

# THYROID DYSFUNCTION AND FORMATION OF DYSLIPOPROTEINAEMIAS: GENDER DIFFERENCES IN CHILDREN WITH OBESITY



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**Background:** Thyroid dysfunction plays an important role in formation of dyslipidemia during obesity while thyroid pathology (TP) is one of the most common endocrinopathies associated with obesity. Among adults existence of gender differences has been proven in formation of a dyslipoproteinaemias and thyropathies; the presence of such changes in obese children requires clarification.

**Objective and hypotheses:** To explore the details of blood lipids in children with obesity depending on the functional state of the thyroid and sex.

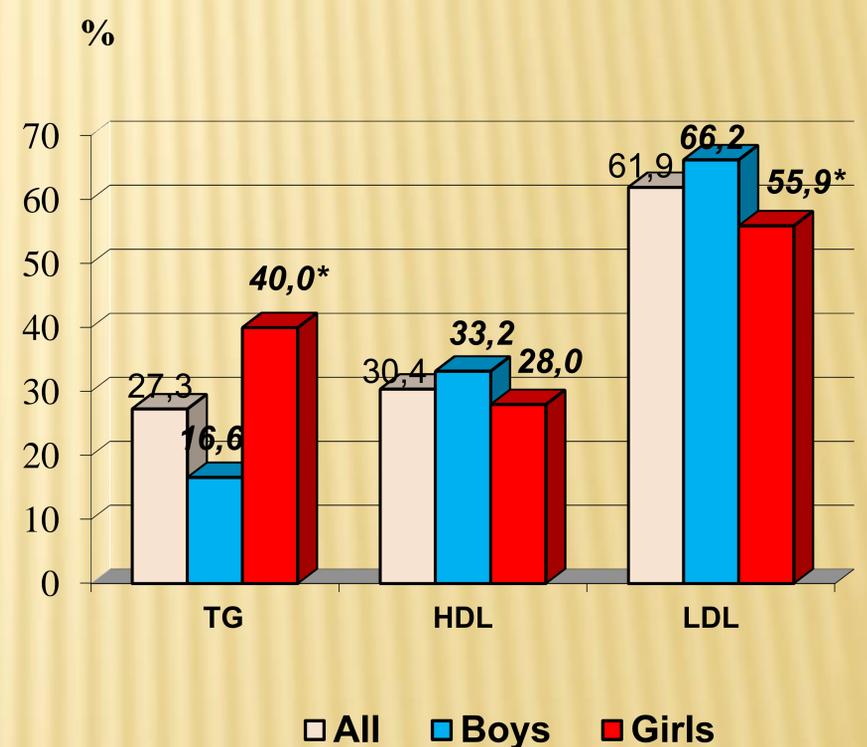
**Method:** . In 187 children with obesity, age 6-18 years (105 boys, 82 girls) the following blood lipids indicators were studied - total cholesterol (TC), high-density lipoprotein (HDL), low-density lipoprotein (LDL), triglycerides (TG). Data were analyzed according to gender and the presence of hypothyroidism, taking indicators of thyroid hormones into account (1gr - TSH>4.0mIU/ml, 2 gr - TSH<4.0mIU/ml)

**Results:** Atherogenic lipid level changes were detected more frequently in patients of 1gr (increase of TG level in 35.7%, reduction of HDL level in 42.8% of patients) compared to 2gr (16.7% and 22.2% respectively,  $p<0.05$  ).

These results were confirmed by the difference between average rates of TG ( $1,15\pm0,37$ mmol/l in 1gr vs.  $1,07\pm0,31$ mmol/l in 2 gr) and LDL ( $2,72\pm0,48$ mmol/l in 1gr vs.  $2,51\pm0,43$ mmol/l in 2 gr),  $p<0.05$ .

In the 1gr such shifts were more typical of boys than girls: TG -  $1,23\pm0,58$  vs.  $1,08\pm0,48$ mmol/l, LDL -  $2,93\pm0,61$  vs.  $2,55\pm0,43$ mmol/l,  $p<0.05$ . In 2gr such differences have not been identified and changes in average HDL levels were less pronounced.

Gender differences of frequency of pathological changes of lipid spectrum of the blood in children with obesity and thyropathies



Among the indicators of lipid profile in obese children and thyropathies most frequently detected decrease in HDL cholesterol and increased triglycerides and LDL

**Conclusion:** Formation of atherogenic dyslipidemia in children with obesity is closely associated with hypothyroidism, especially in boys. This requires particularly careful monitoring of thyroid hormone indicators and blood lipids in this group of patients.