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Pediatric Nutrition and Its Role in Preventing Non-communicable Diseases: A Review

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Abstract

Pediatric nutrition is crucial for the prevention of non-communicable diseases (NCDs), which increasingly impact children and adolescents worldwide. Nutritional interventions during early childhood, such as exclusive breastfeeding in the first six months and the introduction of nutrient-rich complementary foods thereafter, lay the foundation for lifelong prevention of chronic diseases. The growing global burden of NCDs, including obesity, cardiovascular diseases, and diabetes, highlights the urgent need for effective public health strategies to promote healthy dietary habits and physical activity among young populations. This review explores the role of nutrition in preventing NCDs, examining key dietary guidelines and recommendations from global organizations such as the Food and Agriculture Organization (FAO), the World Health Organization (WHO), and the United Nations International Children's Emergency Fund (UNICEF). Additionally, it identifies barriers to the effective implementation of nutrition policies, including economic constraints, food insecurity, cultural beliefs, urbanization, and misinformation. The review further explores innovative research directions, including the potential of nutrigenomics, artificial intelligence (AI)-based dietary monitoring, and fortified foods. Integrating nutrition into primary healthcare systems and public health initiatives is essential to addressing the root causes of NCDs in children. In conclusion, addressing these challenges through personalized nutrition, technological interventions, and policy reforms will be key to preventing NCDs and promoting lifelong health in children.

Categories: Endocrinology/Diabetes/Metabolism, Public Health, Pediatrics
Keywords: artificial intelligence, childhood obesity, complementary feeding, nutrigenomics, pediatric nutrition, public health policies, zinc deficiency

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