Cover illustration
Coloured scanning electron micrograph of adipocytes (pink) from bone-marrow tissue. (Courtesy of Science Photo Library.)

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OBESITY AND DIABETES

Obesity and type 2 diabetes represent a serious threat to the health of the population of almost every country in the world. The World Health Organization estimates that 1.1 million people died as a result of diabetes in 2005, and this is almost certainly an underestimate. Moreover, the figure is expected to increase by 50% during the next ten years.

This escalation is due in part to increasing rates of childhood obesity. Until recently, type 2 diabetes was a disease that afflicted only adults. Now a growing number of children are being diagnosed with obesity-related type 2 diabetes. Also increasing is the incidence of 'metabolic syndrome' — a complex condition linked to obesity that is characterized by a cluster of closely related clinical features, including insulin resistance, dyslipidaemia and hypertension. Metabolic syndrome is associated with an increased risk of cardiovascular disease, which is ultimately responsible for a considerable proportion of diabetic mortality.

There is, therefore, an urgent need for new approaches to address obesity and type 2 diabetes and their associated complications. In particular, understanding the various processes that give rise to the characteristics of metabolic syndrome and its attendant risks — from abnormal regulation of energy metabolism through to dysfunction of molecular mechanisms — will pave the way for the development of new treatment strategies. And, as the reviews in this Insight highlight, it is hoped that a combination of preventative and therapeutic strategies will ultimately reduce the burden of type 2 diabetes on society.

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Deepa Nath, Marie-Thérèse Heemels and Lesley Anson, Senior Editors

REVIEWS

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