hypoglycemic drugs, reported incidence of hypoglycemia and treatment satisfaction were also unaffected by self-monitoring. However, patients in the self-monitoring group were significantly more depressed than those in the control group at 12 months.

The authors question the value of self-monitoring, since glycemic control was unaffected and wellbeing seemed to be reduced as a result of this intervention.

Original article O'Kane MJ et al. (2008) Efficacy of self monitoring of blood glucose in patients with newly diagnosed type 2 diabetes (ESMON study): randomized controlled trial. BMJ 336: 1174–1177

A 6-year lifestyle intervention can prevent or delay diabetes for decades

While several major clinical trials around the world have shown that lifestyle interventions reduce diabetes incidence in people with impaired glucose tolerance, questions remain over how long these strategies remain effective after intervention ceases. Furthermore, the long-term effect of lifestyle interventions on diabetes-related macrovascular and microvascular complications and mortality is unknown. Li and colleagues report the results of a 20-year follow-up of the China Da Qing Diabetes Prevention Study.

In 1986, 577 adults with impaired glucose tolerance from 33 clinics in China were randomly assigned to one of three intervention groups (diet, exercise, or diet plus exercise) or to a control group. Active intervention ceased in 1992, and follow-up was conducted in 2006.

Patients in the lifestyle-intervention group (all three intervention groups combined) were half as likely (49%) to develop diabetes during active intervention, and were just over half (57%) as likely to develop diabetes over the whole 20-year period. Consequently, diabetic individuals in the intervention group had a shorter duration of disease than diabetic individuals in the control group (mean difference 3.6 years), although the 20-year cumulative incidence of diabetes in the intervention group was still high (80% versus 93% in the control group). Rates of first cardiovascular disease event, cardiovascular disease mortality and all-cause mortality were not significantly different between the two groups, but the statistical power of these analyses was limited.

These promising findings champion the worldwide use of lifestyle interventions to attenuate the diabetes epidemic.

Original article Li G *et al.* (2008) The long-term effect of lifestyle interventions to prevent diabetes in the China Da Qing Diabetes Prevention Study: a 20-year follow-up study. *Lancet* **371:** 1783–1789

Patient-controlled infusion pumps might pose special risks for adolescents

Insulin pumps and patient-controlled analgesia (PCA) pumps are increasingly used by children and adolescents. Although these devices offer effective control of blood glucose level and pain, the growing number of adverse event reports has raised concerns about their safety in adolescents. Cope and colleagues performed a retrospective study of adverse events reported to the Food and Drug Administration between 1996 and 2005 that involved patients aged 12–21 years.

In total, 1,594 insulin-pump-related adverse events were reported, including 1,038 injuries and 13 deaths. In 82% of cases the patient required hospital admission. The most common adverse events were hyperglycemia (61.9%), and hypoglycemia or overdelivery of insulin (10.5%). Issues specific to adolescents were identified in 6.4% of the reports, including problems with education and adherence, risk-taking behavior (including suicide attempts in two cases), and sport-related activities. The 53 reports of PCA-pump problems included 19 injuries and 5 deaths. Overmedication was cited in 27 reports, which in 12 cases led to respiratory depression and unresponsiveness. In two cases the adverse events were probably caused by tampering with the device.

The authors conclude that the use of insulin and PCA pumps might be problematic in teenagers because of lifestyle and psychosocial factors. They emphasize the importance of education, careful selection, and monitoring of adolescents who use these devices.

Original article Cope JU *et al.* (2008) Adolescent use of insulin and patient-controlled analgesia pump technology: a 10-year Food and Drug Administration retrospective study of adverse events. *Pediatrics* **121:** e1133–e1138