

Antimalarial treatments more likely to fail in children with acute malnutrition, finds study

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Children with acute malnutrition across Africa and Asia have a higher risk of treatment failure and malaria reinfection, even after being given the best currently available and recommended malaria treatment. Researchers from the Infectious Diseases Data Observatory (IDDO) at Oxford University analyzed data from more than 11,000 young children for the study, [published](#) in *The Lancet Global Health*.

The analysis found that children younger than age 5 who were very underweight for their height had nearly double the risk of malaria treatment failing, even when given the World Health Organization recommended doses of an artemisinin-based combination therapy. This is currently the best treatment for falciparum malaria.

A staggering 47 million children across the world are estimated to suffer from [acute malnutrition](#), with a 30% increase in the last three years (an additional 13.6 million children). Areas with malnutrition overlap with those affected by malaria across many tropical and sub-tropical parts of the world, and children under 5 account for 80% of all malaria deaths.

The results from the research study suggest that acute malnutrition in children may play a role not only in treatment failure, but it also puts this vulnerable group at higher risk of severe malaria and death.

"Malaria and malnutrition both affect poorer communities with limited research resources, so there just aren't enough studies on the efficacy of antimalarial drugs in malnourished children, and past studies have contradictory results," said Professor Philippe Guerin, study lead and Director of the Infectious Diseases Data Observatory. "So we used a different strategy to answer this question."

The research team pooled individual patient data from 36 different

antimalarial efficacy studies from 24 countries, that included both height and weight information for the study participants.

"No one individual study included a large enough sample of malnourished children to uncover a clear relationship, but by combining information across many different studies, which each included few malnourished children, we were able to spot a clear pattern," said Dr. Kasia Stepniewska, the IDDO Head of Statistics.

"These results highlight the power of pooling and reusing data from clinical studies of poverty-related diseases across Asia, Africa and the Americas," said study author Professor Karen Barnes, Head of WWARN's Africa Hub and the Pharmacology Scientific Group at the University of Cape Town, South Africa. The Infectious Diseases Data Observatory has one of the biggest data repositories of this kind for tropical and [infectious diseases](#), which is free to use for researchers across the world.

The study's conclusions also urge scientists and doctors to record [young children's](#) height and weight in future malaria studies, to identify children who need more careful medical follow-up because [malaria treatment](#) is more likely to fail. Future work is also now needed to optimize the dose of current anti-malarial drugs for this group of children.

More information: Kasia Stepniewska et al, Does acute malnutrition in young children increase the risk of treatment failure following artemisinin-based combination therapy? A WWARN individual patient data meta-analysis, *The Lancet Global Health* (2024). [DOI: 10.1016/S2214-109X\(24\)00003-2](https://doi.org/10.1016/S2214-109X(24)00003-2)

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