The louse is (no longer) in the house

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Clinical question
What is the best treatment for head lice?

Bottom line
Dimeticone appears superior to traditional lice treatments, ridding 1 more in every 3 to 4 patients of lice with no increased adverse events. Dimeticone is a silicone-based product that suffocates lice.

Evidence
Trials found the following statistically significant results.

- Two RCTs compared dimeticone with permethrin. A British RCT of 73 patients (aged 1 to 48) compared 4% dimeticone once with 1% permethrin twice (1 week apart) and found more dimeticone patients were lice free at day 9 (60% vs 36%, number needed to treat [NNT] = 3). Adverse events were similar and none were serious. A Brazilian RCT of 145 children (aged 5 to 15) compared 2 applications (1 week apart) of 92% dimeticone with 4% dimeticone once with 1% permethrin and found that more dimeticone patients were lice free at day 9 (97% vs 68%, NNT = 4). Adverse events were 2 cases of ocular irritation from dimeticone.

- A British RCT of 90 patients (aged 2 to 45) compared 4% dimeticone once with 1% permethrin creme rinse for treatment of head louse infestation: a randomised controlled trial. BMC Dermatol 2013;13:5.

- A British RCT of 73 patients (aged 1 to 48) compared 2 applications (1 week apart) of 4% dimeticone with 0.5% malathion. Analysis (considering dropouts to have lice) found more dimeticone patients were lice free at day 9 (70% vs 33%, NNT = 3).

- Other European dimeticone RCTs found cure rates of 83% to 92% and 70% in patients predominantly with long-standing lice and previous failed treatments.

Context
- Most lice in North America (99%) express genes associated with traditional pediculicide resistance. Dimeticone is a silicone-based product that acts as an occlusive to suffocate lice and is applied to dry hair and left for 8 hours. It is often repeated after 1 week. Other occlusive agents, such as isopropyl myristate, also appear more effective than traditional pediculicides.

- In one study, less than 20% of children with nits developed active lice.

- Wet combing is better than inspection for diagnosing lice. Head lice are primarily transmitted from head-to-head contact in play and sharing beds, and occasionally by sharing objects like hats and combs. To decrease reinfection, wash clothes and linens used 2 days previously in hot water and dry with high heat. Put unwashable items in a sealed bag for 2 weeks.

- Lice treatments cost about $30 and most are covered by drug plans.

Implementation
Head lice are present throughout the world irrespective of socioeconomic climates, hair length, or hair cleanliness. The typical presentation is scalp itch (often worse at night), but diagnosis should only be made by observing a living louse (normally within 4 mm of the scalp). Lice treatment failures might be owing to re-treatment before 8 to 10 days (ie, before eggs hatch); hair conditioner use, which prevents head lice medicine from adhering; reinfestation from another close contact; or pediculicide resistance. If pediculicide resistance is suspected, try an alternative product. As only 20% of children with nits develop lice, no-nit school policies should be abolished.

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Competing interests
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References