

Effect of time elapsed after the onset of menarche on physique and body composition of 11 to 15 years girls

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■ ABSTRACT

The current study have been done to see the effect of duration passed after the onset of menarche on physique and body composition girls. Total 327 school going girls ranging in age from 11 to 15 were taken from Patiala and its surrounding area. The conformation of age was taken from the school attendance register by class in charge. The skinfolds measurements (biceps, triceps, subscapular, suprailiac and calf) were taken by standard technique. Their age at menarche and duration of menarche from the onset was recorded by retrospective method and divided into five groups on the interval of 6 months viz., 0.000-0.500, 0.501-1.000 to ≥ 2.00 according to their time elapsed after the onset of menarche. Total body fat percentage was calculated by using the equation of Slaughter *et al.* (1988). The formula was used to calculate the three components of physique (endomorph, ectomorph and mesomorph). The above data were compiled by "t" test and ANOVA. It was observed that all the measurements and fatness increased with the increasing the duration after the onset of menarche. The endomorphic component showed increase while the ectomorphic component decrease as the duration elapsed after the onset of menarche. ANOVA revealed significant differences ($p < 0.05$) between all the age groups for all the measurements.

■ **Key Words** : Menarche, Physique, Body composition, BMI, LBM, Somatotypes

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The term 'menarche' was first introduced by Stratz in 1908, denoting the occurrence of the first menstruation. The onset of menstruation is the most applied criterion for an estimation of female sexual maturity in the adolescent period. Adolescence is the period of changes in the reproductive organs and the secondary sex characters, in body size and shape, in the relative proportions of muscle, fat and bone and in a variety of physiological functions (Tanner, 1978). Adolescence holds us spellbound more than any other age, simply because of the sheer magnitude of changes unfolding in this phase. The adolescent growth period is the phase of one's life which reflects overall and cumulative growth. There is intense physical, physiological, psychological and emotional development during this period. Though menarche marks a definitive and probably mature stage of uterine

development, it does not signify the attainment of full reproductive function. The age of menarche is associated with the biological and socio-cultural environment of maturing girls as well as with the genetically constitution (Marshal, 1978). In pubertal females while assessing the developmental status the age at menarche is an important maturity indicator. In other words mean or median age at menarche for group of girls is an important indicator of population health, well-being and socio-economic stratification which progressively declines when subjected to improving environmental conditions (Eveleth and Tanner, 1976). It is closely related to the height spurt e.g. during the downwards part of the height velocity curve, indeed on average, menarche occurs at the time of maximum declaration of height growth, the moment when the velocity is dropping fastest (Tanner, 1978).