**UK Biobank study identifies gene changes that influence timing of sexual behaviour**

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A study of over 380,000 people, published today in the journal *Nature Genetics*, has identified gene differences that influence the age of puberty, sexual intercourse and first birth.

Age at first sexual intercourse is known to be influenced by social and family factors, such as peer pressure, but this study shows that genetic factors also have an influence on the timing of this sexual behaviour.

It is known from other studies that first sexual intercourse at an early age is associated with adverse educational achievements, physical health and mental wellbeing.

To identify the gene differences which influence timing of sexual behaviour, the researchers at the [MRC Epidemiology Unit](http://www.mrc-epid.cam.ac.uk/) University of Cambridge analysed the genetic data of 59,357 men and 66,310 women aged between 40 and 69 years old part of UK Biobank, a national study for health research.

This analysis identified 38 gene variants that were associated with age at first sexual intercourse. The researchers confirmed this association in two independent datasets, 241,910 men and women in the deCODE Study in Iceland and 20,187 participants in the Women’s Genome Health Study in the USA, to total a sample of over 380,000. Several of these gene variants were located in or near genes previously implicated in brain development and neural connections, and their analysis uncovered associations with a range of reproductive behaviours, such as age at first birth and number of children.

Dr John Perry, a senior investigator scientist at the MRC Epidemiology Unit, and a lead author of the paper, said: “While social and cultural factors are clearly relevant, we show that age at first sexual intercourse is also influenced by genes which act on the timing of childhood physical maturity and by genes which contribute to our natural differences in personality types.

“One example is a genetic variant in *CADM2*, a gene that controls brain cell connections and brain activity, which we found was associated with a greater likelihood of having a risk-taking personality, and with an earlier age at first sexual intercourse and higher lifetime number of children.”

In previous studies by the same team, it was found that an earlier age at puberty is linked to increased long-term risks for diseases such as diabetes, heart disease and some cancers.

Dr Ken Ong, a paediatrician and programme leader at the MRC Epidemiology Unit, and a lead author on the paper, added: “We have already shown that early puberty and rapid childhood growth adversely affect disease risks in later life, but we have now shown that the same factors can have a negative effect at a much younger age, including earlier sexual intercourse and poorer education attainment.”

The team hope that taking account of the timing of puberty and personality type could lead to more targeted and effective approaches to health interventions and promotion of healthy behaviours.

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