

Emotionality in adolescent males is driven by hormonal changes

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(Medical Xpress) -- Researchers led by a team from the University of Glasgow and Oslo University Hospital, Norway have discovered that while changes in the emotions of adolescent females are directly related to age those from young males are influenced by the changing patterns of reproductive hormones that occur as individuals become more sexually mature.

The findings are significant as a variety of [medical conditions](#) such as growth deficiency, early onset [gender identity disorder](#) and cancers in reproductive tissues, including [prostate cancer](#) are treated using drugs that temporarily ‘turn off’ the reproductive system. The long term effects or side effects of these treatments, in particular when they are used on adolescents are, as yet, not known.

In the study which was conducted on 92 sheep, the University of Glasgow team working with colleagues from the Norwegian School of Veterinary Science, Oslo University Hospital and AgroParisTech, considered what would happen if puberty did not occur by blocking changes in hormones using a common human drug treatment.

Professor Neil Evans of the University of Glasgow said, “We used sheep because the time course of pubertal development is more similar to humans than laboratory rodents. As sheep are flock animals, and like to see other sheep, an easy way to test their [emotional](#) response is to place them in social isolation for a two minute period. This was done at three times, before, during and after puberty. The results showed that females

had a greater emotional response than males, both before and after puberty. Interestingly the results also showed that the [emotional response](#) of males, but not females, was significantly altered when puberty was blocked.”

The results suggest that changes in hormones during adolescence drive changes in the brains of males that alter emotional reactivity.

Prof Neil Evans added, “The findings may have implications for the treatment of medical conditions which occur at the time of puberty, but the link between [reproductive hormones](#) and how the brain works also raises the possibility that other medical conditions that affect how we think and behave, such as Alzheimer’s disease, may be affected by, or could be treated with, drugs that change activity within the reproductive system.”

The exact hormonal changes that bring about these alterations in behaviour, exactly how they act within the brain and whether such changes are permanent will be the subject of further studies planned by the research team.

More information: www.sciencedirect.com/science/.../S0306453012001254

Provided by University of Glasgow

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