestation unless specified by the manufacturer.

This means that household members and other close contacts should not be treated unless there is direct evidence that they are infested. They should however increase their vigilance and get their hair checked frequently for headlice. The wet-combing technique is a more reliable method than checking dry hair.

Treatment failure

Reports of treatment failure are common, particularly from understandably upset parents. In assessing a treatment failure, one must first establish that an effective pediculicide has been used and that it has been applied according to the manufacturer's recommendations. Especially important is the re-application of the treatment 7-10 days after the initial treatment and avoiding the use of normal shampoos, conditioners or hairdryers on the same day as the chemical treatment. (See section, *Recommended frequency of use and resistance*)

If the correct treatment regime has been followed, then the next step to verify the reported persistence of headlice is to establish the presence of nymphs and adults in the hair. Many people interpret the persistence of eggs on hair shafts as an indication of the persistence of headlice, even though the eggs may have already been killed. It is important to point out that pediculicides do not remove eggs. Dead eggs can be differentiated from live eggs. It is safe to assume that any egg found more than 10 - 15 mm from the scalp has either hatched or is dead.

If headlice are persisting it is likely that the person has either been reinfested from household members or other close contacts, or that the headlice have developed resistance to the pediculicide.

Resistance should be tackled by the use of a different pediculicide.

Finally, a less obvious route of transmission may be responsible for reinfestation. Regular head contact may, for example, take place in the close contact playing football, whispering or hugging. The causes of treatment failures can usually be identified without lengthy investigations.

Hairdryers

Hairdryers are not recommended as part of the treatment as heat destroys the effectiveness of the chemicals in the treatment preparations.

7. Non Chemical Control

Wet-combing technique

This technique is used throughout the world as a detection and removal method. Once headlice are detected, it should be done three (3) times each week, (on alternate days) for three weeks. The idea is to smother the headlice to stun them and prevent them moving away. They are then manually removed before they can mature and are able to lay eggs.

Directions:

1. using white conditioner, apply enough to saturate the dry hair and cover the scalp and the full length of the hair.
2. use an ordinary comb to take out the knots.
3. put the fine-tooth headlice comb flat against the scalp and draw the comb through each section of hair from the roots to the ends of the hair.
4. wipe the comb after each stroke onto white tissue or kitchen paper, checking for headlice and nits. You can wipe several combings onto one tissue.
5. repeat the combing for every part of the head at least 4 or 5 times.
6. dispose of tissues and paper in a bin.
7. wash the hair in the usual manner.
8. scrub the combs with an old toothbrush in hot soapy water.
9. If you find live headlice, the wet-combing technique should be conducted 2-3 times weekly for 3 weeks to remove headlice and nits.
10. Where headlice or nits are not found, repeat steps 1-8 once/week for another 4 weeks to ensure individuals are headlice free. Then check hair weekly on an ongoing basis.

Wet-combing using conditioner should be avoided for at least one day *before and after* chemical treatment.

Electric combs

A battery-operated comb is available. It is designed for use on dry hair. It is claimed to kill the headlice, or stun them so they let go of the hair shaft where they are then removed as the comb passes through the hair. The manufacturers recommend that the electric comb be used frequently (on alternate days) for 2-3 weeks to break the breeding cycle. Electric combs should not be used by people with epilepsy, heart disease, pacemakers or neurostimulators.

Manual combs

The National Pediculosis Association (NPA), an organisation in the United States, recommends combs which they claim significantly reduce the time spent on manual removal, increase the number of headlice and eggs removed and do not tear hair.

Combs which have individually-tooled, rounded teeth, which are evenly spaced and set in a plastic handle are recommended. There is a range of effective combs available, but in general metal-toothed combs are considered to be more robust than plastic-toothed combs.

Some combs may pull the hair and may be more comfortable if used on wet hair with conditioner. Fingernails are also effective at removing eggs but total removal when there are many eggs present, may be painstaking. Vinegar dabbed on or combed through the hair makes the eggs slightly easier to remove.

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Haircuts

Short hair is easier to comb and requires less time. This can reduce the frustration. However, shaving heads and cutting long hair is not necessary. Tying back or plaiting hair is an effective precaution against the transmission of headlice.

What kind of treatment is adequate for readmission to school or pre-school?

The Department of Education and Children's Services has a policy that if evidence of headlice is found, the parent/guardian can be called and requested to pick the child up from the school at the end of the day and meet a staff member at the school. The child can stay at school for the whole day if appropriate control measures can be taken by the school to avoid transmission (See section, *Managing a case, or an outbreak of headlice*).

The parent/guardian should be instructed to treat the child as soon as possible, preferably that evening. Advice should be given to the parent or guardian on the best methods for effectively treating headlice. The parent/guardian may choose either the wet-combing treatment or the chemical treatment or both as appropriate methods for the effective removal of headlice.

Once a correct and careful treatment of the hair is conducted by the parent or guardian, so that there are no longer live headlice present in the hair, the child can be re-admitted to the school. The first thorough treatment with either a pediculicide or wet-combing should be sufficient for re-admission to school. Some evidence suggests that wet-combing can be even more effective in the removal of adult headlice and their eggs from the hair.

Once the child is returned to school without adult headlice, the wet-combing treatment should be continued by the parent over the next three weeks and the chemical treatment should be re-applied in 7-10 days after the first application to ensure that headlice from hatched eggs are removed. During this period, the child should make a special attempt to avoid head contact with others, use precautions such as tying back their hair and avoid the exchange of hats and helmets.

Parents of those who have had close contact with the person identified with headlice, such as classmates, should be notified of the headlice case and informed that they should carefully check their child's hair daily for at least the next three weeks.

In cases where a child has recurring headlice problems, the school may request that the child obtain clearance from a Medical practitioner before they return to school. The medical advice from the practitioner can help ensure that the parent/guardian is provided with personal advice on treating and preventing further headlice problems. Often community health services or local councils can help by providing one to one advice to families having ongoing difficulties with treating and preventing headlice infections.

8. The community's role

Families/households

Whilst both adults and children can have headlice in their hair, the close contact between children makes them more vulnerable. Parents and guardians are responsible for ensuring that their children are effectively treated and attempting to prevent further infestations.

Families should check everyone's head regularly (weekly is a good idea - and daily, if people in close contact have had headlice). Many families wet-comb weekly as a household routine. Families should help children to check properly. Families should understand that headlice are always present in the community and it is unfair and unhelpful to try to identify and blame one person or household.

If parents/guardians detect headlice, they should inform close contacts (other family members, school friends) so that they can check for the presence of headlice. Remember to keep the hair of close contacts or those who have had headlice recently plaited or tied back as this can effectively reduce transmission.

Education and childcare staff are obliged to tell parents as soon as they detect or suspect headlice and parents and guardians are obliged to collect their children at the end of the day and treat the headlice as soon as possible. This is so their child can be treated, and to try to prevent spread to others (See section, *What kind of treatment is adequate for readmission to school or pre-school?*)

Families should assist other families, particularly through schools and other community groups and clubs. For example, parents can begin or participate in an established community-managed committee at their child's school or in the community to co-ordinate activities to reduce the prevalence of headlice. These committees can be started and supported with advice from a local council Environmental Health Officer, or the Environmental Health Service of the Department of Health.

Pre-school, school and child care centre staff

(From: *Headlice: the role of preschools and schools in community headlice control*. Department of Education, Training and Employment, South Australia. 2000)

School, preschool and child care centre staff may be the first to notice or suspect a child/student has headlice or some other public health pest such as scabies or worms.

**Schools, preschools and child care centres
do not get or transmit headlice - people do!**

Nevertheless because schools and preschools are places of frequent close contact between people, principals and directors have an important role to play in supporting public health measures.

Section 43a of the South Australian Public and Environmental Health Act 1987 states that:

"A person infested with vermin must take all reasonable measures to prevent transmission of the vermin to others." The Act defines vermin to include lice, fleas and mites. A parent is responsible for a child.

Preschool, school and child care centre staff, therefore:

- include in the curriculum or activities, information about control and prevention of transmission of public health pests,
- send periodic reminders during a detected headlice infestation to families to check hair weekly as a preventative measure,
- inform parents as soon as practical, and at least by the end of the day, if their child is suspected of having headlice,
- inform parents that proper treatment must be carried out before the child returns to the site (See section - *What kind of treatment is adequate for readmission to school or pre-school?*)

A director or principal can:

- require that a child be treated before returning to the school or centre,
- request confirmation from the child's general practitioner that effective treatment of headlice has occurred prior to the student returning to school,
- ensure headlice treatment chemicals are available to parents. These can be obtained from Supply SA (free to school card holders). It is important that treatments be stored under 30°C,
- inform the parents of children in close (same class/group) contact with the infested child that a case is suspected,
- inform parents of children in close contact of the need to check all household members' hair,
- provide parents with relevant prevention and treatment information available from the Department of Health, the school, the local council and the Department of Education and Children's Services.

It is **not** the role of school, preschool or child care centre staff to:

- conduct mass head inspections, or
- treat children.

Managing a case, or an outbreak of headlice

If staff detect or suspect headlice in a child/student they should do the following:

Remove the child from **direct** head to head contact with others. The child need **not** be isolated. It is recommended to undertake an activity such that all children are doing something in the class where close head to head contact is unlikely.

Transmission occurs mainly via head-to-head contact. In rare cases, headlice may also be transmitted through shared contact with items (such as hats and helmets) which have recently been in contact with infested hair. Headlice do not jump, but they may crawl along surfaces.

Contact the parent/emergency contact person to arrange for the child to be checked and treated as soon as possible, and for household members to be checked and treated if headlice are detected. It is desirable to meet the parent/ guardian when they pick the child up to offer advice and explain their requirement to treat the child. Where there is doubt about treatment effectiveness, a letter from the child's general practitioner may be requested, declaring the child has been effectively treated for headlice. (See section, *What kind of treatment is adequate for readmission to school or pre-school?*)

Provide the parent of the infested child and parents of children in close contact with a copy of the Department of Health headlice pamphlet. Point out documentation explaining the child may return after treatment. Offer parents the opportunity to obtain headlice treatment products through the school or preschool. Products recommended by the Department of Health, including those containing malathion or permethrin, and headlice combs are stocked by Supply SA.

If headlice are persistently detected in a group of children, the principal or director should seek assistance from the local council environmental health officer or community health centre. The school may organise sensitive head inspections, with consent of the parents, of all close contacts within the school or centre. Checks for headlice may be conducted by community health nurses, but the emphasis should be on demonstrating the best way for families to treat and prevent headlice.

Conducting headlice inspections

Checking for headlice is a family responsibility. The Department of Health recommends that *all* family/household members should have their hair checked weekly for eggs and headlice. Even if a mass headlice check was conducted with every child in a preschool, school or child care facility, these pests would probably not be eliminated. All household members and other close contacts should be checked for headlice on an ongoing basis to ensure the number of cases is minimised.

No staff member can be required to conduct a head inspection. However, if numerous cases of headlice are detected or suspected, a preschool or school may arrange head inspections of children in close contact within the site, subject to parent/guardian consent.

Any inspection of a child's head requires the consent of the parent/guardian and the child. This may be obtained via a standard consent sought from parents at the beginning of each year and/or a request at the time of an incident.

The adult conducting the head inspection should ask the child's permission immediately before checking the child's head. If the child says no, staff should contact the parent/guardian.

School, preschools and child care facility staff are not public health authorities. They can, however, support the control and prevention of transmission of public health pests, through a prompt and consistent response to a detected or suspected case.

Local councils

Environmental health officers are authorised under the Public and Environmental Health Act to provide assistance and advice on the management of headlice.

Local councils can strongly encourage and support community-managed headlice programs by providing information and helpful contacts.

Councils may also have information on agencies in their area which are able to assist with specific problems related to headlice.

Proactive workshops, public displays, internet websites and seminars may be provided by councils as a useful means of sharing information and establishing contacts to assist the community.

Local council action when headlice numbers are abnormally high

When dealing with headlice 'outbreaks', authorised officers can ensure that resource information is freely available to all households, families, community clubs and groups including schools and childcare centres.

Pre-schools, schools and child care facilities can be a focus during times of perceived headlice 'outbreaks' and may require the assistance of an authorised officer to develop a coordinated approach to the problem.

Accurate information can be made available by councils to staff, parents and children regarding how to:

- identify headlice and eggs (nits),
- select effective treatment(s),
- obtain supplies,
- apply treatment,
- follow-up treatment,
- assess the effectiveness of treatments,
- ensure prompt and effective strategies in schools and childcare services.

Authorised officers may provide support to education and childcare staff and other community groups by assisting households who have persistent problems with headlice. In some extreme cases, a home visit by the environmental health officer may be necessary. It is better to educate and support rather than take an enforcement approach. Local council environmental health officers can obtain information and advice from the Environmental Health Service of the Department of Health and other councils already extensively involved in headlice control.

Local councils should have public headlice management policy and procedures

The policies may include:

- liaison with other resource people within the Local Government Area, for example community health nurses, pharmacists, general practitioners and hairdressers,
- liaison with other key community service providers including schools, childcare services and community clubs and groups,
- provision of professional development and in-service training, on headlice management to community workers including home and centre-based childcare providers, pharmacists, hairdressers, child and adolescent health nurses, council reception staff and Environmental Health Officers,
- procedures to provide one to one support for households experiencing particular difficulties with headlice treatment and management.

Community Health Centres

Community health centre staff can have a key role in providing information regarding the treatment of headlice.

Community health centres may:

- develop the capacity in the centre, through an appointment system, to provide one to one care for families experiencing particular difficulties with headlice treatment and management,
- take a community leadership role in the education and health promotion aspects of headlice management.

Community Health Centres should have a headlice management policy and procedures. The policies may include:

- advisory and referral processes to community services and resources for families who are experiencing particular difficulties managing headlice,
- networking with the other community based organisations who are able to provide resources for headlice management, such as local government, general practitioners, pharmacists and hairdressers,
- provision of education sessions for families and workers through schools, childcare services, community clubs and groups.

Child and Youth Health

Child and Youth Health is a State Government community child and youth health organisation. They can offer headlice management information and support through:

- the Parent Helpline on 1300 364 100 which is a 24 hour/7 days telephone service which offers advice on a range of issues affecting parents including headlice management. It is the normal cost of a local call from anywhere in South Australia,
- their child, family and youth health services,
- their website - www.cyh.com

Department of Health (DH)

DH is responsible for:

- provision of up-to-date, referenced and sourced information,
- dissemination of policy guidelines to key stakeholders on the detection, treatment and management of headlice,
- provision of an ongoing advisory service for public inquiries regarding headlice,
- ensuring consistency on this issue across the state,
- working collaboratively with schools, local government and other community services and individuals to actively adopt these management guidelines.

General practitioners

General practitioners have a key role in the management of headlice transmission. They are encouraged to:

- provide information to the community on treatment and detection options,
- support education and childcare services and other community services who request a certificate confirming effective treatment of headlice prior to returning to school or work,
- maintain up-to date information on the wet-combing procedure and currently recommended chemical treatments,
- support families and households in the control of headlice,
- have an awareness of community services and resources to where families who are experiencing particular difficulties can be referred,
- prescribe or recommend treatment **only** when a positive identification of active headlice has been made.

General practitioners should be aware that headlice infestation is not a notifiable disease.

Pharmacists

Pharmacists can assist the management of headlice in the community by:

- recommending or prescribing effective treatments and providing advice on the use of such treatments,
- liaising with product manufacturers and sales staff to ensure promotional material provided is accurate and consistent with community needs,
- supporting and educating families who are experiencing difficulty treating headlice,
- staff being aware of headlice treatment options and liaising with other community based resource staff,
- provision of regular updates and support to the workforce through professional networks.

Hairdressing Associations and Hairdressers

Hairdressing professional bodies and hairdressers can help manage headlice cases by providing assistance to customers detected with headlice. Hairdressers are often the first point of detection for headlice and their advice and referral of customers to appropriate help is critical for its control. Hairdressers can:

- provide consistent and helpful advice to customers regarding current headlice detection and treatment practices,
- provide accurate information regarding headlice to training providers to supply to their apprentices and students, and
- increase their awareness of the relevant legislation regarding headlice and notably that there are no regulations preventing a person with headlice from entering and using a hairdressing salon.

It is usually not appropriate to close a business down or prevent the future entry of a person with headlice, following the detection of a headlice case in the premises. Instead simple washing techniques are effective in preventing headlice transmission.

Combs and any other items that may have been in contact with headlice should be washed in hot water over 60° C, and any towels or linen used for the person with headlice should be washed and can be placed in a clothes dryer and ironed. If something is difficult to wash, it can be tied-up in a plastic bag for three or four days. Carpets can be vacuumed as a precautionary measure. **There is no need to steam clean or iron carpets or use pesticide 'bombs'.**

9. PAMPHLET, FACTSHEETS & TEACHING ACTIVITIES

The following factsheets have been developed by the Department of Health. They can be downloaded from the DH headlice website:

www.dh.sa.gov.au/pehs/branches/headlice/headlice-index.htm. Some materials can be ordered at a small cost by telephoning the Environmental Health Service on 8226-7100 or may be obtained from a local council office and photocopied for distribution.

A series of headlice teaching activities were developed by the City of Onkaparinga and the Aldinga Schools as a resource for teaching students about headlice. They can be downloaded from www.dh.sa.gov.au/pehs/branches/headlice/headlice-index.htm. They can also be obtained from the Department of Health and copied or modified as required.