

## December 2013 Highlights of This Issue

- **Catch-up growth between 1 and 8 years of age related to better scores on math, reading, and vocabulary in low- and middle-income countries**  
Results from a large international study of malnourished children suggests that it's probably never too late to help children reach their potential when it comes to the impact of proper nutrition.
- **Low omega-3 fatty acid intake in infancy might permanently alter brain circuitry regulating weight maintenance**  
A well-controlled animal study finds that very early dietary omega-3 to omega-6 ratio may have long-lasting effects on neural density in the region of the brain that helps control energy balance.
- **Unbalanced vitamin B-12 and folate may lead to low birth weight in some**  
Researchers find that, at least in India where many women are vegetarians and consume very low amounts of vitamin B-12 from foods, folate supplementation during pregnancy may be linked to the birth of smaller babies.
- **Researchers investigate impact of high-dose zinc for premature infants**  
Study evaluating impact of zinc supplementation in at-risk infants suggests positive effects on early wellbeing. Additional studies needed to determine optimal dosage.

### Catch-up growth between 1 and 8 years of age related to better scores on math, reading, and vocabulary in low- and middle-income countries

**Background** Without question, adequate nutrition in early life is important for life-long health. In fact, experts agree that some negative effects of suboptimal nutrition during fetal development and the first 2 years of life are irreversible. As such, there is increasing effort among health agencies to focus efforts on preventing early growth and developmental deficits by improving nutrition during pregnancy and very early life. What is the evidence, though, that interventions aimed at helping malnourished children catch up in their growth *after* this time are not effective? To tackle this question, an international research team led by Benjamin Crookston (Brigham Young University) evaluated the relation between catch-up growth and cognitive abilities from 1 to 8 years of life in ~8000 children living in Ethiopia, India, Peru, and Vietnam. Their results, accompanied by a compelling editorial by Rafael Pérez-Escamilla (Yale School of Public Health), are published in the December 2013 issue of *The American Journal of Clinical Nutrition*.

**Study Design** This investigation was conducted as part of the "Young Lives" study, an international project evaluating relations between postinfancy nutritional status (as it relates to growth in height between 1 and 8 years of age), school enrollment; and cognitive achievements related to math, reading, and vocabulary skills.

**Results** As expected, children who were shorter than expected at 1 year of age were found to be behind in school at 8 years of age and to score lower on cognitive tests than their counterparts who had healthy heights at 1 year of age. However, children who experienced greater than expected growth (referred to as "catch-up" growth) from 1 to 8 years of age scored relatively better on their tests than did those who continued to grow slowly. Children who experienced catch-up growth during this time were also in more age-appropriate school classes at 8 years of age when compared with children who remained relatively short.

**Conclusions** The researchers concluded that "improvements in child growth after early faltering might have significant benefits on schooling and cognitive achievement." Pérez-Escamilla agrees and urges additional studies designed to tease apart the potential long-term impacts of nutrition interventions that start during the 2nd or 3rd years of life from those that start earlier. These types of studies can shed additional light on the mechanisms by which early nutrition has such important long-term impacts on human development and can help shape important international public health initiatives.



**Reference** Crookston BT, Schott W, Cueto S, Dearden KA, Engle P, Georgiadis A, Lundeen EA, Penny ME, Stein AD, Behrman JR. Postinfancy growth, schooling, and cognitive achievement: Young Lives. *American Journal of Clinical Nutrition* 2013;98:1555-63.

Pérez -Escamilla R. Post-1000 days growth trajectories and child cognitive development in low- and middle-income countries. *American Journal of Clinical Nutrition* 2013;98:1375-6.

**For More Information** For the complete article, please go to the following URL:

<http://www.ajcn.org/content/98/6/1555.full>

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