Reducing insulin dependency in people with Class 3 obesity and type 2 diabetes

**Aim:** People with concomitant Class 3 obesity (body mass index [BMI] ≥40kg/m2) and type 2 diabetes (T2D) on insulin often require increasing doses of insulin to improve glycaemia. This study aimed to compare insulin requirements and weight loss following 12 months in a multidisciplinary weight management program (WMP).

**Methods**: A retrospective review of all patients with T2D on insulin who commenced a publicly funded WMP between March 2018 and April 2024 in Sydney, Australia, for 12 months. Outcomes were compared at 12 months in those with T2D with and without insulin therapy.

**Results**:

Of 676 patients enrolled in the WMP, 291 (44.5%) had T2D of whom 77 (26.5%) were on insulin at baseline. Of those with T2D, 174 (59.8%) attended for 12 months, and 48 (27%) were on insulin. Those with T2D on insulin compared to those off insulin had comparable baseline weight (142.7±26.0kg 142.5±33.0kg, p=1) and BMI (53±10.5 vs 52±8.1kg/m 2, p=0.5), but HbA1c was higher (8.6±1.7% vs 7.4±3.7%, p=0.01). At 12 months, there was similar weight loss in those on insulin and not on insulin (6.5±7.6% vs 6.9±7.7%, p=0.7). There was a similar drop in HbA1c in both groups with a significant drop in the average insulin dose (123±93U vs 67±50U, p<0.001), despite being on similar non-insulin diabetes medications (1.8 vs 2.1,p=0.19), although 12-month HbA1c remained higher in the insulin group (8.0± 2.6% vs 6.7±1.9%, p<0.001). 66.7% had lower insulin requirements (n=32); 10.4% had commenced insulin (n=5); and 12.5% were dose unchanged (n=6).

**Conclusions:** Participation in a multidisciplinary WMP for twelve months facilitated weight loss, glycaemic control and reduced insulin requirements in patients with class 3 obesity and T2D on insulin. Weight loss was comparable between the two groups, however, those not on insulin did better in terms of glycaemic control suggesting earlier management prior to starting insulin may be beneficial.