

The association between stunting, wasting and breastfeeding, and fat-free mass and fat mass in Kenyan children aged 6 and 15 months

Introduction: It is important to understand the linkage between nutritional status, growth, breastfeeding and body composition in order to design interventions to prevent growth faltering, but few data from low- and middle-income countries are available. The objective was to assess the role of nutritional status and other correlates of body composition in Kenyan children aged 6 and 15 months.

Methods: Four hundred and forty nine infants were enrolled in an observational study embedded in a nutrition intervention trial conducted in rural Kenya. Infants were enrolled at 6 months of age. Anthropometric measurements were conducted, and fat-free mass (FFM) and fat mass (FM) were measured with the deuterium dilution technique when the children were 6 and 15 months of age, respectively. Linear regression was used to assess the association of sex, breastfeeding, stunting and wasting as correlates of fat-free mass index (FFMI), fat mass index (FMI) and body mass index (BMI).

Results: At the age of 6 months, boys had a 0.45 (95% CI 0.10-0.80) kg/m² higher FFMI compared to girls. There was no difference in FMI. A similar pattern was seen when the children reached the age of 15 months. Those who stopped breastfeeding before the age of 15 months (11%) had a 0.10 (95% CI -0.60; 0.40) kg/m² lower FMI when they reached 15 months. At 6 months, stunted infants had a 0.28 (95% CI -0.85; 0.29) kg/m² lower BMI than infants with LAZ above 0, due to 0.66 (95% CI -1.08; -0.23) kg/m² lower FMI, but not FFMI. Stunting was not associated with body composition at 15 months of age. Wasted children had both lower FFMI and FMI at 6 and 15 months of age.

Conclusion: Further research is needed to establish the relation between these early changes in body composition and later body functions and the risk of infectious and chronic diseases.

Institution

Masinde Muliro University of Science and Technology

Country

Kenya

Primary author: Dr KONYOLE, Silvenus (Masinde Muliro University of Science and Technology)

Co-authors: Prof. ESTAMBALE, Benson (Jaramogi Oginga Odinga University of Science and Technology); Dr OWUOR, Bethwell (Kisii University); Prof. FRIIS, Henrik (University of Copenhagen); Dr KINYURU, John (Jomo Kenyatta University of Agriculture and Technology); Prof. WELLS, Jonathan (Institute of Child Health, University College London); Prof. MICHAELSEN, Kim (University of Copenhagen); Prof. ROOS, Nanna (University of Copenhagen); Dr OMOLLO, Selina (University of Nairobi); Dr OWINO, Victor (Technical University of Kenya)

Presenter: Dr KONYOLE, Silvenus (Masinde Muliro University of Science and Technology)

Session Classification: Poster Session 4

Track Classification: Epidemiology