

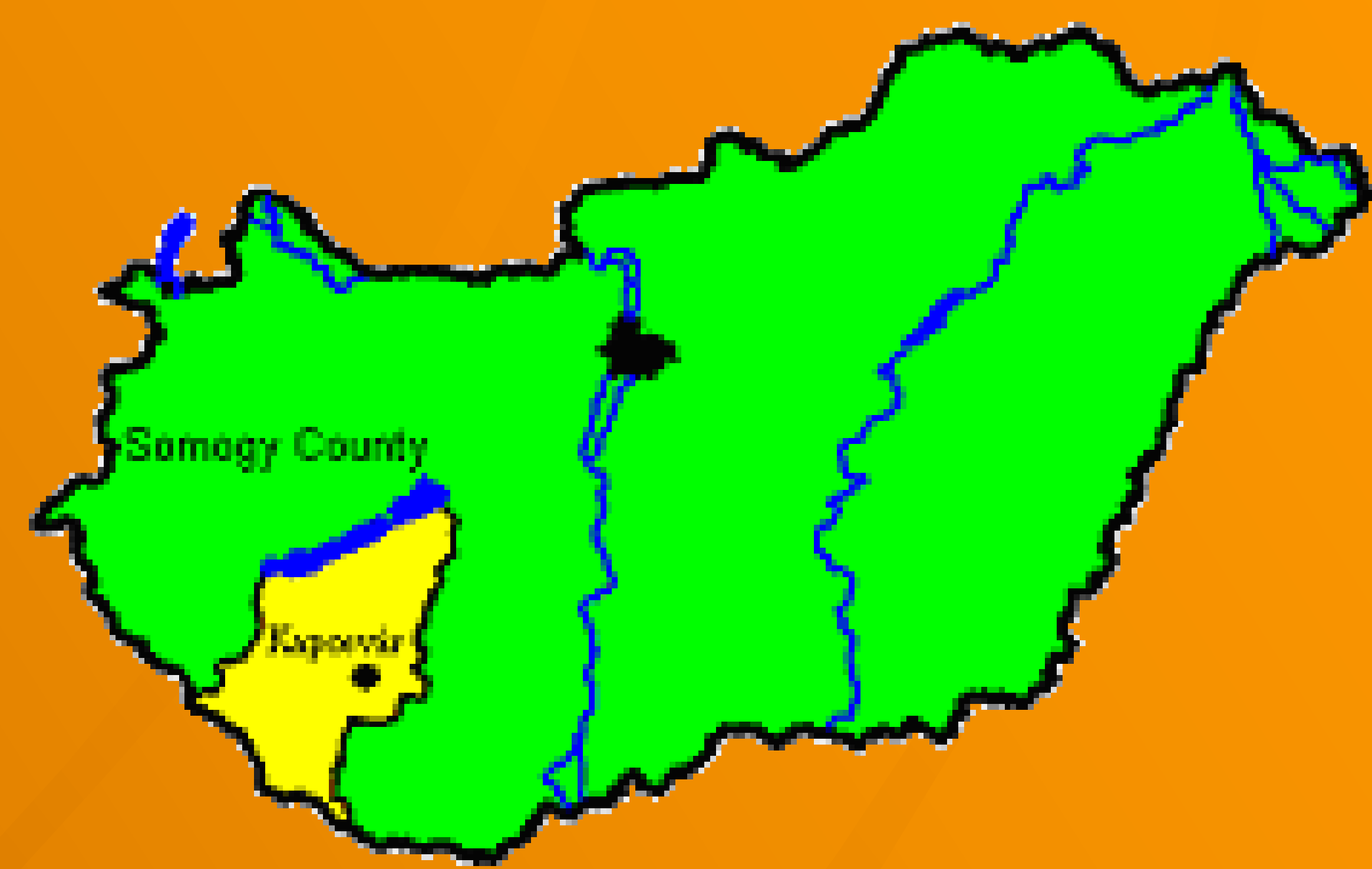
# Data on the biological development of Kaposvár (South-West Hungary) children (preliminary study)

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The study is based on a cross-sectional study carried out in 2012. It was planned to involve 35% (3000 children) of the 6-15-year-old Kaposvár children in the investigation. In the case of the present survey there is data of 665 children (298 boys and 367 girls) from this. The aim of the present study was to analyse directions and velocities of secular growth changes from 1928 to 2012 in 10-14 year-olds. According to our hypothesis, the positive secular trend is still present in this region, so most of the body measurements show greater values than before. The anthropometric programme involved 28 body measurements according to the Martin technique (Martin and Saller 1957), with regard to the recommendations of the International Biological Programme (Weiner and Lourie 1969), but this paper focused on the changes in height and weight. The recent data were compared with the results obtained earlier in Kaposvár (Véli 1936, 1948, 1954, 1956, 1967, 1968; Bodzsár and Véli 1980, Környei et al. 1980, 1983, Suskovics 2003, Suskovics and Eiben 2002). The data processing happened with descriptive statistics. The means were plotted on the diagrams of percentile curves of 2nd HNGS (Bodzsár et al. 2007). Statistical analyses were made by the Excel and SPSS programme-pocket.



## Results and discussion

In the past more than eighty years, changes of the girls' and boys' body mass and height values show a positive secular trend (Figure 1 – 4).

The secular trends are strongly influenced by the different environmental factors. This effect increased in an accelerated general development of the 20<sup>th</sup> century.

Kaposvár became a trade centre with help of the railway line built at the end of the 19<sup>th</sup> century and later on, it had a better possibility for industrialization. In the first half of the 20<sup>th</sup> century a lot of people came to the town hoping of better living conditions. Migration with heterosis effect could strengthen the positive secular trend. Between the two world wars due to the economic crisis, emigration also increased, but in spite of this, immigration still had a greater part. After the Word War II, the population of the town decreased temporary. But the newly built factories and industrial units attracted the people with their new workplaces and urbanization went on in Kaposvár within a couple of years. By the 1960s there had not been any food shortage problems in the country, so there was not any compulsory delivery by then in the country, and there was a larger scale industrialization in the 1950s in Kaposvár. Urbanization increased, and as its consequence the population grew with its third during the next 15 years. Conditions became better in health care and education. These circumstances had a positive effect on the somatic development of children and secular trend. Practically, there was not any growth change in body mass at the end of the 1970s and at the beginning of the 1980s, but growth in height accelerates. The possible reason for accelerated increase is hysteroplasia (Rietz 1906) accelerated growth and development of children living in better economic, social and welfare conditions (so-called SES) compared to those of the same age living in disadvantageous circumstances. The secular changes in Kaposvár over the whole 20<sup>th</sup> century proceeded towards a positive direction, and the present research signifies further growth in body size. It seems that start of puberty shifted to an earlier age in Kaposvár.

Figure 1: Means of weight in Kaposvár boys, plotted on the 2nd HNGS percentile curves (Bodzsár et al. 2007)

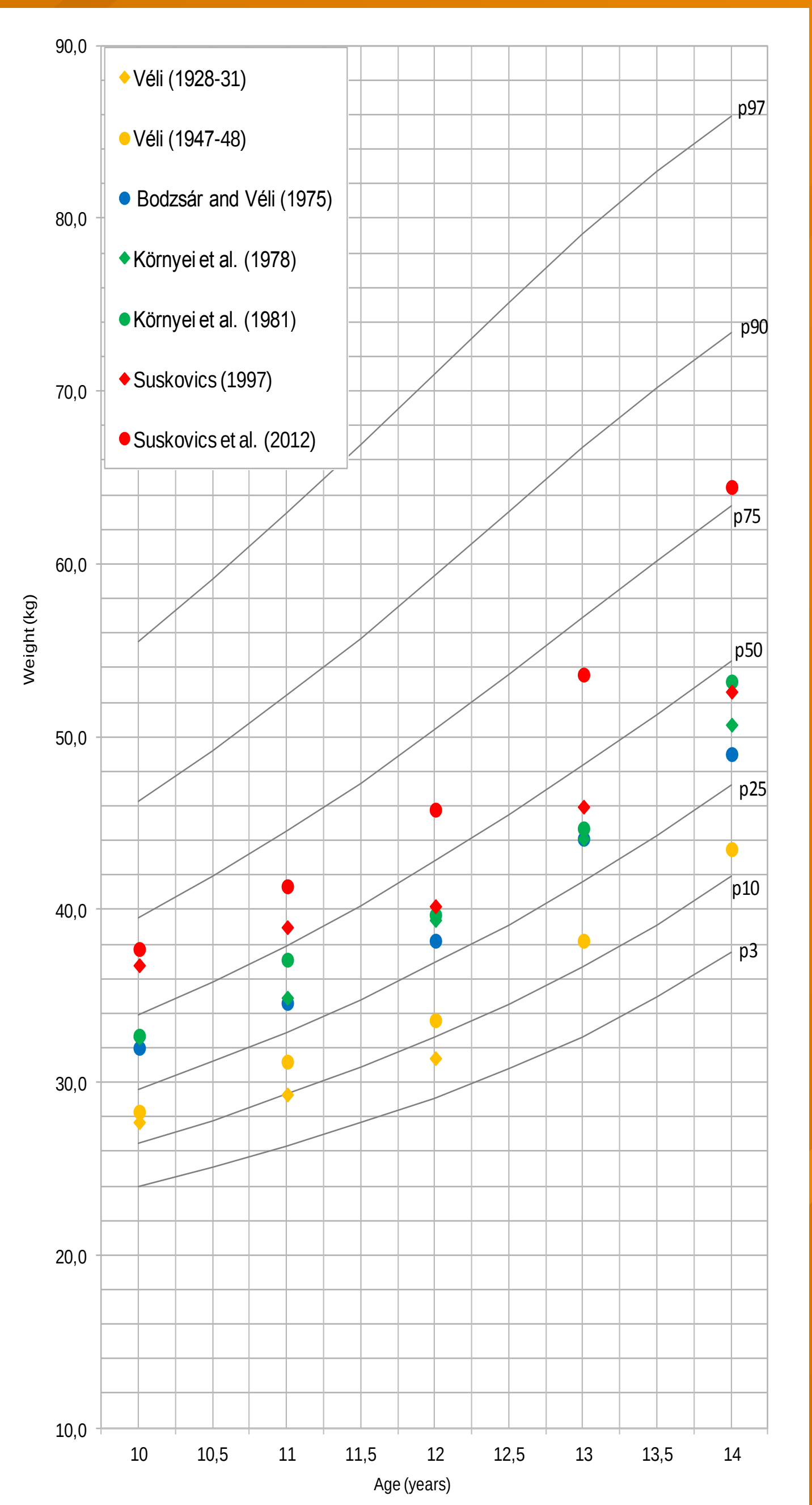


Figure 2: Means of weight in Kaposvár girls, plotted on the 2nd HNGS percentile curves (Bodzsár et al. 2007)

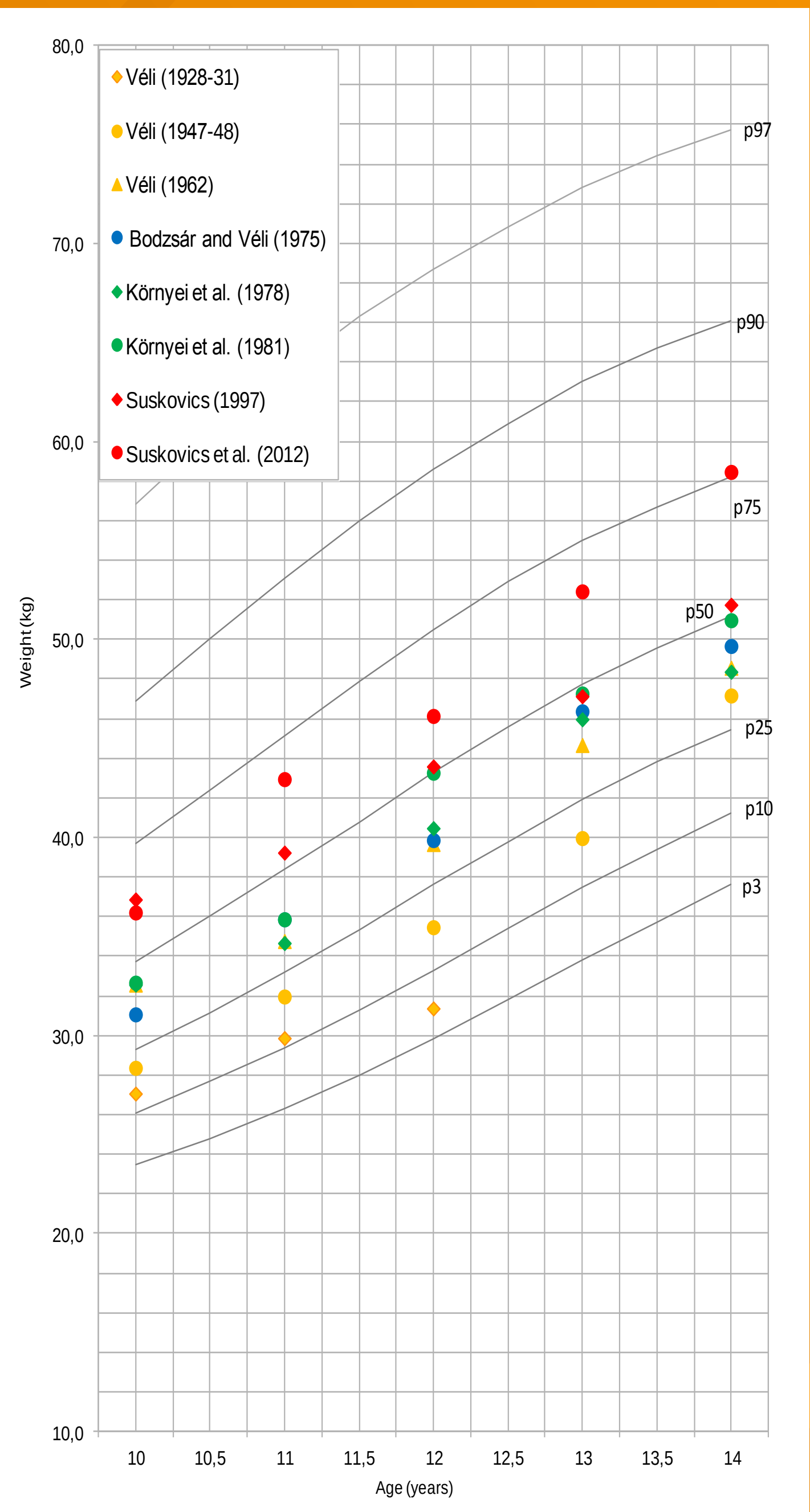


Figure 3: Means of height in Kaposvár boys, plotted on the 2nd HNGS percentile curves (Bodzsár et al. 2007)

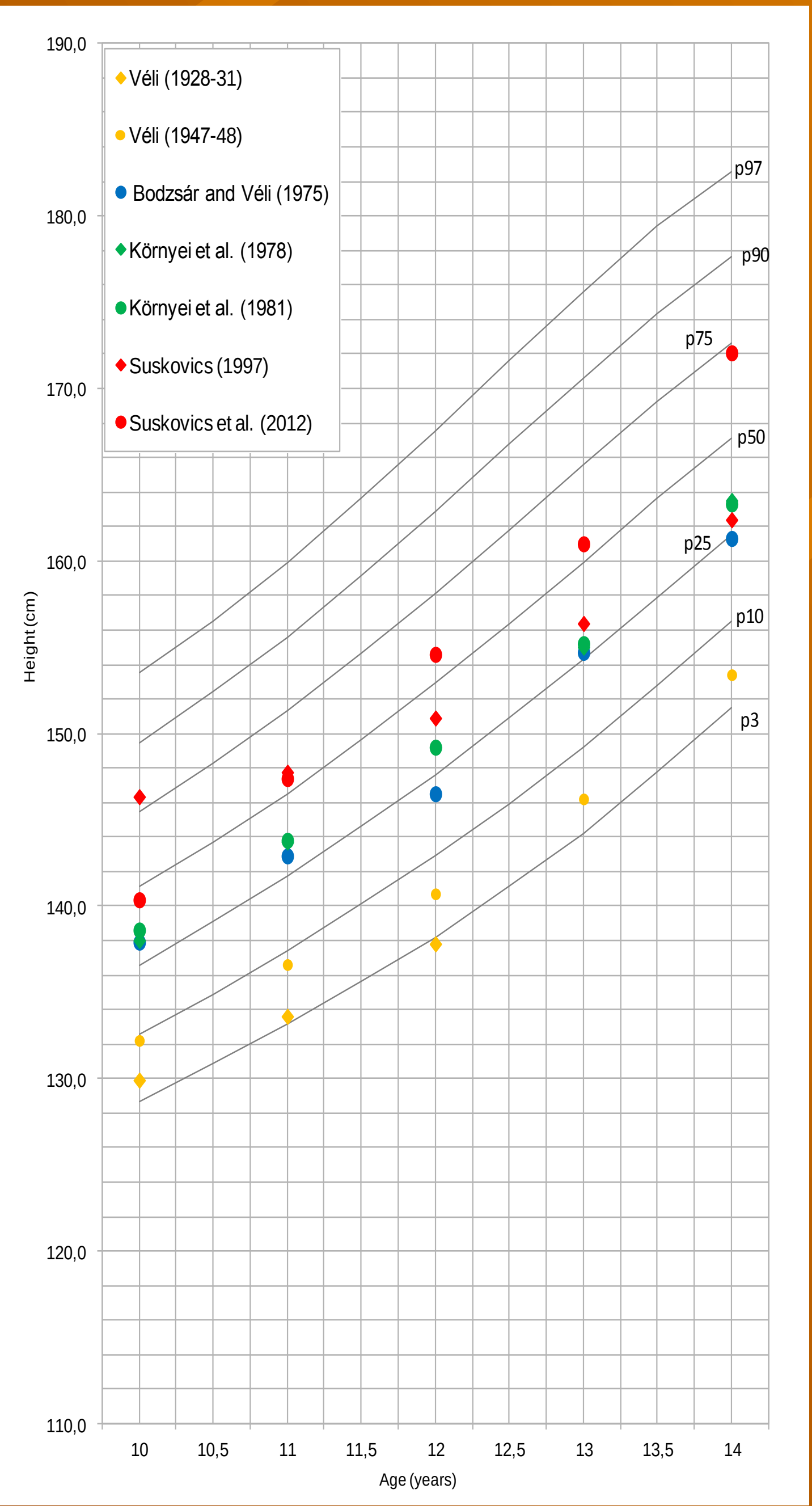


Figure 4: Means of height in Kaposvár girls, plotted on the 2nd HNGS percentile curves (Bodzsár et al. 2007)

