MUM'S DIET KEY TO BABY HEALTH

Obesity breakthr

April 19, 2011 Front Pg NZH

NZ research helps reveal key to pregnancy DNA change

by Vaimoana Tapaleao

Expectant mothers' diets could be creating an obesity timebomb for their unborn children, a groundbreaking study involving New Zealand scientists has revealed.

The study of 300 children has shown for the first time that what a woman eats and drinks during her pregnancy can alter her child's DNA.

That change can determine whether her child will grow up to be obese, and can even increase the risk of a child getting diabetes or heart disease later in life.

Professor Sir Peter Gluckman, of the Liggins Institute at the University of Auckland who aided the study, said: "For the first time ever, because of what we've done, we now have a way of working out what mother should eat.

"It confirms our suspicions that maternal nutrition does indeed influence the offspring's risk of later obesity and disease.

"It's a major breakthrough ... It's the biggest, most important finding I've made, as the result of 15 years' work," he said.

The study found there was an element in a woman's diet, particularly during the first third of a pregnancy, that was of crucial importance.

But it was too soon to say what that was.

"If you are asking me to give you a specific nutritional recipe, what mothers should eat, I can't do that yet," Sir Peter said.

"I'd dearly love to, and I have my biases but I need to prove it."

The international study was headed by the University of Southampton. Teams from New Zealand and Singapore also took part.

It revealed that change in DNA — called epigenetic change — could result in a child storing more fat, increasing the risk of obesity, diabetes or heart disease as an adult.

Of 300 children in the study, 25 per cent showed signs of a change in their DNA make-up caused by their mother's diet during pregnancy.

Mothers who had a lower carbohydrate intake had children who had a change in their DNA and therefore had an increased risk of being obese.

There was also a 5kg difference in body fat between the children considered obese and the others.

Sir Peter said that was "a hell of a lot of difference".

"At nine years of age — that's an enormous percentage of body weight. And if you then see that going into adulthood, you can imagine how much difference in fat that would be."

An important finding was that

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A slim mother could give birth to a slim child whose DNA make-up had changed because of the food she ate. The effects would manifest themselves only years later.

But Sir Peter said a low carbohydrate intake alone had not been proved to be the reason for the DNA change.

"It could be there is something else that we didn't measure," he said. "But we haven't proven which food it is.

"We do know for certain that the lower carbohydrate intake was the key factor."

Sir Peter said researchers would next be looking at the food women ate — particularly the women whose children showed signs of a DNA change.

It was vital for moves to be made to help mothers, particularly new mothers, to look after themselves.

"The study demonstrates the importance of developmental factors before birth in the pathway to childhood obesity — and we already know that childhood obesity is an important predictor of later diabetes and heart disease," he said.

"It does imply that attention to mothers' health and nutritional status early in pregnancy is very important, to get the best for your baby.

"We have to start focusing more on the help of mothers ... otherwise we will never tackle this epidemic completely."

In 2009, an OECD report found 26.5 per cent of New Zealanders were obese. Obesity costs the health system about