strengthen community action for childhood obesity prevention; and, (2) measure the impacts of increased action on risk factors for childhood obesity. This application builds on a 13-year partnership within the study region that has delivered several successful and world leading childhood obesity prevention interventions.

**Methods:** WHOSTOPS is a stepped wedge cluster randomised trial in ten communities in the Great South Coast Region of Victoria. Five communities will be randomised into the study in year one and all communities will be included in year 3. A parallel group of 13 additional communities from other regions of Victoria with no intervention will provide an external control and will help assess the potential diffusion of the intervention between regions within this trial.

**Conclusion:** We will assess whether the adoption of systems change interventions is scalable and rapidly increases community capacity to apply best evidence across community systems. The primary outcome of childhood obesity prevalence will be collected by the community-led monitoring system already established. In 2015, baseline data were collected from >2500 children (90% participation rate (PR)).

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## Body Mass Index — measured adiposity and population attributability of associated factors in Cameroon: A population-based study in sub-Saharan Africa

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**Introduction:** Obesity is currently a global health challenge driven by a mix of behavioural, environmental and genetic factors. Recent population-based estimates are needed to guide successful prevention and control efforts in African countries. We investigated the prevalence and population attributable fractions of overweight and obesity in Buea, the Southwest region of Cameroon.

**Methods:** This was a community-based cross-sectional study involving randomly selected adults. Body mass index (BMI) was categorized according to the WHO classification. Multivariable logistic regressions were used to investigate independent factors associated with obesity. Their population attributable fractions were similarly estimated.

**Results:** Of the 1,139 participants, prevalence of overweight and obesity were; 34.8 (32.0−37.6) and 10.1 (8.3−11.9) percent respectively. The mean BMI was $25.3 \pm 4.3 \, kg/m^2$ and women were heavier (25.8 vs. 24.4 $kg/m^2$; $p < 0.0001$). Factors associated with obesity were; female gender [odd ratio 3.26 (95%CI: 1.91−5.59)], older age [3.14 (1.86−5.28)], marriage [2.12 (1.56−3.61)] and family history of cardiovascular disease [1.61 (1.04−2.48)]. At the population level; older age, marriage, low level of education, high monthly income and physical inactivity accounted respectively for 11.9%, 21.8%, 11.6%, 6.4% and 8.7% of overweight and obesity among the women, while older age and marriage explained 9.2% and 28.3% respectively, of overweight and obesity in men.

**Conclusion:** The prevalence of overweight and obesity is high among semi-urban Cameroonians. Community-based interventions to control these would need to take into account gender specificities and socio-economic status.

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## The 20Lighter Experience: A review of the first two phases of an intense weight reduction program in the United States

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**Background:** Recent animal studies report significant and wide ranging benefits of fasting and calorie reduction. As a result, there is heightened interest in the feasibility and effects of a Very Low Calorie Diet (VLCD) in humans. Here we present data collected over the past 18 months from the US-based 20Lighter Program (T20LP), a 3-phase (9wk) intensive weight reduction program. This abstract

focuses on the first 2 phases (6 wk) of data from participants enrolled between Jan 2015 and June 2016.

**Methods:** T20LP, a doctor supervised 3-phase program includes a loading day, 6 wk of VLCD, and 3 wk transition back to a normal dietary intake. The VCLD (500–520 calorie/day) eliminates dairy, wheat, corn, sugar, oil. T20LP includes daily weigh-ins and texting with the doctor, proprietary vitamin/mineral supplementation, daily journaling, and requires 3 in-person office visits (Initial baseline, Day $40 \pm 3$ d, Day $60 \pm 3$ d). The 20LP uses body composition analysis via Bioelectrical Impedance Analysis with bipolar foot electrodes to monitor participant progress. Baseline values are shown as median+/-SD.

**Results:** 351 men and 251 women completed the first 6 wk of T20LP by July 31, 2016. Baseline age ($51 \pm 9.4$), BMI ($35.1 \pm 6.1$), comorbidities, history and prescription medications were typical of metabolic syndrome. 20LP-related health/safety events were mild- the majority were reductions in prescription medications, none required more than a consultation with a PCP. T20LP participants showed statistically significant and clinically meaningful reductions in body weight, BMI, body fat %, visceral fat, basal metabolic rate, and metabolic age; and increases in body water % as a whole and when stratified by gender.

**Conclusions:** The first 6 weeks of an intensive intervention in high risk older obese adults results in significant improvements in weight and metabolism-related measures without significant safety issues.

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# Consumption of diets with low advanced glycation end products improves cardiometabolic outcomes: Meta-analysis of randomised controlled trials

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**Background:** Contradictory evidence exist on the impacts of consumption of diets with low advanced glycation end products (LAGE diets) on improving cardiometabolic profile with regards to the participants' diabetic status and amount of dietary AGEs.

**Objective:** To determine the effect of low and high AGE diets in reducing cardiometabolic risk.

**Methods:** Medline, Embase, Scopus, Cochrane, CINHAL and ProQuest databases were searched up to May, 2016. Risk of bias and data extraction was done by two independent reviewers. Meta-analysis using random effects model was employed.

**Results:** Seventeen RCTs comprising $n = 560$ participants were included. LAGE diets were associated with decreased insulin resistance (MD $-1.3$ μmol/mU/l, 95% CI $-2.3$, $-0.2$) but no change in weight (MD $-0.8$ kg, 95% CI $-4.4$ to 2.9), fasting glucose (MD $-0.4$ mg/dl, 95% CI $-2.4$, 1.7), 2-h glucose (MD $-7.2$ mg/dl, 95% CI $-16.7$, 2.3), HbA1c (MD $-0.01$%, 95% CI $-0.09$, 0.08) and 2-h insulin levels (MD 0.3 μU/ml, 95% CI $-1.5$, 2.1). Decrease in fasting insulin levels (MD $-7$, 95% CI $-11.5$, $-2.5$) was observed only in patients with type 2 diabetes. Total cholesterol (MD $-8.5$ mg/dl, 95% CI $-9.5$, $-7.4$) and low-density lipoprotein levels (MD $-2.4$ mg/dl, 95% CI $-3.4$, $-1.3$) reduced after consumption of LAGE diets with no change in HDL cholesterol (MD $-1.6$, 95% CI $-6.6$, 3.3) and blood pressure. Estimated glomerular filtration rate was improved after a consumption of LAGE diets. Tumour necrosis factor $\alpha$, vascular cell adhesion protein-1, 8-isoprostane, leptin, and circulating AGEs were reduced in LAGE groups. In