

Curing Tungiasis Sand Flea Disease with skin application of Dimethicones widely sold internationally without prescription as treatment for head lice.

written for the KWES Foundation, <https://kwes-foundation.org>

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The Problem

Tungiasis is a parasitic disease caused by tiny sand fleas, endemic in many warmer regions, especially in Africa where it affects mostly children and the elderly. The fleas burrow into the skin, mostly on the feet and legs, causing swelling, disfigurement, and disability. Without proper medical intervention, self-removal of the fleas can lead to mass infections and even loss of limb or life.

Emerging OTC Treatment

Silicone oils known as dimethicones, commonly used in over-the-counter head lice treatments, cosmetics, and plastic surgery implants, have been shown to effectively kill Tungiasis sand fleas. This treatment consists of a volatile low viscosity dimethicone with a dissolved low volatility dimethicone, which suffocates the fleas without the use of poison. Articles are linked below.

Our Proposal

Given the prohibitive cost of medical treatment for Tungiasis in rural areas, we propose a local pharmaceutical initiative that provides affordable packages of disposable dimethicone swabs and spray bottles for home and group treatment through the schools to decrease healthcare burden. This solution will increase school attendance, decrease disability, and strengthen the nation's future, eliminating need for amateur "jigger digging" and its medical complications. A swab packet represents a simple and cost-effective solution to a significant public health issue. Applied to a single spot, 1 drop 1 flea equals 1000 packets to a \$5 liter of pharma grade dimethicones. Let's work together to ensure that severe Tungiasis becomes a thing of the past. It starts here.

Scientific Journal Resources:

Very severe tungiasis in Amerindians in the Amazon lowland of Colombia: A case series (2019)

[PLoS Neglected Tropical Diseases](https://doi.org/10.1371/journal.pntd.0007068) 13(2) , DOI: [10.1371/journal.pntd.0007068](https://doi.org/10.1371/journal.pntd.0007068).

Researchgate: https://www.researchgate.net/publication/330937997_Very_severe_tungiasis_in_Amerindians_in_the_Amazon_lowland_of_Colombia_A_case_series

Efficacy and safety of dimethicones in the treatment of epidermal parasitic skin diseases with special emphasis on tungiasis: an evidence-based critical review

<https://pubmed.ncbi.nlm.nih.gov/32105621/>

Thielecke M, Nordin P, Ngomi N, Feldmeier H (2014). Treatment of tungiasis with dimethicone: a proof-of-principle study in rural Kenya. *PLoS Negl Trop Dis*. 8(7):e3058. doi:10.1371/journal.pntd.0003058.

<https://pubmed.ncbi.nlm.nih.gov/25079375/>

Nordin P, Thielecke M, Ngomi N, Mudanga GM, Krantz I, Feldmeier H (2017). Treatment of tungiasis with a two-component dimethicone: a comparison between moistening the whole foot and directly targeting the embedded sand fleas. *Trop Med Health*. 45:6. doi:10.1186/s41182-017-0046-9 PMID: 28293130; PubMed Central PMCID: PMC5345134.

<https://europepmc.org/article/MED/28293130>

Burgess, I.F. The mode of action of dimethicone 4% lotion against head lice, *Pediculus capitis*. *BMC Pharmacol* 9, 3 (2009). <https://doi.org/10.1186/1471-2210-9-3> <https://bmcpharma.biomedcentral.com/articles/10.1186/1471-2210-9-3>

Lover et al. US Patent 4146619 – Siloxane Toxicants (1979)

[expired patent detailing dimethicone formulations effective against headlice, fulltext PDF]

<https://www.freepatentsonline.com/4146619.pdf>