



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).

## February 2018

### 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, April 10, 2018 at 10am CST.

### Upcoming Meetings and Conferences

- [Operant Conditioning of EMG Evoked Potential Workshop](#) March 27-29, 2018, Charleston, SC
- [Repetitive Transcranial Magnetic Stimulation for Rehabilitation Workshop](#) March 27-28, 2018, Charleston, SC
- [Transcranial Direct Current Stimulation for Rehabilitation Workshop](#), March 29-30, 2018, Charleston, SC
- [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.](#)
- [Human neuromuscular aging: Sex differences revealed at the myocellular level.](#)
- [Smooth Muscle Cell-Mineralocorticoid Receptor as a Mediator of Cardiovascular Stiffness With Aging.](#)

### Arthritis

- [Cost-effectiveness of generic celecoxib in knee osteoarthritis for average-risk patients: A model-based evaluation.](#)

### Cancer

- [A Randomized Dose-Response Trial of Aerobic Exercise and Health-Related Quality of Life in Colon Cancer Survivors.](#)
- [Weight, physical activity and breast cancer survival.](#)
- [The effects of high-dose calcitriol and individualized exercise on bone metabolism in breast cancer survivors on hormonal therapy: a phase II feasibility trial.](#)
- [Yoga for the Management of Cancer Treatment-Related Toxicities.](#)

### Cardiovascular

- [Effects of Increasing Exercise Intensity and Dose on Multiple Measures of HDL \(High-Density Lipoprotein\) Function.](#)
- [Association of Cardiac Rehabilitation With Decreased Hospitalizations and Mortality After Ventricular Assist Device Implantation.](#)
- [Effect of acute hypoxemia on cerebral blood flow velocity control during lower body negative pressure.](#)
- [FES-assisted Cycling Improves Aerobic Capacity and Locomotor Function Postcerebrovascular Accident.](#)
- [Pathophysiology of Chronic Systolic Heart Failure. A View from the Periphery.](#)
- [Impaired arterial responsiveness in untreated gout patients compared with healthy non-gout controls: association with serum urate and C-reactive protein.](#)
- [Elevated vasopressin in pregnant mice induces T-helper subset alterations consistent with human preeclampsia.](#)

### Cell and Molecular Biology

- [Mitochondrial accumulation of doxorubicin in cardiac and diaphragm muscle following exercise preconditioning.](#)

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

- [High-intensity interval exercise attenuates but does not eliminate endothelial dysfunction after a fast food meal.](#)
- [Effects of 2 years of caloric restriction on oxidative status assessed by urinary F2-isoprostanes: The CALERIE 2 randomized clinical trial.](#)
- [Promoting Successful Weight Loss in Primary Care in Louisiana \(PROPEL\): Rationale, design and baseline characteristics.](#)
- [Long-term effects of glucocorticoids on function, quality of life, and survival in patients with Duchenne muscular dystrophy: a prospective cohort study.](#)
- [Severe negative energy balance during 21 d at high altitude decreases fat-free mass regardless of dietary protein intake: a randomized controlled trial.](#)
- [Influence of Sleep Restriction on Weight Loss Outcomes Associated with Caloric Restriction.](#)
- [Weight Control Program and Gestational Weight Gain in Disadvantaged Women with Overweight or Obesity: A Randomized Clinical Trial.](#)

### Metabolic

- [Prospective evaluation of insulin and incretin dynamics in obese adults with and without diabetes for 2 years after Roux-en-Y gastric bypass.](#)

### Neuroscience and Stroke

- [Bilateral deep brain stimulation of the subthalamic nucleus increases pointing error during memory-guided sequential reaching.](#)

### Other

- [A qualitative study of patient experiences of care in integrated behavioral health and primary care settings: more similar than different.](#)

- [Physical Activity and Bone Accretion: Isotemporal Modeling and Genetic Interactions.](#)
- [Validity of the 4-compartment model using dual energy X-ray absorptiometry derived body volume in overweight individuals.](#)
- [A mathematical model of the effects of resistance exercise-induced muscle hypertrophy on body composition.](#)

#### **Pediatric**

- [Correlates of intensity-specific physical activity in children aged 9-11 years: a multilevel analysis of UK data from the International Study of Childhood Obesity, Lifestyle and the Environment.](#)
- [Bone mineral density and body composition in children with congenital adrenal hyperplasia.](#)
- [Association Between Carotid Intima Media Thickness, Age, and Cardiovascular Risk Factors in Children and Adolescents.](#)
- [Novel patterns of physical activity in a large sample of preschool-aged children.](#)

#### **Pulmonary**

- [Slow  \$\dot{V}O\_2\$  kinetics in acute hypoxia are not related to a hyperventilation-induced hypocapnia.](#)
- [Effect of tiotropium on spontaneous expiratory flow-volume curves during exercise in GOLD 1-2 COPD.](#)
- [Repetitive TLR-3 activation in the lung induces skeletal muscle adaptations and cachexia.](#)

#### **Additional New Findings**

- [Eccentric exercise induces spatial changes in the mechanomyographic activity of the upper trapezius muscle.](#)
- [Comparison of metabolic adaptations between endurance- and sprint-trained athletes after an exhaustive exercise in two different calf muscles using a multi-slice <sup>31</sup>P-MR spectroscopic sequence.](#)
- [Acceptability and validity of a home exercise diary used in home-based pulmonary rehabilitation: a secondary analysis of a randomised controlled trial.](#)
- [Regular physical activity prevents development of chronic muscle pain through modulation of supraspinal opioid and serotonergic mechanisms.](#)
- [Chronic Remote Ischemic Conditioning May Mimic Regular Exercise: Perspective from Clinical Studies.](#)
- [Role of Dietary Protein and Muscular Fitness on Longevity and Aging.](#)
- [Validity of combination use of activity record and accelerometry to measure free-living total energy expenditure in female endurance runners.](#)
- [Effect of 7 days of exercise on exogenous carbohydrate oxidation and insulin resistance in children with obesity.](#)
- [Effects of intermittent hypoxic training performed at high hypoxia level on exercise performance in highly trained runners.](#)
- [Community Health Advisors' Participation in a Dissemination and Implementation Study of an Evidence-Based Physical Activity and Healthy Eating Program in a Faith-Based Setting.](#)
- [Exploring the Specific Needs of Persons with Multiple Sclerosis for mHealth Solutions for Physical Activity: Mixed-Methods Study.](#)
- [Influence of estrogen on individual exercise motivation and bone protection in ovariectomized rats.](#)
- [The importance of understanding the underlying physiology of exercise when designing exercise interventions for brain health.](#)
- [Test-Retest Reliability of Exercise-Induced Hypoalgesia After Aerobic Exercise.](#)
- [A study on nonlinear estimation of submaximal effort tolerance based on the generalized MET concept and the 6MWT in pulmonary rehabilitation.](#)
- [Exercise and Asthma.](#)
- [Knee extensor strength gains mediate symptom improvement in knee osteoarthritis: Secondary analysis of a randomised controlled trial.](#)
- [The effects of pressure biofeedback training on infraspinatus muscle activity and muscle thickness.](#)
- [Weight management in rural health clinics: The Midwest diet and exercise trial.](#)
- [Fuel for the Work Required: A Theoretical Framework for Carbohydrate Periodization and the Glycogen Threshold Hypothesis.](#)
- [Feasibility and acceptability of PrE-operative Physical Activity to improve patient outcomes After major cancer](#)

- [surgery: study protocol for a pilot randomised controlled trial \(PEPA Trial\).](#)
- [Evidence-Based Exercise Recommendations to Reduce Hepatic Fat Content in Youth- a Systematic Review and Meta-Analysis.](#)
- [Urban-Rural Differences in Aerobic Physical Activity, Muscle Strengthening Exercise, and Screen-Time Sedentary Behavior.](#)
- [Shoulder and arm muscle activity during elastic band exercises performed in a hospital bed.](#)
- [Community-based rehabilitation training after stroke: results of a pilot randomised controlled trial \(ReTrain\) investigating acceptability and feasibility.](#)
- [Aerobic exercise inhibits obesity-induced respiratory phenotype.](#)
- [Physical Training and Cardiac Rehabilitation in Heart Failure Patients.](#)
- [Randomized, Controlled Trial: Efficacy of Ultrasound and Exercise in Patients With Ankylosing Spondylitis.](#)
- [Water-based aerobic and combined training in elderly women: Effects on functional capacity and quality of life.](#)
- [Is willingness to exercise programmed in utero? Reviewing sedentary behavior and the benefits of physical activity in intrauterine growth restricted individuals.](#)
- [The Impact of Exercise Training on Breast Cancer.](#)
- [Considerations for Exercise Prescription in Patients with Bone Metastases: A Comprehensive Narrative Review.](#)
- [Exercise and taurine in inflammation, cognition, and peripheral markers of blood-brain barrier integrity in older women.](#)
- [Chronic inflammation in skeletal muscle impairs satellite cells function during regeneration: can physical exercise restore the satellite cell niche?](#)

#### **RFAs / FOAs**

- Self-Management for Health in Chronic Conditions [PA-18-377](#) [PA-18-384](#)
- 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](#)
- [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**

- [More Fitness, Less Fatness](#)
- [How Long Does It Take to Build Muscle?](#)
- [Aerobic exercise slows cognitive decline in Alzheimer's disease](#)