MedicalXpress

Semen quality depends upon antioxidants

June 2 2009

A possible relationship between men's diets and the quality of their semen has long been a discussion point. Spanish researchers have now confirmed that antioxidants, molecules which are found mainly in fruit and vegetables and can delay and prevent the oxidation of other molecules, play a key role.

Low antioxidant intake is associated with low reproductive capacity in semen. This is the finding of a new study carried out in two infertility centres in Alicante and Murcia, and which has been published online in the journal *Fertility and Sterility*.

"Our previous research study, published in March, showed that men who eat large amounts of meat and full fat dairy products have lower seminal quality than those who eat more fruit, vegetables and reduced fat dairy products. In this study, we have found that people who consume more fruits and vegetables are ingesting more antioxidants, and this is the important point", Jaime Mendiola, lead author of the article and a researcher at the University of Murcia, tells SINC.

The experts have spent the past four years analysing the link between dietary habits or workplace exposure to contaminants and the quality of semen among men attending fertility clinics.

The objective was to find out whether a higher or lower intake of vitamins, which act as antioxidants, could affect semen quality. These molecules, which are present in foods such as citrus fruits, peppers and spinach, work by lowering the level of oxidative stress that can affect

semen quality, and improve sperm concentration parameters as well as sperm mobility and morphology.

The study was carried out among 61 men, 30 of whom had reproductive problems, while the remaining 31 acted as controls. "We saw that, among the couples with fertility problems coming to the clinic, the men with good semen quality ate more vegetables and fruit (more vitamins, folic acid and fibre and less proteins and fats) than those men with low seminal quality", explains Mendiola.

"A healthy diet is not only a good way of avoiding illness, but could also have an impact on improving seminal quality. What we still do not understand is the difference between taking these vitamins naturally and in the form of supplements. In the studies we are going to carry out in the United States (where the consumption of vitamins in tablet form is very common) we will be looking at the role of supplements", the Spanish scientist continues.

Spanish fertility, a worrying analysis

More and more scientific studies show that human seminal quality and male fertility have declined over recent decades. The results of the European study Differences in seminal quality and reproductive results, carried out between 2000 and 2008 by the Valencian Infertility Institute show that Spanish semen is at the bottom of the league table in terms of volume (9th position), mobility (10th position) and concentration.

However, after analysing the quality of sperm, the research team evaluated its functioning, in other words its capacity to successfully lead to pregnancy. In this analysis, the Spanish sperm came second, only behind Portugal. "The quality among Spanish men is around the European average. We shouldn't worry ourselves, although we must monitor the situation", points out Mendiola.

In the countries of northern Europe, such as Denmark, 40% of young men have seminal quality that is below recommended levels for fertility. "The Danish experts are studying the issue, because it is very worrying. Lifestyle habits could be closely related to seminal quality and human fertility parameters. In addition, emphasis has been placed in recent years on the significance of babies being exposed to toxins and pollutants (pesticides, xenoestrogens, etc.) while in the womb, which could also compromise their future reproductive capacity when they grow to be adults".

Source: FECYT - Spanish Foundation for Science and Technology