

Researchers studying links between nutrition and fetal development

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(PhysOrg.com) -- An ongoing study led by Catherine Field from the University of Alberta's Department of Agricultural, Food & Nutritional Science is attempting to determine the effects of nutrition on both expectant mothers and their babies.

The Alberta Pregnancy Outcomes and Nutrition Study, which first started accepting volunteers in May 2009 and now has more than 1,400 participants, is hoping to amass information on women from different backgrounds, with different eating and exercise habits, in order to understand what nutritional factors contribute to healthy mothers and healthy babies in both the pre and post-natal stages.

Due to the considerable variables involved in such a complex research project, researchers are hoping to assemble 5,000 volunteers in order to compile an extensive, diversified sample group.

The study examines factors in expectant mothers such as weight gain, activity levels and depression, as well as examining possible links to autism and attention-deficit hyperactivity disorder. The information will then be developed into a genetic bio-bank of pregnant women, children and biological fathers, which will help to determine how particular conditions develop due to certain nutritional factors.

For the first stage of the study, researchers are focusing on a specific group of nutrients: iron, folate and omega 3 fatty acids. Iron is essential for development of red blood cells and helps maintain energy levels.

Folate is a naturally occurring B vitamin and it helps produce and maintain new cells, while omega 3 fatty acids are seen to help alleviate a myriad of potential health problems, including heart disease and high cholesterol.

“We are looking at a number of other nutrients later,” said Field, “but these are the first three because they are all linked to mom’s mental health and the baby’s development and brain function.”

While the establishment of better dietary practices during pregnancy is a benefit to any expectant mother, Field says that the research will have benefits beyond pointing out links established between diseases and [nutrition](#).

“One of the major contributions from the study may be new weight gain guidelines for women who enter pregnancy with different body mass indexes,” she said and that, while guidelines have been set on historically collected data, but there haven’t been any large North American studies to update them and relate them to healthy outcomes for mom and baby.

“We will be able to look at whether women are following these guidelines and look at hard outcomes such as baby’s birth weight, and mom’s obstetrical complications.

“We will be able to contribute to what is a healthy weight gain.”

Researchers are also paying particular attention to the mother’s emotional state, both before and after delivery of the baby, in order to determine how mood can affect other factors in the baby’s development. Previous studies have demonstrated that women who experience even moderate depression during their pregnancy tend to have lower levels of activity and less discipline with their diet. This can affect hormone levels in the mother, which, in turn, can alter the development of the fetus.

“We will look at scales of anxiety and happiness,” she said; “even scales of when people are really happy, as we would like to know what is associated with that. Women who don’t suffer from depression will give us as much information as those [women](#) who do.”

More information: For more information on the APrON study, or to register as a volunteer, click [here](#) .

Provided by University of Alberta

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