An inadequate diet during pregnancy predisposes the baby to diabetes

December 5 2012

Experts already know that pregnant women should not eat for two. A study now insists on the importance of a healthy diet as a way of avoiding increased insulin and glucose levels in the child, both of which are indicators of diabetes and metabolic syndrome risk.

Maternal diet quality during pregnancy is fundamental to foetal growth as well as insulin and glucose levels at birth. Such indications warn of the possible predisposition to suffer from illnesses like diabetes and metabolic syndrome.

The study was headed by the Complutense University of Madrid and published in the European Journal of Clinical Nutrition, which studies diet during this vital stage which sees cell growth in terms of both number and size.

Previous studies have already outlined that when the mother does not consume enough food during pregnancy, the glucose supply to other tissues is reduced in the foetus to ensure that the brain receives the correct amount. In turn, this causes reduced foetal growth. This adaptive mechanism is known as Barker's thrifty phenotype hypothesis.

"However, the effects of an imbalance between fats, proteins and carbohydrates are not as well-known. In others words, the effect during pregnancy of Western diets that vary greatly from the Mediterranean variety are not well-known," as explained to SINC by Francisco J. Sánchez-Muniz, researcher at the Complutense University of Madrid and

one of the authors of the study.

The new study forms part of the Estudio Mérida, a macro investigation that analyses different parameters in newborns and their mothers. In this way, the new study reveals that when pregnant women ingest adequate energy quantities, their children are born at a normal weight of around 3.3 kilograms to 3.5 kilograms.

"Nonetheless, more than half of women have low quality diets that include a high amount of animal products rich in saturated fats yet a low amount of carbohydrates from vegetables and pulses. Furthermore, more than a third of women displayed eating habits that differ greatly from the Mediterranean diet," outlines Sánchez-Muniz. "It is surprising that women do not change their eating habits or diet quality during pregnancy."

The effects of an incorrect diet

The experts state that when a woman does not eat properly during pregnancy, the child is born with a diabetogenic profile, meaning high levels of serum glucose and insulin and a marker of insulin resistance. This confirms the influence of the diet on foetal pancreas development and glucose and insulin concentration at birth.

"It is vital to make mothers aware of the importance of eating well during pregnancy with a balanced Mediterranean diet," adds the researcher. "We must also push for studies amongst the same population group in order to understand how children will develop over time and thus avoid, or at least mitigate, the development of high prevalence diseases within our society."

More information: Gesteiro E, Rodríguez-Bernal B, Bastida S, Sánchez-Muniz FJ. "Maternal diets with low Healthy Eating Index score

and adherence to Mediterranean diet are associated with cord blood insulin and insulin resistance markers at birth". Eur J Clin Nutr 2012; 66:1008-1015.

Barker DJ. "Fetal origins of coronary heart disease". BMJ 1995; 311: 171-174.

Barker DJ. "Early growth and cardiovascular disease". Arch Dis Child 1999; 80: 305-307.

Provided by Spanish Foundation for Science and Technology (FECYT)