

# Clinical Update

## **Folate reduces chromosomal abnormalities in sperm**

Folate status is important to men as well as women prior to conception, study says

*(Human Reproduction, March 2008)*

This finding may indicate that men should up their intake before conception as well as women. Although the link between a woman's intake and healthy fetal development has long been known (folate greatly reduces the risk of neural tube defects like spina bifida), the study is claimed to be the first indication that paternal diet may play a role after conception.

Aneuploidy is the general term given to changes in the number of chromosomes. It is estimated that between 1 and 4% of a healthy man's sperm have some form of aneuploidy. Aneuploidy has been implicated in failure to conceive and miscarriages, as well as children born with conditions such as Down's syndrome, Turner's syndrome and Klinefelter's syndrome.

The study involved 89 healthy, non-smoking men who gave sperm samples and were questioned about their total intake of the nutrients zinc, folate, vitamin C, vitamin E and beta-carotene – both from food sources (such as green leafy vegetables, fruit and pulses) and from dietary supplements (folic acid, the synthetic form of the vitamin.)

The researchers found that there was a statistically significant association between high folate intake and lower sperm aneuploidy.

Men in the upper 25<sup>th</sup> percentile, who had the highest folate intake of between 772 and 1150 micrograms per day, were seen to 20 to 30% less sperm aneuploidy than those with the lowest folate intake.

The researchers admitted that one of the difficulties of the study was being able to disentangle the effects of folate from other micronutrients. However, they said they were able to do this through statistical analyses of several different nutrients.

The results of these different analyses were different, which they said gave them confidence that they could look at the effect of the micronutrients separately.

The mandatory addition of folic acid to certain foodstuffs, such as bread, has been a hot topic for debate for a number of years. The US and Canada made the addition of the vitamin to bread mandatory in 1998 in order to reduce the number of pregnancies affected by neural tube defects.