

**S01-09 Nutrition transition of the Amazon Basin: Impact of fish consumption on growth of exclusively breastfed infants during the first 5 years**

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Changing fish-eating habits due to fast urbanization of Amazonians is a fact; we investigated whether maternal frequency of fish consumption may impact on children's weight and height during the first 5y. A longitudinal study (birth to 5 years) examined the impact of frequency of fish consumption and the influence of exclusive breastfeeding (> six months) on growth of a sample of 82 urban children from Porto Velho, Western Amazon. We used Hg concentration in hair as a marker of fish consumption. Detailed information concerning diet, anthropometry (and infant growth and development) was completed for 82 mother-infant pairs. Infants and children were measured and weighed at birth and at 6 (exclusive breastfeeding), 36 and 60 months. Only at birth and six months, Hair-Hg (HHg) concentrations were substantially elevated in both mothers and infants (but were not statistically significant). **HHg (fish consumption) had no significant impact on children' weight and height at the specified ages.** Compared to other sampling periods, after exclusive breastfeeding (6 m) analysis by Z-scores showed the highest proportion of children (14/82, 36/82, 52/82) respectively for length/height-for-age (H/A), weight-for-age (W/A), and weight-for-length (W/H) Z-scores (<-1 SD). There was a wide variation in birth weight (range: 2.2 to 4.3 Kg); however, exclusive breastfeeding substantially lowered (by 50%) the range of body mass at 6 months (6.1 to 8.5 kg). Weaning (with extended breastfeeding) had a substantial impact in moving up the attained growth at 3y; the duration of breastfeeding was significant correlated with attained Z-scores for W/A ( $r=0.2608$ ;  $p=0.0179$ ) and W/H ( $r=0.2269$ ;  $p=0.0404$ ) but not for H/A. At 3y most children improved Z-scores (> -1 SD) for H/A (12/82), W/A (8/82) and W/H (8/82). At 5y, all but one child attained Z-scores > -1. Although hair-Hg is an indicator of fish-methylmercury exposure, in this study it was a more precise indicator of fish consumption. The results indicate that the main source of dietary protein consumed by the family was successfully substituted by other sources of protein, but extended breastfeeding had a significant impact on profiles of attained height and weight at 3y; thus indicating that extended breastfeeding can be an important nutritional modifying-factor of weaning.

**Keywords:** Hair-mercury; Fish consumption; Breastfeeding; Infant growth