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Opinion

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The silent expansion of diabetes: are we prepared for the next global epidemic?

Abstract

Diabetes mellitus represents one of the greatest global public health challenges of the 21st century. Over recent decades, the rapid growth of the disease has been driven by changes in lifestyle, urbanization, physical inactivity, unhealthy dietary patterns, population aging, and socioeconomic inequalities. Alongside the increasing prevalence, significant technological advances have transformed the clinical management of diabetes, including continuous glucose monitoring systems, insulin pumps, telemedicine, and digital self-care tools. Despite these advances, the impact of diabetes on quality of life, healthcare systems, and socioeconomic costs continues to grow. This opinion article discusses the silent expansion of diabetes in the contemporary context, reflecting on the relationship between modern lifestyle, public policies, access to technologies, and prevention strategies. Furthermore, it highlights the need for integrated approaches that prioritize not only disease treatment, but also health promotion, health education, and the improvement of the population's quality of life.

Keywords: diabetes mellitus, overweight, obesity, prevention, continuous glucose monitor, chronic disease, hyperglycemia, public health

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Opinion

The rapid growth of type 2 diabetes mellitus in recent decades has occurred almost in parallel with the global rise in overweight and obesity. More than merely coexisting conditions, obesity and diabetes share complex pathophysiological mechanisms, including insulin resistance, chronic low-grade inflammation, mitochondrial dysfunction, and hormonal alterations.[1–4]

The modernization of lifestyle has profoundly transformed the population's dietary and behavioral patterns. The increased consumption of ultra-processed foods, combined with physical inactivity, sleep deprivation, and chronic stress, promotes the accumulation of visceral adipose tissue, which is considered one of the main factors involved in the development of insulin resistance and, consequently, type 2 diabetes.[1,2,5]

In addition to unhealthy dietary habits, physical inactivity has become a defining characteristic of the contemporary lifestyle. The progressive replacement of movement by increasingly automated and digitalized routines contributes not only to the rise in overweight and obesity, but also to metabolic alterations directly associated with the development of type 2 diabetes.[6,7]

In this context, it becomes evident that type 2 diabetes cannot be understood merely as an isolated metabolic condition, but rather as a reflection of a widely prevalent obesogenic environment. The simultaneous progression of obesity and diabetes suggests a structural failure in current health promotion models, requiring more effective population-level interventions focused on primary prevention and on modifying social and behavioral determinants.[8]

The management of type 2 diabetes mellitus has evolved substantially with the incorporation of new therapeutic and technological tools. The emergence of GLP-1 analogs and dual GLP-1/GIP receptor agonists represents a major advance in glycemic control and body weight reduction, targeting central mechanisms involved in disease progression. Simultaneously, continuous glucose monitoring has improved diabetes management by allowing more precise assessment of glycemic patterns and individualized therapeutic adjustments. Nevertheless, despite these innovations, technological progress alone is insufficient to reverse the growing burden of diabetes without structural interventions focused on obesity prevention and healthier lifestyle promotion.[9–11]

The prevention of diabetes requires a broad approach that goes beyond individual responsibility and involves collective actions focused on health promotion. Environments that encourage physical activity, access to healthy foods, health education, and effective public policies become indispensable elements in addressing this growing metabolic epidemic. In this context, government actions related to primary healthcare, public awareness campaigns, promotion of healthy eating, creation of public spaces for physical activity, and expansion of access to early diagnosis play an essential role in reducing the impact of diabetes on the population.[12]

The discussion surrounding diabetes prevention also involves food security, since socioeconomic inequalities often limit the population's access to healthy foods and favor the consumption of low-cost, energy-dense ultra-processed products. Food insecurity, defined as the lack of consistent access to sufficient food for an active and healthy life, is a significant risk factor for the development and progression of diabetes.[13]

In addition to lifestyle-related factors and social inequalities, another concerning issue is the growing prevalence of prediabetes within the population. A substantial proportion of individuals remain undiagnosed for years, allowing the progressive development of insulin resistance and metabolic dysfunction before type 2 diabetes is formally identified. This gradual and frequently asymptomatic progression reflects broader contemporary lifestyle changes characterized by sedentary behavior, reduced physical activity, and increased consumption of ultra-processed foods.[14,15]

The silent expansion of diabetes suggests that we are still not fully prepared for the next global metabolic epidemic. Although innovations such as continuous glucose monitoring and GLP-1/GIP-based therapies are transforming diabetes management, the roots of

the disease remain deeply connected to modern lifestyle patterns, obesity, food insecurity, physical inactivity, and social inequalities. Technology may optimize disease control, but it cannot independently reverse the environmental and behavioral determinants sustaining the worldwide increase in diabetes prevalence. Preparing for this epidemic requires more than therapeutic innovation; it demands integrated prevention strategies, effective public policies, early diagnosis, health education, and healthier social environments.[9–11,16,17]

Once the diagnosis of type 2 diabetes mellitus is established, new challenges progressively emerge. In addition to continuous glycemic control, many patients face an increased risk of cardiovascular, renal, neurological, and ophthalmological complications, making disease management a complex and long-term process. In this context, the importance of multidisciplinary healthcare teams in the care of patients with diabetes should also be emphasized.[18–21]

Although the treatment of established diabetes is essential to reduce complications, preserve quality of life, and decrease disease-related mortality, preventing new cases remains the greatest public health challenge and potentially the most cost-effective strategy for confronting this growing metabolic epidemic. In a scenario of silent global expansion, focusing exclusively on established disease means continuously reacting to a condition that is still being fueled by obesogenic environments, sedentary lifestyles, food insecurity, and persistent social inequalities. More than expanding therapies and technological innovations, preparing for the future of diabetes requires sustained investment in prevention, health education, early diagnosis, and public policies capable of promoting healthier and more equitable environments worldwide.

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Conflicts of interest

The author declares there is no conflict of interest in this job.

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