

A New Technology Kills Super Lice Without Chemicals

MEET THE INGENUOUS COMPANY
COMBATING A 25-MILLION-YEAR-OLD
PEST PROBLEM NATURALLY.



CREDIT: Getty Images

Lice! It's a word that sends terror into the hearts of parents everywhere. It makes you itch just to hear it. Lice have been plaguing us and our primate ancestors for [25 million years](#). In fact, one evolutionary theory attributes our hairless bodies as a biological strategy to avoid lice. It is estimated that between [six and twelve million children ages 3 to 12 suffer from head lice](#) in America in any given year, which makes this a robust (and recurring) market for companies looking to eliminate these pesky and -- let's admit it -- revolting insects.

For decades, the most popular and effective options for combating head lice were pesticide-based shampoos and ointments that target the lice and/or their eggs. In fact, the [CDC still recommends](#) treating lice with a handful of over-the-counter and prescription chemicals, along with "supplemental measures" such as brushing the nits out with a fine tooth comb, washing all exposed clothing and bedding in hot water, and thoroughly vacuuming floors, rugs and furniture.

Unfortunately, as happens with all prolonged attempts at chemical pest management, lice have evolved resistance to our arsenal of poisons. According to research published in the *Journal of Medical Entomology* in March 2016, 98% of head lice in the United States now carry gene mutations for pesticide resistance -- up from just 37% in 2001. Now that's a statistic that can make anyone itchy!

SO WHAT TO DO ABOUT THESE "SUPER LICE"? AirAllé's answer is surprisingly simple and creative: use heated air. It turns out that directing the right amount of heat and airflow along the scalp for a specific duration of time kills not only the crawling lice, but the lice eggs as well.

THE DESIGN

This FDA-cleared medical device that uses heated air to kill head lice came onto the market in 2010. It has already been used to treat 75,000 lice infections each year. The 1.0 version of AirAllé® looked more like a vacuum cleaner than a highly specialized lice-killing machine. But the 2.0 version looks like a professional-use medical device.

The device sends a [tightly controlled stream of heated air through a 6-foot hose to an applicator](#). The air blows through specialized holes at the end of 28 fingerlike tips on the applicator, directing the air along the scalp where lice live, feed and lay eggs. Thirty minutes of exposure is enough to dehydrate and kill the lice and eggs, without harming the child or adult being treated. It does take about 30 minutes to expose the entire head to the heated airstream with the applicator.



THE ENGINEERING

You would think that engineering a device like this would be easy. It is, after all, just a modified hair dryer, right? Not so much. [It took researchers at the University of Utah ten years to develop the device](#). First, they had to prove that this novel way to kill lice worked. Then they had to prove to the FDA that it was both safe and effective to use on humans, since there wasn't a similar device already on the market.

The reason why a standard hair dryer won't effectively treat a lice infestation is because hair dryers produce a wide range of airflow and heat. They can also have a 10-degree swing in heat production during their normal operation, which can mean a scalp burn on the high end and living lice at the low end. Also, a conventional hair dryer is designed for blowing the hair itself, not blowing air beneath

the hair. Blowing the hair with a dryer, mats it against the head, which actually creates an insulating layer that protects lice and their tiny white eggs from the heated air.

THE TECHNOLOGY

By designing a delivery system that [directs the heated air along the base of the hairline](#), Larada Sciences has created an innovative treatment for a very old problem. Getting treated by Larada's lice-killing AirAllé® requires going to one of their Lice Clinics of America® treatment clinics. There are more than 100 operating clinics in the United States.

Treatments are costly, at around \$170 for a visit, but they are [guaranteed to be completely effective in a single treatment](#).

Air is non-toxic and much more effective now that lice have evolved to rebuff conventional treatments. However, for someone who lives in a remote area, this is a good news--bad news situation. Perhaps, version 3.0 of the will be an AirAllé home-use system? A mom can always hope!

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