



American Journal of Genetics (ISSN:2637-4757)



EFFECT OF FOLIC ACID FORTIFICATION ON THE PREVALENCE OF NEURAL TUBE CLOSING DEFECTS IN GOIÁS

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ABSTRACT

Introduction: Neural Tube Closure Defects classify the most common congenital anomalies of the central nervous system and constitute the main preventable congenital malformation through nutritional strategies. Although its mechanism of action is little known, it is known that folic acid is an important cofactor in the synthesis of amino acids and nucleic acids, therefore, the lack of this nutrient can prevent the correct cellular mitosis interfering already in the early stages of development embryonic. **Objective:** To evaluate the effect of dietary fortification of wheat and corn flour with folic acid on the prevalence of Neural Tube Closure Defects in Goiás.

Methods: A cross-sectional study was designed to compare the prevalence of neural tube closure defects at two stages: before (2000 to 2004) and after (2005 to 2013) the introduction of mandatory supplementation of folic acid wheat and maize flour. (June 2004). Secondary data provided by the Live Birth Information System (SINASC) and Mortality Information System (SIM) for mothers living in the state of Goiás were used. **Results:** In the period studied (2000 to 2013), there were a total of 1,269,393 live births and 11,350 dead births, with a total of 519 cases of Neural Tube Closure Defects, resulting in a prevalence of 0.41 / 1000 births. The evaluation of the evolution of the time series of the Neural Tube Closing Defects in Goiás over the study period allows us to conclude that there was a trend of increasing prevalence in the pre-fortification period (2000 to 2004), followed by a downward trend in the period post-fortification period (2005-2013) for live births, stillbirths and all births. From 2000 to 2004, the period prior to folic acid food fortification, the total prevalence of Neural Tube Closing Defects (considering all births) was 0.42 / 1000 births, while in the period after food fortification, 2005 to 2013, the prevalence dropped to 0.40 / 1000 live births. The results show a general trend of increasing prevalence of Neural Tube Closing Defects in the pre-fortification period (2000-2004) and reduction of prevalence in the post-fortification period (2005-2013), both when considering born alive, born dead and all births. Regarding the assessment of the effect of fortification on the prevalence of Neural Tube Closing Defects, a significant reduction of 42.6% in dead born (from 14 to 8/1000) was found, this may indicate a beneficial effect of fortification from Wheat and corn flour with folic acid in Goiás. **Conclusion:** The results obtained in this study provided important information about the temporal evolution of the Neural Tube Closing Defects in Goiás using the records available in DATASUS.

Keywords: Folic Acid, Fortification, Congenital Malformation, Goiás.

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How to cite this article:

Vivian Divina Correia Ribeiro;
Denise da Silva Pinheiro; Isabela
Amorim Jesuino; Isadora Cristina
Mendes; Lilian Carla Carneiro;
Rosália Santos Amorim Jesuino.
EFFECT OF FOLIC ACID FORTI-
FICATION ON THE PREVALENCE
OF NEURAL TUBE CLOSING DE-
FECTS IN GOIÁS .American Jour-
nal of Genetics, 2020, 3:10

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