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Study finds genes that influence the start of menstruation

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Two scientists at the Institute for Aging Research of Hebrew SeniorLife are part of an international team of investigators that has identified genes that influence the start of menstruation, a milestone of female reproductive health that has lifelong influences on overall health. The breakthrough was published online in *Nature Genetics*, one of the world's leading scientific journals.

Using several population studies, including the Framingham Heart Study, the researchers analyzed data from more than 17,500 women to determine when menarche, the start of menstruation, begins, typically around age 13 or two years after the onset of puberty.

This study provides the first evidence of common genetic variants that influence the normal variation in the timing of female sexual maturation. The researchers say these findings are significant because girls with an earlier age at menarche tend to have a greater body mass index (BMI) and more body fat than girls who begin menstruating at a later age. In addition, one of the genes is located in a region that influences adult height.

"As earlier age at menarche is associated with shorter stature and obesity later in life, the identified variants may not only clarify the genetic control of female sexual maturation, but may also point to regulatory mechanisms involved in normal human growth and obesity," wrote the scientists, who included Douglas Kiel, M.D., M.P.H., the Institute for Aging Research's director of medical research, and David Karasik,

Ph.D., director of its Genetic Epidemiology Program.

Genome-wide association studies have successfully identified many genetic variants associated with multiple diseases and traits such as height and skin color, so the researchers used a similar approach to identify genes involved in determining age at menarche.

Source: Hebrew SeniorLife Institute for Aging Research