

simultaneous association between changes in consumption of UPF (as % of total daily intake) and adiposity was evaluated using mixed-effects linear models with random intercepts.

RESULTS: A total of 1485 participants was included in the analysis. At baseline, sweets (29%), processed meats (23%) and soft drinks (20%) were main food groups within UPF. Consumption of UPF was associated with significantly (all p values <0.01) greater accumulation (per 10% daily increase in UPF in diet) of total fat (β per 1SD increments 0.09, 95% CI 0.06; 0.12), visceral fat (0.10, 0.06; 0.14) and the ratio android/gynoid fat (0.06, 0.02; 0.09). Results remained statistically significant after additional adjustment for nutritional determinants of diet quality.

CONCLUSION: In this longitudinal assessment performed in Spanish elderly population with overweight/obesity and metabolic syndrome, using repeatedly measured food habits and DXA-derived adiposity, higher consumption of UPF was associated with greater age-related total and regional adiposity accumulation. Further studies are warranted to confirm these results in other populations and settings.

AD15-05 | Impact of vitamin D supplementation and VDR and ADR gene polymorphisms in weight loss diet outcomes

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INTRODUCTION: Vitamin D is a fat soluble vitamin, essential in multiple physiological functions. Studies suggest that vitamin D deficiency is associated with obesity and vice versa; low vitamin D levels might be an independent predictor of obesity.

OBJECTIVES: To investigate the effect of vitamin D3 3000 IU oral spray supplementation on obesity markers during a personalized weight-loss diet, according to individual's genetic profile.

METHODS: A randomized, double-blind, placebo-controlled trial was conducted among 125 overweight and obese Caucasian volunteers with vitamin D deficiency or insufficiency. Volunteers were randomly assigned to either oral vitamin D (Dlux 3000) supplement (intervention, $n = 76$) or placebo (control, $n = 49$), on a daily basis for 3 months following a weight loss diet. Fat mass, weight, BMI, RMR and serum 25(OH)D were monitored on baseline and each month. DNA samples were extracted from buccal swabs and genotyped for the rs2228570 (VDR), rs1544410 (VDR), rs731236 (VDR), rs1800544 (ADRA2A), rs1801252 (ADRB1), rs1042713 (ADRB2) and rs4994 (ADRB3) polymorphisms. Statistical analysis was performed using SPSS package (v.25).

RESULTS: Significant improvement in vitamin D status and reduction in weight, BMI and fat percentage were observed in the intervention group ($p < 0.05$). In the intervention group, carriers of the rs2228570 T allele showed greater vitamin D level improvement compared with the homozygous C allele ($p = 0.067$). Furthermore, heterozygous (CT) for the rs731236 showed lesser weight loss ($p = 0.068$) and for the rs1042713, a significant lower decline in fat percentage was observed for homozygous AA carriers compared with the heterozygous ($p = 0.051$). In the control group, differences in weight loss ($p = 0.055$) and BMI ($p = 0.045$) were observed between rs1544410 AA and GG homozygous.

CONCLUSION: Vitamin D oral spray supplementation improved 25(OH)D levels and obesity markers in overweight and obese volunteers with vitamin D deficiency or insufficiency. Genetic polymorphisms seem to influence vitamin D supplementation response and obesity markers.

AD15-06 | Energy and macronutrient intake, intake of different food groups and physical activity as potential causes of suboptimal weight loss 10 years after Roux-en-Y gastric bypass

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BACKGROUND: Bariatric surgery is the most effective long-term treatment for severe obesity and its comorbidities. However, it has been shown that up to 20–30% of bariatric surgery patients experience suboptimal weight loss (SWL) within the first five postoperative years. The role of energy and macronutrient intake as well as food habits and physical activity (PA) levels in determining long term weight loss maintenance after Roux-en-Y gastric bypass (RYGB) remains controversial.

OBJECTIVES: The aim of this study was to assess the potential association between energy and macronutrient intake, intake of food groups, meal frequency and physical activity (PA) and SWL 10 years after RYGB.

METHODS: Participants were recruited from the bariatric surgery observation study (BAROBS) ≥ 10 y after RYGB. Those who experienced SWL were compared with those with optimal weight loss (OWL), and those with weight regain (WR) were compared with those with no weight regain (NWR). An excess weight loss