**Premature babies at risk of ill health in later life, research suggests**

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**Young adults who were born prematurely show multiple biological signs of risks to future health, research from Imperial College London has found.**

**The scientists, reporting their findings tomorrow in the journal** [**Pediatric Research**](http://journals.lww.com/pedresearch/Abstract/2011/11000/Aberrant_Adiposity_and_Ectopic_Lipid_Deposition.12.aspx)**, say that the research indicates that urgent work is now needed to monitor preterm babies into adulthood to improve the detection of early signs of disease.**

The study of 48 volunteers aged 18-27 found that those who were born at 33 weeks of gestation or less had higher blood pressure, more fat tissue despite having a normal body mass index, and more fat in their muscle and liver.

These traits are linked to heart and circulatory disease and type 2 diabetes.

The differences in fat around the abdomen were most marked in men.

The number of preterm babies born each year is rising, and in developed countries, around 2 per cent of babies are born before 33 weeks of gestation.

Medical advances mean that a higher proportion of babies born early are surviving: 90 per cent of infants born before 33 weeks will go home.

However, a few studies have suggested that the impact of preterm birth persists into adulthood, putting premature babies at risk of ill health in later life.

The biological pathways involved are unknown.

“This was only a small study but the differences we found were quite striking,” said [Professor Neena Modi](http://http/www1.imperial.ac.uk/medicine/people/n.modi/), the lead investigator in the study from the [Department of Medicine](http://www1.imperial.ac.uk/departmentofmedicine/) at Imperial College London.

“The results suggest that we need to monitor the health of premature babies beyond infancy and childhood.

Preterm men and women might be at greater risk of cardiovascular and metabolic diseases but if we look out for the warning signs, we can help them to stay healthy with lifestyle interventions, and treatment where appropriate.”

Professor Neena Modi and her colleagues used whole body magnetic resonance imaging (MRI) and advanced chemical profiling techniques to investigate what biological differences might be present in young adults who were born prematurely.

They found that even though the preterm subjects did not have a higher body mass index (BMI), they did have more fat tissue around their abdomens and in their muscle and liver. Nuclear magnetic resonance (NMR) spectroscopy revealed differences in the chemical makeup of their urine, with preterm subjects producing more metabolites associated with inflammation, which is in keeping with the higher blood pressure and greater fat found in the preterm subjects.

The study involved 23 healthy men and women born before 33 weeks and 25 healthy men and women born at full term.

The preterm volunteers were recruited with the help of [Bliss](http://www.bliss.org.uk/), a national UK premature and sick baby charity.

The study was funded by the [Medical Research Council](http://www.mrc.ac.uk) and [Chelsea & Westminster NHS Foundation Trust](http://www.chelwest.nhs.uk/).

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Notes to Editors:

1. Reference: E.L. Thomas et al. ‘Aberrant adiposity and ectopic lipid deposition characterise the adult phenotype of the preterm infant.’ Pediatric Research, November 2011.

Senior author: Professor Neena Modi, Imperial College London (for full list of authors please see paper)

2. About Imperial College London

Consistently rated amongst the world's best universities, Imperial College London is a science-based institution with a reputation for excellence in teaching and research that attracts 14,000 students and 6,000 staff of the highest international quality. Innovative research at the College explores the interface between science, medicine, engineering and business, delivering practical solutions that improve quality of life and the environment - underpinned by a dynamic enterprise culture.

Since its foundation in 1907, Imperial's contributions to society have included the discovery of penicillin, the development of holography and the foundations of fibre optics. This commitment to the application of research for the benefit of all continues today, with current focuses including interdisciplinary collaborations to improve global health, tackle climate change, develop sustainable sources of energy and address security challenges.

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Website: [www.imperial.ac.uk](http://www.imperial.ac.uk)

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