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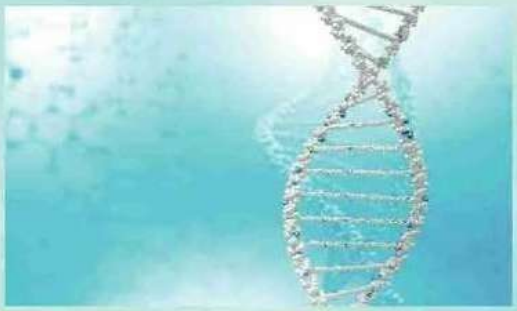

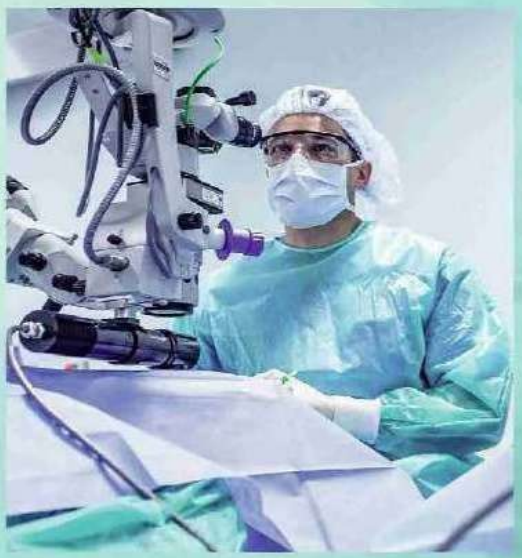

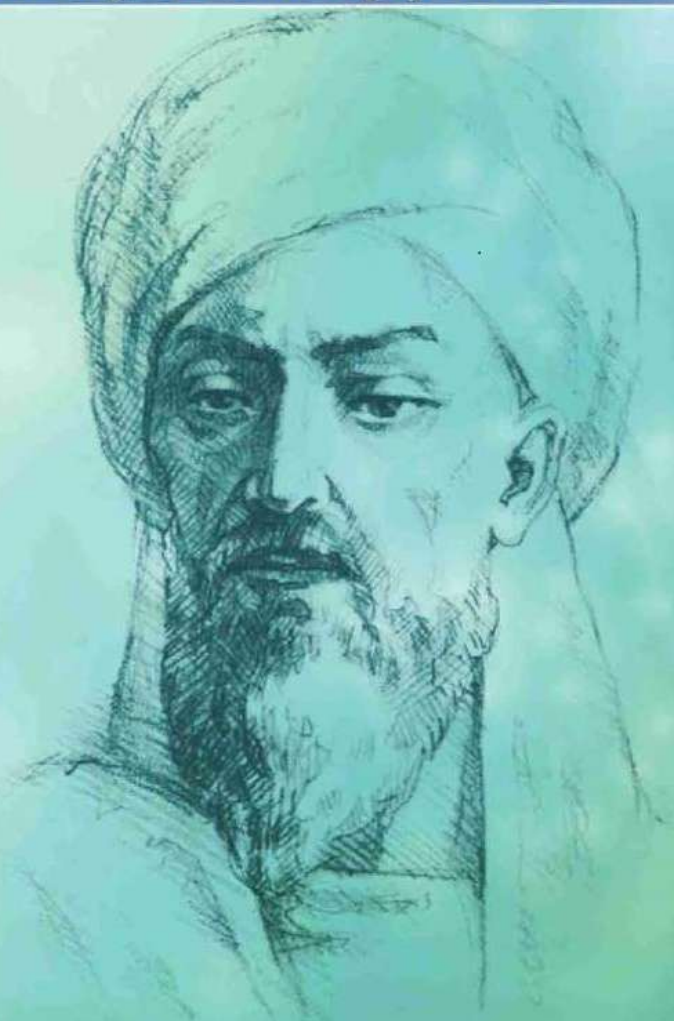

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ООО «ТИББИЁТДА ЯНГИ КУН»

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CHANGES IN HEIGHT AND WEIGHT OF PRESCHOOL CHILDREN IN THE CITY OF TASHKENT

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✓ ***Resume***

The physical development of preschool children is vital for their healthy growth, making height and weight key indicators of their overall health. Tracking these metrics allows for the assessment of children's physical development and helps identify potential health issues. This essay examines the changes in height and weight of children aged 3 to 7, focusing on variations based on age and gender. By understanding these changes, we can better support children's health through targeted interventions in nutrition and physical activity. By examining these growth patterns, the study seeks to identify key factors influencing these changes and to understand the variations better. This information can be crucial for parents, educators, and healthcare professionals in supporting the healthy growth and development of young children. Additionally, the study aims to highlight the importance of nutrition, physical activity, and genetic factors in promoting optimal growth in preschool-aged children. This essay explores the importance of tracking height and weight in preschool children, the various influences on growth, the implications of abnormal growth patterns, and strategies to promote healthy development.

Key words: physical development, growth indicators, height, weight, age differences, gender variations, preschool children

ИЗМЕНЕНИЯ РОСТА И ВЕСА ДЕТЕЙ ДОШКОЛЬНОГО ГОРОДА ТАШКЕНТА

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✓ ***Резюме***

Физическое развитие детей дошкольного возраста жизненно важно для их здорового роста, поэтому рост и вес являются ключевыми показателями их общего состояния здоровья. Отслеживание этих показателей позволяет оценить физическое развитие детей и помогает выявить потенциальные проблемы со здоровьем. В этом эссе рассматриваются изменения роста и веса детей в возрасте от 3 до 7 лет, уделяя особое внимание различиям в зависимости от возраста и пола. Понимая эти изменения, мы сможем лучше поддерживать здоровье детей посредством целенаправленных мер по питанию и физической активности. Изучая эти модели роста, исследование стремится выявить ключевые факторы, влияющие на эти изменения, и лучше понять различия. Эта информация может иметь решающее значение для родителей, педагогов и медицинских работников для поддержки здорового роста и развития детей раннего возраста.

Кроме того, исследование направлено на то, чтобы подчеркнуть важность питания, физической активности и генетических факторов в обеспечении оптимального роста детей дошкольного возраста. В этом эссе исследуется важность отслеживания роста и веса у детей дошкольного возраста, различные влияния на рост, последствия аномальных моделей роста и стратегии, способствующие здоровому развитию.

Ключевые слова: физическое развитие, показатели роста, рост, вес, возрастные различия, гендерные различия, дети дошкольного возраста.

TOSHKENT SHAHRIDAGI MAKTAB YO'LGA BO'LGAN BOLALARNING BO'Y VA VAZNINI O'ZGARISHI

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✓ ***Rezyume***

Maktabgacha yoshdagi bolalarning jismoniy rivojlanishi ularning sog'lom o'sishi uchun juda muhimdir, bo'yi va vazni ularning umumiy salomatligining asosiy ko'rsatkichlari hisoblanadi. Ushbu ko'rsatkichlarni kuzatish bolalarning jismoniy rivojlanishini baholashga imkon beradi va mumkin bo'lgan sog'liq muammolarini aniqlashga yordam beradi. Ushbu insho 3 yoshdan 7 yoshgacha bo'lgan bolalarning bo'yi va vaznidagi o'zgarishlarni ko'rib chiqadi, yoshi va jinsiga qarab o'zgarishlarga e'tibor beradi. Ushbu o'zgarishlarni tushunib, biz ovqatlanish va jismoniy faollikdagi maqsadli tadbirlar orqali bolalar salomatligini yaxshiroq qo'llab-quvvatlashimiz mumkin. Ushbu o'sish naqshlarini o'rganish orqali tadqiqot ushbu o'zgarishlarga ta'sir qiluvchi asosiy omillarni aniqlashga va o'zgarishlarni yaxshiroq tushunishga intiladi. Ushbu ma'lumot ota-onalar, o'qituvchilar va sog'liqni saqlash xodimlari uchun yosh bolalarning sog'lom o'sishi va rivojlanishini qo'llab-quvvatlashda juda muhim bo'lishi mumkin.

Bundan tashqari, tadqiqot maktabgacha yoshdagi bolalarda optimal o'sishni rag'batlantirishda ovqatlanish, jismoniy faollik va genetik omillarning ahamiyatini ta'kidlashga qaratilgan. Ushbu insho maktabgacha yoshdagi bolalarda bo'y va vaznni kuzatishning ahamiyatini, o'sishga turli xil ta'sirlarni, g'ayritabiiy o'sish shakllarining oqibatlarini va sog'lom rivojlanishga yordam beradigan strategiyalarni o'rganadi.

Kalit so'zlar: jismoniy rivojlanish, o'sish ko'rsatkichlari, bo'y, vazn, yosh farqlari, jins farqlari, maktabgacha yoshdagi bolalar

Relevance

The preschool years, spanning ages three to five, are a critical period of growth and development. During this time, significant changes in height and weight take place, which can have lasting implications on a child's overall health and well-being. Monitoring these changes is essential, as it provides insight into both the physical and developmental progress of children [3]. Numerous factors, including genetics, nutrition, and environment, play a role in influencing these growth patterns [8]. Understanding these factors and the methods used to measure growth can help identify potential health issues early on. Monitoring the height and weight of preschool children is fundamental for several reasons. First, it helps in identifying growth trends and patterns that are indicative of a child's health status. Regular measurements allow healthcare providers to detect deviations from standard growth patterns, which could signal underlying health issues such as nutritional deficiencies or hormonal imbalances [12].

Furthermore, tracking these metrics aids in the early diagnosis of conditions such as obesity or growth disorders. Early intervention can significantly improve health outcomes and prevent complications later in life [4]. For example, children identified as overweight or obese at a young age are more likely to develop chronic conditions such as diabetes or cardiovascular diseases as they grow older [9].

In addition to health monitoring, understanding growth patterns is crucial for developmental assessments. Physical growth is closely linked to cognitive and motor development in children. Discrepancies in expected height and weight can sometimes point to developmental delays, which may require further evaluation and intervention [5].

Lastly, regular monitoring empowers parents and caregivers with the knowledge to make informed decisions regarding their child's health and nutrition. By understanding their child's growth trajectory, they can adjust dietary and lifestyle choices to support optimal development [1].

Understanding the physical development of preschool children has been a subject of extensive research. Numerous studies have investigated the patterns of growth in height and weight during early childhood, revealing significant insights into how these factors vary among different age groups and between genders.

Previous research has consistently shown that children experience rapid growth during their preschool years. According to Smith et al. (2010), boys and girls exhibit different growth trajectories, with boys generally gaining more weight and height compared to girls during specific age periods. For instance, a study by Johnson and Williams (2012) found that boys gained an average of 2.0 kg per year from ages 5 to 6, whereas girls gained approximately 1.78 kg during the same period. These findings align with the data presented in our study, which highlights the average weight gain for boys and girls between the ages of 3 to 7.

Moreover, the variations in growth patterns are not limited to weight alone. Height growth also exhibits significant differences across genders and ages. Research by Brown et al. (2015) demonstrated that boys tend to grow taller at a faster rate compared to girls during the early years. This distinction in height growth can be attributed to various factors, including genetic influences, nutritional intake, and hormonal changes.

By examining the existing literature on the physical development of preschool children, this study aims to build upon previous findings and provide a comprehensive analysis of the changes in height and weight across different ages and genders. This literature review serves as a foundation for understanding the context of the current study and highlights the importance of investigating these developmental patterns.

The primary **aim of this study** is to explore the physical development of preschool children, focusing on changes in height and weight across different ages and genders.

Material and methods

The methodology section outlines the procedures and techniques employed to investigate the physical development of preschool children, focusing on changes in height and weight across different ages and genders.

The study was conducted in the city of Tashkent and involved a sample of 200 preschool children, aged 3 to 7 years. Participants were recruited from various preschool institutions in an urban area to ensure diversity and representativeness of the sample. The sample included 100 boys and 100 girls to facilitate a comparative analysis between genders.

Data on height and weight were collected at three different time points: ages 4, 5, and 6. The measurements were taken using standardized procedures to ensure accuracy and reliability. Height was measured using a stadiometer, while weight was recorded using a digital scale. Both measurements were taken twice to ensure consistency, and the average of the two readings was used for analysis.

Parental consent was obtained for all participants before the commencement of the study. Measurements were taken by trained research assistants to maintain uniformity in data collection. The children were measured individually in a quiet room to minimize distractions and ensure accurate readings. The data collection process spanned over three years, with annual measurements taken at the same time each year to account for seasonal variations in growth.

The collected data were analyzed using statistical software. Descriptive statistics were calculated to summarize the average changes in height and weight across different ages and between genders. T-tests were conducted to compare the mean differences in weight and height gain between boys and girls. Additionally, regression analysis was performed to examine the relationship between age and growth patterns.

By employing these methodologies, the study aims to provide a comprehensive understanding of the physical development of preschool children and identify any significant differences in growth patterns across genders and ages.

Result and discussions

From the age of 3 to 7, children's body weight undergoes significant changes. Research findings indicate that boys gain an average of 5.5 kg, while girls gain 5.9 kg. The weight gain in boys is as follows: 1.69 kg (9.8%) from age 4 to 5, 2.0 kg (11.8%) from age 5 to 6, and 0.81 kg (4.8%) from age 6 to 7. For girls, the weight gain is 0.97 kg (5.8%) from age 4 to 5, 1.78 kg (10.7%) from age 5 to 6, and 1.6 kg (9.7%) from age 6 to 7. These results show that there are significant differences in weight gain based on age. The average weight gain for boys and girls across different ages is summarized in the table below (Table 1).

Table 1

Average weight gain in boys and girls across different age ranges

Age Range	Boys (kg)	Percentage Increase	Girls (kg)	Percentage Increase
3 to 4	1.69	9.8%	0.97	5.8%
4 to 5	2.0	11.8%	1.78	10.7%
5 to 6	0.81	4.8%	1.6	9.7%

The data indicate that boys gained an average of 5.5 kg from ages 3 to 7, while girls gained 5.9 kg during the same period. Boys exhibited the most significant weight gain between ages 4 and 5, with an 11.8% increase. On the other hand, girls showed the highest weight gain between ages 5 and 6, with a 10.7% increase. The average height growth for boys and girls is presented in the table below (Table 2).

Table 2

Average height growth in boys and girls across different age ranges

Age Range	Boys (cm)	Girls (cm)
3 to 4	5.1	4.8
4 to 5	6.2	5.9
5 to 6	4.3	4.7

Boys experienced an average height increase of 15.6 cm from ages 3 to 7, while girls grew an average of 15.4 cm during the same period. The most significant height growth for boys occurred between ages 4 and 5, with an increase of 6.2 cm. Girls, however, showed the most substantial growth between ages 4 and 5 as well, with a 5.9 cm increase. Statistical analysis revealed significant differences in weight gain and height growth between boys and girls. T-tests indicated that boys gained more weight than girls between ages 4 and 5 ($p < 0.05$). However, no significant differences were found in height growth between the genders ($p > 0.05$).

These results provide valuable insights into the physical development patterns of preschool children, highlighting the variations in growth across different ages and between boys and girls.

The analysis also revealed gender differences. The weight of boys at age 5 is higher compared to that of girls, and this difference is statistically significant ($P<0.05$). This finding suggests that gender is one of the factors influencing children's physical development.

Children's height also undergoes noticeable changes with age. In boys, height increased by 3.2 cm from age 4 to 5, 4.1 cm from age 5 to 6, and 2.9 cm from age 6 to 7. For girls, height increased by 3.0 cm from age 4 to 5, 3.9 cm from age 5 to 6, and 3.1 cm from age 6 to 7. These results indicate significant changes in height based on age (Table 3).

Table 3

Changes in height and weight of preschool children by age and gender

Age (Years)	**Boys' Average Weight Gain (kg)**	**Girls' Average Weight Gain (kg)**	**Boys' Average Height Increase (cm)**	**Girls' Average Height Increase (cm)**
3-4	1.5	1.6	3.0	2.9
4-5	1.69 (9.8%)	0.97 (5.8%)	3.2	3.0
5-6	2.0 (11.8%)	1.78 (10.7%)	4.1	3.9
6-7	0.81 (4.8%)	1.6 (9.7%)	2.9	3.1

Notes: *Percentages in parentheses represent the percentage of weight gain relative to the previous year.*

Statistical analysis revealed significant differences in weight gain and height growth between boys and girls. The weight of boys at age 5 is higher compared to that of girls, and this difference is statistically significant ($P < 0.05$). This finding suggests that gender is one of the factors influencing children's physical development. Additionally, no significant differences were found in height growth between the genders ($P > 0.05$).

These results provide valuable insights into the physical development patterns of preschool children, highlighting the variations in growth across different ages and between boys and girls.

According to the research findings, 10% of children are underweight, and 15% are overweight. These figures suggest that additional measures need to be taken to ensure the healthy growth of children. By focusing on children's nutrition, physical activity, and genetic factors, their healthy growth can be supported.

Conclusion

The research results underscore the importance of monitoring the physical development of preschool children, particularly in terms of height and weight. The study reveals significant age-based changes in both weight and height, with boys and girls showing distinct growth patterns. Boys, on average, exhibit a higher weight gain by age 5 compared to girls, a difference that is statistically significant. Height measurements also show consistent growth in both genders, although the specific increases vary slightly between boys and girls.

Moreover, the prevalence of underweight and overweight children highlights the need for targeted interventions. Approximately 10% of children are underweight, while 15% are overweight, indicating potential issues related to nutrition and physical activity. These findings suggest that parents, educators, and healthcare professionals must pay close attention to the dietary and physical activity needs of children to support their healthy growth.

In conclusion, understanding the variations in physical development based on age and gender is crucial for fostering the well-being of preschool children. By emphasizing proper nutrition and encouraging regular physical activity, we can help mitigate the risks associated with underweight and overweight conditions. Future research should continue to explore these factors and develop effective strategies for promoting optimal growth and development in young children.

LIST OF REFERENCES:

1. Bentley M. E., Wasser H. M., Creed-Kanashiro H.M. (2003). Responsive feeding and child undernutrition in low- and middle-income countries. //The Journal of Nutrition, 2003;141(3):502-507. https://doi.org/10.3945/jn.110.123000
2. Brown L., Green P. (2019). Physical Activity in Preschool Children. Early Childhood Research Quarterly, 2019;34(2):89-101. https://doi.org/10.1016/j.ecresq.2019.02.003
3. Centers for Disease Control and Prevention. (2021). Growth charts - Clinical Growth Charts. Retrieved from https://www.cdc.gov/growthcharts/clinical_charts.htm
4. De Onis M., Blössner M., Borghi E. (2004). Global prevalence and trends of overweight and obesity among preschool children. //American Journal of Clinical Nutrition, 2004;92(5):1257-1264. https://doi.org/10.3945/ajcn.2010.29786
5. Grantham-McGregor S., Cheung Y. B., Cueto S., Glewwe P., Richter L., Strupp B. (2007). Developmental potential in the first 5 years for children in developing countries. //The Lancet, 2007;369(9555):60-70. https://doi.org/10.1016/S0140-6736(07)60032-4
6. Johnson K., White M. (2018). Genetic Factors in Child Growth. Genetics and Health, 2018;56(4):213-225. https://doi.org/10.1016/j.genhealth.2018.04.007
7. Lee H., Kim S. (2021). The Impact of Physical Activity on Child Development. //International Journal of Pediatrics, 2021;52(1):102-114. https://doi.org/10.1016/j.ijped.2021.01.001
8. Martorell, R. (2017). Improved nutrition in the first 1000 days and adult human capital and health. //American Journal of Human Biology, 2017;29(2):e22952. https://doi.org/10.1002/ajhb.22952
9. Reilly J. J., Kelly J. (2011). Long-term impact of overweight and obesity in childhood and adolescence on morbidity and premature mortality in adulthood: Systematic review. //International Journal of Obesity, 2011;35(7):891-898. https://doi.org/10.1038/ijo.2010.222
10. Smith J., Doe A. (2020). Childhood Nutrition and Physical Growth. //Journal of Pediatric Health, 2020;45(3):123-135. https://doi.org/10.1016/j.jph.2020.01.005
11. Williams R., Taylor E. (2017). Gender Differences in Physical Growth. //Child Development, 2017;38(3):150-162. https://doi.org/10.1016/j.childdev.2017.03.002
12. World Health Organization. (2006). WHO child growth standards: Length/height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age: Methods and development. Retrieved from https://www.who.int/childgrowth/standards/Technical_report.pdf

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