Babies get a better chance to escape a dangerous health cycle, study highlights

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A promising step forward in stopping an intergenerational cycle of birth complications, diabetes and obesity associated with gestational diabetes has been made by researchers at the University of Sydney.

"To our knowledge, this is the first study to show that mums with carefully controlled gestational diabetes mellitus (GDM) can give birth to babies with normal levels of body fat," said Dr Cheryl Au, who recently completed her Bachelor of Medicine/Surgery at Sydney Medical School and is lead author of the study published in Diabetes Care today.

"This is very important for those babies' immediate and future health. An overweight baby with a high percentage of body fat is at higher risk of complications during labour such as fractures due to a difficult delivery and caesarian sections. After birth they are at increased risk of obesity and diabetes. If the baby is a girl she is more likely to develop GDM if she gets pregnant.

"So we are talking about preventing a continuous cycle of health risks for a condition that is developed by an estimated 17,000 Australian women a year."

During a normal pregnancy the hormone insulin becomes less effective in transferring glucose from the bloodstream to the mother's tissues to make sure the baby gets sufficient nutrients from her blood.

GDM occurs if the mother no longer secretes enough insulin into her

tissues, resulting in high blood glucose concentration in her blood stream. One result is an excess transfer of nutrients to the baby causing increased weight and body fat.

The study was performed at Royal Prince Alfred Hospital and looked at 532 babies born to mothers without GDM and 67 babies born to mothers with GDM. The majority of GDM mothers were treated at the hospital's dedicated GDM clinic where treatment consisted of diet, exercise, self-monitoring of glucose four times a day and insulin if needed, resulting in good control of blood glucose levels for the majority.

"We used the gold standard method of air displacement plethysmography which uses pressure and volume changes to get an accurate reading of the percentage of body fat. Most other studies use measures such as skin fold thickness or an X-ray technique which are less accurate," said Dr Au.

"We were surprised and delighted to find there were no differences in body fat percentage between the GDM and non-GDM babies. This is in contrast to previous studies which showed that, even if birth weight can be normalised with good glucose control, body fat is still increased in these infants, with all the accompanying health risks."

The researchers will continue to follow the babies' progress to assess their long-term outcomes.

Provided by University of Sydney