Killing head lice just got easier

By Greg Lavine
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To head lice, it's like hurricanes tearing through their hairy neighborhoods.

To scalp-scratching kids, it might soon be the quickest cure for head lice.

Meet the LouseBuster, the University of Utah's hot-air-blowing entry into the age-old battle against the smallest of human foes.

The device, which U. researchers describe in this week's edition of the journal Pediatrics, resembles a canister vacuum cleaner with a special comb at the end of the hose.

The LouseBuster shoots warm air at the roots of infested hair.

"It's not the heat that kills," explained Dale Clayton, the U. biologist who led the development effort.

And the torrent of air is not enough to blow lice away, because the critters cling to hair.

Yet the high volume of warm air manages to kill the parasites.

While they're not certain yet, Clayton's team speculates the system may dry out the lice and their eggs, known as nits.

It turns out Utah's dry climate helped Clayton hatch the LouseBuster idea.

When Clayton arrived at the U. from England's Oxford University a decade ago, he had trouble keeping bird lice, his main research focus, alive. The biologist learned that other Utah insect researchers added steam to the air to help raise humidity for their test subjects.

It occurred to Clayton that if arid conditions kill bird lice, maybe this could be used against human head lice. The problem was that while bird lice take their water from the air, head lice extract their water feeding on human blood.

"Frankly, we didn't think this would work," he said of the concept.

Over the past five years, Clayton's team created several prototypes through the U.'s Center for Alternate Strategies of Parasite Removal. That center is funded through the state's Centers of Excellence Program, which is designed to encourage technology commercialization.

Researchers didn't have to look far for willing test subjects. Several Salt Lake valley elementary schools recruited students, about 170, who contracted lice to try the device.

"When you hear the word head lice, your head starts to scratch," said John Erlacher, principal of Salt Lake City's Mountain View Elementary School.

Erlacher said the current methods of treatment - chemical shampoos and nit combs - have their drawbacks, such as the length of the treatment.

"We send a kid home for head lice, we don't see him for several days," he said.

Mountain View signed up itchy-headed students for the experiment. Erlacher said the device seems to be a quick solution to a traumatic problem that stresses kids and parents. The students can be treated and sent right back to class.

Clayton said he wanted to move away from chemicals to fight lice.
The eventual answer came in the form of a dog-grooming device. Researchers modified a tool used to dry dogs to find the proper louse-killing temperature - about 138 degrees, said Matt Jacobsen, a U. junior involved in the project.

The operator lets the child feel the flow of air before beginning the 30-minute treatment, said Jacobsen.

"It's kinda like a big vacuum," he explained to his young patients, "except it is blowing instead of sucking."

Jacobsen, who has performed a few dozen treatments, said "you can't miss a single fraction of an inch of the scalp, or you won't have an effective treatment."

The researchers advise parents against using hair dryers to kill lice, as the LouseBuster exposes the roots where nits are attached.

Because of the need for training, the device will not be available at drug stores. Instead, the LouseBuster would be aimed at schools and other institutions, said Randy Block, president of a spin-off company, Larada Sciences, which hopes to market the LouseBuster within two years.

The U.S. Food and Drug Administration must approve the product.

John Clark, a veterinary researcher at the University of Massachusetts, Amherst, said the head lice treatment industry needs new products.

"There are lots of people who don't want their children treated with chemicals," said Clark, who has seen the device.

Many available chemical treatments have lost their effectiveness as resistant lice strains pop up, he said, though a few new active ingredients are on the way.

"We're very encouraged with a nonchemical approach that compliments combing," said Deborah Altschuler, president of the National Pediculosis Association, a nonprofit head lice awareness group.

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