ABSTRACTS

CLINICAL

Vitamin D_3 supplementation in HIV infection: Effectiveness and associations with antiretroviral.

Coelho L, Cardoso S, Luz P, et al. *Nutr J.* 2015; http://dx.doi.org/10.1186/s12937-015-0072-6.

Because studies have yielded inconsistent vitamin D depletion rates in the community with human immunodeficiency virus (HIV), and there is a known association between vitamin D insufficiency and progression of HIV to acquired immune deficiency virus, this study examined vitamin D_3 supplementation in HIV-infected individuals on a suppressive antiretroviral therapy regimen. Participants in this open-label trial were 97 men and women (32% women, 47% nonwhite, with a median age of 46 years) in Rio de Janeiro. To be included, participants had to be receiving combination antiretroviral therapy in the form of two nucleoside reverse transcriptase inhibitors in combination with at least one protease inhibitor or non-nucleoside reverse transcriptase inhibitor for a minimum of 6 months before the study period. Participants were screened for serum 25(OH)D sufficiency—those found to be insufficient were assigned to the supplementation group to receive 50,000 IU vitamin D_3 supplementation twice weekly for 5 weeks in the repletion stage and then 8,000 IU twice weekly for 19 more weeks during the maintenance stage, and those measured as having sufficient vitamin D_3 were assigned to control group. Clinical records were used for data including drug type and dosage and dates of administration for antiretroviral therapy; laboratory measurements including fasting glucose, lipid profile, $CD4^+$ T-lymphocyte count, and HIV-1 ribonucleic acid were obtained at baseline and study week 24. Wilcoxon rank-sum test for continuous variables and χ^2 or Fisher's exact test for categorical variables were used for between-group comparisons of baseline vitamin D sufficiency vs insufficiency and success or failure in attaining 25(OH)D of at least 30 ng/mL after 24 weeks' supplementation.

CULINARY

Instant oatmeal increases satiety and reduces energy intake compared to a ready-to-eat oat-based breakfast cereal: A randomized crossover trial.

Rebello CJ, Johnson WD, Martin CK, et al. *J Am Coll Nutr.* 2015; http://dx.doi.org/10.1080/07315724.2015.1032442.

This randomized, crossover study examined how consuming instant oatmeal (Quaker Instant Oatmeal Fakes, Quaker Oats Company) for breakfast, compared with an oat-based, ready-to-eat breakfast cereal (Honey Nut Cheerios, General Mills, Inc), affected satiety and food intake. Participants comprised 47 healthy individuals (28 women, 19 men) aged 18 years and older. Baseline screening measured body weight; height; waist circumference; blood pressure and pulse rate; a panel of 15 blood tests, including albumin, glucose, creatinine, potassium, calcium, uric acid, albumin, magnesium, creatine phosphokinase, alanine aminotransferase, alkaline phosphatase, iron, and multiple cholesterol screenings; body mass index; and complete blood count. Participants were tested on 2 days at least 1 week apart and were randomly assigned to the order of consuming oatmeal vs oat-based cereal. Breakfasts were composed of 363 kcal (250 kcal cereal and 113 kcal lactose-free, fat-free milk) and consumed in 20 minutes after a 10-hour fast and 24-hour abstention from strenuous activity and alcohol. Participants could add Splenda (McNeil Nutritionals, LLC) (1 g) or cinnamon ($^1/_2$ teaspoon) to oatmeal, but those who opted to do so had to add same when consuming cereal. Four hours after breakfast, during which time hunger, fullness, desire to eat, and prospective intake were evaluated, subjects were provided a lunch—sandwich, beverage, potato crisps, and a cookie—representing an intake that could reasonably be consumed, and instructed to eat until satisfied during a 20-minute period. Afterward, food, macronutrient, and energy intakes were calculated and subjects completed a questionnaire. *T* tests were used to assess food intake and b-glucan properties, while mixed model analysis of variance analyzed primary outcomes, including total energy intake; weight of food eaten; and energy intake from fat, protein, and carbohydrate.

DIABETES

Bolus estimation—Rethinking the effect of meal fat content.

Laxminarayan S, Reifman J, Edwards SS, et al. *Diabetes Technol Ther.* 2015; http://dx.doi.org/10.1089/dia.2015.0118.

Because micronutrients other than carbohydrate were identified as affecting insulin requirements for postprandial type 1 diabetes management, the authors sought to identify the responsible mechanism for increased insulin requirements in the original study (a randomized controlled trial). Seven adults—five men, two women—aged 55 years and with mean 42-year duration participated in this original study. These participants twice were studied at a clinical research center for 18 hours over 2 consecutive days. These subjects had a mean hemoglobin A1c of 7.2%, mean total daily insulin dosage of 0.50 U/kg, and a mean body mass index of 26.3 (calculated as kg/m^2). On clinic days, at 6:00 PM, they were served a dinner—high-fat or low-fat but with the same carbohydrate content—and monitored until 12:00 PM the following day. This monitoring included measuring the insulin requirement of each participant along with blood samples drawn every 15 minutes while the meal was being consumed and then

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every 60 minutes throughout the remainder of the clinic day and subsequently assessed for plasma glucose and plasma insulin. Carbohydrate-containing juices were provided to subjects at risk for hypoglycemia during the night. For this study, the authors combined metabolic models that had been previously validated to process data from the original study regarding plasma insulin and glucose concentrations as well as insulin delivery rate. Among the assessments were model parameters for time of appearance of peak meal glucose, insulin sensitivity, net hepatic glucose balance, and glucose effect at zero insulin during four mealtimes throughout the day. Wilcoxon signed-rank tests were used to analyze differences.

GERONTOLOGY

Effect of a 24-month physical activity intervention vs health education on cognitive outcomes in sedentary older adults: The LIFE randomized trial.

Sink KM, Espeland MA, Castro CM, et al. *JAMA*. 2015;314(8):781-790.

The Lifestyle Interventions and Independence for Elders, or LIFE, study is a single-blinded randomized clinical trial to evaluate how a standardized, 2-year physical activity intervention in sedentary older adults affects cognitive function and impairment, in which the authors tested the hypothesis that better cognitive function and lowered risk of dementia and mild cognitive impairment would be noted in intervention subjects compared with those provided health education. Participants were 1,635 sedentary men and women aged 70 to 89 years who could walk unassisted for 400 minutes in the span of 15 minutes at baseline but whose scores on the Short Physical Performance Battery identified them as at risk for mobility-related disability. Scores from the Modified Mini-Mental State Examination were used to exclude any participants with a diagnosis of dementia or major cognitive impairment. Subjects received random assignment to physical activity intervention, which emphasized walking, flexibility, and balance training, or a health education program. All participants attended twice-weekly visits to one of eight field centers and were given home-based activities to perform three to four times weekly. Intervention group subjects participated in progressive activities toward an ultimate goal of walking 30 minutes at moderate intensity, 10 minutes of strength training that focused on lower extremities, and 10 minutes of balance training and flexibility exercises targeting large muscle groups. Those assigned to health education attended weekly 60- to 90-minute workshops for 26 weeks and a minimum of once/monthly for the study duration and included didactive and interactive lesson plans plus up to 10 minutes of stretching and flexibility exercises. Subjects were assessed for weekly physical activity engagement every 6 months through administration of the Community Healthy Activities Model Program for Seniors. Several computerized tests were administered at baseline and at 18 or 30 months to assess cognitive function, including a neuropsychological battery at baseline.

PEDIATRIC

Perspectives of obese children and their parents on lifestyle behavior change: A qualitative study.

Schalkwijk AAH, Bot, SDM, de Vries L, et al. *Int J Behav Nutr Phys Act*. 2015; http://dx.doi.org/10.1186/s12966-015-0263-8.

The authors believe that improved understanding of what obese children and their parents expect of behavioral family lifestyle interventions is critical for the development of such programs moving forward. This qualitative study was intended to obtain data on such expectations and perceptions of intervention experience, as well as the impact of social context and factors on such interventions, from these individuals. Semi-structured interviews were conducted with participants (18 children mostly between age 4 and 12 years [mean=10 years] and 24 parents) in three discrete lifestyle intervention programs in pediatric, youth health, and primary health care settings in the Netherlands, of varying duration, and that focused on changing eating or physical activity habits and preventing weight gain. The authors developed the interview guide and observational protocol with a focus on what factors are perceived as barriers or as facilitators of success. Interviews—lasting 30 to 60 minutes—took place during daytime hours in the family's home, with children interviewed before the parents; where possible, children and parents were interviewed separately (though in two-parent households, both were interviewed jointly). Transcripts were later coded for data analysis, grouped into text segments, and reread and discussed by the researchers.

WEIGHT MANAGEMENT

Is self-weighing an effective tool for weight loss: A systematic literature review and meta-analysis.

Madigan C, Daley A, Lewis A, et al. *Int J Behav Nutr Phys Act*. 2015; http://dx.doi.org/10.1186/s12966-015-0267-4.

In trying to determine whether self-weighing is an effective component of weight loss and whether counseling individuals to do so is most effective when delivered via a single intervention vs a behavioral therapy series, the authors assessed whether being monitored by someone who has an interest in whether the task is being performed augments the effects. The authors performed a systematic database search for randomized controlled trials where self-weighing, and not being weighed, was an intervention's primary strategy or whether self-weighing was a strategy within a larger intervention with multiple components. The researchers performed systematic searches of The Cochrane central register, the Cochrane library, CINAHL, MEDLINE, and EMBASE for articles published from 1980 to 2014, and PsychInfo for articles published from 1806 to 2014. Web of Science, ISRCTN, and clinical trial registries were also searched. Specific keyword searches included body weight, weight maintenance, self-monitoring, weight monitoring, self-care, self-weighing, and weight loss. Out of 1,401 initial results, the full text of 79 articles was screened for applicability to the present study, and 24 ultimately were selected for the descriptive synthesis. Mean weight changes from baseline to end of intervention and weight change from baseline to final follow-up were the primary outcome measures of interest. Meta analyses of the studies included random effects models because of the expectation of diversity among intervention modules and control conditions. Pooled mean difference was calculated for weight change and at final follow-up.

WELLNESS/PREVENTION

Do overweight workers profit by workplace health promotion, more than their normal-weight peers? Evaluation of a worksite intervention.

Mache S, Jensen S, Linnig S, et al. *J Occupation Med Toxicol*. 2015; http://dx.doi.org/10.1186/s12995-015-0068-3.

Given the multiple presentations of burden related to overweight and obesity and the emphasis on workplace wellness programs, this study investigated the effectiveness of multiple-component worksite interventions focusing on body weight classifications—that is, normal weight vs overweight—and weight gain, physical activity, health status perception, eating behaviors, and attitudes toward health. Participants in these controlled 12-month interventions, which focused on physical activity training and nutrition counseling and were completed in 2013, were 1,573 workers (73.4% between 41 and 60 years of age; mean age 44 years; 45% women, 55% men; and 55% at normal weight