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Editorial

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It is not an everyday event that an article aims to alert editors and reviewers. But Cofield et al. (USA) [1] not only do just that but even more so appeal to authors of scientific articles. They urge us to use causal language correctly in the context of scientific articles. After screening all titles and abstracts of the 525 original human observational studies from the 2006 volumes of the *American Journal of Clinical Nutrition*, *Journal of Nutrition*, *Obesity* and *International Journal of Obesity* for causal language, 31% were found to use causal language. In almost all of these articles the causal language was not used appropriately. Only a small proportion of articles included a disclaimer or statement of study limitations. There was no difference in the use of causal language by source of funding.

We are well aware of the interindividual variability in the susceptibility to weight gain in response to controlled overconsumption of calories. Twin studies have shown that weight gain in response to overfeeding is partially due to genetic factors. Experiments with overfeeding have also shown that weight gain is often less than expected from the energy excess, thus suggesting alterations in metabolic efficiency and the basal metabolism. Bakkman and coworkers (Sweden) [2] have analyzed mitochondria of 9 healthy obese females, 9 (4 females) untrained controls, and 9 male ultra-endurance performance athletes for coupled and uncoupled respirations and mitochondrial efficiency; the mean age of the obese subjects exceeded that of the two other groups by approximately 10 years. Mitochondria were isolated from muscle biopsies. Obese subjects had a reduced respiratory capacity per mitochondrial volume compared to the reference group. Accordingly, the results support a role of mitochondrial respiratory capacity in weight regulation and interindividual differences of susceptibility to obesity. A reduced uncoupling would make more of the consumed energy available which, if not expended, would eventually be stored as fat. The authors are to be commended for their careful discussion pertaining to causality: The study is unable to answer whether the decreased mitochondrial capacity and uncoupling is part of the cause or the consequence of obesity. The authors also discuss the potential influence of the age and sex differences between the three groups.

Based on the 2003 and 2005 Canadian Community Health Survey 52,857 men and women aged ≥65 years were analyzed for the association between obesity and unintentional injuries in the elderly by Danielle Bouchard and coworkers (Canada) [3]. Weight, height and details on injuries occurring in the past year were obtained by survey. 8.4% of the participants reported having been injured within the 12 months prior to the survey. Rates of injuries varied by age, sex, BMI level, physical activity level and alcohol intake. Almost half of the injuries resulted in a hospital admission. Obese males and females had a higher risk for sprains/strains occurring at any anatomical site (odds ratios 1.48 and 1.14, respectively). In contrast, obese individuals were less likely to have a fracture at any anatomical location (men 0.56; women 0.66) including the hip (men 0.31; women 0.42). Particularly hip fractures are associated with a loss of independence and premature mortality. The protective effect of obesity on fractures are thought to result from an increased bone mineral density and an increased fat mass, which would provide added cushioning during a fall in some anatomical sites. Interestingly, despite an expected higher fracture rate as based on biomechanical considerations, obese men had lower relative odds of fractures in the wrist/hand and shoulder/elbow.

Sasai et al. (Japan) [4] examined whether air displacement plethysmography (ADP) can accurately track body composition changes in response to weight loss in obese Japanese men, using dual energy X-ray absorptiometry (DXA) as a reference method. ADP is a fairly novel technique that provides a body composition estimate from body density using a two-compartment model, as does hydrostatic weighing which has been considered as the gold standard for determination of body composition. In comparison to hydrostatic weighing ADP is more feasible and comfortable than hydrostatic weighing. Cross-sectional studies based on Cau-

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casians have shown that percentage of fat mass (%FM) estimated from ADP highly correlates with that obtained with DXA. Sasai et al. [4] examined 50 middle-aged Japanese men with a mean BMI of 30 kg/m^2 who participated in a 3-month weight loss program. There was no mean difference for change (Δ) in %FM between the two methods. DXA-derived Δ%FM significantly correlated with Δ%FM determined by ADP (R^2 = 0.48). However, %FM by ADP at baseline and Δ%FM by ADP were significantly correlated to the differences between Δ%FM by DXA and ADP (r = 0.42, and r = –0.54, respectively). The authors conclude that, despite proportional biases, ADP is comparably accurate for evaluating Δ%FM as DXA.

If you wonder if your coffee or tea consumption has an effect on your BMI, the article of Danielle Bouchard et al. (Canada) [5] is a must. The majority of the readers of Obesity Facts drink coffee or tea – as do about 55% of the adult population. As shown in epidemiological studies, consumption of these beverages has consistently been associated with a reduced risk of type 2 diabetes and coronary heart disease . It is however unclear if this association is mediated by BMI. Based on 3,823 participants of the 2003–2004 National Health and Nutrition Examination Survey, the investigators analyzed the relationship between BMI or waist circumference and coffee or tea consumption. In contrast to previous studies, the authors also sought to assess the influence of additives. Coffee consumption was not related to BMI or waist circumference. Male tea drinkers, however, may rejoice: Men who drank ≥2 cups of tea per day had a lower BMI (2.1 kg/m^2 difference) and waist circumference (6 cm difference) than men who never drank tea. However, before you switch to tea or start increasing your daily tea consumption, you need to take potential confounders into consideration: After adjustment for additive use, the association between tea consumption and BMI and waist circumference was no longer significant.

Clinically obese populations with additional risk factors are one of the fastest growing patient populations. To systematically assess the effects of behavioral interventions for obese adults with at least one additional risk factor for morbidity on behavior (diet and physical activity), weight and risk factors, Dombrowski (Scotland) [6] and coworkers conducted the first review of randomized controlled trials. The effect of interventions on outcomes were compared for intervention groups which focused on changes in diet only, physical activity (PA) only, or both diet and PA against control or less intensive intervention groups. Three electronic databases (MEDLINE, EMBASE and PsycInfo) were searched for relevant studies using a comprehensive search strategy. Three journals were searched by hand. The outcomes were behavior (i.e. objective or self-reported measures of diet and/or PA), weight and cardiovascular and type 2 diabetes mellitus risk factors. Follow-up periods of at least 12 weeks were required. A total of 44 randomized controlled trials fulfilled the inclusion criteria. Participants had a mean age of 55 years and a mean BMI of 33.1 kg/m^2; the mean number of participants was 240 per study. 21 randomized controlled trials focused on individuals with type 2 diabetes mellitus; hypertension, cardiovascular disease and impaired glucose tolerance constituted other risk factors assessed in the remaining studies. Almost half of the trials were identified as having made a good attempt at concealment of randomization; blinding of outcome assessors was rarely described. The majority of studies did not report on features such as the method of randomization or reasons for participant dropout. Nearly half of the studies failed to report whether the analysis was intention-to-treat. Behavioral interventions proved to be successful at significantly changing behavioral outcomes to moderate degrees in both dietary and PA behaviors over consistent periods of time. The magnitude of behavioral effects was modest; changes tended to be greatest at around 6 months. The results of the meta-analysis suggest that behavior change effects are greater when focusing on only one kind of behavior, as compared with both diet and PA behaviors at the same time. Interventions focusing on diet and PA simultaneously showed the greatest improvements in terms of weight loss and disease risk factor change.

We wish our readers a Merry Christmas and a Happy New Year!

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