



## A MADE SAFE® Guide for Safer Options

# Lice: Treatment & Prevention



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# Table of Contents

<b>Table of Contents .....</b>	<b>2</b>
<b>Lice: Treatment &amp; Prevention.....</b>	<b>3</b>
<i>What Are Lice?.....</i>	<i>3</i>
<i>How Do Lice Spread?.....</i>	<i>3</i>
<i>Lice Life Cycle.....</i>	<i>3</i>
<i>Where Do I Start? .....</i>	<i>4</i>
<b>Safer Solutions.....</b>	<b>4</b>
<i>What Are Lice Treatment Options?.....</i>	<i>4</i>
<i>Wet Combing.....</i>	<i>5</i>
Wet Combing Efficacy.....	5
<i>Non-Pesticide Safer Lice Treatments .....</i>	<i>6</i>
A Note About Essential Oils .....	6
Shop MADE SAFE Certified Essential Oils.....	6
<b>Preventative Protocols .....</b>	<b>7</b>
<b>Conventional Non-Pesticide Treatments .....</b>	<b>7</b>
<i>Other Ways to Prevent Head Lice .....</i>	<i>8</i>
<b>Think Twice .....</b>	<b>8</b>
<i>Over-the-Counter Chemical and Pesticide Treatments .....</i>	<i>8</i>
Pesticide Treatment Efficacy + Super Lice .....	9
<i>Prescription Treatments.....</i>	<i>9</i>

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# Lice: Treatment & Prevention

Learning your child has lice can be overwhelming. As a team made up of mostly mothers, we're familiar with the questions racing through your mind: How can I get rid of them quickly? Are lice treatments safe? Does my whole family have lice? Could I have prevented this?

Don't panic. This guide contains the essentials to kicking lice to the curb – without high-risk pesticides potentially harmful to your family and the environment. And if you're not experiencing an infestation now, this guide will provide you with the tools and knowledge to be prepared when you need it.

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## What Are Lice?

Head lice are parasitic insects that need human blood to survive. While they are bothersome and itchy, they are not harmful and do not spread disease.

## How Do Lice Spread?

Lice cannot fly or jump, so they spread primarily through head-to-head contact. Less commonly, they are spread through sharing of personal items like sports gear, hairbrushes, hats, and accessories. However, because lice die in 1-2 days without a host, this is less common than head-to-head contact. Head lice isn't a sign of poor hygiene; they actually prefer clean hair! So if your child gets lice, remember that it is not a reflection on your family's cleanliness. [Pets also don't play a role](#) in the spread of lice, so no need to treat the dog!

## Lice Life Cycle

Understanding their [life cycle](#) is crucial to eliminating lice, not over-treating your child, and preventing re-infestation. The life cycle of lice has three stages: nit, nymph, and adult.

**Nits** are eggs and are most often found at the base of the hair shaft, where they look like tiny white or tan dots firmly attached with a glue-like substance.

**Nymphs** are young lice that mature into adults in about 7-10 days. They look like adults but are the size of a pinhead.

**Adults** can live for about 30 days but will die within 1-2 days without a head to live on. They are about the size of a sesame seed.

All three generations of lice need to be dead to be totally clear of lice and prevent re-infestation.



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## Where Do I Start?

- Choose and enact a treatment option (more on the options below).
- Wash all articles of clothing, linens, and accessories that the infected person has come in contact with in the last 48 hours. Items should be (1) washed in hot water [at least 130°F](#) and (2) dried in the dryer for a minimum of 20 minutes.
- Items that cannot be washed, can be [put in the dryer](#) on high heat for a [minimum of 20 minutes](#).
- For items that cannot be washed and/or dried, seal them in an [airtight bag for 2 weeks](#).
- Soak combs, brushes, and hair accessories in [very hot water](#) (at least 130°F) for 10 minutes or more. Feel free to add a couple drops of essential oil for added power ([read more](#) on essential oils).
- It is not necessary to clean your home from top-to-bottom. Launder or seal necessary items, as mentioned above. Give your home a good vacuuming, especially in areas where your child has been. (Think couches and cars and other places they may sit, relax, or play.) Remember that lice can only live for 1-2 days without a host so extreme cleaning is likely not necessary.

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## Safer Solutions

While a pesticide over-the-counter treatment ([read more](#)) may be the first option many healthcare providers suggest, there are safer solutions that may be equally, if not more effective, especially with the rise of pesticide-resistant “super lice” ([read more](#)). Read on for safer solutions to choose the best option for your family.

### What Are Lice Treatment Options?

Wet Combing

Non-Pesticide Safer Lice Treatments

Over-the-Counter Chemical & Pesticide Treatments

Prescription Treatments

## Wet Combing

[Wet combing](#) is exactly what it sounds like – meticulous combing for lice through hair wetted with conditioner. This one gets easier with practice. Here are [the steps](#):

1. Gather the necessary supplies: A high-quality lice comb, magnifying glass or magnifying visor, hair conditioner, hair clips for long hair, a bowl of hot water, and white paper towels, tissues, or rags.
2. Be patient. This process is painstaking and time-consuming, but effective. We recommend providing your child with an activity like a movie, game, or craft to keep them occupied during the tedious process.
3. Generously apply conditioner to dry hair, making sure to cover hair from root to tip. White conditioner works best, as you can more readily spot lice.
4. Divide long hair into sections using clips.
5. Start with one section and divide and clip into smaller sub-sections. Select one small sub-section and place the lice comb flat to the scalp, as close to the root of the hair as possible. Draw the comb through the entire length of the hair.
6. After each pass through the hair, wipe the comb on a white cloth. Check for nits and lice. (You can use the magnifying glass to see the difference between an actual louse or nit vs. dirt or scalp particles in the hair.)
7. Comb each sub-section of hair five times and try moving the comb in different directions. Then inspect the section for nits or lice using the magnifying glass. If any lice or nits still remain, comb again.
8. Repeat steps 5-7 with each section of hair.
9. Rinse out conditioner.
10. Soak all tools in hot water heated to [at least 130°F](#). Discard paper towels or wash rags in hot water heated to [at least 130°F](#) and dry on a hot dryer cycle.

**If you find live head lice, wet comb every 2 days until no lice have been found for at least 10 days.**

Once your child is completely free of lice and nits, check them once a week (on dry hair) to prevent infestations.

### Wet Combing Efficacy

[One study](#) comparing the efficacy of a wet combing kit to home-use pesticide treatments found the wet combing kit to be the most effective treatment. Experts at [Consumer Reports](#) also recommend wet combing as the best approach.



## Non-Pesticide Safer Lice Treatments

Promising research has demonstrated the ability of some essential oils to combat lice and their eggs.



**Tea Tree:** A number of studies have demonstrated [tea tree essential oil's efficacy](#) in [killing lice](#) at various stages in their life cycle. Most studies tested concentration ranges from 1 – 5% (the remaining percentage being a carrier oil like coconut or sunflower) and left the solution on for 30 minutes. The efficacy [may also be boosted](#) when [mixed with alcohol](#). [One study](#) even demonstrated that a concentration of 1% tea tree and 99% carrier oil killed 100% of lice in 30 minutes. Results have varied in other studies, but numerous studies demonstrate likely effectiveness.

Other studies have suggested that [mixing tea tree and lavender essential oils](#) may be effective as well. Mixing tea tree with [white turmeric essential oil](#) (curcuma zedoria) may increase efficacy of killing eggs.

**Clove:** Clove essential oil has also been more than 90% of lice after 30 minutes of contact with solution comprised of 10% clove essential oil and 90% carrier oil.

**Spearmint:** Spearmint oil has demonstrated [high effectiveness](#) in killing adult lice.

**Neem:** Studies testing neem extracts within shampoos have shown the capability to kill lice at [all stages of life, including eggs](#).

**Yunnan verbena:** In [one study](#), yunnan verbena essential oil (litsea cubeba) showed the ability to kill more than 70% of lice using 10% essential oil and 90% carrier oil.

## A Note About Essential Oils

Some botanicals can be irritating, so try a small patch test before use, and avoid any botanicals you know you are allergic or sensitive to. If you plan to make your own formulas, always use a carrier oil and make sure to dilute properly according to manufacturer guidelines or by consulting a professional. Essential oils are highly concentrated, can be potent, and can inflict harm when not diluted. Be sure to follow all manufacturer directions and guidelines.



## Shop MADE SAFE Certified Essential Oils

Certified products meet a high standard for human and ecosystem health based on the best available science. Shop MADE SAFE Certified essential oils: [Buhbli Organics](#) and [CVS Radiance](#).

## Conventional Non-Pesticide Treatments

**Dimethicone Treatments:** Dimethicone is a silicone-based polymer called a [siloxane](#). It can be found in lice treatment lotions and serums. Dimethicone [suffocates lice](#), and also can aid in the wet combing process by lubricating hair.

**Nuvo Method:** In this [method](#), Cetaphil Gentle Skin Cleanser is applied to the scalp and hair, then hair is wet-combed using a nit comb. Finally, the hair is blow dried. The philosophy behind this method is that the heated cleanser creates a “shrink wrap” effect, suffocating lice. Note that Cetaphil contains [parabens](#).

*These conventional treatments contain ingredients associated with harm to human and/or environmental health. MADE SAFE does not recommend exposure to these ingredients. It is up to you to decide whether these treatments are appropriate for your family for limited-time use in this capacity.*



If you aren't experiencing an active infestation, establishing a preventative protocol is worth the time and effort. Some companies offer products that aim to prevent lice by using lower concentrations of some of the essential oils used above. These products can include shampoos and conditioners or daily sprays meant to be misted in the hair before heading to camp or school. Note that more research is needed to demonstrate their efficacy.

Our team also recommends purchasing a high-quality lice/nit comb before you experience a lice outbreak. Diagnosing lice is [more effective with a nit comb](#). And, if your child does happen to have lice, you're already armed with a comb.



As with treatments for active infestations, MADE SAFE recommends avoiding high-risk pesticides in preventative products. Instead, look for products containing essential oils like those listed above. Remember to pay attention to more than just the active ingredients, as [shampoo, conditioner](#), and other personal care products can contain numerous toxic ingredients. Read our [Hazard List](#) for biggies to avoid.

One of our favorite preventative protocols comes from Babo Botanicals. Their [Lice Prevention Kit](#) contains Lice Repel Shampoo and Conditioning Spray, as well as a Lice Nit Comb for early detection and preventative combing.

## Other Ways to Prevent Head Lice

- Teach your child to avoid head-to-head contact.
- Send children to school, camp, and other activities with their hair tied back or in braids.
- Ask your child not to share accessories like hats, scarves, hairbrushes, hair ties, and sports equipment with other children.
- If a friend, relative, or someone at your child's school informs you of head lice, do a thorough check on your child and other family members right away, as well as periodic checks until the infestation ends.

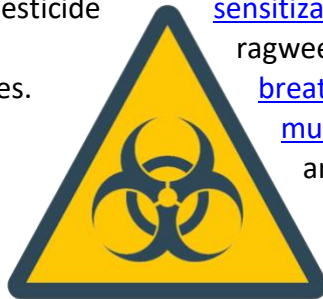
## Think Twice

### Over-the-Counter Chemical and Pesticide Treatments

Over-the-counter treatments often contain pesticides, as well as other chemical ingredients.

**Permethrin:** A synthetic chemical pesticide [linked to](#) seizures, and potential physiological and behavioral changes. Orally, permethrin is considered a [likely carcinogen](#) by the EPA. More research is needed on carcinogenicity when exposed through the skin. When mixed with DEET, permethrin exhibits [greater neurotoxic effects](#) than when it or DEET are used alone. Permethrin is [toxic to](#) fish, aquatic life, and bees.

**Pyrethrins:** A mix of 6 chemicals found naturally in chrysanthemum flowers. However, being naturally-occurring does not make pyrethrins necessarily safe. [Limited research](#) has [linked](#) pyrethrins to endocrine disrupting effects. Pyrethrins may also be associated with the development of [allergic](#)



[sensitization](#), and if you are allergic to ragweed, exposure can cause [difficulty breathing or an asthmatic attack](#). In [multiple cases](#), exposure to pyrethrins and pyrethroids (the class of pesticides to which pyrethrins belong) through in-home use products like flea shampoos for pets has led to death. Pyrethrins are also [toxic to aquatic life](#) and [bees](#).

**Piperonyl Butoxide:** A [synergist](#) designed to enhance the effectiveness and longevity of permethrin or pyrethrins. Piperonyl butoxide may be associated with endocrine disrupting effects, and is part of the EU's Endocrine Disruption [Priority List](#). Piperonyl butoxide may be linked [to toxicity to neurological development](#).



## Prescription Treatments

When over-the-counter treatments don't work – which is on the rise due to “super lice” (see box on right) – parents may resort to prescription treatments.

**Lindane:** In 2001, an international treaty called the Stockholm Convention on Persistent Organic Pollutants was signed by over 100 nations with the aim of completely eliminating or restricting the use of a number of toxic substances. [Lindane](#), an insecticide, was included in the Convention for elimination, but with an exemption for the use as a pharmaceutical. Only a few countries still produce lindane. In the United States, Lindane is used as a prescription medication for lice and scabies, even though it is known to be [toxic](#).

The [FDA's warnings](#) on lindane include seizures and death. Lindane is [banned](#) in the EU.

**Malathion:** A pesticide belonging to the organophosphate class. It is [readily absorbed](#) through the skin, so skin contact can result in “systemic poisoning.” It's important to note that children are [more vulnerable to exposure to toxic substances](#) through their skin. Numerous studies demonstrate [endocrine disrupting capabilities](#). Malathion is [banned](#) in the EU.

## Pesticide Treatment Efficacy + Super Lice

Recent research has demonstrated that lice are [growing resistant](#) to pesticide treatments containing [permethrin and pyrethrins](#) – dubbed “[super lice](#).” The resistance is [widespread across the United States](#). Growing resistance adds another reason to think twice about choosing permethrin and pyrethrin-based lice treatments.



**Disclaimer:** This guide offers health information and is designed for educational purposes only. You should not rely on this information as a substitute for, nor does it replace, professional medical advice, diagnosis or treatment. When beginning a lice treatment protocol or prevention plan, it may be necessary to consult your health care provider; always seek the advice of your health care provider with any questions you have about your health. A number of lice treatment products and methods within this guide have not been evaluated or approved by the U.S. Food and Drug Administration.