Genetic link between period onset and BMI

Nicky Phillips
ABC

Monday, 18 May 2009

A large group of studies have found genetic links between body mass index and the onset of menarche.

Molecular geneticist Dr Scott Wilson from the University of Western Australia (http://www.uwa.edu.au) , co-author of one study published today in the journal *Nature Genetics* (http://www.nature.com/ng) , says it is the first to reveal the genes that influence the start of menarche - the onset of menstruation in females.

He says that while the age of menarche is influenced by the environment, it is also known to be partly controlled by genetics.

But the specific gene variants associated with the onset of menstruation have been unclear until now.

Using high tech 'gene chips', the scientists looked for clusters of women that had similar gene codings and started menarche at the same age. Gene chips take a DNA sample and look for variations at specific points, known as SNPs, associated with menarcheal age.

As well as determining the genes linked to early menarche the study also investigated the link between menarchael age and BMI.

Previous epidemiological studies have shown that early menstruation is linked to higher body fat and shorter stature. Wilson and colleagues found that of the 10 known genetic variants associated with BMI, eight were also linked to SNPs known to influence the age of menarche.

While the age of menarche is influenced by environment, it is also partly controlled by genetics *(Source: iStockphoto)*

Related Stories

- Mum's diet linked to onset of puberty (/science/articles/2008/06/17/2276176.htm) , Science Online, 17 Jun 2008
- Neanderthals sped through puberty (/science/articles/2004/04/29/1097282.htm) , Science Online, 29 Apr 2004
- Training does not stunt growth: study (/science/articles/2002/02/05/473125.htm) , Science Online, 05 Feb 2002
- **Map:** University of Western Australia 6009 (http://www.abc.net.au/science/maps/map.htm?lat=-31.978522&long=115.815956&caption=University of Western Australia 6009)

Other functions

Wilson says further study of the genes may reveal their role in reproductive disorders.

"The next step of the work will be to look at the precise function of the genes," he says.

"Do they have a role in later reproductive life and fertility as well as age at menarche? Could they have a role in the onset of menopause? "

Professor Peter Rogers, Director of the Centre for Women's Health Research at Monash University (http://www.monash.edu.au) in Melbourne, says the study identifies a series of genes we didn't previously know were associated with the age of menarche.

"Now medical biologists can better understand how processes like menstruation and menopause work," he says.

Common thread

Also published in Nature Genetics are four independent studies that found that a gene known as 28Linb plays a role in age of menarche.

Dr Rob Norman, Director of the Centre for Reproductive Health at the University of Adelaide (http://www.adelaide.edu.au) , says it's amazing that four papers from different population groups identified the same gene as being responsible.

"Often these genome wide scans come from different populations and they come up with different answers," he says.

Tags:

obesity (/science/tag/browse.htm?site=science&topic=latest&tag=obesity)
,
womens-health (/science/tag/browse.htm?site=science&topic=latest&tag=womens-health)
,
genetics (/science/tag/browse.htm?site=science&topic=latest&tag=genetics)
,
menstruation (/science/tag/browse.htm?site=science&topic=latest&tag=menstruation)

(http://www.abc.net.au)