BMI ↓2.7 ± 1.14 kg.m-2, BMI ↓SDS 0.27 ± 0.16, % body fat ↓3.3 ± 3.0% & waist circumference ↓5.9 ± 3.8 cm.
Discussion: We are not aware of any publication which outlines such a high number of children participating in an evaluation of a RWLC. The significant improvements in a range of anthropometric variables demonstrate the impact of this form of intervention. The degree of weight loss (BMI ↓SDS 0.27) is high when compared to typical non-residential community based programmes (SDS-0.06 in children <12 years & SDS –0.14 in children aged =>12) as cited in the 2009 Cochrane review. Given there are few options for children with severe obesity, greater consideration should be given to these more intensive intervention options.

T5:S40.11
Characteristics of individuals attending a community specialist weight management service (SWMS): not so simple

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There is a growing recognition of the complexity of patients presenting for treatment in SWMS, in terms of clinical co-morbidity, however much of the literature has focused on prevalence of individual conditions within clinical trials. To develop effective weight management services for this specialist population, a better understanding of the interaction of conditions that occur in actual practice is needed. This study provides characteristics of individuals attending a community SWMS in the south England. Data was extracted from service referral forms completed by local GP's referring patients onto the SWMS. The sample included 724 participants; x? BMI 41.7 ± 8.2; x? age 48.4 ± 12.9; 71.5% female; and 70% white European. The co-morbidities present were: hypertension (33.8%), osteoarthritis (26.4%), depression (25.6%), T2DM (20.6%), obstructive sleep apnoea (9%), hyperlipidaemia (6.2%), and polycystic ovary syndrome (6.1%). Within this sample, only 33% presented with no clinical co-morbidity in addition to their obesity – what may be deemed as 'simple' obesity. The majority of the patients are referred with multiple conditions (49.5% 2–3 conditions, 6.3% 4–6 conditions).These findings indicate that this is a sample with complex medical and psychological needs and highlights the need the multidisciplinary management of these patients.

T5:S40.12
Changing prevalence of obesity-related comorbidities with age

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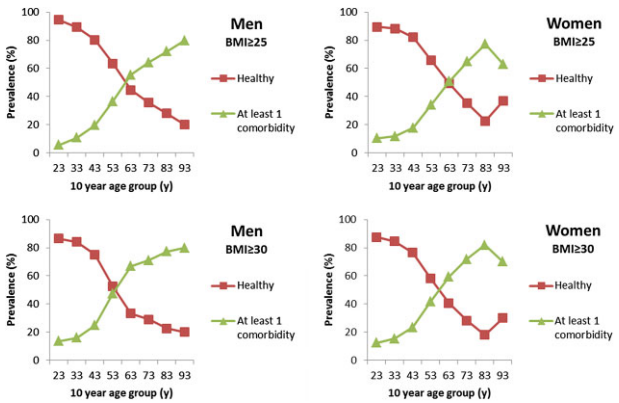
Background: The proportion of the population with high BMI and WC increases with age. By the age of 63 y only 10–15% of the UK population has a 'normal' BMI (18.5–25 kg/m^2).
Methods: Adults, aged 18–97 y, in Scottish Health Surveys 2008–11 were divided into eight 10-year age-bands. Individuals were grouped as healthy (free of obesity-related comorbidities) or having at least one of the following: diabetes, hypertension, angina, heart attack, stroke. Proportions of healthy and non-healthy individuals were plotted against age in sex- and BMI-specific analyses.
Results: Data for 24,831 subjects showed generally similar patterns between sexes. Hypertension (28% overall) was the most common comorbidity in both sexes, followed by CVD (angina, heart attack or stroke: 10% overall) and diabetes (6% overall). By the age of 73 y only 50% of those with BMI 18.5–25 were classified as healthy. Prevalences of having at least one obesity-related comorbidity increased with age in men, peaking at age 93 y, when only 20% of overweight or obese men were free from comorbidities. In women, comorbidity prevalences peaked at age 83 y, when 30% of obese and 37% of overweight, were free from comorbities.
Conclusions: As the prevalence of 'normal' BMI decreases with age, this category becomes less 'normal' in terms of health. More older people have obesity- related comorbidities: frailty, the traditional medical concern for older people, is no longer their dominant concern.



Session 41: What does weight loss do to mortality and comorbidities

T5:S41.01
Weight related comorbidities associated with increased health care costs

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Recent evidence suggests that mortality is not increased among adults in the overweight (BMI 25–29.9) and obese type I (BMI 30–34.9) categories, only in the obese type 2 category (BMI 35–39.9) and above. Objective is to assess the relationship between body mass index (BMI) and morbidity (as measured by health claims) and identify which comorbidities are the main drivers of any increased costs. Using 2001–2011 medical and pharmacy claims data for Duke University and Health System employees who participated in a health risk appraisal, annual health plan paid costs (adjusted to 2011 dollars) were calculated by BMI category. One-part negative binomial models were fit to evaluate the relationship between BMI and costs, controlling for age, gender, race/ethnicity, and calendar year period. The relationship between increasing BMI and increasing health claims costs was gradual and starts in the lower end of the recommended BMI range. The most important obesity related comorbidity, expressed as percent increase in cost per BMI unit, was cardiovascular disease in males

(10.53, 95% CI [6.46, 14.77]) and females (4.27, 95% CI [1.25, 7.38). Similarly, for pharmacy costs the most important driver of the relationship was cardiovascular agents (7.23, 95% CI [6.08, 8.39]). Cardiovascular disease was the most important weight related comorbidity driving both medical and pharmacy claims costs. Research supported by CDC grant (R01-OH009468), no conflicts of interest.

T5:S41.02

Effects of bariatric surgery on sympathetic activity and cardiac risk in non-diabetic severely obese patients

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Obesity is associated with elevated cardiovascular mortality, sympathetic nervous system (SNS) activity and poor metabolic profile. Laparoscopic Adjustable Gastric Band (LAGB) surgery provides substantial weight loss (WL) and long-term health-related beneficial effects. However, the effect of a more modest WL, such as the initial goal of 10% WL set by the clinical guidelines may already confer beneficial effects. We examined the effects of LAGB on cardiovascular profile and SNS activity and baroreflex function following the recommended initial 10% WL. Twenty three severely obese non diabetic individuals (17 females, 6 males, BMI = 42.2 kg/m^2) underwent cardiovascular risk profile [metabolic profile, ambulatory blood pressure (BP) and renal function] and SNS function assessments (microneurography) prior to LAGB surgery and when they achieved 10% WL. Participants achieved 10% WL at 7.3 ± 1.4 months varying from 1.3 to 23.3 months. This was associated with significant improvement in systolic and diastolic BP (−12 mmHg and −5 mmHg), a 30% decrease in muscle SNA, improvement in cardiac and sympathetic baroreflex function, total cholesterol, fasting insulin and creatinine clearance. None of the cardiovascular risk improvement related to the rate of WL. The clinical guideline of 10% WL goal induced by LAGB is associated with substantial improvement of cardiovascular risk profile in severely obese individuals. These changes were accompanied by improvement in the SNS function.

T5:S41.03

Effect of Roux-en-Y gastric bypass on skeleton, 5 years follow up

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Introduction: Obesity is a major health problem worldwide and has reached an epidemic proportion in certain societies. Bariatric surgery is currently the only modality that provides sustained weight reduction with resultant improvement in obesity-related co morbidities. Briatric Surgery is increasing world wide. To evaluate the effect of weight loss after Roux-en-Y gastric bypass (RYGB) surgery on Bone Mineral Density (BMD) and eventually development of osteopenia. We analyzed changes in BMD on 26 female aged 42 ± 8 with BMI 44 ± 4,4 years after RYGB surgery. BMD scanning with DXA in the hip, lumbar spine L1-4 and total body BMD. Plasma determination of Calcium, Parathyroid hormone and 25-hydroxyvitamin D. All the patients received Vitamin B12 Iron, Calcium and Vitamin D substitution routinely

Results

	Preoperative	Postoperative (5 years)
BMI	44.2 ± 4.4	32.3 ± 5.5
S-Corr. Ca	2.3 ± 0.1	2.3 ± 0.1
BMD-Hip (t-score)	1.85 ± 0.2	–0.3 ± 0.9
BMD-L1-4(t-score)	1.49 ± 0.2.	–0.4 ± 1.2
PTH (10–73 ng/L)	62,04 ± 19,6	83 ± 32 (36–105)
Vit. D (>75 nmol/L)	47,69 ± 15,8	47 ± 24 (19–109)

Obs Difficult to insert the Tables. Postoperatively 6 patients developed Osteopenia 2 patients developed Osteoporosis. PTH 83 ± 32 (36–105) 12 patients developed secondary HPT of whom 9 with PTH > 100. Vit. D 47 ± 24 (19–109). 2 patiens >75 nmol/l and 1 patient <20 nmol/l.

Conclusion: Although the routinely substitution of Calcium and Vitamin D after RYGB surgery, can patients develop low levels of Calcium and Vitamin D and in some cases can lead to osteopenia and secondary hyperparathyroidism. Low levels of BMD especially in Hip and Lumbar regions increases the risk for osteoporoses in the future.

T5:S41.04

Effect of weight loss on the severity of psoriasis: one year follow-up

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Psoriasis is associated with adiposity, and weight gain increases both the severity and the risk of incident psoriasis. Initially, in the framework of a RCT, obese psoriatic patients completed 8 weeks of low energy diet (LED) (800–1000 kcal/day) with subsequent 8 weeks of reintroduction of normal food intake (1200 kcal/day) including two daily LED products. We assessed if the weight loss and reduction in the severity of psoriasis after a LED program were maintained during one year of follow up where two daily meals were replaced by LED products. A total of 32 out of 38, who after 16 weeks LED trial had achieved a weight loss of 15.4 kg and a trend to reduce Psoriasis Area and Severity Index (PASI), completed the one year follow up. After 1 year, patients had maintained 66% (10 kg) of their initial weight loss ($P < 0.001$), there was no change in PASI during follow up. From baseline to week 64 PASI was reduced (–3.39 (–4.87; –1.71) $P < 0.001$) (Figure 1). Also a significant improvement of Dermatology Life Quality Index (DLQI) at 16 weeks was maintained at one year follow up. We conclude that the beneficial effects of treating overweight psoriatic patients with LED on PASI and DLQI are maintained among patients that manage to maintain their weight reduction. Cambridge Manufacturing Ltd provided the formula diet product Figure 1: Mean changes over time from in body weight (A) and PASI (B).