

# Abstract

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## Delayed language development due to infantile thiamine deficiency.

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**OBJECTIVE:** The aim of this study was to investigate the language development of 20 children who had been exposed to thiamine (vitamin B(1)) deficiency in infancy due to feeding with soy-based formula that was accidentally deficient of thiamine.

**METHODS:** In this case-control study, 20 children (12 males, eight females; mean age 31.8mo [SD 4.1], range 24-39mo) who were fed thiamine-deficient formula in infancy were compared with 20 children (12 males, eight females; mean age 32.2mo [SD 3.9], range 25-39mo) fed with other milk sources and matched for age, sex, and maternal education. Receptive and expressive language development was assessed with the Preschool Language Scale, 3rd edition. Other assessments included mental development (Bayley Scales of Infant Development, 2nd edition), evaluation for autistic spectrum disorders, and neurological examination. Motor development was compared by age at independent walking.

**RESULTS:** The study and control groups differed significantly in the expressive communication ( $p<0.001$ ) and auditory comprehension language subscales ( $p<0.001$ ), the Mental Developmental Index score ( $p<0.001$ ), and age at independent walking ( $p=0.001$ ). A significant correlation was found between the receptive language score and age at independent walking, i.e. poorer language associated with later walking ( $r=-0.601$ ,  $p=0.005$ ).

**CONCLUSION:** The conclusion was that thiamine deficiency in infancy could affect language development in childhood.

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