Folic Acid in the Prevention of Cleft Lip and Palate
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For some years now the government has recommended that newly pregnant mothers and those planning to have a baby should take folic acid as a daily dietary supplement.

This recommendation is based on research which has shown that taking folic acid can help reduce the risk of having a baby with spina bifida. A few studies have also indicated that folic acid may alter the likelihood of having a baby with a cleft but are no published guidelines as to what size of dose might be effective. CLAPA News bas therefore asked paediatrician Dr. Alex Habel and geneticist Dr. Melissa Lees to shed some light on the issue.

Folic acid is an essential vitamin found in meat, fresh fruit and vegetables. It is added to many breakfast cereals, of which one standard serving gives a quarter of the Daily Recommended Allowance (DRA). Research has shown that mothers who have a deficiency of folic acid in their diets may be at an increased risk of having a child with spina bifida, and that taking an extra daily dose of folic acid from at least 2 months before the conception of the baby can reduce the chances of this happening.

Many factors are involved in the formation of the human face. These include a number of genes which control the facial cells' activities - the way the cells move, divide and become a specific part of the face. If these genes do not work normally for any reason, the development of the face may be altered, and could result in a cleft. In the majority of cases it is not known what causes the genes to work the way they do to form a cleft lip and/or palate. It may be that some of these important genes require certain nutritional factors, such as folic acid, in order to act. It is possible that other non-genetic factors also interfere with the process.

Prevention of cleft lip and palate

Several research groups have suggested a possible link between cleft lip and/or palate and diets low in folic acid or other vitamins in the mother. These early studies are being repeated to try and determine whether or not there really is a link and, if so, what dose of folic acid would be needed to reduce the chance of a cleft in a baby. At present there are no guidelines on this.

The most respected research on added folic acid was done by the Medical Research Council in the prevention of spina bifida. This recommended a daily dose of 4mg to mothers who already had an affected baby, and 0.4mg to women where there was no previous history of a similar problem. It may be that this dose also prevents cleft lip and palate in those cases which will benefit from extra folic acid, but this has not been proved. The nearest dose readily available is a 5 mg tablet of Folic Acid BP which can be requested from your doctor, and some women are choosing to take this higher dose. Only the 0.4mg tablet can be bought over the counter without a prescription. If you are anaemic, or think you may be, it is advisable to consult you doctor first as the rare Pernicious Anaemia can cause sever damage to the spinal cord if folic acid is given by itself in this dosage. There is no evidence the 5mg dose is otherwise harmful, but a larger dose is not recommended as there is insufficient information.

Epilepsy and cleft lip and palate

Epilepsy and the medicines used to prevent it (anticonvulsants) increase the risk of cleft hp and palate, and combining two or more anticonvulsants increases the risk even more. Under medical supervision it may be possible to reduce the number of medicines and the risk. Ask your doctor, and never attempt to do so unsupervised as the epilepsy may increase.

References

Here are some selected references for further reading:

Hayes, C., Werler, M. M., Willett, W. C. & Mitchell, A. A. Case-control study of periconceptional folic acid supplementation and oral clefts. American journal of Epidemiology. 1996; 143:1229-34. They studied the diet of mothers of 600 babies with clefts against almost 1,200 with other congenital abnormalities. No protective effect was found.

Medical Research Council (MRC) Study Research Group. Prevention of neural tube defects: results of the MRC Vitamin Study. Lancet. 1991; 338:131-7. Spina bifida and neural tube defects were reduced by 72%.

Shaw, G. M., Lammer, E. J., Wasserman, C. R., O'Malley, C. D. & Tolarova, M. M. Risk of orofacial clefts in children born to women using multivitamins containing folic acid periconceptionally. Lancet 1995- 345: 39396. 25-50% reduction in risk when using vitamins comparing 731 babies with cleft lip and palate and 734 control babies with no abnormality.

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