The Centers for Disease Control (CDC) reported that diabetes mellitus affected 8.3% of the United States population in 2011. Type 2 diabetes mellitus is insidious; of the 25.8 million persons affected, the CDC indicated that ≈7 million were undiagnosed subjects.1 The health care costs and burden of diabetes mellitus are substantial; although cardiovascular disease is the leading cause of morbidity and mortality, other complications such as those in the eye, kidney, and nervous system may greatly impact the quality and span of life. A leading risk factor for the development of type 2 diabetes mellitus is obesity; obesity rates have risen dramatically in the United States over the past 2 decades. At present, the CDC estimates that 35.7% of Americans are obese.2 Alarming, the rise in obesity in adolescents renders many young people vulnerable to diabetes mellitus and its sequelae.3

See accompanying articles on pages 1754, 1760, 1766, and 1771

Insulin Resistance and Metabolic Syndrome
Mechanisms and Consequences

Ann Marie Schmidt

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This Miniseries on “Insulin Resistance and Metabolic Syndrome” will present a review of recent insights into the mechanisms that underlie these disorders, such as inflammation, tissue specific roles of insulin receptor signaling, glycation, and genetic predisposition; the consequences to human subjects, such as diabetes mellitus, cognitive impairment, and cancer, and insights into potential therapeutic interventions based on preclinical investigation and clinical trials. The value of pharmacological and lifestyle intervention changes will be discussed. As current epidemiological data highlight the worldwide epidemic of obesity, insulin resistance, and metabolic syndrome facing the future generations, public health awareness of this problem and rigorous basic science and clinical research are essential to stem the tide of these disorders. This mini-series underscores lessons learned from research and the evidence supporting specific interventions.

Disclosures

None.

References


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