

Effective supplements to benefit malnourished children worldwide

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Credit: Christian Fabiansen, Doctors Without Borders

Thirty-three million children worldwide suffer from moderate acute malnutrition. It affects human development and generally, increases susceptibility to illness. Unfortunately, the nutritional supplements and aid that these children may receive today is based upon dated standards developed for adults or otherwise intended for children with severe acute nutrition.

A collaborative venture between the University of Copenhagen (UCPH) and the Danish chapter of Doctors Without Borders is countering this decades old mismatch with the development of 12 supplementary foods geared specifically for [children](#) with moderate [acute malnutrition](#). Now, researchers, PhD-students and relief workers from a host of African and

other nations have gathered for a course during which leading international experts will discuss the most current knowledge and science concerning the treatment of childhood malnutrition.

The twelve food supplements providing malnutrition relief have been developed via collaborative research within the TreatFOOD research project. The research aspect of the project investigated the specific needs of those children suffering from moderate acute malnutrition (MAM).

Thus far, the project has produced an otherwise absent body of knowledge on the subject. Current food supplements for children with MAM are either inadequate or too costly, making them unavailable for the millions of kids worldwide who need them.

"Until now, food supplement assistance was either based on dated knowledge of adult needs or based upon the requirements for children with severe acute malnourishment. However, the dietary needs of moderately malnourished children are different. They are typically not in any immediate danger of dying, but their physical development, activity levels and immune systems are hit hard. So hard in fact, that 3.5 million children die annually due to illnesses such as [pneumonia](#), simply because they are physically weakened," says Henrik Friis, an international nutrition and health professor at UCPH's Department of Nutrition, Exercise and Sports.

New malnutrition food supplements to be tested in large-scale field study

The testing and comparison of the 12 MAM [food supplements](#) will begin two weeks from now in Burkina Faso. The study's 1600 participants, children aged 6 months – 3-years-old, represent a critical age group

during which moderate malnutrition can manifest itself in permanent damage to organ and mental development. Researchers will monitor how the supplements are absorbed by the children and how they affect their physical development and overall well-being. Additionally, researchers will meet with each of the children after three months and make a follow-up assessment of their individual well-being.

"The large-scale field study about to take place in Burkina Faso is unprecedented in that we are evaluating the effects of 12 different products in the field. Far from just measuring weight gain, we will also be measuring so-called 'lean body mass' with the help of stable isotopes that provide a much more accurate reflection of a child's condition and overall development. It is also unique in that we won't be conducting the study at a university or in a hospital, but within the framework of a nutritional programme run by the NGO, Alima," says Kim F. Michelsen, a professor of pediatric nutrition at UCPH's Department of Nutrition, Exercise and Sports and head of TreatFOOD.

Price is a key parameter. Indeed, aid packages should be as cheap as possible, to benefit as many children as possible. For this reason, TreatFOOD has ensured that the nutritional supplement recipes are not bound by any patent and are available for all to make use of.

Results may alter current practice

While a couple years will pass before the field study's results are clear, the WHO and World Food Programme await them with excitement:

"If results are positive, the WHO and World Food Programme will use the findings to develop effective new types of nutritional aid. This would meet the needs of the millions of children who currently suffer from malnutrition," states Professor Michaelsen.

And that could save countless lives.

"We know that children with severe acute malnutrition face a high mortality risk. However, we also know that with the appropriate treatment, they can recover and once again live as robustly as other children. We expect that the same results can be achieved with moderately acute malnourished children, who today, are often not treated or receive the wrong type of treatment," says Vibeke Brix, a Rigshospitalet (national hospital) pediatrician, also of Doctors Without Borders.

Research combined with treatment – capacity building with local aid workers

Another key aspect of TreatFOOD is capacity-building among those who treat [malnourished children](#). This includes NGO's, doctors, PhD students and other aid workers:

"Part of our funding will be directed towards capacity-building within the treatment aspect of child malnutrition in Africa. We primarily provide instruction for African PhD students who are members of TreatFOOD Training Teams. However, we also reach out to other key individuals within the field who seek to expand their knowledge, and thus grow their opportunity to make an even greater difference," continues Vibeke Brix.

This week, TreatFOOD is assembling the most renown international experts for a course being held at the University of Copenhagen during which the experts will provide instruction for 31 PhD students in the field's most up-to-date research. Participants originate from 19 countries including: Uganda, Ghana, Ethiopia, Kenya, Mozambique, Mali, India, Nepal, Bangladesh, Cambodia, Tajikistan and Jamaica.

This expansive, collaborative effort is about to put Denmark on the map within the field of malnourishment:

"I don't think there's anywhere else in the world where one experiences this type of collective focus on malnourishment. Our exceptional partnership with Doctors Without Borders makes it possible to combine research with treatment that benefits children. In the meantime, we have built strong research-ties with some of the planet's leading actors in the field of malnutrition," summarizes Professor Henrik Friis.

Provided by University of Copenhagen

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