

Confluence of Diabetes Risk

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In the last 25 years, there has been an increase in the diagnosis, incidence and prevalence of both type 1 and type 2 diabetes with predicted continued increase in the future in all these domains, and the greatest increases among those aged 20–24 years.^{1–3} While all these factors, ie diagnosis, incidence and prevalence, are connected, there are aspects of each which have occurred independently due to changes in awareness of risk factors, as well as therapies for both diabetes and its complications.^{1,4} This presents the paradox that while we have increased overall awareness and treatment of the disease, it continues to grow as a public health issue across the world with changing age dynamics potentially leading to greater morbidity and increasing mortality rates.^{5,6}

This trend is seen across regions of the world to varying degrees due to different facets including genetics, population density and other environmental factors (eg obesity).^{1,3,6} This dichotomy in age at diagnosis between T1 and T2DM led to T1DM being referred to as “juvenile” diabetes previously. However, despite the increase in knowledge there are reports that those 20–24 years are experiencing the highest rates of T1DM both in Europe and Asia.⁵ Bell et al recently reported that in 2024, only 43.5% of individuals diagnosed with T1DM were under 20 years globally, yet almost all cases were diagnosed by the age of 40 years.¹ This is supported by data from Gong et al in a study of the global change in T1DM, reporting an average annual percent change in incidence among those 20–24 years of 1.78 [95% CI, 1.65–1.91] compared to –0.23 [95% CI, –0.48–0.03] among those 10–14 years.⁵ An increasing incidence rate of T2DM was also seen in the same age group between 2000 and 2020 across all regions, demonstrating a two-fold growth in the burden of diabetes in the young adult population.^{7,8}

Fortunately, despite the confluence of rising incidence rates of T1 and T2 DM among those in early adulthood, we continue to achieve “milestones” in diabetes research, which may help to mitigate the risk of developing diabetes and its complications and may hold the promise of alleviating consequences of insulin resistance and dysglycemia. The recent increase in the use of GLP-1 agonists for the treatment of both diabetes and obesity may slow development of vascular dysfunction. In addition, for those without sufficient insulin production, the closed loop system or “artificial pancreas” was introduced in 2014, with recent clearance by the FDA for those 6 years and older in May of 2023 (FDA 5/19/2023). Alongside these developments in the management of diabetes, increasing awareness of differences in presentation and development paths across populations has also grown, increasing the quality of treatment and speed of diagnosis.⁹

Over the past year, many of the papers in the section on Public Health and Epidemiology in Diabetes, Metabolic Syndrome and Obesity have sought to disseminate information which would reduce severity, if not lessen the prevalence of complications due to diabetes and insulin resistance. In the upcoming year, the hope is to continue disseminating papers presenting novel population characterizations, methods of early detection of dysglycemia and complications, as well as risk factors which may lead to prevention, lessening the burden in this age group and potentially leading to an increased quality of life.

Data Sharing Statement

Data sharing is not applicable to this article as no data were created or analysed in this study.

Author Contributions

Hillary A. Keenan is the only contributor to this article including conceptualization, data curation, analysis, methodology, resources and writing – reviewing and editing. All authors gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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