



Welcome to this month's edition of NExTNet News. In addition to pertinent announcements, RFAs, and news stories, follow the exciting research advances of NExTNet members and their investigative teams with links to recent findings.

NExTNet News is prepared monthly by Jenny Martz, NExTNet Coordinator. For future editions, please send relevant stories, articles, scientific publications, or announcements to [nextnet@uab.edu](mailto:nextnet@uab.edu).

## November 2017

### Announcements

- **Request for clinical trials info and teleconference presenters**
  - As part of NExTNet's effort to facilitate multi-site clinical trials we provide opportunities for member institutions to present their research, interests, and capabilities to help identify collaborative possibilities. The bi-monthly teleconference is one such opportunity. If you would be interested in having your institution highlighted during one of these calls please email [nextnet@uab.edu](mailto:nextnet@uab.edu) for more information.
  - Investigators with current multi-site clinical trials are also invited to submit their trials for listing on the NExTNet website (<http://www.uab.edu/medicine/nextnet/clinical-trials>)
- **Teleconference Schedule**
  - The next teleconference is scheduled to take place on Tuesday, December 12, 2017 at 10am CST.

### Upcoming Meetings and Conferences

- [Mayo Clinic Rehabilitation Medicine Update 2018](#) February 2-4, 2018, Scottsdale, AZ
- [ACSM's International Health & Fitness Summit](#) April 5-8, 2018, Arlington, VA
- [Experimental Biology](#) April 21-25, 2018, San Diego, CA
- [ACSM's 65<sup>th</sup> Annual Meeting](#) May 29-June 2, 2018, Minneapolis, MN
- [4<sup>th</sup> Federal Interagency Conference on TBI](#) June 11-15, 2018, Washington, DC

### New Findings from NExTNet Investigators

#### Aging

- [Cycling Efficiency and Energy Cost of Walking in Young and Older Adults.](#)
- [Randomized, four-arm, dose-response clinical trial to optimize resistance exercise training for older adults with age-related muscle atrophy.](#)

#### Arthritis

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## Demographic and Clinical Factors Associated with Non-Surgical Osteoarthritis Treatment Use Among Patients in Outpatient Clinics.

### **Cancer**

- [Weight management and physical activity throughout the cancer care continuum.](#)
- [Agenda for Translating Physical Activity, Nutrition, and Weight Management Interventions for Cancer Survivors into Clinical and Community Practice.](#)
- [Incorporating Strength Training into Cancer Care: Translating PAL into the Strength After Breast Cancer Program.](#)
- [Transdisciplinary Research on Energetics and Cancer: From Adipose Tissue to the American Society of Clinical Oncology \(ASCO\) Summit Recommendations.](#)

### **Cardiovascular**

- [Ozone exposure is associated with acute changes in inflammation, fibrinolysis, and endothelial cell function in coronary artery disease patients.](#)
- [Cerebrovascular Reactivity and Vascular Activation in Postmenopausal Women With Histories of Preeclampsia.](#)
- [Deep-targeted sequencing of endothelial nitric oxide synthase gene exons uncovers exercise intensity and ethnicity-dependent associations with post-exercise hypotension.](#)
- [A hypertension emergency department intervention aimed at decreasing disparities: Design of a randomized clinical trial.](#)
- [Sarcopenia in Peripheral Arterial Disease: Prevalence and Impact on Functional Status.](#)
- [Associations between BMI Change and Cardiometabolic Risk in Retired Football Players.](#)
- [Effects of High-Intensity Intermittent Training on Vascular Function in Obese Preadolescent Boys.](#)
- [Transcranial doppler of the middle cerebral artery indicates regional gray matter cerebral perfusion.](#)
- [Steady State vs. Pulsatile Blood Pressure Component and Regional Cerebral Perfusion.](#)

### **Cell and Molecular Biology**

- [Erratum: Large meta-analysis of genome-wide association studies identifies five loci for lean body mass.](#)
- [Sex-specific variation in signaling pathways and gene expression patterns in human leukocytes in response to endotoxin and exercise.](#)
- [Biological/Genetic Regulation of Physical Activity Level: Consensus from GenBioPAC.](#)
- [Inter- and intra-subject variability of nitric oxide levels in leukocyte subpopulations.](#)
- [A Postmortem Study of Frontal and Temporal Gyri Thickness and Cell Number in Human Obesity.](#)
- [Exercise Alters Gut Microbiota Composition and Function in Lean and Obese Humans.](#)

### **Exercise – Diet/Disease/Drug/Device/Environmental Interactions**

- [High-Intensity Interval Exercise Attenuates, but does not Eliminate, Endothelial Dysfunction after a Fast-Food Meal.](#)
- [The impact of dairy protein during limb immobilization and recovery on muscle size and protein synthesis: a randomized controlled trial.](#)
- [Enhanced skeletal muscle regrowth and remodelling in massaged and contralateral non-massaged hind limb.](#)
- [Effects of Two Years of Calorie Restriction on Aerobic Capacity and Muscle Strength.](#)
- [Using Machine Learning to Define the Association between Cardiorespiratory Fitness and All-Cause Mortality \(from the Henry Ford Exercise Testing Project\).](#)
- [Motion sensors in multiple sclerosis: Narrative review and update of applications.](#)
- [Long-term supplementation with EGCG and beta-alanine decreases mortality but does not affect cognitive or muscle function in aged mice.](#)
- [Physical Function and Physical Activity in Peritoneal Dialysis Patients.](#)

### **Metabolic**

- [Differential acute and chronic responses in insulin action in cultured myotubes following from nondiabetic severely obese humans following gastric bypass surgery.](#)
- [Impact of prolonged overfeeding on skeletal muscle mitochondria in healthy individuals.](#)

- [Intramyocellular Lipid Droplet Size Rather Than Total Lipid Content is Related to Insulin Sensitivity After 8 Weeks of Overfeeding.](#)
- [Triheptanoin versus trioctanoin for long-chain fatty acid oxidation disorders: a double blinded, randomized controlled trial.](#)
- [Potential Causes of Elevated REE after High-Intensity Exercise.](#)
- [Markers of maternal and infant metabolism are associated with ventricular dysfunction in infants of obese women with type 2 diabetes.](#)

### Neuroscience and Stroke

- [Rats bred for low and high running capacity display alterations in peripheral tissues and nerves relevant to neuropathy and pain.](#)
- [An Evolutionary Game Theory Model of Spontaneous Brain Functioning.](#)
- [Intermittent theta-burst stimulation induces correlated changes in cortical and corticospinal excitability in healthy older subjects.](#)
- [The Cognitive Reserve Model in the Development of Delirium: The Successful Aging After Elective Surgery Study.](#)
- [Simultaneous aerobic exercise and rTMS: Feasibility of combining therapeutic modalities to treat depression.](#)

### Other

- [Gait biomechanics of skipping are substantially different than those of running.](#)
- [Long-term effects of glucocorticoids on function, quality of life, and survival in patients with Duchenne muscular dystrophy: a prospective cohort study.](#)
- [Total And Segmental Body Composition Examination In Collegiate Football Players Using Multifrequency Bia And Dxa.](#)
- [Biomechanical adaptations during running differ based on type of exercise and fitness level.](#)

### Pulmonary

- [Association of sputum and blood eosinophil concentrations with clinical measures of COPD severity: an analysis of the SPIROMICS cohort.](#)
- [The Significance of Eosinophilic Inflammation in COPD.](#)
- [Diagnostic Value of Quantitative Chest CT Scan in a Case of Spontaneous Pneumothorax.](#)

### Additional New Findings

- [Improved compensatory postural adjustments of the deep abdominals following exercise in people with chronic low back pain.](#)
- [Exercise-dependent formation of new junctions that promote STIM1-Orai1 assembly in skeletal muscle.](#)
- [Voluntary running enhances glymphatic influx in awake behaving, young mice.](#)
- [The copeptin response after physical activity is not associated with cardiac biomarkers or asymptomatic coronary artery disease.](#)
- [The effects of exercise on the quality of life of patients with breast cancer \(the UMBRELLA Fit study\): study protocol for a randomized controlled trial.](#)
- [Correlates of physical activity among community-dwelling adults aged 50 or over in six low- and middle-income countries.](#)
- [Effects Of Combined Strength And Endurance Training On Physical Performance And Biomarkers Of Healthy Young Women.](#)
- [The APEX Trial: Effects of Allopurinol on Exercise Capacity, Coronary and Peripheral Endothelial Function and Natriuretic Peptides in Patients with Cardiac Syndrome X.](#)
- [Motivators and Barriers to Exercise in Parkinson's Disease.](#)
- [Cancer Patients' Knowledge and Acceptance of Physical Activities for Rehabilitation.](#)
- [Frontal alpha asymmetry and aerobic exercise: are changes due to cardiovascular demand or bilateral rhythmic movement?](#)
- [Associations between physical activity, medical costs and hospitalisations in older Australian women: Results from the Australian Longitudinal Study on Women's Health.](#)

- [Determinants of diet and physical activity \(DEDIPAC\): a summary of findings.](#)
- [Does strength promoting exercise confer unique health benefits? A pooled analysis of eleven population cohorts with all-cause, cancer, and cardiovascular mortality endpoints.](#)
- [A potential strategy for counteracting age-related sarcopenia: preliminary evidence of combined exercise training and leucine supplementation.](#)
- [Physical Activity Protects Against the Risk of Erosive Esophagitis on the Basis of Body Mass Index.](#)
- [Exercise more or sit less? A randomized trial assessing the feasibility of two advice-based interventions in obese inactive adults.](#)
- [Indoor air quality of environments used for physical exercise and sports practice: Systematic review.](#)
- [Is irisin the new player in exercise-induced adaptations or not? A 2017 update.](#)
- [Body mass index, diet, and exercise: testing possible linkages to breast cancer risk via DNA methylation.](#)
- [Recovery following a marathon: a comparison of cold water immersion, whole body cryotherapy and a placebo control.](#)
- [Active and passive recovery influence responses of luteinizing hormone and testosterone to a fatiguing strength loading.](#)
- [\[Exercise as a protective cardiovascular and metabolic factor in end stage renal disease patients\].](#)
- [The effect of a physical activity intervention on preschoolers' fundamental motor skills - A cluster RCT.](#)
- [Effects of programmed exercise on depressive symptoms in midlife and older women: A meta-analysis of randomized controlled trials.](#)
- [Findings from a strength-based moderate-intensity exercise interventions for individuals with dementia \(innovative practice\).](#)
- [Computer-Based Exercise Program: Effects of a 12-Week Intervention on Mood and Fatigue in Pediatric Patients With Cancer.](#)
- [Physical activity across adulthood and subjective cognitive function in older men.](#)
- [Acute Exercise and Neurocognitive Development in Preadolescents and Young Adults: An ERP Study.](#)
- [Skeletal muscle overexpression of nicotinamide phosphoribosyl transferase in mice coupled with voluntary exercise augments exercise endurance.](#)
- [Veterans Group Exercise: A randomized pilot trial of an Integrative Exercise program for veterans with posttraumatic stress.](#)
- [Strong Implications But Weak Evidence for Strength Training.](#)
- [Higher participation in physical activity is associated with less use of inpatient mental health services: A cross-sectional study.](#)
- [Physical activity perceptions and behaviors among young adults with congenital heart disease: A mixed-methods study.](#)
- [Effects of chronic endurance exercise training on serum 25\(OH\)D concentrations in elderly Japanese men.](#)
- [Vigorous exercise in patients with hypertrophic cardiomyopathy.](#)
- [Lifelong Voluntary Exercise Modulates Age-Related Changes in Oxidative Stress.](#)
- [Cardiac Autonomic Function, Cardiovascular Risk and Physical Activity in Adolescents.](#)
- [Investigating the Perceived Benefits, Barriers and Beliefs towards Physical Activity in Pregnancy among Women with Gestational Diabetes Mellitus.](#)
- [Effects of Exercise on Depression and Anxiety. A Comparison to Transdiagnostic Cognitive Behavioral Therapy.](#)
- [Physical activity among cancer survivors-what is their perception and experience?](#)

#### **RFAs / FOAs**

- Developing Interventions for Health-Enhancing Physical Activity [PAR-18-307](#)
- Testing Interventions for Health-Enhancing Physical Activity [PAR-18-324](#)
- Diet and Physical Activity Assessment Methodology [PAR-18-112](#) [PAR-18-010](#)
- Science of Behavior Change: Revision Applications for Use-inspired Research to Optimize Adherence, Behavior Change Interventions, and Outcomes (R01) [RFA-RM-17-022](#); (U01) [RFA-RM-17-023](#); (R34) [RFA-RM-17-024](#); (R21) [RFA-RM-17-028](#)
- [REACT Center Pilot Studies Program](#)
- [Center for Translation of Rehabilitation Engineering Advances and Technology \(TREAT\) Pilot Project Grants](#)
- [REACT Center Scholar Awards Program](#)

- [AR3T Regenerative Rehabilitation Pilot Grants](#)

#### **In the News**

- [Strength Training Can Add Years to Your Life](#)
- [How Running May or May Not Help the Heart](#)
- [To Maintain Muscle and Lose Fat as You Age, Add Weights](#)
- [Even Advanced Breast Cancer Patients Gain From Exercise](#)