

6 months in the diet groups, compared with the control group.

The authors conclude that these commercially available weight-loss programs were equally effective in overweight individuals who strictly follow the diet for a prolonged period. They suggest that their results will help physicians manage their overweight patients, and help them to choose effective diet programs.

Original article Truby H *et al.* (2006) Randomised controlled trial of four commercial weight loss programmes in the UK: initial findings from the BBC "diet trials". *BMJ* 332: 1309–1314

In growth-hormone-deficient adults, hormone replacement can boost cognitive performance

Does growth hormone (GH) deficiency and subsequent GH-replacement therapy affect cognitive performance in adults? Falletti *et al.* performed a meta-analysis of 13 studies to find out.

The authors identified five cross-sectional studies that compared the cognitive function of GH-deficient adults with that of matched controls, or that expected from normative data. They also identified eight prospective studies that measured cognitive performance before and after GH-replacement therapy in GH-deficient adults; two of these studies included cross-sectional analyses. The magnitude of the effect on cognitive performance associated with both GH deficiency and GH-replacement therapy was calculated for each cognitive domain assessed in these studies.

Attention, memory, and executive functions were moderately-to-largely impaired in GH-deficient patients, compared with matched controls. Improvement in cognitive functions was seen after 3–6 months of GH-replacement treatment, compared with pretreatment values. Attention, spatial ability, and executive functions improved during the first year of GH-replacement therapy; and memory continued to improve over 10 years of treatment, although cognitive performance did not normalize.

When the cognitive function of GH-deficient patients was compared to normative data (which demonstrate considerable variation), patients performed better than they did when compared with controls—the authors

caution that comparison with normative data could lead to an underestimation of cognitive impairment in GH-deficient patients. They call for further research into the beneficial effects of GH-replacement therapy, particularly in the many distinct disorders that include GH deficiency.

Original article Falletti MG *et al.* (2006) The effects of growth hormone (GH) deficiency and GH replacement on cognitive performance in adults: a meta-analysis of the current literature. *Psychoneuroendocrinology* 31: 681–691

Depression is a risk factor for type 2 diabetes

Evidence suggests that depression and diabetes are associated; however, it is unclear whether there is a temporal or causal relationship. Knol and colleagues, therefore, conducted a meta-analysis to examine whether depression is a risk factor for the onset of type 2 diabetes.

Nine studies were selected by the authors from MEDLINE and PsychINFO databases for inclusion in this meta-analysis. These were longitudinal studies, published before January 2005, that examined the link between depression and diabetes. Analysis revealed that adults with depression had a 37% increased risk of developing type 2 diabetes, compared with non-depressed individuals. Pathophysiologic mechanisms that could explain the increased risk of developing type 2 diabetes seen in depressed patients include increased levels of cortisol that could result in insulin resistance, dysregulation of the immune system, and low intake of ω -3 polyunsaturated fatty acids.

The authors conclude that depression is a risk factor for diabetes, but further studies are needed to establish the extent of this relationship. Obesity is the most important risk factor for the onset of type 2 diabetes, but Knol *et al.* consider that depression is a risk factor of comparable importance to smoking and physical inactivity. In addition, the authors believe that clinicians should be made aware of the association between depression and diabetes, as this link means that detection and treatment of depression becomes even more important than it is already.

Original article Knol MJ *et al.* (2006) Depression as a risk factor for the onset of type 2 diabetes mellitus. A meta-analysis. *Diabetologia* 49: 837–845