Plenary 3: The Lifestyle Dilemma

Stemming the tide of the type 2 diabetes epidemic in New Zealand
Jim Mann
University of Otago, Dunedin, New Zealand

Predicted rates of type 2 diabetes in New Zealand suggest that around 150,000 people have been diagnosed with the condition. This number is expected to rise to around 180,000 by 2011. Many more have undiagnosed diabetes and prediabetes and are therefore at risk of developing the disease and its complications. It is generally assumed that the dramatic escalation in rates is associated with the increase in overweight and obesity. New Zealand-based research has demonstrated the potential of school and community-based interventions to reduce the risk of excessive weight gain in children and demonstration projects involving a range of strategies have been established in areas where a high proportion of the population are Maori, amongst whom diabetes rates are particularly high. A special enquiry of the Parliamentary Health Select Committee has reported on public health measures aimed at reducing the diabetes epidemic and other government measures support early detection of those with diabetes and prediabetes. The potential of lifestyle measures to stem the tide of the epidemic of type 2 diabetes and the likelihood of their being successful.

Reducing sedentary behaviour: another strategy for diabetes prevention in adults?
The AusDiab Study
DW Dunstan
International Diabetes Institute, Melbourne, VIC, Australia

Background – There is now increasing interest in sedentary behaviour, as distinct from lack of physical activity, as an important contributor to poor health outcomes. Television viewing, a common leisure-time sedentary behaviour, has been linked to obesity, type 2 diabetes and, impaired glucose tolerance in adults.

Objectives – We examined the associations between self-reported TV viewing time and blood glucose levels across the glucose continuum from normal to diabetes levels in Australian adults. We also examined the associations of objectively-measured sedentary time with blood glucose in a sub-sample of participants.

Design – Measures of fasting and 2-hr plasma glucose and TV viewing time were obtained in 8,357 adults aged >=35 years who were free from diagnosed diabetes and who attended the AusDiab Baseline Study in 1999/2000. Objectively assessed physical activity and sedentary time (assessed using accelerometers) was obtained in 2004/2005 in 173 (67 men, 106 women, mean age 53yrs) AusDiab participants.

Outcomes – TV viewing time was positively associated with 2-hr plasma glucose (p for trend: women=0.02, men=0.06). Similarly, sedentary time, measured objectively by accelerometers, was independently associated with higher 2-hr plasma glucose (b=0.29, 95% CI 0.11 to 0.48, p=0.002). No significant associations were observed with fasting plasma glucose and TV viewing or objective sedentary time measures. Importantly, both the self-reported and objectively measured sedentary behaviour findings were independent of moderate-to-vigorous intensity physical activity time and waist circumference.

Conclusion – These findings suggest that time spent both in leisure-time sedentary behaviours, and sedentary time across the day, may pose a unique health risk, irrespective of leisure-time physical activity levels. The implication for public health is that prevention strategies to address type 2 diabetes should focus not only on increasing physical activity levels, but also on decreasing sedentary behaviours, especially prolonged television viewing.