

## REFINE Resource Review: January 2020

The **REFINE Resource Review** is a collection of materials to keep you updated on research related to food aid products and malnutrition. Resources identified and added between July 2019 and January 2020 are detailed below and are available on the [REFINE website](#).

The goal of Research Engagement on Food Innovations for Nutritional Effectiveness (REFINE) is to enhance the accessibility to, and exchange of, rigorous, operational and policy relevant research on **nutrition-directed interventions that improve nutrition in both emergency and non-emergency contexts**.

REFINE is a product of the [Food Aid Quality Review](#) (FAQR) project, which is funded by the United States Agency for International Development's Office of Food for Peace (USAID/FFP) and provides actionable recommendations on ways to improve nutrition among vulnerable populations for whom the direct distribution of food aid can make a significant impact.

Please direct all questions or comments to [lauren.thompson@tufts.edu](mailto:lauren.thompson@tufts.edu).

### **Ongoing Clinical Trials Added to REFINE Roster**

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#### **Community-based Clinical Trial With Microbiota-directed Complementary Foods (MDCFs) Made of Locally Available Food Ingredients for the Management of Children With Primary Moderate Acute Malnutrition, Bangladesh**

- [NCT04015999](#): To investigate the efficacy of complementary food made of locally available ingredients that can stimulate the proliferation of growth promoting gut microbiota, repair microbiota immaturity, promoting proliferation of beneficial bacteria, and improving metabolomic profile.
- Principal Investigator: Tahmeed Ahmed, International Centre for Diarrhoeal Disease Research, Bangladesh
- Anticipated Completion Date: June 2021

#### **Comparison of Treatment of SAM in Children 6-59 Months With RUTF and RUSF in Umerkot, Sindh, Pakistan**

- [NCT04174846](#): To test the effectiveness of a chickpea-based specialized nutritious food Acha Mum, compared to a standard RUTF for the treatment of SAM.
- Principal Investigator: Dr Sajid Bashir Soofi, Aga Khan University
- Anticipated Completion Date: October 2021

#### **Effect of a Fortified Balanced Energy-Protein Supplement on Birth Outcome and Child Growth in Houndé District, Burkina Faso (MISAME-3)**

- [NCT03533712](#): To assess the efficacy of a fortified balanced energy-protein (BEP) supplement for pregnant and lactating women to improve birth weight, fetal and infant growth.
- Principal Investigator: Dr. Patrick Kolsteren, University of Ghent
- Anticipated Completion Date: November 2022

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### Published Food Aid Product Studies added to REFINE

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*This section includes publications from individual clinical trials testing food aid products, and reports and evaluations from programs using food aid products.*

- Adu-Afarwuah, S. et al. (2019) **“Supplementation with Small-Quantity Lipid-Based Nutrient Supplements Does Not Increase Child Morbidity in a Semiurban Setting in Ghana: A Secondary Outcome Noninferiority Analysis of the International Lipid-Based Nutrient Supplements (iLiNS)–DYAD Randomized Controlled Trial,”** *The Journal of Nutrition*. Oxford University Press (OUP). doi: 10.1093/jn/nxz243.
- Adubra, L. et al. (2019) **“Conditional cash transfer and/or lipid-based nutrient supplement targeting the first 1000 d of life increased attendance at preventive care services but did not improve linear growth in young children in rural Mali: results of a cluster-randomized controlled trial,”** *The American Journal of Clinical Nutrition*, 110(6), pp. 1476–1490. doi: 10.1093/ajcn/nqz238.
- Akomo, P. et al. (2019) **“Soya, maize and sorghum ready-to-use therapeutic foods are more effective in correcting anaemia and iron deficiency than the standard ready-to-use therapeutic food: Randomized controlled trial,”** *BMC Public Health*. BioMed Central Ltd., 19(1). doi: 10.1186/s12889-019-7170-x.
- Bartels, R. H. et al. (2019) **“Hypoallergenic and anti-inflammatory feeds in children with complicated severe acute malnutrition: an open randomised controlled 3-arm intervention trial in Malawi,”** *Scientific Reports*. Nature Publishing Group, 9(1). doi: 10.1038/s41598-019-38690-9.
- Becquey, E. et al. (2019) **“Impact on child acute malnutrition of integrating a preventive nutrition package into facility-based screening for acute malnutrition during well-baby consultation: A cluster-randomized controlled trial in Burkina Faso,”** *PLOS Medicine*. Edited by L. Å. Persson, 16(8), p. e1002877. doi: 10.1371/journal.pmed.1002877.
- Borg, B. et al. (2020) **“Effectiveness of a locally produced ready-to-use supplementary food in preventing growth faltering for children under 2 years in Cambodia: a cluster randomised controlled trial,”** *Maternal & Child Nutrition*, 16(1). doi: 10.1111/mcn.12896.
- Delimont, N. M. et al. (2019) **“Complementary Feeding of Sorghum-Based and Corn-Based Fortified Blended Foods Results in Similar Iron, Vitamin A, and Anthropometric Outcomes in the MFFAPP Tanzania Efficacy Study,”** *Current Developments in Nutrition*. Oxford University Press, 3(6). doi: 10.1093/cdn/nzz027.

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- Ercumen, A. *et al.* (2019) **“Effects of water, sanitation, handwashing and nutritional interventions on soil-transmitted helminth infections in young children: A cluster-randomized controlled trial in rural Bangladesh,”** *PLOS Neglected Tropical Diseases*. Edited by S. V. Nery, 13(5), p. e0007323. doi: 10.1371/journal.pntd.0007323.
- Galasso, E., Weber, A. M., *et al.* (2019) **“Effects of nutritional supplementation and home visiting on growth and development in young children in Madagascar: a cluster-randomised controlled trial,”** *The Lancet Global Health*. Elsevier Ltd, 7(9), pp. e1257–e1268. doi: 10.1016/S2214-109X(19)30317-1.
- Heckert, J. *et al.* (2019) **“The cost of improving nutritional outcomes through food-assisted maternal and child health and nutrition programmes in Burundi and Guatemala,”** *Maternal & Child Nutrition*. doi: 10.1111/mcn.12863.
- Huybregts, L. *et al.* (2019) **“Impact on child acute malnutrition of integrating small-quantity lipid-based nutrient supplements into community-level screening for acute malnutrition: A cluster-randomized controlled trial in Mali,”** *PLOS Medicine*. Edited by L. Å. Persson, 16(8), p. e1002892. doi: 10.1371/journal.pmed.1002892.
- Kajjura, R. B., Veldman, F. J. and Kassier, S. M. (2019) **“Effect of a novel supplementary porridge on the nutritional status of infants and young children diagnosed with moderate acute malnutrition in Uganda: a cluster randomised control trial,”** *Journal of Human Nutrition and Dietetics*. Blackwell Publishing Ltd, 32(3), pp. 295–302. doi: 10.1111/jhn.12635.
- Kohlmann, K. *et al.* (2019) **“Alternative ready-to-use therapeutic food yields less recovery than the standard for treating acute malnutrition in children from Ghana,”** *Global Health Science and Practice*. Johns Hopkins University Press, 7(2), pp. 203–214. doi: 10.9745/GHSP-D-19-00004.
- Leng, B. *et al.* (2019) **“Severe gut microbiota dysbiosis caused by malnourishment can be partly restored during 3 weeks of refeeding with fortified corn-soy-blend in a piglet model of childhood malnutrition,”** *BMC microbiology*, 19(1), p. 277. doi: 10.1186/s12866-019-1658-5.
- Leroy, J. L., Olney, D. K. and Ruel, M. T. (2019) **“PROCOMIDA, a Food-Assisted Maternal and Child Health and Nutrition Program, Contributes to Postpartum Weight Retention in Guatemala: A Cluster-Randomized Controlled Intervention Trial,”** *The Journal of Nutrition*. Oxford University Press (OUP). doi: 10.1093/jn/nxz175.

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- Nane, D. *et al.* (2019) **“Research protocol local ingredients-based supplementary food as an alternative to corn-soya blends plus for treating moderate acute malnutrition among children aged 6 to 59 months: a randomized controlled non-inferiority trial in Wolaita,”** *BMC public health*, 19(1), p. 1689. doi: 10.1186/s12889-019-8031-3.
- Nkhoma, M. *et al.* (2019) **“Lipid based nutrient supplements during pregnancy may improve foetal growth in HIV infected women – A cohort study,”** *PLoS ONE*. Public Library of Science, 14(5). doi: 10.1371/journal.pone.0215760.
- Ordiz, M. I. *et al.* (2019) **“Serum Amino Acid Concentrations in Infants from Malawi are Associated with Linear Growth,”** *Current Developments in Nutrition*, 3(10). doi: 10.1093/cdn/nzz100.
- Rogawski McQuade, E. T. *et al.* (2019) **“Impact of Water Quality, Sanitation, Handwashing, and Nutritional Interventions on Enteric Infections in Rural Zimbabwe: The Sanitation Hygiene Infant Nutrition Efficacy (SHINE) Trial,”** *The Journal of Infectious Diseases*. doi: 10.1093/infdis/jiz179.
- Shivakumar, N. *et al.* (2019) **“Protein Quality Assessment of Follow-up Formula for Young Children and Ready-to-Use Therapeutic Foods: Recommendations by the FAO Expert Working Group in 2017,”** *The Journal of Nutrition*. doi: 10.1093/jn/nxz250.
- Stewart, C. P. *et al.* (2019) **“Lipid-based nutrient supplements and all-cause mortality in children 6–24 months of age: a meta-analysis of randomized controlled trials,”** *The American Journal of Clinical Nutrition*. doi: 10.1093/ajcn/nqz262.
- Tadesse, A. W. *et al.* (2017) **“Choosing anthropometric indicators to monitor the response to treatment for severe acute malnutrition in rural southern Ethiopia—empirical evidence,”** *Nutrients*. doi: 10.3390/nu9121339.
- Tano-Debrah, K. *et al.* (2019a) **“Development and Sensory Shelf-Life Testing of KOKO Plus: A Food Supplement for Improving the Nutritional Profiles of Traditional Complementary Foods,”** *Food and nutrition bulletin*, 40(3), pp. 340–356. doi: 10.1177/0379572119848290.
- Zyba, S. J. *et al.* (2019) **“Effect of exogenous phytase added to small-quantity lipid-based nutrient supplements (SQ-LNS) on the fractional and total absorption of zinc from a millet-based porridge consumed with SQ-LNS in young Gambian children: a randomized controlled trial,”** *The American Journal of Clinical Nutrition*. Oxford University Press (OUP). doi: 10.1093/ajcn/nqz205.

## REFINE Resource Review: January 2020

### Other Publications Added to REFINE Library

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*The REFINE Library is a collection of resources relating to food-supported interventions, including systematic reviews, meta-analyses, organizational documents, and general discussion pieces on key topics related to food aid products and interventions.*

Borg, B. et al. (2019) “**Development and testing of locally-produced ready-to-use therapeutic and supplementary foods (RUTFs and RUSFs) in Cambodia: lessons learned,**” *BMC Public Health*, 19(1), p. 1200. doi: 10.1186/s12889-019-7445-2.

Das et al. (2020) “**Effectiveness of Interventions for Managing Acute Malnutrition in Children under Five Years of Age in Low-Income and Middle-Income Countries: A Systematic Review and Meta-Analysis,**” *Nutrients*, 12(1), p. 116. doi: 10.3390/nu12010116.

Dewey, K. G. et al. (2019) “**Nutrient supplementation during the first 1000 days and growth of infants born to pregnant adolescents,**” *Annals of the New York Academy of Sciences*, p. nyas.14191. doi: 10.1111/nyas.14191.

Lelijveld, N. et al. (2019) “**Systematic review of the treatment of moderate acute malnutrition using food products,**” *Maternal and Child Nutrition*. Blackwell Publishing Ltd. doi: 10.1111/mcn.12898.

# REFINE Resource Review: January 2020

## REFINE Search and Selection Criteria

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Search Criteria for consideration for REFINE:

- **Condition:** malnutrition OR undernutrition OR stunting OR stunted OR wasting OR wasted
- **Intervention:** supplement OR food OR RUF OR RUTF LNS OR “nutrition program”

Selection Criteria for Inclusion in REFINE:

- **Interventions:** Those that use food aid products, use foods that have been nutritionally enhanced, or study specific ingredients that are intended for use in food aid.
- **Study population:** Restricted to those without chronic conditions that confound nutritional health (e.g., diabetes, HIV/AIDS, etc.)
- **Outcome measures:** Eligible studies report outcome measures including birth weight, weight gain, height gain, weight-for-age, height-for-age, weight-for-height/length, mid-upper arm circumference, lean body mass, recovery, mortality, default, nutritional intake, cognitive abilities, and product acceptability. Studies investigating the intergenerational effects of an intervention are considered if outcomes measures include wasted or stunted status of the participants, or body composition in addition to another measure of recovery.