Obesity

Type 1 diabetes is changing shape

Professor Jonathan Pinkney, Peninsula College of Medicine and Dentistry, Plymouth Hospitals NHS Trust

Traditionally, people with type 1 or type 2 diabetes were considered to contrast in age and shape, although the inadequacies of this classification system are well known (Balasubramanyam et al, 2008). In contrast to type 1 diabetes, weight gain and obesity have previously been considered common features of type 2 diabetes. What, then, are we to make of the report from the Pittsburgh Epidemiology of Diabetes Complications Study (Conway et al, 2010; summarised alongside), which observed a 47% increase in the prevalence of overweight and seven-fold increase in the prevalence of obesity in 625 individuals with type 1 diabetes studied between 1986–1988 and 2004–2007?

These striking results certainly suggest the changing shape of adults with type 1 diabetes, although the authors admit that there must be a significant survivor effect relating to decreased mortality in overweight and obese individuals within the cohort.

While those with type 1 diabetes are no less exposed to the current obesogenic environment, the magnitude of these weight increases seems in excess of the population increase in obesity that has been observed for the same period. The authors highlight the increasing use of intensive insulin treatment over this period, and suggest that improved glycaemic control may have promoted the attainment of "normal", rather than historically suboptimal body weight. Consistent with this result and interpretation, the DCCT (Diabetes Control and Complications Trial; DCCT Research Group, 2001) also reported an average BMI increase of 3 units (kg/m^2) over a period of 9 years.

Conway et al (2010) observed that a higher baseline HbA$_{1c}$ level was associated with greater weight gain, while nephropathy and autonomic neuropathy were associated with weight loss, and considered these relationships to be intuitive.

In a previous report from this study, the same authors observed that weight gain in people with type 1 diabetes had a substantial protective effect on mortality (Conway et al, 2009). Each tertile of weight gain reduced 10-year mortality by 33%. Thus, weight gain and obesity in type 1 diabetes is a relatively recent phenomenon, which is probably at least partly associated with intensive glycaemic control and overall appears to have a beneficial effect. However, in view of the adverse metabolic impact of obesity in general, and weight gain in people with type 2 diabetes, it is still not entirely clear whether weight gain in type 1 diabetes is necessarily to be welcomed under all circumstances.

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If weight is to be taken into consideration in treating type 1 diabetes, perhaps an appropriate aim may be restoration of a metabolically healthy weight while avoiding excessive, unhealthy weight gain.

Conway B, Miller RG, Costacou T et al (2009) Adiposity and mortality in type 1 diabetes. *Int J Obes* **33**: 796–805

DCCT Research Group (2001) Weight gain is associated with intensive insulin therapy in the Diabetes Control and Complications Trial. *Diabetes Care* **241**: 1711–21

Balasubramanyam A, Nalini N, Hampe CS, Maldonado M (2008) Syndromes of ketosis-prone diabetes mellitus. *Endocr Rev* **29**: 292–302

DIABETIC MEDICINE

Dramatic increase in overweight and obesity in T1D

Readability	✓✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓✓

1 Temporal patterns of overweight status and obesity in the general population have been well documented; however, such trends in people with T1D have not received equivalent investigation.

2 This study examined data from 589 individuals from the Pittsburgh Epidemiology of Diabetes Complications Study (a cohort of childhood-onset T1D) to assess temporal patterns in overweight status and obesity, and predictors of weight change.

3 Data from when participants were first seen in 1986–88 (mean age and diabetes duration 29 and 20 years, respectively) were compared with data from 2004–7 after 18 years of biennial follow-up. Overweight was defined as a BMI of ≥25 kg/m^2 but <30 kg/m^2, and obesity as a BMI of ≥30 kg/m^2.

4 The proportion of participants overweight at baseline was 28.6%; by 2004–7 this had increased to 47%. Similarly, the proportion of participants obese at baseline was 3.4%, increasing seven-fold by 2004–7 to 22.7%. The mean increase in BMI over the 18-year follow-up was 2.6 kg/m^2.

5 At baseline, 7% were receiving intensive insulin therapy (IIT); by 2004–7 this had increased to 82%.

6 Predictors of weight change were ongoing IIT during follow-up, higher baseline HbA$_{1c}$, overt nephropathy (inversely), and symptomatic autonomic neuropathy (inversely).

7 Despite an increasing prevalence of overweight and obesity in T1D, the authors concluded that caution should be taken in encouraging weight loss, particularly regarding the association between insulin, weight gain and mortality.

Conway B, Miller RG, Costacou T et al (2010) Temporal patterns in overweight and obesity in type 1 diabetes. *Diabet Med* **27**: 398–404

JOURNAL OF THE AMERICAN COLLEGE OF SURGEONS

Gastric bypass for T2D remission in non-obese people

Readability	✓✓✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓

1 Overweight (n=18; BMI <30 kg/m^2) and obese (n=6; BMI 30–35 kg/m^2]) people with T2D who had undergone gastric-bypass surgery for reasons other than obesity were identified.

2 Complete T2D remission was experienced by all participants who underwent total gastrectomy within 12 months post-surgery, but only 20% of those who received minimal gastric resection, which implicates foregut factors.

Zervos EE, Agle SC, Warren AJ et al (2010) Amelioration of insuin requirement in patients undergoing duodenal bypass for reasons other than obesity implicates foregut factors in the pathophysiology of type II diabetes. *J Am Coll Surg* **5**: 564–71

HEALTH PSYCHOLOGY

Obesity predictive of depressive symptoms in adolescent girls

Readability	✓✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓

1 This study looked at the association between overweight or obese status and the development of depression in 496 adolescent girls.

2 A significant effect of obesity on the depressive symptom scale was found (P<0.01). Obesity, but not overweight, was associated with future depressive symptoms, but not clinical depression.

3 It was concluded that weight status may contribute to the development of depressive symptoms in adolescent girls.

Boutelle KN (2010) Obesity as a predictor of depression in adolescent females. *Health Psychol* **3**: 293–8

AMERICAN JOURNAL OF PREVENTATIVE MEDICINE

Children in deprived areas less likely to walk, cycle to school

Readability	✓✓✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓

1 This study assessed the relationship between objectively measured characteristics of route to school, neighbourhood and school environments and active commuting to school among 2012 children aged 9–10 years.

2 Children who lived in more deprived areas were less likely to walk or cycle to school, as were children with the most direct routes.

3 The authors concluded that the creation of safe environments may modify children's commuting behaviour.

Panter JR, Jones AP, Van Sluijs EM, Griffin SJ (2010) Neighborhood, route, and school environments and children's active commuting. *Am J Prev Med* **38**: 68–78

"Obesity, not overweight, was associated with future depressive symptoms, but not clinical depression."