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Hope for children malnourished beyond 1,000 days, study says

By Lois M. Collins , Deseret News National Edition
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Children enjoy a meal in Cambodia. A BYU study finds hope for children who have been malnourished beyond their first 1,000 days. (unknown)

The first 1,000 days of life are critical in caring for children who are malnourished. But that's not the end of their story. Improving nutrition later in childhood can also have a positive impact, according to [study](#) led by BYU that examined data on children in India, Vietnam, Peru and Ethiopia.

Children who don't receive adequate nutrition from conception to age 2 (that's the 1,000 days) are often stunted physically and delayed developmentally, driving global health initiatives in desperately poor communities to try to prevent it. But the new multi-university

analysis of data collected by Oxford University's "Young Lives" project indicates that improvements in nourishment up to age 8 can translate to better health, education and developmental outcomes.

The study does not say this reverses all lost ground, but it improves lives and futures, said Benjamin Crookston, Brigham Young University Health Science assistant professor and lead author on the study. It is published in December's [American Journal of Clinical Nutrition](#).

Examining stunted growth was central to the study's determination of how well children develop. It's well accepted — and the new research confirmed — that children who have stunted height at age 1 lag in school and don't score as well on cognitive tests. Kids who "caught up" did better on tests than those who remained stunted. They also advanced better in school. Crookston said "stunted" referred not to a consistent height, but to how tall a child should be based on his or her own genetics.

A news release from Oxford explained how its researchers conducted the initial study of the 4,000 children in four countries. They followed the children over time, interviewing and testing at key points, and measured learning gaps between children who were not stunted and those who were. The researchers also looked at gaps in educational achievement and learning ability at age 8.

Children still stunted at age 5 were almost a fifth less apt to be able to read a simple sentence and nearly 13 percent less likely to be able to write one, Oxford experts said in an earlier analysis they prepared for the Save the Children "Food for Thought" report released in May.



A child is held in Da Nang, Vietnam. A BYU study finds hope for children who have been malnourished beyond their first 1,000 days. (Mark A. Philbrick)

The Oxford researchers are still following the children, and their



A child enjoys some food on Rabaul, Island of New Britain in Papua New Guinea. A BYU study finds hope for children who have been malnourished beyond their first 1,000 days. (Mark A. Philbrick)

recovery will be measured again when they reach age 12, Crookston said.

The BYU-led research asks a different question: Can kids catch up at all? And it concludes they can. That study looked at four categories of children: those stunted at 1 but not at 8; not stunted at 1 but stunted at 8; persistently stunted and never stunted. They considered whether the children in each category were in the appropriate grade for their age, mathematical achievement, reading comprehension, receptive vocabulary.

"Our findings suggest that improving growth in children who are stunted in infancy and maintaining nutrition in children who otherwise might falter may have significant benefit for schooling and cognitive achievement," they wrote in the study. "Our work reinforces the need to prevent nutritional insults in early life but also emphasizes the importance of promoting child growth and preventing faltering beyond infancy."

Put simply, said Crookston, his team doesn't want to suggest taking away from nutrition efforts targeted at very young children up to 1,000 days old. That's where the biggest impact occurs. But not providing nutrition help beyond that misses an opportunity to improve young lives.

"We are really trying to push the policy to say yes, we ought to have a focus on 1,000 days, but we shouldn't shut programs down beyond that. Preschool feeding, school lunch programs — they can have real, positive benefits," he said.

While the resilience of the human brain is not understood, it is clear that kids with earlier nutritional difficulties can still have improved cognitive function down the road if deficits are addressed. "The hopeful idea is there is some resilience. It's not as rigid an organism as maybe people have thought. But this is an observational study, not physiological data."

"The findings from Crookston are in general agreement with previous empirical evidence suggesting the brain is a highly plastic organ with remarkable ability to improve its function, even when interventions start after exposure to nutritional insults during the first 1,000 days of life," said Rafael Perz-Escamilla, director of the Office of Public Health Practice at Yale School of Public Health. He was not part of the study, but wrote an editorial that accompanied the study in the journal.

Research funding was provided by the National Institutes of Health, the Bill & Melinda Gates Foundation and Grand Challenges Canada. Besides BYU and Oxford, the analysis was conducted by researchers from the University of Pennsylvania; the Grupo de Analisis para el Desarrollo in Lima, Peru; Boston University; Cal Poly State University; Emory University and the Instituto de Investigación Nutricional in Lima.

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