

# Trends in obesity prevalence and body-mass index among pre-pubertal Bulgarian children (1990-2007)

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## Background

Obesity prevalence is increasing among young children in both developed and developing countries, showing a tendency to persist with age and lead to early morbidity and mortality.

## AIM

The aim of this study is to present the most recent trend in obesity prevalence and to investigate the changes in body-mass index (BMI) among Bulgarian pre-pubertal children for a period of 17 years (from 1990 to 2007).

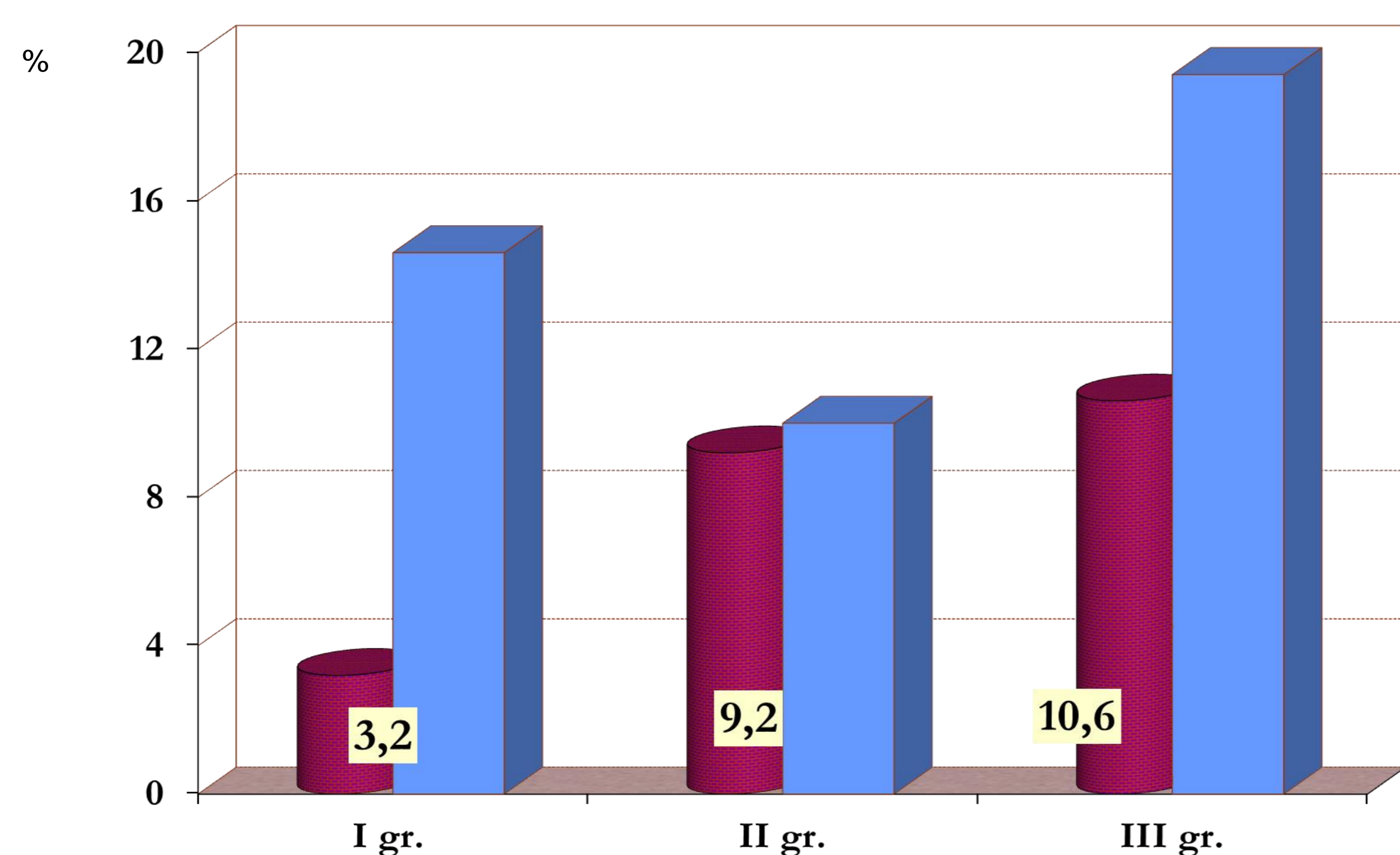
## Participants

- Three urban representative samples of 7-9 years old schoolchildren were conducted:
- I sub-study** – including children born in 1980-82 – anthropometric data collected in 1999-2000;
- II sub-study** – children born in 1990-92 – measured in 2001 as a part of a larger obesity project;
- III sub-study** – children born in 1998-2000 – measured in 2006-2007 as a part of a project creating National reference values for waist circumference (WC).

## Methods

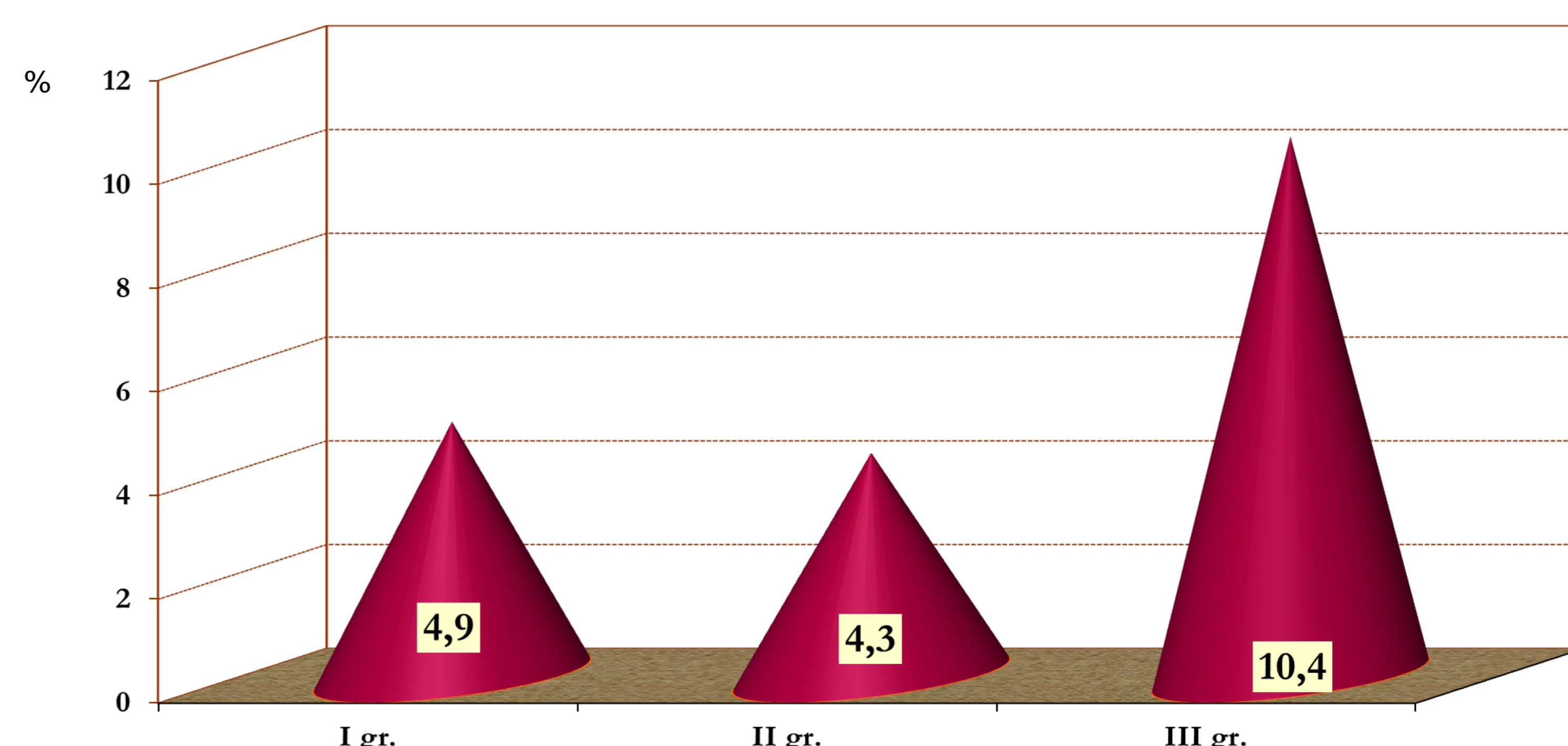
- Body weight and height** were measured by trained personnel using the standard procedures;
- BMI** was calculated;
- Overweight/obesity status** – defined according to the international IOTF reference (Cole et al, BMJ, 2000).

The overweight and obesity prevalence among boys increases significantly with time



$p < 0.001$  for obesity trend;  $p = 0.03$  for overweight trend

The obesity trend is the same in girls, rising sharply in III gr., and the overweight trend is more sustained



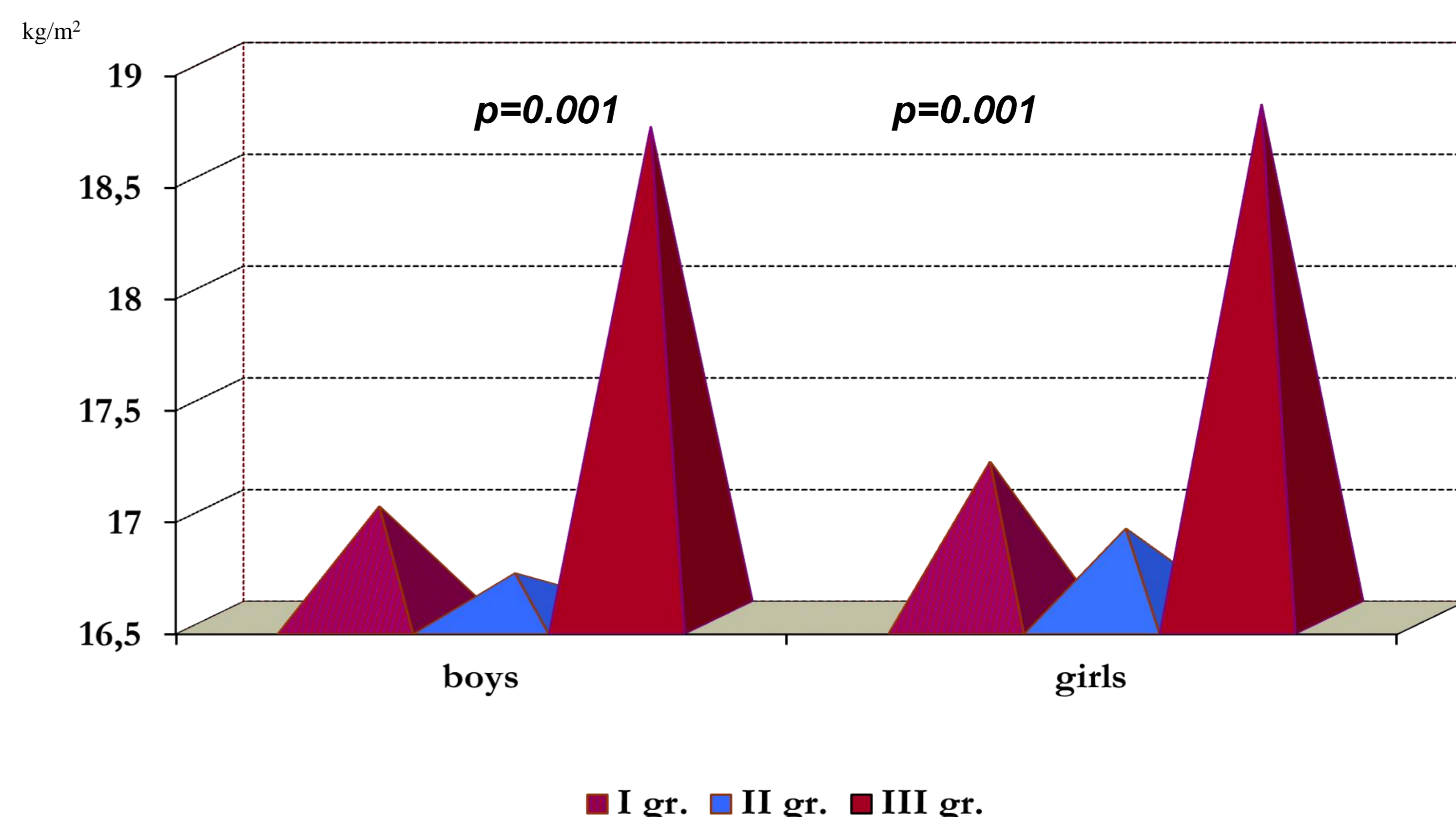
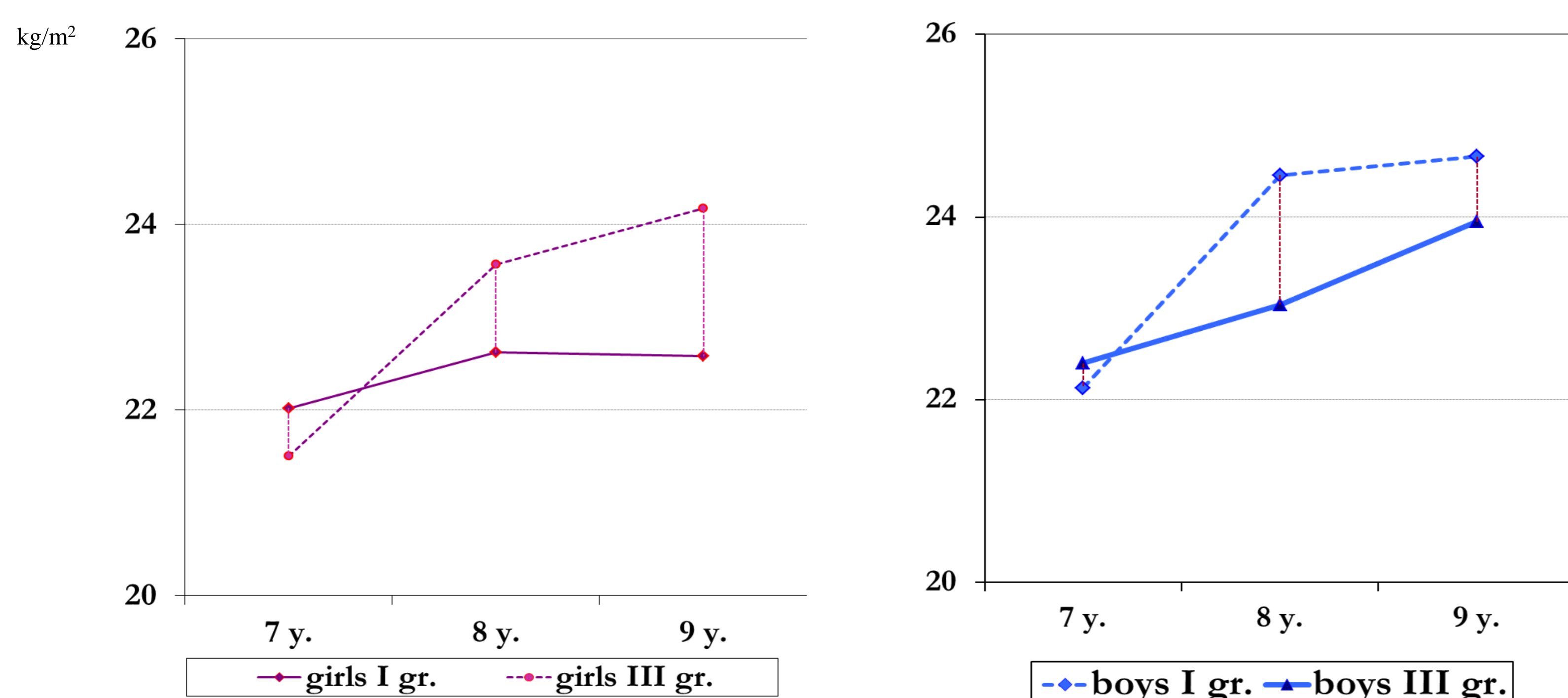
$p = 0.027$  for obesity trend;  $p = 0.004$  for overweight trend

## Gender obesity dynamics

No gender related difference in obesity prevalence was found during the last survey conducted in 2006/2007,  $p > 0.05$ ).

Mean BMI comparison – dramatic increase, not only a matter of prevalence...

Dynamics of the 95<sup>th</sup> BMI percentile according to study group and gender



## CONCLUSION:

- There is a significant increase in obesity prevalence and mean BMI among pre-pubertal children over time.
- Active preventive measures and regulations are needed to halt this positive trend of increasing childhood obesity and alleviate the burden of future diseases.