

Effects of folic acid fortification on orofacial clefts prevalence: a meta-analysis

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PUBLIC HEALTH NUTRITION

Volumen: 20

Número: 12

Páginas: 2260-2268

DOI: 10.1017/S1368980017000878

Fecha de publicación: AUG 2017

Tipo de documento: Review

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Resumen

Objective: Orofacial clefts (OFC) are the most prevalent craniofacial birth defect. Folic acid (FA) supplementation has been demonstrated as an effective intervention to reduce risk of OFC occurrence. However, the effect of mandatory FA fortification of wheat and/or maize flour on OFC prevalence has shown controversial results among countries adopting this policy. Thus, we performed a meta-analysis to synthesize the available evidence evaluating the global impact of this mandatory policy on OFC occurrence.

Design: Literature search in conventional and grey medical/scientific databases showed fifteen studies considering OFC prevalence in pre- and post-fortification periods with FA. The effect of this policy was evaluated by computing relative risk (RR) and separating samples into total OFC, non-syndromic forms, cleft lip with or without cleft palate (CL/P) and cleft palate only (CPO).

Results: We found a significant effect of FA fortification only on non-syndromic CL/P (RR = 0.88; 95% CI 0.81, 0.96), whereas neutral effects were detected for total OFC (syndromic plus non-syndromic) and CPO.

Conclusions: Our results may reflect the different aetiology of syndromic OFC with respect to non-syndromic forms and the CL/P related to CPO. Although the number of non-syndromic CL/P samples was lower than that for total OFC, the absence of both between-study heterogeneity and publication bias leads us to conclude that FA fortification may have beneficial effects on non-syndromic CL/P.

Palabras clave

Palabras clave de autor:[Orofacial clefts](#); [Folic acid fortification](#); [Meta-analysis](#)

KeyWords Plus:[NEURAL-TUBE DEFECTS](#); [ORAL CLEFTS](#); [FLOUR](#)

[FORTIFICATION](#); [MOLECULAR-BIOLOGY](#); [BIRTH](#)

[PREVALENCE](#); [LIP](#); [PALATE](#); [RATES](#); [GENETICS](#); [CHILE](#)

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Editorial

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CAMBRIDGE, ENGLAND

Información de la revista

- **Impact Factor:** [Journal Citation Reports](#)

Categorías / Clasificación

Áreas de investigación:Public, Environmental & Occupational Health; Nutrition & Dietetics

Categorías de Web of Science:Public, Environmental & Occupational Health; Nutrition & Dietetics

Información del documento

Idioma:English

Número de acceso: [WOS:000416041700019](#)

ID de PubMed: 28534456

ISSN: 1368-9800

eISSN: 1475-2727