

# **Nutritional status influence the onset of puberty of school girls in Al Mekhwah Governorate, Kingdom of Saudi Arabia**

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## **Abstract**

Puberty is the stage in the development of humans and other primates marked by the development of secondary sex characteristics, including menarche in females. Puberty occurs at the onset of adolescence, between the ages of about 11 and 14 in girls. The aim of the study was to investigate the influence of nutritional status on the onset of puberty among school girls and study the percentage of recommended dietary allowance as a nutritional factor. A cross-sectional study of four hundred school girls was carried out in the government primary, preparatory and secondary schools in Al Mekhwah Governorate, Kingdom of Saudi Arabia. Every girl was subjected to anthropometric measurements including weight and height. Body mass index was calculated. The twenty four hours dietary recall method was used to assess the dietary intake. Results were statistically analyzed. The results revealed that the mean and median ages of menarche were  $12.24 \pm 1.16$  and 12.3 years respectively. Underweight girls had menarche significantly ( $p < 0.001$ ) later than normal weight, overweight and obese girls. The age at menarche was lower ( $11.10 \pm 0.80$ ) among those of  $>95^{\text{th}}$  percentile of BMI as compared to ( $12.41 \pm 1.11$ ) for those  $<5^{\text{th}}$  percentile of BMI. The age at menarche was significantly higher among girls consuming energy, protein and iron less than 70% of the RDA, while it was significantly decreased when the nutrients requirements were satisfied. The results revealed that the nutritional status of the adolescent girls had a significant association with the age at menarche, but some factors behind early puberty due to a combination of factors including the childhood obesity epidemic and substances in the environment.

**Key words:** menarche age, adolescent girls, nutritional status. BMI.