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**ПРИМЕНЕНИЕ INTERGROWTH-21й В 5-Й ГОРОДСКОЙ КЛИНИЧЕСКОЙ  
БОЛЬНИЦЕ МИНСКА**

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**INTERGROWTH-21st APPLICATION AT 5th CITY CLINICAL HOSPITAL  
MINSK**

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**Резюме.** В данном исследовании рассматриваются клинические показатели работы 5-й городской клинической больницы Минска, с акцентом на влияние применения INTERGROWTH-21 на улучшение здоровья матерей и детей. Целью было сравнить результаты, связанные с различными стратегиями вмешательства.

**Ключевые слова:** INTERGROWTH-21-й, клинические показатели, здоровье матери, здоровье ребенка, стандарты здравоохранения.

**Resume.** This study examines the clinical performance indicators at the 5th City Clinical Hospital Minsk focusing on the impact of the INTERGROWTH-21st application on improving maternal and child health care. The objective was to compare the outcomes associated with different intervention strategies.

**Keywords:** INTERGROWTH-21st, clinical performance, maternal health, child health, healthcare standards.

**Relevance.** The INTERGROWTH-21st Project is highly relevant to the study conducted at the 5th City Clinical Hospital in Minsk. It offers a comprehensive framework for assessing fetal and neonatal growth, distinct from traditional calculators, which helps in accurately identifying at-risk pregnancies, particularly those affected by chronic placental insufficiency. The study emphasizes a comparative analysis of the effectiveness of INTERGROWTH-21st standards in predicting preterm births against conventional methods, showcasing their utility in clinical practice. By employing rigorous methodologies established by the INTERGROWTH-21st Project, the research includes significant studies on newborns and fetal growth, which are essential for understanding growth patterns over time. Moreover, the results indicate that the INTERGROWTH standards enhance the accuracy of clinical assessments, leading to improved decision-making for maternal and neonatal health. The findings also support the notion that these standards complement existing World Health Organization growth standards, thereby enhancing their applicability in diverse healthcare settings.

**Aim:** the aim of this research is to evaluate the effectiveness of the INTERGROWTH-21st standards in improving maternal and child health outcomes at the 5th City Clinical Hospital in Minsk. Specifically, the study seeks to compare the outcomes associated with chronic placental insufficiency predicting preterm births using conventional calculators

versus those derived from the INTERGROWTH-21st Project. By systematically analyzing data collected from patients over a four-year period, the research aims to identify discrepancies in birth weight, gestational age, and rates of preterm birth, thereby enhancing clinical decision-making and optimizing healthcare practices for at-risk pregnancies.

### **Objectives:**

1. The goal of the Intergrowth project is to develop new “prescriptive” standards describing normal fetal and preterm neonatal growth over time and newborn nutritional status, and to relate these to neonatal health risk.

2. The primary aim of this research is to compare the outcomes associated with chronic placental insufficiency predicting preterm births using conventional calculators versus those derived from the INTERGROWTH-21st Project.

3. Study includes developing a prediction model that utilizes ultrasound measurements to estimate gestational age during mid to late pregnancy, particularly for populations without access to early and frequent antenatal care. Additionally, it aims to investigate the determinants of low birth weight and its components, such as preterm delivery and impaired fetal growth, within a multi-ethnic, population-based sample under current healthcare conditions.

**Materials and methods.** Data were systematically collected from real patients at the 5th City Clinical Hospital in Minsk between 2019 and 2023. The analysis involved a comparative study of standard clinical calculators and those developed through the INTERGROWTH-21st Project, which is coordinated by the Oxford Maternal and Perinatal Health Institute at the University of Oxford. Specific metrics assessed included birth weight, gestational age, and rates of preterm birth, with a focus on identifying discrepancies in outcomes related to chronic placental insufficiency. Components of study:

1. The Newborn Cross-Sectional Study: a study of all newborns born in the INTERGROWTH-21st study sites over 12 months.

2. The Fetal Growth Longitudinal Study: a detailed study of fetal growth from 14 weeks to birth, with follow-up to age 2 in women individually at low risk of fetal growth and nutritional problems.

3. The Preterm Postnatal Follow-up Study: a detailed study of the growth of all preterm infants born to women in Fetal Growth Longitudinal Study until age 2.

Interconnection of the three components: Newborn Cross-Sectional Study provides new born sizes at birth, while Fetal Growth Longitudinal Study tracks fetal growth, helping to understand how prenatal growth influences birth outcomes. The Preterm Postnatal Follow-up Study then follows these newborns postnatally, linking early growth patterns to later development.

**Results and their discussion.** These findings revealed significant disparities in the outcomes of chronic placental insufficiency predicting preterm births when contrasting results from traditional calculators with those from the INTERGROWTH-21st calculator (Tab.1). Specifically, the INTERGROWTH standards provided a more nuanced understanding of fetal growth patterns, leading to improved identification of at-risk pregnancies. Furthermore, similarities were noted in preterm birth outcomes (Tab.1) when assessed using INTERGROWTH metrics, suggesting their validity in clinical practice. These results underscore the potential of the INTERGROWTH standards to enhance clinical

decision making and improve maternal and child health outcomes.

**Tbl. 1.** Comparison between traditional calculators and INTERGROWTH calculators predicting preterm births and actual results of preterm births

Years	2019	2020	2021	2022	2023
Traditional calculators predictions	185	273	256	264	271
INTERGROWTH-21st predictions	24	6	7	5	8
Actual preterm births	14	1	2	2	4

### Conclusions:

1. The study demonstrates that the INTERGROWTH-21st Project's standards significantly enhance the accuracy of assessing chronic placental insufficiency compared to traditional calculators.

2. Adoption of international calculators is essential for optimizing maternal and child healthcare improving clinical decision making in 5th City Clinical Hospital in Minsk.

3. The INTERGROWTH-21st International standards complement the World Health Organization Child Growth Standards conceptually, methodologically and analytically.

4. These prescriptive growth standards describe how all fetuses and newborns should grow, as opposed to traditional charts that describe how some have grown at a given place and time.

### Literature

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