

# Lipid metabolism parameters and levels of antioxidants in Mongoloid girls with obesity

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**Objective.** To analyze the state of lipid metabolism and antioxidant status in Mongoloid girls with obesity.

**Methods.** Studies were conducted in 22 girls (mean age —  $15.06 \pm 1.53$  years) with the first degree exogenously constitutional obesity of and in 48 girls of control group (mean age —  $14.25 \pm 2.42$  years). All girls by ethnicity were Mongoloids. Lipid components (total cholesterol, triglycerides, high-density lipoproteins, low-density lipoproteins) and components of antioxidant defense (total antioxidant activity,  $\alpha$ -tocopherol, retinol, reduced and oxidized glutathione, superoxide dismutase activity, glutathione peroxidase activity, glutathione reductase activity and glutathione S-transferase activity) in the blood were determined. Spectrophotometric and fluorometric methods were used.

**Results.** Mongoloid girls with obesity had higher values of total cholesterol (1.22 times higher,  $p = 0.017$ ), triglycerides (2.16 times higher,  $p < 0.0001$ ) and lower values of HDL (1.26 times,  $p = 0.0018$ ), compared to the control. In

the antioxidant defense system, a decrease in  $\alpha$ -tocopherol (1.41 times,  $p = 0.0262$ ), retinol (1.12 times,  $p = 0.0306$ ), superoxide dismutase activity (1.28 times,  $p = 0.0004$ ) and glutathione S-transferase activity (1.71 times,  $p < 0.0001$ ) were noted in comparison with the control group with the absence of statistically significant changes in other components.

**Conclusion.** The study revealed changes in lipid metabolism and antioxidant defense parameters in Mongoloid girls with exogenously constitutional obesity, consisting of the presence of dyslipidemia, a decrease in fat-soluble vitamins and antioxidant-enzymes activity. Based on results obtained corrective measures recommended for Mongoloid girls with exogenously constitutional obesity to stabilize the lipid metabolism and antioxidant status by increasing the content of products containing polyunsaturated fatty acids in the diet and administration of antioxidants complex.