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Background:
Over 30% of U.S. children are overweight or obese. Ethnic/racial disparities in increasing body fatness are associated with parallel increases in co-morbidities such as type 2 diabetes mellitus (T2DM). School-based interventions (SBIs) have been proposed as a means to improve pediatric health behaviors and reduce the risk of obesity or the progression of pediatric obesity into adulthood. SBIs have been criticized for being ineffective, cumbersome, and/or too expensive. The Reduce Obesity and Diabetes (ROAD) Project examined the effects of a non-targeted portable, inexpensive SBI on adiposity and T2DM risk factors in a diverse population of middle school students.

Methods:
Anthropometrics were measured in a diverse population of 644 NYC students (mean ± SEM age 12.7 ± 0.9 years; 46% male; 38% Hispanic, 17% East Asian, 15% South Asian, 13.5% African American, 8.5% Caucasian, 8% other) during the fall and spring semesters. Regardless of adiposity, experimental subjects (n=469) received a 12-session classroom-based health and nutrition educational intervention with an optional exercise program designed to meet school physical education mandates between measures.

Results:
Control and experimental groups were demographically and anthropometrically similar. The intervention resulted in significant reductions in overall BMIz (-0.035±0.014; p=0.01), %body fat (-0.5±0.2; p<0.0001), and waist circumference (-0.73±0.30 cm; p<0.0001)] especially in male (ΔBMIz(males) = -0.052±0.015, ΔBMIz(females) = -0.022±0.018; p=0.01), obese (ΔBMIz(obese) = -0.083±0.022 vs ΔBMIz(lean) = -0.010±0.020; p<0.0001) and South Asian (Δ% body fat = -1.03±0.35 vs total = -0.49±0.20; p=0.005) subjects.

Conclusions:
The ROAD Project's relatively simple school-based health intervention is beneficial to students. However, there are numerous group-specific covariates that should be considered in designing and implementing or studying such interventions. These include initial adiposity, gender, and ethnicity/race.

T-P-LB-3648
An Intervention to Improve Self-regulation in Children Increases Knowledge and Energy Compensation
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Background:
Responding to internal satiety cues is critical for the maintenance of healthy body weight, but few interventions exist to improve self-regulation of food intake. We tested the effectiveness of an intervention to determine if self-regulation of food intake can be improved in 4-6 year-old children.

Methods:
A within-subjects design was used to test children (16 boys, 9 girls) across 10 laboratory visits to assess knowledge and eating self-regulation before and after a 4-week intervention. The intervention was designed to teach children how to better respond to satiety signals and included a virtual reality game in which the stomach filling effects of various foods were simulated. Knowledge was assessed with 10 interview questions about digestion and satiety. Energy compensation (COMPx) was assessed with a preloading protocol to measure children's intake at ad libitum meals served 20 minutes after receiving either a high- (150 kcal) or low- (3 kcal) energy beverage. COMPx was calculated as a percentage of energy consumed at the test-meal after the high- relative to the low-calorie preloads.

Results:
All 25 children completed the study, for 100% retention. Knowledge increased from $3.7 ± 1.9$ to $7.0 ± 2.0$ out of 10 ($p < 0.0001$). There was a trend for COMPx to increase from baseline ($23.5 ± 148.0$) to follow-up ($113.0± 202.6$) ($p = 0.08$), suggesting that on average, children were overeating at baseline, but approached perfect compensation (100%) after the intervention. However, repeated measures ANOVA showed a sex * condition interaction ($p < 0.01$), with boys increasing compensation from 7.6 to 190.4% and girls decreasing compensation from 51.9 to -24.7% across the intervention.

Conclusions:
A virtual reality game increased children's knowledge and self-regulation of food intake, although results varied by sex. These results suggest that sex differences in intake regulation may emerge as early as the preschool years.

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Real Life Study on Weight Loss Using Exenatide LAR/Dapagliflozin in Obese DM2 Patients in Mexico
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