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## **ASSESSMENT OF MICRONUTRIENT DEFICIENCY IN CHILDREN BORN THROUGH THE USE OF ASSISTED REPRODUCTIVE TECHNOLOGIES**

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**Relevance:** In the modern world, over 5 million children are born as a result of the use of assisted reproductive technologies (ART): in vitro fertilization (IVF) and intraplasmic sperm injection (ICSI) [1]. In the Republic of Uzbekistan, according to statistical data for 2022, over 25 thousand women and 7 thousand men are diagnosed with infertility under dispensary observation. The procedure for implementing assisted reproductive technologies was approved by order of the Minister of Health of the Republic of Uzbekistan (No. 3217 dated February 6, 2020). Data from the Bonduelle multicenter cohort study M., covering 540 children born through ICSI, 437 through IVF and 538 conceived naturally, children born through ART have an increased risk of childhood illnesses, surgeries and conditions requiring medical attention, and also the frequency of hospitalizations in specialized institutions.

**Materials and methods:** this study was conducted on the basis of the 7th polyclinic in the city of Tashkent, a retrospective analysis of women's exchange cards was carried out and a questionnaire survey of study participants was conducted, then the children underwent anthropometry and blood was taken to study micronutrient status.

**Results and discussion:** anthropometric indicators of height and weight of children aged 2 months to 5 years born using ART were analyzed in a comparative aspect, and these indicators were compared with the data of children conceived spontaneously. It was found that children born through ART had lower height, weight and BMI at the age of 2 months, as well as lower body weight after 6 months.

To determine the effect of the ART procedure itself on the growth of children, the factors of prematurity and birth weight were analyzed. It was also noted that in 33 children born as a result of embryo transfer in a fresh cycle, that at primary preschool age they were taller than children from the control group (control group - children conceived naturally).

The level of iodine and the hormones T3 and T4 was studied, since iodine belongs to vital microelements and is an integral part of the thyroid hormones: thyroxine (T4) and triiodothyronine (T3), which determine the activity of almost all metabolic processes in the body. Up to 90% of organic iodine in the human body comes from thyroid hormones, which control the state of energy metabolism, the intensity of basal metabolism and the level of heat production. Their role is irreplaceable in the mental and physical development of children, differentiation and maturation of tissues, especially the central nervous system, maintaining emotional tone, and the functioning of the cardiovascular system and liver. Iodine deficiency in our patients leads to suppression of thyroid function and the development of endemic goiter.

According to Celen M., there is an opinion that children who quickly gain body weight at an early age are at risk of developing high blood pressure at a later age. To confirm the data presented, multicenter studies using modern statistical programs are needed.

**Conclusions:** Differences in the physical health of children born as a result of ART and natural conception are due to the adverse effects of factors associated with multiple pregnancies and prematurity. There is reason to believe that risk factors for cardiovascular

and metabolic disorders that appear in childhood may worsen during later life and lead to chronic cardiometabolic diseases.

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