

Relationship between exclusive breastfeeding and brain-derived neurotrophic factor in children

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Abstract

Objective A positive relationship between breastfeeding and brain-derived neurotrophic factor (BDNF) in infants has been suggested due to the presence of BDNF in human milk. This study aimed to determine the relationship between exclusive breastfeeding and BDNF serum levels in Spanish schoolchildren. **Methods** A cross-sectional analysis including 202 schoolchildren, aged eight to 11 years, from Cuenca, Spain, was conducted. Information on sociodemographic and anthropometric variables, sexual maturation, birth weight and exclusive breastfeeding ('no exclusive breastfeeding', and exclusive breastfeeding for ≤ 6 and > 6 months), and BDNF serum levels using an ELISA method were obtained. Covariance analyses (ANCOVA) were conducted to examine the relationship between serological BDNF and exclusive breastfeeding after controlling for potential confounders. **Results** ANCOVA models showed no significant differences in BDNF levels between children who were exclusively breastfed for more than six months versus those who were not ($p > 0.05$). No significant differences were observed by age group (eight to nine years versus 10 to 11 years; $p > 0.05$). Additionally, no clear negative trend in BDNF serum levels according to sexual maturation categories was found ($p > 0.05$). **Conclusion** These findings suggest that exclusive breastfeeding does not have a significant positive association on BDNF from eight to 11 years, since children who were exclusively breastfed did not have significantly higher BDNF levels than those who were not exclusively breastfed. Likewise, BDNF levels were not found to be negatively affected by hormonal development. Future research should examine the influence of exclusive breastfeeding on BDNF over the different developmental stages.