



## The Cambridge Baby Growth Study

The Cambridge Baby Growth Study developed out of recent understanding that the babies environment during pregnancy have long lasting effects on risks for weight-gain during childhood, timing of puberty and adult diseases such as diabetes and heart disease.

Many women in Cambridge have already joined the study, providing unique information about their pregnancies; blood samples for study of sugar levels during pregnancy and together with their partners, DNA samples which could unravel the mystery of how 'genes', as well as mothers health, can affect the size at birth of their babies.

These babies are being followed to see how their 'genes' and differences in mothers weight gain and sugar levels during pregnancy could affect rates of weight gain over the first two years of life. These are important factors in determining later pubertal development, fertility and risk for adult diabetes and heart disease.

## Welcome to the first newsletter from the Cambridge Baby Growth Study

We are a team of four paediatric research nurses with a combined 70 years of knowledge!! The study first began in 2001 and up to date we have recruited almost 900 mothers with 331 boys and 277 girls; these include 8 sets of twins. We have some 151 babies waiting to arrive! Such is the commitment of our mothers we are now recruiting a high proportion of siblings. Where this is the case we try our best to organise baby check appointments that allow us to see both infants at the same time, minimising the amount of journeys parents make to the hospital.



Anne-Marie Wardell, Suzanne Smith, Karen Forbes & Petra Tucker

One of the main objectives of the CBGS has been to discover how many boys are born with testicles that are either difficult to feel or in a higher position than normal. There is some suggestion that over the last 30 to 40 years the number of boys born with these so called 'undescended testes' is increasing and that the problem may be more common in some countries compared to others. We have now examined over 300 boys at birth and have found that around 4.5 % have evidence of an undescended testis. In the majority, the extent with which the testes had not descended properly was small, with only one testis tending to be affected. Furthermore, when examined again at 3 months of age, most of cases undescended testis had resolved, suggesting that spontaneous testicular descent had occurred. Our preliminary study results, which were presented to the European Society of Paediatric Endocrinology meeting in Basel, Switzerland in September 2004, also reveal that some boys born with testis in the normal position can develop an undescended testis later in infancy, with approximately 1.5% and 5.0% of boys spontaneously developing the condition by 3 and 12 months of age respectively. Explanations for the geographical variations in the incidence of undescended testis at birth and for the apparent spontaneous testicular ascent and descent in infancy are currently unexplained. One of the ongoing aims of the CBCS will be find out and understand which internal and external (environmental) factors may be influencing normal testicular development and descent in the womb and in early life that may explain our findings.

### Measurements taken include:

- Length
- Weight
- Head Circumference



## News from Denmark

Other participating centres taking part in this study are located in Denmark, Sweden, France and Spain. In September we had a visiting doctor join us from Denmark for a few days, observing how our measurements were taken and recorded. In Denmark an equivalent cohort study has been going on for several years and has come to a close. A total of 1072 boys born during 1972 – 2001 were recruited. The boys were examined at 3, 18 and 36 months of age. At birth 9% of the Danish boys had either one or both testes undescended. This rate had decreased to approximately 2% at three months of age due to spontaneous testicular descent. This is significantly higher than those in Finnish cohort study, and significantly higher than reported 40 years ago from a study in Copenhagen.

## Addenbrooke's Clinical Research Centre

The ACRC offers two purpose built research facilities to members of the local research community for patient centred clinical research projects; the Clinical Research Facility on level 5 offers this facility for children. Both areas are staffed by experienced, well qualified NHS Staff that have a range of acute and critical care skills for adult and paediatric patients. Since the facility fully opened in July 2002, there have been 21 paediatric studies and 3 adolescent studies, of which 7 are now complete.



The ACRC aims to provide for the special needs of children within purpose built facilities available to all paediatric researchers. Being able to concentrate purely on caring for the children, undertaking their research in quiet and relaxed surroundings without the ongoing pressures of the ward environment, enables quality care to be given and accurate data to be collected. Our Clinic is held here three days a week: Mondays, Tuesdays and Thursdays. You may have already met our experienced Paediatric Clinical Research Sister Elaine Marriott at the Tuesday session. Elaine has been working at the ACRC for three years and is involved with many other studies.



## Measuring physical activity in young children

Declining physical activity may be a major reason for increasing numbers of overweight and obese children. However, this possible link is poorly documented due to difficulties in precisely measuring physical activity and energy expenditure during normal daily activities. Movement sensors are becoming more popular and can count the total number of steps/jumps you perform during the day, but they do not measure the intensity of the activity.

The purpose of this study is to test a new device, the Actiheart sensor (picture) in young children during daily life. The Actiheart measures both how much you move around and your heart rate. This combined information will allow us to work out more accurately how much energy you use every day.

If you are interested in taking part, or would like more information about this study, please contact the Cambridge Birth Cohort Research Nurses.



*The Actiheart is a small and very lightweight gadget, which sticks to your stomach with two sticky pads - it is made of two parts joined together with a piece of wire. These two pieces clip on to the sticky pads.*

*The Actiheart is waterproof, so you can wear it all the time, including during showering, bathing and swimming.*

This short 'validation' study involves calibrating the Actiheart sensor for each individual – this takes one morning or afternoon at one of our 'exercise laboratories' in Cambridge or Ely, and includes tests such as walking on a treadmill and drinking some special water. This is safe water, which will allow us to very accurately estimate the amount of energy the body uses up. Children will then wear the Actiheart sensor at home for up to 14 days, and collect a daily urine sample.

**Please remember to inform us if any of your contact details have altered.**

**Thank you to all those who are taking part or have completed the Study**

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