

# Shorter maternal height associated with more deaths among children in developing countries

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Mothers shorter than 4 feet, 9 inches in low- to middle-income countries had about a 40 percent higher risk of their children dying within the first five years of life than mothers who were 5 feet, 3 inches or taller according to a new study from the Harvard School of Public Health (HSPH). The risk was higher—almost 60 percent—in the first 30 days after birth. It is the most comprehensive study to date to show that a mother's short stature is associated with poor health in her offspring.

The study appears in the April 21, 2010 issue of the [Journal of the American Medical Association](#).

"Height is a useful and stable marker of cumulative health," said S.V. Subramanian, senior author of the paper and associate professor in the department of society, human development, and health at HSPH. "It is an indicator of the nutritional environment a person was exposed to during childhood, which shapes both the mother's attained height and subsequent health as well as her offspring's chances of survival or ability to grow in infancy and childhood."

Subramanian and his co-authors, Emre Özaltin, a doctoral candidate in the department of global health and population at HSPH and lead author of the study, and Kenneth Hill, professor of the practice of global health at HSPH, analyzed health surveys from 54 low- to middle-income countries that included more than 2.6 million children and more than

750,000 [mothers](#). The researchers also found that a 1-centimeter—less than 0.4 inch— increase in height reduced the risk of child mortality by 1.2 percent. The same increase in height reduced the risk of underweight and growth failure by more than 3 percent.

"Health needs to be viewed not only as a phenomenon that spans one's life, but one that also has a multigenerational aspect," said Özaltın. "We believe that interventions to reduce [child mortality](#) and growth failure have not recognized the intergenerational transmission of poor health," added Subramanian.

The key implication of this research, said the authors, is that targeted nutrition programs, especially for younger girls, are of prime importance in ensuring a healthy population of adult women with beneficial returns for their own health as well as the health of their offspring.

**More information:** "Association of Maternal Stature with Offspring Mortality, Underweight, and Stunting in Low- to Middle-Income Countries." Emre Özaltın, Kenneth Hill, and S.V. Subramanian. Journal of the American Medical Association, April 21, 2010.

Provided by Harvard School of Public Health

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