

## Background to the Project

### Growth

Growth encompasses any kind of development or progression of a foetus/infant, be it mental or physical. Growth can be effected by many things such as; DNA, amniocity, chorionicity, zygosity, method of conception, gestational age, congenital disorder, family socio-economic-status, living environment, parents work, siblings, ethnicity and living environment. Therefore, it is very difficult to decipher a true cause if a developmental abnormality is discovered.

With this project we aim to measure all of these factors in a longitudinal follow up study, so we are able to discover what areas of development, are effected by environmental and/or genes.

### Obesity

The World Health Organisation has said that obesity has now reached epidemic proportions. With this increasing prevalence of obesity in both adults and children, concerns have been raised about the effect of maternal obesity in pregnancy on fetal growth. We aim to investigate this relationship.

### Depression

Very little is known about the cause or origin of post-natal depression despite the fact that it has been claimed to effect up to 50% of mothers. Moreover, its effects on the child are also not well documented. Therefore it is important to discover its cause so we are able to prevent it and to understand its effect on the infant so we can intervene when it has occurred.

### Twins

Twins, monozygotic (single egg twins) and dizygotic (fraternal, separate egg twins), present a unique opportunity to investigate the heritability of certain traits as they present the ability to control for shared environment and genes (monozygotic sharing 100% genes, dizygotic sharing 50% of genes, both sharing the same environment).

### Birmingham

Birmingham was chosen as more than 43% of newborn babies and children under 15 years of age in Birmingham are from minority populations, mainly from Mirpuri Pakistani descent (Census 2001), with the four most prevalent languages after English being Arabic, Urdu, Bengali and Punjabi. This unique setting provides the opportunity to investigate the heritability of infancy growth and development parameters in an ethnically mixed population.

