Head Lice: Treating A Growing Epidemic

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Background: Head lice are a major irritant to children and parents across the globe. Millions of children are infested every year, causing them to miss tens of millions of school days. Head lice have evolved resistance to many of the currently used pediculicides; therefore, an effective new treatment for head lice is sorely needed. A treatment that kills louse eggs, which pediculicides have never killed efficiently, would be particularly useful.

Objective: This study examined the effectiveness of several approaches that use hot air to kill head lice and their eggs.

Methods: We solicited subjects from local elementary schools to participate in the study. We tested six different methods on a total of 149 infested individuals.

These methods were:
1) a bonnet-style hair dryer,
2) a hand-held blow dryer with gradual heating,
3) a hand-held blow dryer with rapid heating,
4) a wall-mounted dryer,
5) the LouseBusterTM, a custom-built high-speed hot air dryer, and
6) the LouseBusterTM with a hand piece attachment.

We evaluated how well these treatments kill lice and their eggs in the scalps of infested individuals.

Results: All six methods killed large numbers of louse eggs (~88%).

The methods were more variable in how well they killed hatched lice. The most successful method was the LouseBusterTM with the hand piece attachment, which killed virtually all eggs and over 80% of hatched lice.

Conclusion: Our findings indicate that fast-moving hot air is extremely effective at killing louse eggs and very effective at killing hatched lice on the head. We suggest that heat has the potential to be a permanent solution for head lice infestations because it takes little time, is non-chemical, and lice are unlikely to evolve resistance to heat. This approach could provide a significant advance in efforts to control head lice in the U.S. and potentially across the world.