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**BABIES** WHO ARE ALREADY OBESE INSIDE THE WOMB  
  
**BYLINE:** BY JENNY HOPE MEDICAL CORRESPONDENT  
  
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CHILDHOOD obesity starts in the womb, with overweight **mothers** giving birth to **fat babies.**

New scanning techniques have allowed British scientists to examine **fat** levels in newborn **babies.**

They found some had built up **fat** around their abdomen in the same way as adults in their 50s.

It is the first direct link to be shown between the weight of a **mother**-to-be and her child.

Obese youngsters are more likely to develop a string of health problems, including heart disease, brittle bones, diabetes and asthma.

Almost half of women of child-bearing age are overweight or obese and more than 15 per cent of pregnant women are obese.

This also raises their odds of dying in pregnancy, of their **baby** being stillborn and a host of pregnancy complications, some of which can be fatal.

The study was led by Professor Neena Modi, the UK's top authority on high-risk health problems in newborns.

She said magnetic resonance imaging (MRI) scans had provided clear evidence that being overweight or obese in pregnancy could result in potentially harmful changes to a **baby's fat** levels while still in the womb.

Her team, which studied 54 boys and 51 girls at Chelsea and Westminster Hospital, found a total of 31 **babies** had more adipose, or **fat,** tissue around their abdomen than would have been expected.

This increased proportionately with the obesity of the **mother.**

Professor Modi, professor of neonatal medicine at Imperial College London, said: 'The biological changes identified in the study were increased total **fat,** particularly around the tummy.

'I was very surprised to be able to detect such a clear continuum of effect of maternal **BMI** (body mass index) on the **baby.**

'This is a very important finding indeed, opening the door to a new understanding of how a **mother's** metabolism affects her **baby.**

'This shows how sensitive the **baby** is to the environment experienced within the womb and how lifelong effects may be initiated before birth.'

In adults, adipose tissue is found mainly under the skin, but also in deposits between the muscles, around the intestines and around the heart Ð collecting **fats** which come from food eaten or produced in the body.

Newborn **babies** typically have about 700g of adipose tissue, but for each unit increase in maternal **BMI**, this increased by approximately 7g with a huge build-up in **fat** in the **babies'** livers.

'Normally, a newborn **baby** has minimal or no detectable liver **fat,**' said Professor Modi.

'But for each unit increase in maternal **BMI**, the **baby's** liver **fat** content increased by 8 per cent.'

The findings come as experts predict obesity will cost the NHS up to £6.3billion a year by 2015 unless more is done to tackle the spiralling problem.

Professor Modi said it was important that all women hoping to have families were aware that being obese could affect their unborn children's health prospects.

'Adipose tissue not only stores energy and provides insulation, but is also a source of variety of hormones.

Being too **fat** is unhealthy and increases the risk of many diseases.

'In adults too much adipose tissue around the tummy is particularly bad and is associated with much greater risk of developing heart disease, high blood pressure and diabetes.'

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Overweight **mothers** 'give birth to **fat babies',** study finds;   
Childhood obesity appears to begin in a **mother's** womb, a new study has concluded using state of the art technology to monitor **fat** levels in unborn **babies.**  
  
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Researchers found some **babies** have similar build up of **fat** around their abdomen that adults aged in their 50s have.

The study of **babies** at Chelsea and Westminster Hospital, west London, used magnetic resonance imaging (MRI) scans to investigate links between obesity in children and their **mothers.**

It reportedly found evidence that being overweight or obese in pregnancy could result in potentially harmful changes to a **baby's fat** levels while still in the womb.

The study, led by Prof Neena Modi, one of Britain's best experts on high-risk health problems in newborns found nearly a third of children had more **fat** than expected.

Of the 105 **babies** - 54 boys and 51 girls - a total of 31 **babies** had more adipose, or **fat,** tissue around their abdomen than normal.

Experts said the study was the first direct link that proved the weight of a **mother**-to-be was passed on to her child and showed that overweight **mothers** gave birth to **fat babies.**

"I was very surprised to be able to detect such a clear continuum of effect of maternal **BMI** (body mass index) on the **baby,**" said Prof Modi, head of neonatal medicine at Imperial College London.

"This is a very important finding indeed, opening the door to a new understanding of how a **mother's** metabolism affects her **baby.**"

Newborn **babies** usually have about 700g of adipose tissue, but for each unit increase in maternal **BMI**, this increased by approximately 7g with a huge build-up in **fat** in the **babies'** livers.

Meanwhile in adults, adipose tissue is found mainly under the skin, but also in deposits between the muscles, around the intestines and around the heart.

Prof Modi, who is also a consultant neonatologist at Chelsea and Westminster Hospital, told the Daily Mail that all women should be aware of the effects of being obese and what this means for their child.

"This shows how sensitive the **baby** is to the environment experienced within the womb and how lifelong effects may be initiated before birth," she said.

Body mass index is calculated by dividing a person's weight in kilograms by the square of their height in metres.

The World Health Organisation classes a **BMI** between 18.5 and 25 as normal weight, between 25 and 30 as overweight and over 30 as obese.

In adults, high amounts of **fat** around the stomach and in the liver impair their control of blood sugar, leading to diabetes.

Problems associated with obesity are set to cost the NHS up to £6.3 billion a year by 2015.