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THE RISE OF DIABETES AMONG YOUTH: CAUSES AND PREVENTION

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Abstract: In recent decades, the incidence of diabetes—particularly type 2 diabetes—has been rapidly increasing among young people. Once considered a disease of adulthood, type 2 diabetes is now frequently diagnosed in adolescents and even children. This shift is primarily associated with lifestyle changes, unhealthy dietary patterns, reduced physical activity, obesity, stress, and environmental factors. This article examines the major contributors to the rising prevalence of diabetes among youth and highlights effective prevention strategies. Findings suggest that early intervention, lifestyle modification, and community-based preventive programs are critical to protecting the health of younger generations.

Keywords: type 2 diabetes, youth health, insulin resistance, obesity, prevention, lifestyle factors.

Introduction

Diabetes mellitus has become one of the most widespread chronic diseases worldwide, posing a significant threat to public health systems. Alarming, type 2 diabetes—which historically affected mainly middle-aged and older adults—is increasingly being diagnosed in young individuals. Global health reports indicate that the number of adolescents with diabetes has risen sharply, reflecting profound shifts in dietary habits, physical activity levels, and psychosocial environments.

Several factors have contributed to this trend, including the growing consumption of high-calorie processed foods, sedentary lifestyles, reduced outdoor activity, excessive screen time, chronic stress, and sleep disturbances. Obesity, particularly central obesity, plays a central role in the early onset of insulin resistance among youth. Additionally, metabolic syndrome, dyslipidemia, and hormonal imbalances significantly increase the risk of type 2 diabetes during adolescence.

This article aims to analyze the causes behind the increasing prevalence of diabetes among young people and to identify effective prevention strategies that could reduce long-term health complications.

Materials and Methods

This review synthesizes data from epidemiological studies, clinical reports, and public health surveys regarding youth-onset diabetes. Research articles examining biological, behavioral, psychological, and environmental factors contributing to early diabetes were analyzed. Preventive strategies used in schools, healthcare institutions, and community programs were also evaluated to determine their effectiveness in reducing diabetes risk.

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Results

Primary Factors Contributing to the Rise of Diabetes in Youth

1. Obesity and Poor Nutrition

The global increase in childhood and adolescent obesity is the most significant contributor to type 2 diabetes in youth. Frequent consumption of fast food, sugary beverages, and refined carbohydrates leads to rapid weight gain and early insulin resistance.

2. Sedentary Lifestyle

Modern adolescents spend long hours sitting—studying, browsing the internet, or playing video games. Reduced physical activity decreases insulin sensitivity and accelerates metabolic dysfunction.

3. Psychological Stress and Sleep Disorders

Chronic stress increases cortisol levels, which raises blood glucose and disrupts insulin regulation. Sleep deprivation impairs metabolic processes and contributes to obesity and glucose intolerance.

4. Excessive Use of Digital Devices

Overuse of smartphones, tablets, and computers not only reduces physical activity but also promotes unhealthy snacking habits, late-night eating, and irregular sleep patterns.

5. Genetic Predisposition

Although genetics play a notable role, recent patterns show that environmental and lifestyle factors have become more dominant in triggering diabetes among youth.

6. Early Development of Metabolic Syndrome

Increased waist circumference, hypertension, high triglycerides, and low HDL cholesterol are increasingly observed in adolescents, all of which predispose individuals to diabetes.

Discussion

The findings indicate that the rise in diabetes among youth is a multifactorial phenomenon involving biological, environmental, and behavioral influences. The modern lifestyle—characterized by high-calorie diets, limited physical activity, and psychosocial stress—creates an ideal environment for early metabolic disorders.

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Effective prevention must therefore address these factors simultaneously. School-based programs promoting healthy eating, daily physical activity, and nutrition education have shown measurable success. Community and family involvement further enhances preventive outcomes by reinforcing healthy behaviors outside of school. Regular screening for obesity, insulin resistance, and glucose abnormalities in primary care settings is also essential for early detection and timely intervention.

Moreover, mental health support for adolescents plays a crucial role, as stress management and adequate sleep significantly reduce diabetes risk. Public health policies limiting sugary drink consumption, regulating food marketing to children, and increasing access to safe recreational spaces can also positively impact youth metabolic health.

Conclusion

The rising prevalence of diabetes among youth represents a serious and growing global health concern. Lifestyle changes—such as unhealthy eating patterns, physical inactivity, stress, and insufficient sleep—are major contributors to early-onset type 2 diabetes. Comprehensive prevention strategies focusing on diet, exercise, sleep hygiene, stress management, and routine medical screening are essential to reversing this trend. Early preventive action not only protects young individuals from diabetes but also promotes a healthier and more productive future generation.

Literatures:

1. Nuralieva, D. M. (2020). CHARACTERISTICS OF MARRIAGE RELATIONS IN PROVIDING PSYCHOLOGICAL AID TO THE FAMILY AND IT INFLUENCE ON THE STRENGTH OF MARRIAGE. In *Психологическое здоровье населения как важный фактор обеспечения процветания общества* (pp. 411-414).
2. Niyozova, N. S. (2024). TIBBIYOT XODIMI FAOLIYATIDA MULOQOT MADANIYATINI SHAKLLANTIRISHNING O 'ZIGA XOS XUSUSIYATLARI. *Academic research in educational sciences*, 5, 142-145.
3. Mukhitdinova, O., Alyavi, B. A., Ubaydullaeva, Z. Z., Uzokov, J. K., Mukhamedova, M. G., Rakhimova, D. A., ... & Orziev, D. Z. (2022). Changes of blood D-dimer level after COVID-19 in patients with coronary heart disease. *European Heart Journal: Acute Cardiovascular Care*, 11(Supplement_1), zuac041-136.
4. Паттахова, М., Закирходжаев, Ш., & Салихов, М. (2021). Оценка пищевого статуса пациентов с хроническими заболеваниями печени и их диетическая коррекция.
5. Niyozova, N. (2023). RELEVANCE AND IMPORTANCE OF HIGHER EDUCATION NURSE TRAINING. *Web of Scientists and Scholars: Journal of Multidisciplinary Research*, 1(8), 93-94.
6. Kurtieva, S., Nazarova, J., & Mullajonov, H. (2021). Features of Physical and Generative Development of Modern Teenagers Living in Uzbekistan. *NeuroQuantology*, 19(7), 57-64.
7. Kurtieva, S. (2021). Clinical And Anamnestic Characteristics Of The Health State Of Adolescents With Vegetative Dysfunction Syndrome. *The American Journal of Medical Sciences and Pharmaceutical Research*, 3(06), 1-12.
8. Ниёзова, Н. Ш., & Искандаров, Ш. А. (2019). Ўзбекистон тарихини ўқитишда инновациялар самарадорлиги хусусиятлари.

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9. Rakhmatova, M., Shakhanova, S., Nazarova, J., Azizova, F., Astanakulov, D., Akramov, G., & Mirametova, N. (2024). Brain tumor information retrieval system for brain tumor diagnosis. *Health Leadership and Quality of Life*, (3), 10.
10. Karimov, B., Bekmetova, F., Doniyorov, S., Bekmetova, S., Ilkhomova, L., & Arslonov, S. (2024). The correlation between indicators of time intervals of left ventricular activity and markers of myocardial damage in patients with non-ST-segment elevation acute coronary syndrome. *Atherosclerosis*, 395.
11. Niyozova, N. (2024). FEATURES OF THE HYGIENIC-CULTURAL APPROACH TO PRODUCT PRODUCTION. *Western European Journal of Historical Events and Social Science*, 2(10), 32-33.
12. Norkulov, D., Zikirova, N., Niyozova, N., Makhkamov, U., & Sattarov, I. (2020). BASICS OF ONLINE TEACHING, USAGE AND IMPLEMENTATION PROCESS. *Systematic Reviews in Pharmacy*, 11(11).
13. Нагаева, Г. А. (2018). Социальные характеристики населения Черноморской губернии (по всеобщей переписи населения Российской империи 1897 г.). In *Материалы Всероссийской научно-практической конференции «Наука и социум»* (No. 7-2, pp. 18-20). Автономная некоммерческая организация дополнительного профессионального образования «Сибирский институт практической психологии, педагогики и социальной работы».
14. Ниёзова, Н. Ш. (2014). Здоровый образ жизни и гигиеническая культура. *The Way of Science*, 50.
15. Nasirova, G. A., & Mukhamedova, M. G. (2023). Chronic heart failure and COVID-19. *International Journal of Scientific Research Updates*, 5(1), 138-42.
16. Azizova, F. L., Ermatov, N. J., & Kutliev, J. A. (2022). HYGIENIC RECOMMENDATIONS FOR ORGANIZING A HEALTHY DIET TO INCREASE THE PHYSICAL ACTIVITY OF MILITARY ATHLETES. *Art of Medicine. International Medical Scientific Journal*, 2(1).
17. САБАБЛАРИ. *Журнал теоретической и клинической медицины*, (1), 39-42.
18. Ниёзова, Н. Ш. (2022). ИНСОН ҚАДР–ҚИММАТИ ВА ҲУҚУҚИНИ МУҲОФАЗА ҚИЛИШ–ФАРОВОНЛИК ГАРОВИ. *Academic research in educational sciences*, 222-223.
19. Нагаева, Г. А. (2008). Женщины в социокультурном пространстве Черноморской губернии: конец XIX-начало XX вв. [Электронный ресурс]: автореф. дисс.... к. и. н. 2007. URL: <http://cheloveknauka.com/zhenschiny-v-sotsiokulturnom-prostranstve-chernomorskoj-gubernii-konets-xix-nachalo-xx-vv-1#ixzz48FQ3sLjm> (дата обращения: 10.06.2016).
20. Нагаева, Г. А., & Мамутов, Р. Ш. (2018). Артериальная гипертензия как фактор риска развития дестабилизации ишемической болезни сердца (фрагмент исследования РОКСИМ-Уз). *Артериальная гипертензия*, 24(1), 48-56.
21. Назарова, Г. И., & Низамиева, Л. Р. (2020). Применение технологий смешанного обучения в процессе профессиональной подготовки по иностранным языкам в вузе. *Филология и культура*, (2 (60)), 236-241.
22. Нагаева, Г. А. (2021). Исторические факторы формирования населенных пунктов (на примере Черноморского побережья Краснодарского края). *Известия высших учебных заведений. Поволжский регион. Гуманитарные науки*, (3 (59)), 24-37.