

Patient information from the BMJ Group

Head lice

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Head lice

Head lice are basically harmless, although they may make your head feel itchy. They're quite easy to treat, but it's a nuisance when your children get them repeatedly.

We've brought together the best research about head lice and weighed up the evidence about how to treat them. You can use our information to talk to your doctor and decide which treatments are best for you.

What are head lice?

Head lice are small insects that live on people's scalps. (A single insect is called a louse.) They spread from one person to another through head-to-head contact.

They are basically harmless and fairly easy to treat. Sometimes head lice are called nits, even though the word 'nits' really means the shells of their eggs.

Having head lice is nothing to be ashamed of. It does not mean you don't keep yourself clean. Head lice can't tell the difference between clean hair and dirty hair. They just want to survive, and to do that they need someone's head to live and breed on.

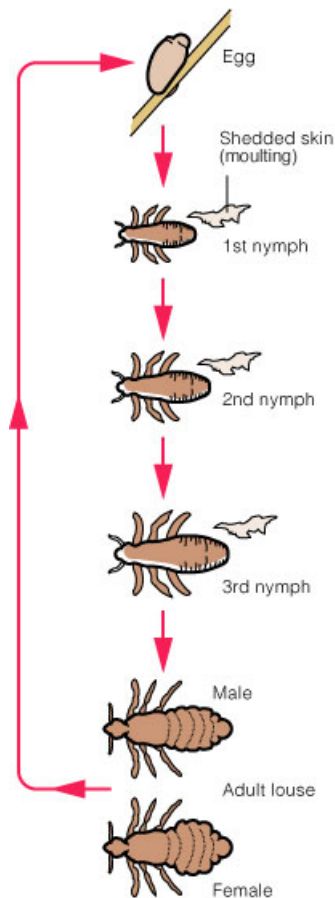
The life cycle of head lice

To understand how you catch head lice and how to get rid of them, it helps to know something about what head lice look like and how they breed.

There are three stages in the life of a louse: the egg, the nymph, and the adult louse.

Head lice lay their eggs on separate strands of your hair.

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It takes about 10 days for a louse to grow into an adult.

When an egg hatches, the shell (nit) becomes easier to see. It looks white and stays attached to the hair.

After seven days, lice hatch from the eggs.

An adult louse can live for up to 30 days. To stay alive, the louse needs to feed on human blood several times a day.

If head lice fall out of your hair, they will die in about one day. However, they're unlikely to fall out of your hair if they're healthy, because of their strong grip.

If there is any disturbance to the hair (for example, if it touches someone else's head), the louse will start to crawl outwards along the hair and may move from the first person's head to the other's.

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What a head louse looks like



This is what a head louse looks like through a magnifying glass.

A fully grown head louse is about the size of a sesame seed. It is flat and doesn't have wings.

Head lice are usually greyish brown, although the colour can vary.

How do head lice spread?

Head lice spread by crawling from one person's hair to another's.

- You can't catch head lice just by standing next to someone who has them. Head lice usually spread among people who spend a lot of time in close contact, such as family members and school friends.
- You won't catch head lice by briefly brushing heads with someone who has them . Your head needs to be in contact with someone else's for a while. Head lice take about 30 seconds to move from one head to another. ^[1]
- Head lice can't fly. They can only move across hairs that are touching each other.
- It is very unlikely you'll catch head lice by wearing a hat that has been worn by someone who has head lice. Head lice have a strong grip, so they're unlikely to fall out of someone's hair.
- If you see a head louse on a pillow, a piece of clothing, or a hat, it's probably dead or dying. ^[2]

How do I know whether I or someone in my family has head lice?

The only definite way to know that you have head lice is to find a live louse in your hair. Finding a louse egg or nit does not prove that you have head lice.

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In one study, out of 50 children found to have just louse eggs and nits, only nine went on to get head lice, probably because they were empty shells left behind from an earlier infestation of head lice.^[3]

To learn how to spot head lice, see [How do I check for head lice?](#)

What are the symptoms of head lice?

You can have head lice without knowing it. There are usually no symptoms, although some people get an itchy scalp from the bites of the lice. The only way to know for certain that you have head lice is to find a live louse in your hair. Finding what may be a nit (the shell of a louse egg) does not prove someone has head lice. The only way to check that you've got rid of head lice is to have a look and make sure that you or your child doesn't have them any more.

It can take weeks or even months before you realise that you or someone in your family has head lice.^[2] ^[4]

Checking for head lice

- You're unlikely to spot head lice by just looking through the hair. To find one, you'll physically have to get it out of the hair. To do this, you need a comb that is capable of picking out head lice. These are available from some pharmacies. Ask for a head louse detection comb. Otherwise, you can use a comb with very fine teeth, although this will not work so well. The space between the teeth of the comb should be between 0.2 millimetres and 0.3 millimetres.
- To make it easier, first use a normal comb to get rid of any tangles.
- Use the louse detection comb to comb the hair thoroughly from the scalp right to the ends of the hair. Work around the head carefully, starting at the front.
- Check the comb for head lice after each stroke. If something is on the comb then you need to look closely to make sure that it definitely is a louse. You should be able to see a brownish body, although head lice can look pale if they have not fed for some time. If you are not sure it is a louse, brush the object off the comb onto a piece of paper. If it's a louse, it should move.
- Once you've been all the way around the head, go through the hair again.
- Some people advise wetting the hair first and using conditioner to make it easier to comb.
- If you're a parent of a school-aged child, try to check for head lice as a regular part of your routine. You could do it once or twice a month.

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Checking you've got rid of head lice

- If you've used a medicine to treat head lice, you will need to check that it's worked and that all the head lice are gone.
- You need to follow the same procedure as above and use the comb to check for head lice.
- Check for new head lice three to five days after using a medicine and again after 10 to 12 days.
- If you find head lice after using a medicine, don't use the same treatment again. There may be a problem with resistance in your area, which is why the treatment has not worked. Speak to your doctor or pharmacist about what to do. You may need to try a different medicine.

How common are head lice?

Head lice are a common problem, especially in school children.

More than 1 in 3 children in the UK are likely to get head lice at some time during the year.^[5] Surveys among school children have found that between 1 in 10 and 2 in 10 have head lice at any one time.^[6] ^[7]

It's difficult to know exactly how common head lice are because most people treat themselves at home and go to see their doctor only if it doesn't work.

Who gets head lice?

- Children between the ages of four and 11 have the highest chance of catching head lice because of their close contact with other children at school.^[2] Parents are also very likely to get head lice because they have close contact with children.^[2]
- Girls have a higher chance of getting head lice than boys do.^[5] ^[2] Researchers think this is because girls are more likely to put their heads together when they're playing or working.
- You'll rarely catch head lice from a stranger. It's more likely to be from someone in your family or your regular group of friends.^[4]
- If you have long hair and have head lice, you're likely to have more of them than if you have short hair. This is because the head lice are less likely to find their way down long hair and onto someone else's head, so they stay where they are.^[4]

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- It's difficult to say whether children will have fewer problems with head lice if they have long or short hair. But it's probably more difficult to get rid of head lice if their hair is long and thick. ^[8]

What treatments work for head lice?

Head lice can be irritating, but they are basically harmless. There are treatments that will, in about 8 in 10 cases, get rid of them quickly. However, head lice are common, and many children get them repeatedly during their early years at school.

Most treatments are lotions or liquids. Shampoos are also available but may not work as well. Most treatments contain chemicals that kill insects (insecticides). If you follow their instructions, they are safe. Sometimes they don't work because the head lice have developed a resistance to the chemicals (this means that the chemicals will no longer kill all the head lice). If this happens, you will have to try a different treatment.

Key points about treating head lice

- Treat yourself or members of your family for head lice only after you've found a live louse in your hair or theirs.
- Chemical treatments for head lice (insecticides) may work. But head lice in the UK are becoming resistant to chemical treatments. So it's hard to say which treatment works best.
- A silicone-based treatment called dimeticone may also help get rid of head lice. Researchers think that head lice won't become resistant to it as they do to chemical insecticides.
- Use liquids or lotions rather than shampoos. The amount of chemical in shampoos is so small that these are unlikely to work.
- Treatments may not always kill head lice eggs. This means you may have to repeat the treatment after seven days to catch newly hatched head lice.
- If you use a treatment correctly and it doesn't work, it probably means the head lice are resistant to it. Don't use the same chemical again.
- Liquid treatments are water-based and lotions are alcohol-based. Both work. But it is best not to use alcohol-based treatments on anyone with severe **eczema** or **asthma**.
- Combing your hair with a louse detection comb (also known as 'bug busting') may work. But we need more research to know for certain.
- There's not enough evidence to say whether herbal treatments work.

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Which treatments work best? We've looked at the research and given a rating for each treatment according to how well it works.

Treatment Group 1

Treatments for head lice

Treatments that are likely to work

- [Dimeticone](#) : This is made from silicone. It is not an insecticide like many other treatments for head lice. Brand names include Hedrin and Linicin. [More...](#)
- [Malathion](#) : This is a chemical that kills insects (an insecticide). The brand names include Derbac-M and Prioderm. [More...](#)
- [Permethrin](#) : This is an insecticide with the brand name Lyclear. [More...](#)
- [Phenothrin](#) : This is an insecticide with the brand name Full Marks. [More...](#)

Treatments that need further study

- [Removing head lice and eggs by combing](#) : This involves repeated combing of the hair to physically remove the head lice. [More...](#)
- [Herbal treatments and aromatherapy](#) : These treatments use herbal products, including essential oils, to get rid of head lice and stop them coming back. [More...](#)
- [Carbaryl](#) : You can get this treatment only on prescription. It isn't used very often. The brand name is Carylderm. [More...](#)
- [Head lice repellents](#) : These include oils and sprays that are thought to deter head lice. [More...](#)

What will happen?

Head lice are rarely a serious problem, but they can be annoying. And if you don't get rid of them, they can spread to other people.

If you don't treat head lice, the problem will get worse as the head lice breed. You or your child will probably be annoyed by itching and bites. You or your child could also develop an infection from the bites, but this is rare.

Head lice will not clear up on their own, so you shouldn't ignore them. You should make sure they are treated straight away. To learn about treatments, see [What treatments work for head lice?](#) Here are some other things you can do if you discover head lice in your household.

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- Tell people who you or your child has close contact with. They can then check and, if necessary, treat their hair or their children's hair. Head lice spread easily in families and schools. Telling people that you or your child has head lice is for your benefit as well as theirs. If you don't do it, the head lice will spread in your community, and you or your child may catch them again.
- If your child has head lice, tell his or her teacher. The teacher can then advise other parents to check their children's hair and treat them if necessary.
- Check your children's hair regularly for head lice, using a louse detection comb. It's much easier to get rid of just a few head lice before they have had a chance to breed and there are more of them.
- For everyday purposes, use a fine-tooth comb rather than a brush on your child's hair. Combs are better at removing head lice, so you will be able to detect them more quickly.

Infection

Head lice are usually just a nuisance. But, occasionally, their bites can result in infection. This is more likely to happen if you scratch your head and pull off the scabs. If the lice in your hair are carrying **bacteria** (germs), these can get into the wound.

One of the most common infections from head lice is **impetigo** of the scalp. This is a skin infection that head lice can spread from one person to another. Impetigo causes crusty, itchy scabs, and needs to be treated with **antibiotics**. Impetigo is also easily passed on. If you have crusty or itchy scabs on your head, you should see your doctor straight away. You should get rid of the head lice while you're taking antibiotics for the infection.

Long-term infestations

If head lice go untreated for a long time (for example, 12 to 18 months), they can make you feel generally low and tired.^[9] This is because your immune system becomes worn down after this time. Because head lice are usually treated these days, this is now rare.

Any waste from the head lice will normally be dissolved in sweat, especially at night. Children sweat more than adults, and this means their pillowcases may become dirty more quickly than usual.

Treatments:

Dimeticone

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[How good is the research on dimeticone?](#)

This information is for people who have a child with head lice. It tells you about dimeticone, a treatment used for head lice. It is based on the best and most up-to-date research.

Does it work?

Yes, dimeticone is likely to work. In studies, it worked for about 7 in 10 people. You might want to use this treatment if you wish to avoid putting insecticides in your child's hair.

What is it?

Dimeticone is a treatment for head lice. It is sold with the brand names Hedrin and Linicin.

Unlike most of the other treatments for head lice, dimeticone is not an insecticide (a chemical that poisons insects). Because it's not an insecticide, head lice are less likely to become resistant to it. When head lice are resistant to a treatment, this means that some lice are not killed by the treatment.

Dimeticone is available as a lotion, shampoo, or spray. The lotion and shampoo are for treatment. The spray is a repellent. To learn more about repellents, see [Head lice repellents](#). The lotion is put onto dry hair, combed through with a normal comb, and left to dry. The treatment should be washed out around 12 hours later, and the steps should be repeated after seven days.

How can it help?

Three studies have found that dimeticone works well. In two studies, 7 in 10 people no longer had head lice after using this treatment twice.^[10] ^[11] In a third study, more than 9 in 10 people no longer had head lice after two treatments.^[12] In each study, dimeticone worked at least as well as an insecticide treatment.

How does it work?

It works by coating the head lice so water can't get in and out of their bodies. This kills them.

Can it be harmful?

Dimeticone can irritate your eyes, neck, and scalp. But it seems to cause fewer problems than a treatment called [phenothrin](#).^[10] But problems are rare. Only 2 in 100 people who used dimeticone in one study reported problems. By comparison, 9 in 100 people in the same study reported skin irritation with phenothrin.^[13]

How good is the research on dimeticone?

We found three good-quality studies ([randomised controlled trials](#)) that compared dimeticone with other treatments. The studies included more than 430 people, mostly

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children. Dimeticone was compared with the insecticides phenothrin (a pyrethrin) and malathion. In each case, dimeticone worked at least as well as the insecticide. Between 70 in 100 and 97 in 100 people were clear of head lice after two treatments with dimeticone.

Malathion

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[How good is the research on malathion?](#)

This information is for people who have a child with head lice. It tells you about malathion, a treatment used for head lice. It is based on the best and most up-to-date research.

Does it work?

Yes, malathion is likely to work against head lice. It may work better than some treatments because it kills the head lice eggs too. But malathion might not work if head lice have become resistant to it in the area where you live.

What is it?

Malathion is a chemical that kills insects (an insecticide). It is one of a group of compounds called **organophosphates**. There are many different organophosphates, and many are used to control pests on animals and crops. Some organophosphates are more poisonous than others, and malathion is one of the weaker chemicals in this group.

Some people are concerned that chemicals such as malathion can cause serious damage to their health and cause problems such as dizziness and numbness. The government committee that checks the safety of chemicals says there's no evidence that the low doses of malathion used in head lice treatments are harmful.^[14] Because these treatments are not used very often or for very long the committee says the use of treatments does not need to be restricted.

Malathion rapidly kills both the head lice and their eggs. It should get rid of all the head lice after just one treatment, but your doctor or pharmacist will probably suggest you apply the treatment again after one week to be certain it has killed all the head lice.

Malathion comes as a liquid, a lotion, and a cream shampoo. You can buy malathion in a pharmacy or your doctor can prescribe it for you. The brand names include Derbac-M and Prioderm. It's not suitable for babies younger than six months.

Malathion lotion contains other substances that give it a strong smell. It has to be left on for several hours, so it is a bit inconvenient to use. It may be worth trying if other treatments haven't worked.

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How to use malathion

Check everyone in the household for live head lice before using this treatment. You'll want to treat everyone who has head lice at the same time.

- Sprinkle malathion onto dry hair and work into the scalp and hair until they feel thoroughly moistened. Unless you have very short hair, you will need at least 50 millilitres (50 mL) to do this.
- Wash your hands as soon as you've finished rubbing in the treatment.
- Let your hair dry naturally. Do not use a hairdryer, and make sure you leave your hair uncovered.
- Leave the treatment in your hair for 12 hours. Usually the most convenient way to do this is to leave it on overnight.
- After 12 hours, wash your hair and rinse it thoroughly.
- After rinsing your hair, and while it's still wet, go through it with a louse detection comb to remove the dead head lice and nits from your hair.
- You should repeat this treatment after one week to be certain your hair is clear of head lice.
- Do not use this treatment more than recommended by your doctor. Your doctor will probably suggest you try a different treatment if it doesn't work the first time you use it. The head lice may be resistant to malathion, which means this insecticide won't kill them.
- If you get some of the treatment in your eyes, wash it out immediately with plenty of water.

How can it help?

Malathion can work well as a treatment for head lice. One study found that more than 9 in 10 people treated with malathion had got rid of their head lice within one week. ^[15]

But, like other chemical treatments, this product may not work as well if head lice are becoming resistant to it in your area. Becoming resistant means some head lice are no longer killed by the treatment.

Malathion may work better than [phenothrin](#) , [permethrin](#) , and [wet combing the hair](#) . ^[15] ^[16] ^[17] ^[18] However, one study found it may not work as well as a treatment called [dimeticone](#) . ^[11]

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How does it work?

Malathion acts by attaching itself to a chemical in the louse's nervous system called [acetylcholinesterase](#) . This causes the louse's nervous system to stop working and the louse dies.

Other substances in the lotion are able to get into louse eggs and damage the unborn head lice.

Can it be harmful?

When used according to the instructions, malathion is safe. At its recommended doses, malathion rarely has side effects. Some people find it makes their scalp sting.^[19]

Malathion contains alcohol, so it can catch on fire if it is near a flame or heater.^[20]

If the medicine is swallowed, it can cause symptoms such as stomach cramps, confusion, and [diarrhoea](#) . However, these effects are rare and didn't happen in the studies we looked at.

How good is the research on malathion?

There's some good evidence that malathion gets rid of head lice. In one study, malathion got rid of head lice for 90 out of 95 children after seven days.^[15]

We found four good studies that showed that malathion works better than [phenothrin](#) , [permethrin](#) , and [wet combing](#) .^{[15] [17] [21] [18]}

Another study compared malathion or permethrin with wet combing.^[22] It found that wet combing worked better. But only one application of each product was used, which is less than the amount recommended, so the results are not reliable.

A small study also found that malathion may not work as well as a treatment called [dimeticone](#) .^[11] After two treatments with malathion, 33 in 100 people no longer had head lice. After two treatments with dimeticone, however, 70 in 100 people were free of head lice.

Permethrin

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[How good is the research on permethrin?](#)

This information is for people who have a child with head lice. It tells you about permethrin, a treatment used for head lice. It is based on the best and most up-to-date research.

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Does it work?

It may do. Some research has found that permethrin can get rid of head lice. One study suggests you may have to apply permethrin twice, within seven days, for it to work well.

But the only permethrin product suitable for head lice in the UK is a crème rinse. Doctors think it may be too diluted and is not left on the head long enough to work.

What is it?

Permethrin is a chemical that kills insects (an insecticide). It is a man-made (synthetic) version of natural insecticides called pyrethrins.

Permethrin is also used to get rid of many other types of insects on animals and crops, as well as to control [scabies](#) (a disease caused by mites that live on the skin) and pests in buildings.

You can buy permethrin from a pharmacy without a prescription as Lyclear Crème Rinse. This is a one percent rinse, which means one part of the chemical (permethrin) is used in 99 parts of solution (the liquid in which the chemical is dissolved). You rinse it out of your hair after 10 minutes. It's not suitable for babies younger than six months.

But doctors don't recommend Lyclear Crème Rinse to get rid of head lice. This is because it may be too diluted and is not left on the head long enough to work well.^[23] Doctors recommend that lotions and liquids stay on your hair overnight to give them more chance of getting rid of all of your head lice.^[23]

How to use permethrin

If you wish to try it, here's how to use permethrin as a crème rinse.

- Check everyone in the household for live head lice before using this treatment. You should treat everyone with head lice at the same time.
- Before you apply any treatment, remove clothes from the waist up.
- Shampoo and towel-dry your hair.
- Apply the crème rinse to the scalp and all the hair, and leave on for 10 minutes.
- Rinse hair with water only. Do not shampoo the hair for at least 24 hours.
- Check the hair for head lice after about eight hours to 12 hours with a louse detection comb. If the permethrin has worked, you should not find any live head lice.
- Keep checking your own or your child's hair every two or three days for any newly hatched head lice. If you find head lice, repeat the treatment after seven days.

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- After about two weeks, check the hair of everyone who has been treated to make sure all the nits and head lice are gone.

How can it help?

Some research shows that permethrin is likely to work well at getting rid of head lice.^[24] However, the only permethrin product suitable for head lice in the UK is Lynclear Crème Rinse, and doctors don't recommend this to get rid of head lice.

Also, whether it works depends on whether there is resistance to permethrin in your area. You may have to ask your GP or pharmacist about the situation in your area.

Permethrin doesn't seem to work as well as another treatment called [malathion](#) .^[25]

How does it work?

Permethrin is poisonous to insects. It kills by acting on the insect's nervous system.

Permethrin also enters the outer layers of head lice eggs and sticks to the outside of the eggs' shells. It cannot get into the eggs, so the unhatched head lice develop without any problems. But when the baby head lice start to come out of the eggs, they may come into contact with the insecticide. Whether they are killed will depend on how much insecticide they are in contact with.

Can it be harmful?

There were no serious side effects reported in the studies we looked at.

You may get pain, burning, and stinging on your scalp. And after treatment you may get a red rash or feel some tingling. These side effects are quite rare and go after a few days.

How good is the research on permethrin?

There's some evidence that permethrin works well to get rid of head lice. One summary of the research (a [systematic review](#)) found that it worked better than another chemical treatment called lindane (which is not available in the UK).^[24]

Permethrin doesn't seem to work as well as another treatment called [malathion](#) .^[26]

Another study compared permethrin or malathion with [wet combing](#) .^[27] It found that wet combing worked better. But only one application of each product was used, which is less than the amount recommended, so the results are not reliable.

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[How good is the research on phenothrin?](#)

This information is for people who have a child with head lice. It tells you about phenothrin, a treatment used for head lice. It is based on the best and most up-to-date research.

Does it work?

Yes, it is likely to work. How well it works depends on whether head lice have become resistant to this insecticide in your area. Resistance means some head lice are able to survive the treatment.

What is it?

Phenothrin is a chemical that kills insects (an insecticide). It is a man-made (synthetic) chemical similar to the natural insecticides called **pyrethrins**. Phenothrin is one of a group of insecticides known as **pyrethroids**. It is also used to control [scabies](#) (a disease caused by mites that live on the skin).

The brand name for phenothrin is Full Marks. You can buy this from your pharmacy without a prescription. It's available as a lotion, a liquid, and a mousse, which is used like a shampoo. It's not suitable for babies younger than six months.

How to use phenothrin

This is how you use it.

- Check everyone in the household for live head lice before you use this treatment. You should treat everyone who has head lice at the same time.
- Apply the medicine to dry hair so that the scalp and all the hair become thoroughly wet. Keep it on the head for exactly 30 minutes for the mousse, two hours for the lotion, and 12 hours or overnight for the liquid.
- Wash the hair with normal shampoo, then rinse and dry with a clean towel.

Doctors say it's best to use the overnight liquid instead of the mousse or lotion, both of which stay in your hair for only a short time. ^[28] Using the treatment for a short time could encourage head lice to become resistant to phenothrin. But there's no evidence that this happens.

For all these treatments, when you've dried off the excess water, use a louse-detection comb to remove the dead head lice and nits from the hair. Wash your hands when you've finished.

You will need to repeat the treatment seven to 10 days later.

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How can it help?

Some research has found that phenothrin works against head lice. In one study, only 4 out of 10 people who used phenothrin were free of head lice.^[15] Another treatment, [malathion](#), worked better. But the study was carried out in an area where head lice were suspected of being resistant to phenothrin. Being resistant means some head lice can survive the treatment.

One study found that phenothrin worked as well as a relatively new treatment called [dimeticone](#).^[29] In the study, 7 in 10 people got rid of their head lice whatever treatment they used.

In another study, [wet combing](#) (bug busting) worked better than phenothrin.^[30] But, again, resistance may have been a problem in the area.

You need to find out from your doctor or pharmacist which treatments work best in your area.

How does it work?

Phenothrin kills head lice by stopping their nervous system working.

Can it be harmful?

Like most insecticide treatments, phenothrin can have minor side effects, such as skin rashes.

How good is the research on phenothrin?

The research has found mixed results on how well phenothrin works against head lice.

We found one study involving 193 children that looked at how well phenothrin worked compared with another treatment called [malathion](#).^[15] It was carried out in an area where head lice had become resistant to phenothrin.

The study found after seven days:

- That 4 out of 10 children treated with phenothrin were free of head lice
- That 9 out of 10 children treated with malathion were free of head lice.

But the trial was organised in a way that means we can't be sure of the results.

One study found that phenothrin worked as well as a relatively new treatment called [dimeticone](#).^[31] In the study, 7 in 10 people got rid of their head lice whatever treatment they used.

Another small study (30 people) found that only 2 out of 15 children were free of head lice after treatment with phenothrin.^[30] This was far fewer children without head lice than

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in another group that [removed head lice and eggs by combing](#) (bug busting). But the study may not be reliable.

Removing head lice and eggs by combing

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This information is for people who have a child with head lice. It tells you about removing head lice and eggs by combing, a treatment used for head lice. It is based on the best and most up-to-date research.

Does it work?

We're not sure. There's some evidence that combing can get rid of head lice. But we need more studies before we're sure how well it works. It seems to depend on how well you carry out this treatment. Your doctor may recommend combing if the head lice are resistant to chemical treatments.

What is it?

Combing the hair to get rid of head lice is not new, but it has become popular in the UK, where some people prefer it to using chemical treatments (insecticides). Your doctor may advise you to use this treatment if you don't want to use chemicals on your own or your child's hair.

The technique of combing wet hair with a louse detection comb is also known as 'bug busting' or 'wet combing'. It involves thoroughly combing through wet hair using a special comb with very fine teeth that can pick out head lice. You can buy these combs in a pharmacy, or your GP may prescribe a kit that contains them. The product is called the Bug Buster Kit. ^[32]

The aim of combing is to break the life cycle of the head lice. The idea is that by removing head lice early on in their life cycle, you'll stop them becoming mature enough to lay eggs. After about two weeks, all the head lice should have been removed.

Here's how to remove head lice by combing your hair or your child's hair.

- First comb through the wet hair with an ordinary comb to get rid of any knots and tangles.
- Apply some conditioner or olive oil if you wish, as this may make combing the hair easier.

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- Work carefully. Comb through all the hair, pulling the comb from the scalp right to the ends of the hair. If you have a Bug Buster Kit, start with the widest-tooth comb in the pack and continue this process down to the finest-tooth comb until no more head lice or nits can be found. If you find any head lice, rinse them off the comb and down the sink. Continue working through the hair until you've gone through it at least two times, flushing away any head lice you find. Once you've finished, you can rinse the conditioner out of the hair (or shampoo out any oil).
- You need to do this every four days for at least two weeks to make sure that you catch any new head lice that have hatched since you last combed the hair. ^[32]
- Keep carrying out this procedure until you no longer find any head lice for at least three combing sessions in a row.

You can also buy electric combs that are supposed to kill head lice with a small shock. But there's no proper research to show whether they work.

Some people try covering the hair in a thick substance such as grease, olive oil, styling gel, or even mayonnaise to suffocate the head lice. But there's no evidence that suffocation will get rid of head lice.

How can it help?

There's some evidence that combing works. But many parents find combing hard to do properly. If you miss only one adult female louse, it can lay more eggs. You may have to comb repeatedly for many weeks.

- One study looked at five different areas in the UK. ^[33] It involved 133 young people with head lice. About 6 in 10 of those who used the combs were free from head lice after 15 days.
- One study that compared bug busting with the chemical treatment [malathion](#) found that malathion worked a lot better. ^[17] Nearly 8 in 10 children using malathion got rid of their head lice, compared with nearly 4 in 10 who used combing.
- Combing worked better in another study, in which trained nurses (instead of parents) did the combing. ^[30] This study found that more than 1 in 2 children in the combing group got rid of their head lice, compared with 2 in 15 children who were treated with a chemical.
- Another study compared the effects of combing in a group of 95 adults and children who had head lice. ^[34] Everyone in the study got [permethrin crème rinse](#) , and 1 in 3 people also had their hair combed to get rid of the head lice. Combing didn't seem to affect the results of the treatment.

How does it work?

Combing should help because it physically removes the head lice from your hair. Carried out every few days, it should break the life cycle of head lice by not allowing them to become mature enough to lay eggs.

It is also possible that the conditioner used when wet combing might have an effect. One study has found that leaving conditioner to dry on hair works as well as a chemical treatment for getting rid of head lice. ^[35]

Can it be harmful?

Combing is not harmful, although it may be uncomfortable to have a fine-tooth comb dragged through your hair, especially if your hair is thick. Some people are allergic to some conditioners, especially if they have eczema or similar scalp conditions, so they may want to not use anything, or use olive oil instead.

How good is the research on removing head lice and eggs by combing?

There's some evidence that combing can get rid of head lice. But we need more research to know for sure how well this method works.

Two studies have found that combing gets rid of head lice in about 1 in 2 people who do this. ^[17] ^[30] But some people may not follow the instructions carefully enough, which means for them the treatment is unlikely to work.

Out of two other studies, one found that combing with a chemical didn't work better than using the chemical on its own. ^[34] The other found that combing worked better than a chemical treatment. ^[36] But in the second study, only one application of each product was used, which is less than the amount recommended, so the results are not reliable.

Herbal treatments and aromatherapy

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[How good is the research on herbal treatments and aromatherapy?](#)

This information is for people who have a child with head lice. It tells you about herbal treatments and aromatherapy, treatments used for head lice. It is based on the best and most up-to-date research.

Do they work?

Herbal treatments and aromatherapy products haven't been properly tested, so we can't say whether they work.

Head lice

What are they?

These treatments are mixtures of herbal oils that are put on the hair to help get rid of head lice and stop them coming back.

Herbal or essential oils contain chemicals taken from parts of a plant, including flowers and roots. Aromatherapy oils also come from plants but depend on their scent for their effect.

There is no standard combination of herbal oils to treat head lice, so the mixture might vary from practitioner to practitioner. For example, one might recommend you use lavender and camomile extracts, while another recommends a mixture of six or more herbal oils. You can buy these products from pharmacies.

You use these oils simply by applying them to your hair and brushing them through so that each hair strand gets a good coating of oil. You still have to use a louse detection comb to get the head lice out, but once you have got rid of them, it's thought that brushing the oils back into the hair every day may help stop the head lice coming back.

How can they help?

These treatments have not been studied much, so we don't know for certain whether using herbal and aromatherapy oils helps to get rid of or prevent head lice.

One recent study looked at a herbal product called Chick-Chack that is popular in Israel and contains coconut oil, aniseed oil, and other ingredients. The study compared this product with a spray containing chemicals such as [malathion](#). The herbal remedy and the spray worked equally well. ^[37]

A spray containing coconut, anise, and ylang ylang was also tested, and shown to work better than the insecticide permethrin. Unfortunately, the concentrations of herbs in the product were not recorded in the trial. ^[38]

But we need more studies to say for certain whether herbal products can help get rid of head lice.

How do they work?

One theory is that putting oil in the hair makes it slippery, so the head lice are easier to remove. Some oils may suffocate the head lice, and some may have a toxic (poisonous) effect on them.

Aromatherapy oils, it is claimed, can repel head lice by disguising the hair's natural scent. However, as far as we know, head lice do not have any way of detecting human odours. Because they live on human heads, they do not need to seek them out. In any case, the powerful smell from these oils disappears after a short time.

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Can they be harmful?

There's no evidence that herbal oils for head lice are harmful, but we don't really know because they have not been tested much. However, there are concerns that some essential oils may be toxic (poisonous) to people. ^[39]

In the study of coconut, anise, and ylang ylang spray, 17 out of 50 people said reported stinging or burning sensations from the spray. ^[38]

How good is the research on herbal treatments and aromatherapy?

Although we found some studies of herbal treatments for getting rid of head lice, they were mostly small and of poor quality. That means we can't rely on them.

Carbaryl

In this section

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This information is for people who have a child with head lice. It tells you about carbaryl, a treatment used for head lice.

Does it work?

We haven't looked at the research on carbaryl in the same detail we have for most of the treatments we cover. (To read more, see Our method.) But we've included some information because you may have heard of this treatment or be interested in it.

What is it?

Carbaryl is an insecticide (a chemical that kills insects). It kills head lice by stopping their nervous system working.

The brand name for carbaryl is Carylderm. It comes as a lotion or a liquid. You need to leave it in your hair for 12 hours (or overnight) before washing it off. Carbaryl is the only treatment for head lice that has to be prescribed by your doctor. You can't buy it from pharmacies.

Carbaryl isn't used very often. Your doctor will probably prescribe carbaryl only if other treatments haven't worked. ^[40] Sometimes head lice treatments won't work because the head lice in your area have built up a resistance to the chemicals. ^[41] (Resistance means that the treatment doesn't kill the head lice.) But there haven't been any good studies that say that carbaryl will work when other treatments don't. ^[2]

How can it help?

Applying carbaryl to your hair will probably get rid of the head lice. One small study found that almost all the people treated with carbaryl were free of head lice two weeks later.

[42]

But there is a risk of side effects. You should use carbaryl only if other treatments haven't worked.

Can it be harmful?

In studies of laboratory animals, very high doses of carbaryl caused cancer in rats and mice. [43] There's no evidence that carbaryl can cause cancer in people. But doctors are advised that this may be a risk for people. However, the risk is probably very small, as head lice treatments are not used very often and are used only for a short time. [23]

Head lice repellents

In this section

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This information is for people who have a child with head lice. It tells you about head lice repellents, a treatment used for head lice.

Do they work?

We haven't looked at the research on head lice repellents in the same detail we have for most of the treatments we cover. (To read more, see Our method.) But we've included some information because you may have heard of these treatments or be interested in them.

What are they?

You can buy head lice repellents from chemists and health shops. They come as sprays or oils. The idea is that the fragrance of the spray or oil could keep head lice away.

Some people also put herbal oils, such as citronella and tea tree oil, in their children's hair to repel head lice. [44]

But we don't know whether they can help. There hasn't been any good research that has looked at whether repellents stop head lice climbing onto hair. [44]

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How can they help?

Sprays containing chemicals to keep head lice away haven't been properly tested. Repellents might stop you getting head lice but they are not a treatment to get rid of head lice if you already have them. They are not a treatment to kill head lice.

Can they be harmful?

There's no evidence that repellent sprays or herbal oils used regularly have side effects. But just because a product is natural does not mean there won't be any side effects.

Further informations:

Glossary:

bacteria

Bacteria are tiny organisms. There are lots of different types. Some are harmful and can cause disease. But some bacteria live in your body without causing any harm.

impetigo

Impetigo is a rash, which usually affects your face. It is caused by bacteria. Impetigo usually looks dry, crusty and gold in colour. It can be cured with antibiotics.

antibiotics

These medicines are used to help your immune system fight infection. There are a number of different types of antibiotics that work in different ways to get rid of bacteria, parasites, and other infectious agents. Antibiotics do not work against viruses.

eczema

Eczema is a very itchy rash. It may be dark and bumpy and release fluid. Scratching makes it worse. You can get eczema anywhere on your body, but it is most common on the wrists, the insides of the elbows and the backs of the knees. If you have asthma or allergies you are more likely to get eczema than someone who doesn't have these conditions.

asthma

Asthma is a disease of the lungs. It makes you wheeze, cough and feel short of breath. Asthma attacks are caused by inflammation and narrowing of your airways, which makes it hard for air to pass in and out of your lungs.

randomised controlled trials

Randomised controlled trials are medical studies designed to test whether a treatment works. Patients are split into groups. One group is given the treatment being tested (for example, an antidepressant drug) while another group (called the comparison or control group) is given an alternative treatment. This could be a different type of drug or a dummy treatment (a placebo). Researchers then compare the effects of the different treatments.

organophosphates

Organophosphates are a type of chemical. They are used for several things, including killing insects.

acetylcholinesterase

Acetylcholinesterase is a chemical that affects the way signals travel between nerve cells. Some nerve cells communicate with each other by releasing a chemical called acetylcholine. After acetylcholine has passed on its message, it is destroyed by acetylcholinesterase. This makes the nerve ready to receive a new signal. If acetylcholinesterase can't work, the nerves can no longer communicate properly. This can cause paralysis.

diarrhoea

Diarrhoea is when you have loose, watery stools and you need to go to the toilet far more often than usual. Doctors say you have diarrhoea if you need to go to the toilet more than three times a day.

systematic reviews

A systematic review is a thorough look through published research on a particular topic. Only studies that have been carried out to a high standard are included. A systematic review may or may not include a meta-analysis, which is when the results from individual studies are put together.

allergy

If you have an allergy to something (such as pollen or a medicine), your body always overreacts to it. The reaction happens because your immune system (your body's system for fighting infection) is too sensitive to it.

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