

Which treatments for malnutrition's long-term effects could help reduce mortality and health outcomes for children

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A comparison of treatments for malnutrition enteropathy, caused by severe acute malnutrition (SAM), has found evidence supporting the use of treatments to enhance the healing of mucosal membranes and reduce

inflammation in the gut to improve the outcomes of children affected by long-term health consequences of a period of malnutrition.

The Therapeutic Approaches to Malnutrition Enteropathy (TAME), led by researchers from Queen Mary University of London, evaluated four interventions for [malnutrition](#) enteropathy in a multi-center, Phase II, multi-arm trial in Zambia and Zimbabwe. No interventions for malnutrition enteropathy are currently available. The work has been [published](#) in *Nature Communications*.

The research gathered the first evidence in three decades which confirmed that treating malnutrition enteropathy can reduce intestinal damage among [children](#) experiencing the effects of complicated SAM.

The study of 125 children who had been hospitalized due to complications arising from SAM found a biologically plausible new [treatment](#) paradigm, where intestinal damage drives systemic inflammation, contributing to stunting and developmental impairment, and increasing mortality. Researchers identified that a short course of treatment to restore mucosal integrity in the gut, can ameliorate underlying pathogenic pathways when added to [standard care](#).

Researchers found that GLP-2 agonists such as teduglutide enhance mucosal healing in children with SAM. None of the other interventions studied showed any significant differences compared to standard care; however, budesonide was also shown to reduce the systemic inflammatory marker C-reactive protein (CRP), which is a predictor of infant mortality.

Bovine colostrum and N-acetyl glucosamine also reduced inflammation; in addition, colostrum increased mucosal regeneration and N-acetyl glucosamine reduced diarrhea. Further clinical trials are needed, but the TAME trial demonstrates that both treatments are likely to be safe, and

confirms mucosal healing as a promising strategy in severe malnutrition.

Paul Kelly, Professor of Tropical Gastroenterology at Queen Mary University of London, said, "Severe Acute Malnutrition (SAM) carries unacceptable mortality, particularly if accompanied by infection or [medical complications](#), including enteropathy. We have shown that a short course of therapy added to standard care, aimed at restoring mucosal integrity, can reduce these complications, and we look forward to examining these treatments further in Phase III [clinical trials](#)."

Dr. Jess Boname, Acting Head of Population and Systems Medicine at the Medical Research Council, said, "This study was funded by the Medical Research Council to address the tragedy that nearly half of deaths among children under five worldwide are linked to undernutrition. While the UK and many developing countries are suffering from an obesity crisis, undernutrition still causes a high death rate in children under five, mostly in low- and [middle-income countries](#)."

"We hope that this study will lead to effective treatments that will improve the health and well-being of children suffering from acute malnutrition and provide lasting benefits for the whole community."

Each year 17 million children, mostly in Africa, experience SAM, and malnutrition underlies almost half of all child deaths globally. Studies have confirmed the very high frequency of in resource-poor countries and an association between such gut inflammation and mortality in complicated SAM.

More information: Malnutrition enteropathy in Zambian and Zimbabwean children with severe acute malnutrition: A multi-arm randomized phase II trial, *Nature Communications* (2024). [DOI:](#)

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