x Group (Wilks's $\Lambda = 0.985$ $F_{(6, 269)} = 2.720$, P = 0.044).

CONCLUSIONS: The results of the study demonstrate that *efitbuddy* has limited influence on young adults' PA through a four-week period of time usage. These results echo previous studies exploring the relationship between smartphone applications and PA behaviors and more research is warranted for longer intervention with more vigorous engagement of usage.

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Cardiometabolic Effects of a Randomized Workplace Cycling Intervention

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(No relevant relationships reported)

In laboratory settings, replacing sitting with cycling improves cardiometabolic risk factors. However, changes to risk factors following a cycling intervention in the workplace have yet to be examined.
PURPOSE: To quantify how a compact, stationary cycling device used in a sedentary workplace affects cardiometabolic risk factors.
METHODS: Twenty-one inactive to recreationally active office workers who sat at work >6 h·d⁻¹ visited the laboratory for baseline physiological measurements (resting blood pressure, blood lipid profile, VO2max, body composition, and 2-h oral glucose tolerance test). Participants were assigned to a 4-week intervention (n=12) or a 4-week control period (n=9). At the end of the control period, participants in the control group repeated the baseline physiological measurements and then began the workplace intervention. During the workplace intervention, participants were instructed to use the cycling device a minimum of 15 min·h⁻¹ which would result in a total use of >2 h·d⁻¹ during the workday. Following the 4-week intervention period, the physiological measurements were repeated.
RESULTS: Participants averaged 1.73±0.47 h·d⁻¹ of cycling during the intervention with no changes in actigraphy monitored non-cycling physical activity. Four weeks of the workplace intervention increased VO2max (2.07±0.44 to 2.17±0.44 L·min⁻¹), end of VO2max test power output (166.3±42.2 to 176.6±46.1 W), and HDL cholesterol (1.09±0.17 to 1.17±0.24 mmol·L⁻¹).
CONCLUSIONS: A compact stationary cycling device incorporated into a sedentary workplace improves some cardiometabolic risk factors in 4 weeks with no compensatory decrease in non-cycling physical activity. Therefore, compact cycling devices are a feasible intervention for a sedentary workplace.
Supported by NIH Grant UL1 TR000154, NIH Grant UL1 TR001082, the Rocky Mountain Chapter of the American College of Sports Medicine, and 3D Innovations LLC. This study was prospectively registered as a clinical trial (NCT02855541).

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Effects Of A 12-month Community-based Exercise Program In Men And Women With Non-communicable Diseases.

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(No relevant relationships reported)

INTRODUCTION: Non-communicable diseases represent a significant threat to human health and well-being, and carry significant implications including decreased quality of life and decreased physical functioning. The aim of this study was to evaluate the effects of attendance to a 12 month community-based chronic disease exercise rehabilitation program on measures of physical activity (PA) sedentary behaviour (SB) and physical function and to compare the results of those who attended regularly vs non-regular attenders.
METHODS: Participants (56.3% male; age (mean ± SD) 64.8 ± 0.5 yr) with coronary artery disease, (n=119); chronic obstructive pulmonary disease, (n=101); peripheral arterial disease, (n=53); or type 2 diabetes, (n=43) were referred by a physician to a community-based chronic disease exercise rehabilitation program. Standard anthropometrics, timed sit-to-stand (STS), hand-grip, sit-and-reach test (SAR) and performance during a 6-min time trial (6MTT), PA and SB were measured at induction to the community-based chronic disease exercise rehabilitation program and after 12 months. Results are presented as mean ± SD. Attenders were classified as those who attended at least one class per week for 12 months.
RESULTS: At baseline, attenders had significantly more favourable measures of BMI, hip circumference, STS and 6 MTT, significantly higher stepping hours, min of moderate/vigorous PA (MVPA) and step count, and spent significantly less time in SB > 90 min than non-attendees. Using baseline values as covariates, there was a significant difference in stepping hours, minutes of MVPA, step counts and BMI between attenders and non-attenders at 12 months. There was no significant difference at baseline for the number of sedentary bouts < 20 min, weight (kg), waist circumference and SAR. However, all values were significantly different between attenders and non-attenders at 12 months.
CONCLUSIONS: Participants who attended chronic disease exercise rehabilitation program a minimum of one day per week for 12 months had significantly greater improvements in MVPA, SB and physical functioning than non-attenders.

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Efficacy Trial Of A Behavioral Lifestyle Intervention To Promote Appropriate Gestational Weight Gain

Lyndi M. Buckingham-Schutt, Laura D. Ellingson, Spyridoula Vazou, Greg J. Welk, FACSM, Christina G. Campbell. *Iowa State University, Ames, IA.* (Sponsor: Greg Welk, FACSM)

(No relevant relationships reported)

Appropriate gestational weight gain (GWG) is an important, modifiable risk factor in both maternal and fetal health; however, the majority of women in the United States exceed Institute of Medicine (IOM) weight gain recommendations. A need exists to identify effective strategies targeting lifestyle behaviors (e.g. diet and physical activity (PA)) to encourage healthy GWG.
PURPOSE: The study examines the efficacy of a counseling-based lifestyle intervention designed to promote appropriate GWG and reduce post-partum weight retention.
METHODS: Participants were randomized to intervention (INT; n = 23) or to a usual care (UC; n = 24) group between 8-14 weeks gestation. To encourage appropriate weight gain during pregnancy, the INT group received at least six one-on-one counseling sessions over approximately 30 weeks. Counseling was based on principles of Motivational Interviewing (MI) and was delivered by a Registered Dietitian Nutritionist. INT participants were given a commercially available fitness tracker and an individualized meal plan. Stated goals for INT participants were to accumulate ≥10000 steps per day and eat 45% of total calories from carbohydrates. GWG, PA (steps/ day and minutes of moderate and vigorous PA (MVPA), and diet quality (Healthy Eating Index-2010 (HEI)) were assessed at baseline, 26-28 weeks and 34-36 weeks gestation; weight retention was measured at two-months postpartum.
RESULTS: The proportion of INT women that met the 2009 IOM GWG guidelines was significantly greater than UC (60.8% vs. 25.0%, OR: 4.67 CI: 1.3-16.2; p = 0.019). INT PA increased from baseline to 26-28 weeks gestation (steps/day: 6661 ± 1737 vs. 8603 ± 3062; >30-min bouts: 41.4 ± 88.6 vs. 81.3 ± 73.7; both p<0.01) and was significantly greater at 26-28 weeks gestation compared to UC (steps/day: 6629 ± 2322; >30-min bouts of MVPA: 28.4 ± 55.8; both p<0.01). INT group HEI improved from baseline to 26-28 weeks gestation (61.2 ± 10.5 vs. 70.6 ± 12.8; p<0.01). In the INT group, 36.4% were at or below pre-pregnancy weight at two-months postpartum compared to 12.5% of UC (p = 0.05).
CONCLUSIONS: This efficacy trial can inform the design of future randomized controlled trials aimed to modify lifestyle behaviors to decrease the proportion of women gaining excessive weight during pregnancy in a larger, more diverse pregnant population.

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Baseline Body Composition Affects Exercise Training Outcomes: RESULTS from Diabetic and Athletic Populations

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(No relevant relationships reported)

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When adults initiate an exercise prescription, approximately 51% do so with a declared goal of weight loss. Decreasing adiposity correlates with disease risk reduction and, in some sport contexts, improved performance. However, exercise adherence is typically poor; within 6 months of engagement, expected attrition exceeds 50%. Those who fail to sustain the practice commonly report being discouraged by a lack of progress. Thus, it is important to identify and understand the variables that influence the rate of fat loss at the onset of an exercise program.

PURPOSE: To evaluate predictors of body composition improvement among diverse exercising populations.

METHODS: We enrolled subjects from two distinct populations: older diabetic patients with no history of exercise (n=67) and college-aged rugby athletes (n=12). Each population underwent baseline testing to assess body fat percent (BF%) prior to and following a period of exercise. The diabetic population performed structured, supervised exercise for 10 weeks; the athletic population performed unsupervised, unstructured exercise for 4 weeks. Multiple linear regression analyses, holding other explanatory variables constant, tested predictors of BF% change.

RESULTS: At baseline, the diabetic patients were 68.3 ± 10.7 years of age, had a body mass index (BMI) of 32.3 ± 6.7 kg/m^2, and 39.3 $\pm$ 6.9% body fat. The rugby athletes were 19.6 $\pm$ 2.0 years of age, had a BMI of 25.2 ± 2.8 kg/m^2, and 13.4 $\pm$ 4.3% body fat. Among diabetic patients, controlling for potential confounders, each additional point of baseline BF% predicted a 0.18-point reduction in BF% at post-test (p=0.010; 95% CI: -0.32 to -0.05); the overall model was significant (R^2=0.395; p=0.002). Among rugby athletes, controlling for potential confounders, each additional point of baseline BF% predicted a 0.33-point reduction in post-test BF% (p=0.042; 95% CI: -0.65 to -0.02).

CONCLUSION: Among exercising diabetic and athletic populations, higher baseline BF% corresponded to greater improvements in body composition throughout the exercise intervention. Among athletic populations, this may mean more rapid improvements in sport performance; for diabetic populations, this may lead to greater improvements in glycemic control.

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Blood Flow RestrictionTraining and Functional Improvements in a Single Subject with Parkinson Disease Peter C. Douris, Joanne Donoghue. *New York Institute of Technology, Old Westbury, NY.* (Sponsor: Gordon Schmidt, FACSM) *(No relevant relationships reported)*

Blood flow restriction (BFR) applied with pressure cuffs to an active muscle, during low intensity exercise, produces muscle hypertrophy and strength gains equivalent to traditional high intensity resistance training. Previous research has shown the positive effects of BFR during gait training on younger and older adults. However, the effectiveness of BFR on subjects with Parkinson Disease (PD) and Restless Leg Syndrome (RLS) has not been investigated.

PURPOSE: The purpose of this study was to determine the effects of BFR on a subject with PD in regards to functional improvements and safety.

METHODS: A single subject, B-A design was used. The subject was a 65 year old male diagnosed with PD and RLS for 7 years. Baseline data were measured on day one. The intervention (Phase B) consisted of 5, 2-minute bouts of exercise with lower extremity BFR cuffs interspersed with 1 minute rest, 3 times a week for 6 weeks, at 0 grade incline, and speed of 50 meters/min. The pressure increased from the initial 120 mmHg to 160 mmHg at the end of the phase B as per the subject's tolerance. A 4 week baseline phase (A) without the BFR intervention followed phase B.

RESULTS: The outcome measures which were measured every 2 weeks over the 10 weeks included: Timed Up and Go Test (TUG), 6-Minute Walk Test (6MWT), 30-Second Chair Stand Test (30-sCST) and the Restless Leg Syndrome Questionnaire (RLS).The subject's TUG, 6MWT, 30-sCST scores steadily improved every 2 weeks during the 6 week intervention phase and steadily declined when the intervention was removed during the second 4 week baseline phase according to visual inspection of the graphed data points. The patient's RLS also improved during the intervention phase and steadily worsened again during the second baseline phase.

CONCLUSIONS: The subject enjoyed and tolerated the intervention well without any adverse effects. The results of this single subject design were that BFR training can produce significant functional improvements, reduce restless leg syndrome symptoms and can be safely utilized with a patient with PD.

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A Knowledge Based Intervention on Health and Physical Activity Knowledge and Behavior in Hispanic College Students Ulku S. Karabulut[1], Zasha Romero[2], Paloma Mendoza[1], Ricardo Parra[1], Murat Karabulut[1]. *[1]UTRGV, Brownsville, TX. [2]UTRGV, Edinburg, TX. (No relevant relationships reported)*

PURPOSE: To investigate the effects of an intervention on Hispanic college students' basic health, healthy eating, and physical activity (PA) related knowledge and behaviors.

METHODS: Fifty-two (52) Hispanic college students (age= 24.16 ± 3.54) volunteered to participate in the study. Each subject read and signed the consent form prior to any measurements to take place. Demographic and anthropometric data including age, race, gender, major, height, weight, resting heart rate (RHR), blood pressure (BP), body composition (BC), waist (WC) and hip circumference (HC) were collected. Subjects completed The Food and Drug Administration's (FDA) Health and Diet Survey (modified). They were randomly assigned to a control (CG) or an intervention (IG) group. IG received a pamphlet containing general health knowledge and guidelines about healthy eating and physical activity behaviors. After 4-5 weeks, both CG and IG visited the lab second time for post measurements. Godin's (2011) Leisure-Time Exercise Questionnaire was used to quantify pre/post PA.

RESULTS: There was a trend for group*time interaction for DBP (p=0.09). The IG experienced a greater decrease in DBP. Both groups experienced similar changes in knowledge on BMI (p<0.01), amount of PA (p<0.04), and RHR (p<0.04) with time. A trend for group*time interaction was also reported on RHR (p=0.097). A significant interaction was found for students' knowledge on the effects of trans fatty acid on heart disease (p<0.02). The IG became significantly more knowledgeable compared to the CG. There was a time main effect (p<0.05) and group*time interaction (p<0.05) for the knowledge regarding the role of saturated fat on heart disease.

CONCLUSIONS: Findings of the study showed that many college students lack or have misconceptions about common health related knowledge. Findings also indicated that simple methods such as providing pamphlets may be effective enough to increase students' knowledge. Future studies should investigate the long-term effects of pamphlets and other simple educational strategies on retention of knowledge and behavioral change. In addition, since new technologies might be more appealing to young college students, the effectiveness of various new tech tools can also be used to increase the level of health related knowledge and behavioral changes.

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The Moderating Effect of Baseline Depression and Age on the Efficacy of an Exercise Intervention on Preventing Postpartum Depression and Stress

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(No relevant relationships reported)

PURPOSE: Support for the efficacy of exercise interventions on preventing postpartum depression is mixed. Therefore, it is important to examine potential moderating variables. The purpose of this study was to examine the moderating effect of age and baseline depressive symptoms on the effect of exercise on preventing postpartum depression and stress.

METHODS: Participants were low active participants (n=450; average age = 30.7 years) who had a history of depression and participated in a trial examining the efficacy of exercise on preventing postpartum depression and stress (variables assessed at 6 and 9 months). Participants were randomly assigned to: 1) 6-month telephone-based exercise intervention (2) 6-month telephone-based wellness/support intervention or (3) usual care.

RESULTS: Most participants were married (75%), had at least some college (93%), and were Caucasian (73%). There were between-group differences in baseline age (p=.01) and depressive symptoms (p=.03), so these variables were included as covariates in the models. Using generalized estimating equations (for binary depression outcome) and quantile regression (for depressive symptoms and perceived stress) we explored potential moderators of the association between exercise and outcomes (treatment assignment was controlled). Among older participants (based on a median of 30.5 years), greater exercise was associated with lower median stress at 9 months controlling for baseline (b=-4.74, SE=1.69, p=.005). Effects were not significant among younger participants. Among younger participants, lower exercise was associated with greater odds of depression at 6 months (OR=7.87, 95% CI:1.35-15.69). Finally, among those with higher depressive symptoms at baseline, exercise was significantly associated with reductions in stress at 9 months (b=-4.00, SE=1.55, p=.01) and depression at 6 months (OR=3.41, 95% CI: 1.00-13.54). Among those with lower depressive symptoms at baseline, exercise was associated with greater reductions in depressive symptoms at 6 months (b=-1.13, SE=.57, p=.05).

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