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Letter to the Editor

The Trends of Puberty Onset among Chinese Children

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Dear Editor-in-Chief

Age of puberty onset is considered to be of general public health relevance. A downward secular trend in age of puberty onset has now been repeatedly reported in both developed (1) and developing countries (2). Early puberty onset has been suggested to be a risk factor for a series of diseases in later life, including hormone-related cancer, type 2 diabetes mellitus, metabolic syndrome, cardiovascular disease and all-cause mortality.

In china, the age of puberty onset among children has changed (2-5) over the last two decades. The trends of puberty onset were characterized by: 1) The puberty timing has been occurring earlier in both genders. In boys, the spermarcheal age was shift to an earlier date from 14.9 years in 1995 to 13.8 years in 2005. In girls, the age at menarche (AAM) has declined from 13.0 years to 12.7 years. 2) This trend was relevant for boys. The spermarcheal age has declined by 1.1 years, while only 0.3 years of AAM. 3) There was a variation among different areas. The puberty timing among the children in urban areas was earlier than that in rural areas by 0.5 year in boys and by 0.3 year in girls, and the spermarcheal age in developed coastal area was earlier than that in the less developed southwest, northwest areas of China. 4) Different nationalities showed different trends. The spermarcheal age in Han nationality was earlier than that of the Hui, Li and Tibetan nationalities, expect Mongo nationalities.

To date, beside genetic influences, prospective studies have identified that nutrition played a pivotal role in determination the timing of puberty (6-9): higher intakes of isoflavones or flavonol, fiber, vegetable protein and carbohydrate were related to later puberty onset; whereas intakes of higher fat, animal protein, poly-unsaturated fatty acid (PUFA) and lower quality dietary were related to earlier puberty onset.

In china, the dietary pattern among children has been changing over the past decades, which was mainly characterized by an increased consumption of high energy-dense foods (e.g. snack or fast food) (10). We suppose that the dietary factors may contribute to the earlier puberty onset in China. Thus, nutritional factors, as modifiable factors, should been taken into account in the measures of prevention early puberty timing and related diseases in later life among the children in China.

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