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## HEALTH SUPPLEMENTS INFORMATION SERVICE (HSIS) COMMENTS ON A TRIAL EVALUATING THE ROLE OF SUPPLEMENTS IN CHILDREN WITH DOWN'S SYNDROME

A paper published this week in the British Medical Journal on line<sup>1</sup> reports the results of a study investigating the use of antioxidant nutrients in children with Down's syndrome. Commenting on the paper, Pamela Mason from the Health Supplements Information Service (HSIS) notes: "First of all it is vital to note that antioxidants are safe to take and perform a general preventative role in the body by maintaining good health. Numerous studies support this contention. For instance the antioxidants vitamins A, C and E help to neutralise potentially damaging free radicals<sup>2</sup> in the body. They are particularly important for the protection of fats in cell membranes, as well as maintaining healthy skin, heart and circulation, nerves, muscles and red blood cells. As a result, antioxidants are safe with no risks associated with their consumption in accordance with recommended daily allowances.

"Looking further at this BMJ paper, the authors of the study state that children with Down's syndrome are at higher risk of oxidative stress than healthy children and that this increased risk of oxidative stress may cause some of the changes to the brain seen in these children.

"This study was an attempt to answer the question as to whether altering oxidative stress<sup>3</sup> by boosting antioxidant status could improve developmental measures in children with Down's syndrome.

"However, with the supplements used in the study, there were no noticeable changes in oxidative stress, as suggested by the levels of various enzymes. Given that the study did not reduce oxidative stress in these children, this could explain why developmental changes were not seen. In other words **the trial did not answer the question the researchers started with:** ie, does changing oxidative stress improve developmental measures in children with Down's syndrome? What is also key is that the study demonstrated that the **antioxidant supplements did no harm.**"

"This is the first larger, longer term study in this area, but unfortunately it failed to recruit the 200 children aimed for, which is a further limitation of the study."

1. Ellis JM et al. Supplementation with antioxidants and folic acid for children with Down's syndrome: randomised controlled trial. BMJ online first. February 22, 2008. doi:10.1136/bmj.39465.544028AE.
2. Volkovova K, Barancokova M, Kazimirova A, Collins A, Raslova K, Smolkova B, et al. Antioxidant supplementation reduces inter-individual variation in markers of oxidative damage. *Free Radic Res* 2005;39(6):659-66.
3. Oxidative stress is term used which refers to the damage of tissues and cells.
4. Department of Health. Weaning and the weaning diet. Report on Health and Social Subjects No 45. London HMSO: 1994.

“It is also important to note that the researcher’s question is essentially a clinical, **not a nutritional one**. They were attempting a therapeutic intervention in children with Down’s syndrome. They were not giving supplements to make good a nutritional gap. Supplements are intended to maintain health, to fill a nutritional gap, not to treat or prevent conditions.”

In summary Pamela says: “Obviously, any parent with a baby with Down’s syndrome should take appropriate advice before considering any dietary supplementation for their child. However, young children, overall, are at risk from poor intakes of vitamins and the Department of Health recommends that children between the ages of 1 and 5 years should receive supplements containing vitamins A and D.<sup>2</sup>”

**Vitamins are essential for our health and wellbeing. A significant number of British people have diets lacking in these essential nutrients. Vitamins and minerals should ideally be obtained from the diet, but failing that a supplement can help to fill the nutritional gap.**

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