

On 10.56, 11.86 and  
13.55 years, in order.

Technology, Development



On analyzing data for boys in our study, we found that, the mean age of testicular enlargement  $\geq 4$  ml (stage G2) was 11.

$5 \pm 1.01$  years. The mean age of pubarche was  $12.2 \pm 0.90$  years, for axillary hair (AH2) was  $13.8 \pm 0.58$  years. All these values are later than values that reported by Ghaly et al. 14 who showed the mean age for stages G2, PH2, and AH2 around 10.

56, 11.86 and 13.55 years, in order. A total duration of about 3.5 years from stage G2-G5 in male participants was recorded. This was nearly the same as reported by Marshall et al. 6 and Ghaly et al.

14. In comparison with other studies, participating males experienced the onset of puberty (G2) at earlier age than seen in boys of Turkey and Denmark, but it later than boys of Switzerland and Greece, and nearly as same as white American boys 2. Regarding pubarche (PH2), the mean age was  $11.86 \pm 1.45$  years; which was later than other population as boys in Germany, Saudi Arabia, Italy, and USA 2.

Regarding the axillary hair (AH2), the mean age was  $13.8 \pm 0.58$  years; this was later than Greek and Bulgarian boys, but earlier than boys from the UK and Sweden 2. On comparing males had BMI  $\geq 85$ th percentile and those with normal BMI (5th -  $< 85$ th percentile) regarding the mean age for genitalia and pubic hair development; there was no relation between them and BMI. This is consistent with Laron 22 but inconsistent with Herman-Giddens et al. 23 who suggested that earlier start of puberty in overweight

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boys. Eventually, we found that, the onset of puberty was about 6 months earlier in females than in males (figure 1).

This is in agreement with Marshall et al. 6 who found the same result.

Genetic and environmental factors play an important role in determining the onset and progression of such a vital condition. Conclusion: The pubertal stages in the present study are parallel to increasing the age of the participants of both sexes as reported in other literatures. However, the initial sign of puberty for the participants is later than previous reports can be attributed to sample size, environmental factors, nutritional status and rural residence. A significant association between increased BMI and the earlier pubertal timing in females put the way towards discovering factors controlling this dynamic event among Egyptian children.