



FOLATE SUPPLEMENTATION THROUGHOUT PREGNANCY BOOSTS COGNITIVE FUNCTION IN OFFSPRING AT 8 YEARS OF AGE

Women who are planning a pregnancy are advised to take 400 microgram folic acid supplements daily for three months before conceiving and until the end of the first trimester of pregnancy to prevent neural tube disorders in the foetus¹. However, a new European study, a randomised controlled trial (RCT), has suggested that cognitive skills in 8-year olds could be positively influenced by folate supplements taken by their mothers from week 20 of pregnancy. Should women, therefore, take additional folate throughout pregnancy?

Responding to these exciting findings, published in the American Journal of Clinical Nutrition (AJCN)², Dr Carrie Ruxton from the **Health Supplements Information Service** has made the following comments:

“This study was part of a larger RCT where women from Hungary, Germany and Spain were given supplements of fish oil, 5-methyltetrahydrofolate (a form of folic acid used in food supplements) or a combination of both nutrients from week 20 of pregnancy. The offspring were then followed up for several years to examine neurodevelopment and cognitive function using a variety of tests including response conflict-resolution ability (using congruent and incongruent conditions), alerting, and spatial orienting of attention.

“The results showed that the group of children whose mothers received folate supplements displayed a

significantly better ability to solve response conflicts. This is an important indicator of superior cognitive function because the process of solving conflicts involves understanding other people’s points of views, using language to resolve disputes and considering different strategies and solutions.

“In addition, the brain scans of the children in the study revealed that folate supplementation was associated with higher activation of the midcingulate cortex, indicating that early nutrition was influencing the functionality of specific brain areas involved in executive processing.

“At present, women are urged to take folic acid supplements for just the first 12 weeks of pregnancy but this new study suggests that benefits arise from taking them for longer. The type of folate used in the study - 5-methyltetrahydrofolate – has an identical effect and bioavailability to the folic acid used in over-the-counter vitamin supplements, as well as the folic acid added to fortified foods such as breakfast cereals³. Natural folate, found in orange juice and green leafy vegetables, is still useful but is less bioavailable and active in the body.

“A worrying finding from studies is that only a third of British women take folic acid before becoming pregnant, as advised by the NHS. Indeed, only 6% of pregnant women aged under 20 years had taken folic acid supplements in the weeks prior to conception⁴.

“In conclusion, more women planning a pregnancy need to take daily folic acid supplements as advised to help prevent birth defects in their children. In response to this new study, they should consider continuing the folic acid supplementation until delivery to access potential cognitive function advantages”.

-ENDS-

The Health Supplements Information Service (HSIS) (www.hsis.org.uk; Tel: 020 7052 8955) is an independent information body, set up to provide balanced information on vitamins and minerals. It is

¹ NHS advice www.nhs.uk/conditions/pregnancy-and-baby/pages/vitamins-minerals-supplements-pregnant.aspx#close

² Catena A et al. (2016) Folate and long-chain polyunsaturated fatty acid supplementation during pregnancy has long-term effects on the attention system of 8.5-y-old offspring: a randomized controlled trial. <http://ajcn.nutrition.org/content/103/1/115.abstract?etoc>

³ Pietrzik K et al. (2010) Folic acid and L-5-methyltetrahydrofolate: comparison of clinical pharmacokinetics and pharmacodynamics. Clin Pharmacokinet 49, 535-48.

www.ncbi.nlm.nih.gov/pubmed/20608755

⁴ Bestwick JP et al. (2014) Prevention of neural tube defects: a cross-sectional study of the uptake of folic acid supplementation in nearly half a million women. PLoS One 9: e89354. www.ncbi.nlm.nih.gov/pubmed/24586711

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