



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.

May 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 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 will take place on Tuesday, June 13, 2017 at 10am CST.
- **Job Postings**
 - Colorado State University (see attached for full descriptions)
 - Director of the Center for Healthy Aging
 - Assistant or Associate Professor (2)

Upcoming Meetings and Conferences

- [ACSM Annual Meeting](#) May 30-June 3, 2017, Denver, Colorado
- [International Conference on Ambulatory Monitoring of Physical Activity and Movement](#) June 21-23, 2017, Bethesda, Maryland
- [APS Conference: Cardiovascular Aging, New Frontiers and Old Friends](#) August 11-14, 2017, Westminster, Colorado
- [APS Conference: Physiological Bioenergetics: Mitochondria from Bench to Bedside](#) August 27-30, 2017, San Diego, California

New Findings from NExTNet Investigators

Aging

- [Neuromuscular electrical stimulation combined with protein ingestion preserves thigh muscle mass but not muscle function in healthy older adults during 5-days of bed rest.](#)
- [Exercise with weight loss improves adipose tissue and skeletal muscle markers of fatty acid metabolism in postmenopausal women.](#)
- [Effect of APOE e4 Genotype on Metabolic Biomarkers in Aging and Alzheimer's Disease.](#)
- [Metformin to Augment Strength Training Effective Response in Seniors \(MASTERS\): study protocol for a randomized controlled trial.](#)
- [Social Participation Modifies the Effect of a Structured Physical Activity Program on Major Mobility Disability Among Older Adults: Results From the LIFE Study.](#)
- [Beneficial neurocognitive effects of transcranial laser in older adults.](#)

Arthritis

- [Skeletal muscle fat and its association with physical function in rheumatoid arthritis.](#)

Cancer

- [The Impact of Exercise on Cancer Mortality, Recurrence, and Treatment-Related Adverse Effects.](#)
- [Sleep problems in breast cancer survivors 1-10 years posttreatment.](#)

Cardiovascular

- [Genetic and Pharmacologic Inactivation of ANGPTL3 and Cardiovascular Disease.](#)
- [Sildenafil Treatment in Heart Failure With Preserved Ejection Fraction: Targeted Metabolomic Profiling in the RELAX Trial.](#)
- [Therapeutic Cardiorespiratory Fitness to Prevent and Treat Heart Failure.](#)
- [2016 AHA/ACC Guideline on the Management of Patients with Lower Extremity Peripheral Artery Disease: Executive Summary.](#)
- [Prior exercise and standing as strategies to circumvent sitting-induced leg endothelial dysfunction.](#)
- [VO₂ Kinetics Associated with Moderate Intensity Exercise in Heart Failure: Impact of Intrathecal Fentanyl Inhibition of Group III/IV Locomotor Muscle Afferents.](#)
- [Measurement Repeatability of Central and Peripheral Blood Pressures: The ARIC Study.](#)

Cell and Molecular Biology

- [Effect of acute physiological free fatty acid elevation in the context of hyperinsulinemia on fiber type specific IMCL accumulation.](#)
- [Molecular Regulation of Exercise-Induced Muscle Fiber Hypertrophy.](#)
- [Physiological Redundancy and the Integrative Responses to Exercise.](#)

Exercise – Diet/Disease/Device/Environmental Interactions

- [Comparing Performance During Morning vs. Afternoon Training Sessions in Intercollegiate Basketball Players.](#)
- [A Bioenergetics Systems Evaluation of Ketogenic Diet Liver Effects.](#)
- [Dose-dependent decrease in mortality with no cognitive or muscle function improvements due to dietary EGCG supplementation in aged mice.](#)
- [Breaks in Sitting Time: Effects on Continuously Monitored Glucose and Blood Pressure.](#)
- [Dietary Methionine Restriction Regulates Liver Protein Synthesis and Gene Expression Independently of Eukaryotic Initiation Factor 2 Phosphorylation in Mice.](#)
- [Essential amino acid ingestion alters expression of genes associated with amino acid sensing, transport, and mTORC1 regulation in human skeletal muscle.](#)
- [Change in the Rate of Biological Aging in Response to Caloric Restriction: CALERIE Biobank Analysis.](#)
- [Aerobic capacity mediates susceptibility for the transition from steatosis to steatohepatitis.](#)
- [Autonomic control of body temperature and blood pressure: influences of female sex hormones.](#)
- [Do We Need Another Walking Test?](#)

Metabolic

- [Metabolic Flexibility in Health and Disease.](#)
- [The relationship between insulin resistance and endothelial dysfunction in obese adolescents.](#)
- [Enhanced Coupling within Gonadotropic and Adrenocorticotrophic Axes by Moderate Exercise in Healthy Men.](#)

Neuroscience and Stroke

- [Effect of a long-term intensive lifestyle intervention on prevalence of cognitive impairment.](#)
- [Strength Training for Skeletal Muscle Endurance after Stroke.](#)
- [Resistive Training and Molecular Regulators of Vascular-Metabolic Risk in Chronic Stroke.](#)
- [Transcranial Direct Current Stimulation and Sports Performance.](#)
- [EEG Microstate Correlates of Fluid Intelligence and Response to Cognitive Training.](#)
- [Effects of transcranial magnetic stimulation on oxidative stress in experimental autoimmune encephalomyelitis.](#)
- [POWER training in chronic stroke individuals: differences between responders and nonresponders.](#)
- [A randomized trial of aerobic exercise on cognitive control in major depression.](#)
- [Psychosocial relationship status and quality as predictors of exercise intervention adherence and substance use outcomes: Results from the STRIDE \(CTN-0037\) study.](#)

Pediatric

- [Associations of neighborhood social environment attributes and physical activity among 9-11 year old children from 12 countries.](#)
- [Joint association of birth weight and physical activity/sedentary behavior with obesity in children ages 9-11 years from 12 countries.](#)
- [Socioeconomic status and dietary patterns in children from around the world: different associations by levels of country human development?](#)
- [Prevalence and factors associated with body mass index in children aged 9-11 years.](#)

Respiratory

- [Data collection, handling and fitting strategies to optimize accuracy and precision of oxygen uptake kinetics estimation from breath-by-breath measurements.](#)

Additional New Findings

- [Psychometric evaluation of the short version of the Personal Diabetes Questionnaire to assess dietary behaviors and exercise in patients with type 2 diabetes.](#)
- [Adaptations in corticospinal excitability and inhibition are not spatially confined to the agonist muscle following strength training.](#)
- [Effect of cardiorespiratory and strength exercises on disease activity in patients with inflammatory rheumatic diseases: a systematic review and meta-analysis.](#)
- [Blood flow after contraction and cuff occlusion is reduced in subjects with muscle soreness after eccentric exercise.](#)
- [Effect of an Acute Exercise Bout on Immediate Post-Exercise Irisin Concentration in Adults: A Meta-Analysis.](#)
- [Combined aerobic and resistance training decreases inflammation markers in healthy men.](#)
- [Self-Management and Yoga for Older Adults with Chronic Stroke: A Mixed-Methods Study of Physical Fitness and Physical Activity.](#)
- [Habitual physical activity protects against lipopolysaccharide-induced inflammation in mouse adipose tissue.](#)
- [Short-term changes of serum potassium concentration induced by physical exercise in patient with arterial hypertension treated with angiotensin-converting enzyme inhibitor alone or in combination with statin.](#)
- [Effect of sprint cycling and stretch-shortening cycle exercises on the neuromuscular, immune and stress indicators in young men.](#)
- [Resistance exercise attenuates skeletal muscle oxidative stress, systemic pro-inflammatory state, and cachexia in Walker-256 tumor-bearing rats.](#)
- [Effects of the Inertia Barbell Training on Lumbar Muscle T2 relaxation time.](#)
-

[Understanding barriers and facilitators to healthy eating and physical activity from patients either before and after knee arthroplasty.](#)

- [Circuit strength training improves muscle strength, functional performance and anthropometric indicators in sedentary elderly women.](#)
- [Acute Exercise Improves Motor Memory Consolidation in Preadolescent Children.](#)
- [Predictive Validity of a Fitness Fatness Index in Predicting Cardiovascular Disease and All-Cause Mortality.](#)
- [The Combined Association of Skeletal Muscle Strength and Physical Activity on Mortality in Older Women: The HUNT2 Study.](#)
- [How much myocardium mass may be injured during endurance physical exercise?](#)
- [The effect of exercise interventions on inflammatory biomarkers in healthy, physically inactive subjects: a systematic review.](#)
- [High-intensity interval training using whole-body exercises: training recommendations and methodological overview.](#)
- [High-intensity interval training in facioscapulohumeral muscular dystrophy type 1: a randomized clinical trial.](#)
- [Effects of hydrogen rich water on prolonged intermittent exercise.](#)
- [Removal of a high-fat diet, but not voluntary exercise, reverses obesity and diabetic-like symptoms in male C57BL/6J mice.](#)
- [Mind-muscle connection training principle: influence of muscle strength and training experience during a pushing movement.](#)
- [Childhood and teenage physical activity and breast cancer risk.](#)
- [Bed rest and resistive vibration exercise unveil novel links between skeletal muscle mitochondrial function and insulin resistance.](#)
- [Cardiorespiratory Fitness and All-Cause Mortality in Men With Emotional Distress.](#)
- [Exercise and environment: New qualitative work to link popular practice and public health.](#)
- [Changes in light-, moderate-, and vigorous-intensity physical activity and changes in depressive symptoms in breast cancer survivors: a prospective observational study.](#)
- [Serum BDNF and IL-6 response to high-volume mechanically demanding exercise.](#)
- [Bilateral brachial rhabdomyolysis caused by push-up exercise.](#)
- [A single-bout of Endurance Exercise Modulates EEG Microstates Temporal Features.](#)
- [Impact of Exercise on the Relationship Between CAC Scores and All-Cause Mortality.](#)
- ["We are all there for the same purpose": Support for an integrated community exercise program for older adults with HF and COPD.](#)
- [Hand strengthening exercises in chronic stroke patients: Dose-response evaluation using electromyography.](#)
- [Moderate Physical Activity is Associated with Cerebral Glucose Metabolism in Adults at Risk for Alzheimer's Disease.](#)
- [A simple laboratory exercise with rat isolated esophagus and stomach fundus to reveal functional differences between striated and smooth muscle cells.](#)
- [Physical activity alters limb bone structure but not entheseal morphology.](#)
- [Maternal and early life nutrition and physical activity: setting the research and intervention agenda for addressing the double burden of malnutrition in South African children.](#)
- [A Sport Education Fitness Season's Impact on Students' Fitness Levels, Knowledge, and In-Class Physical Activity.](#)
- [Reallocating sedentary time to moderate-to-vigorous physical activity but not to light-intensity physical activity is effective to reduce adiposity among youths: a systematic review and meta-analysis.](#)
- [Exercise Is Medicine: Proof . . . and Possibilities?](#)
- [Benefits of a regular vs irregular rhythm-based training programme on physical fitness and motor skills in obese girls.](#)
- [Are children participating in a quasi-experimental education outside the classroom intervention more physically active?](#)
- [High-Protein Foods and Physical Activity Protect Against Age-Related Muscle Loss and Functional Decline.](#)
- [A long-term self-managed handwriting intervention for people with Parkinson's disease: results from the control group of a phase II randomized controlled trial.](#)
- [Exercise with weight loss improves adipose tissue and skeletal muscle markers of fatty acid metabolism in](#)

- [postmenopausal women.](#)
- [Effect of exercise on cognitive function in chronic disease patients: a meta-analysis and systematic review of randomized controlled trials.](#)
- [What to Build for Middle-Agers to Come? Attractive and Necessary Functions of Exercise-Promotion Mobile Phone Apps: A Cross-Sectional Study.](#)
- [Physical activity and cardiovascular aging: Physiological and molecular insights.](#)
- [Treatment of NAFLD with diet, physical activity and exercise.](#)
- [A Home-Based Walking Program Improves Respiratory Endurance in Patients With Acute Myocardial Infarction: A Randomized Controlled Trial.](#)
- [Exercise training ameliorates matrix metalloproteinases 2 and 9 messenger RNA expression and mitigates adverse left ventricular remodeling in streptozotocin-induced diabetic rats.](#)

RFAs / FOAs

- Notice of Intent to Publish a Funding Opportunity Announcement to Increase Use of Cardiac and Pulmonary Rehabilitation in Traditional and Community Settings (R61/R33) (NOT-HL-17-495) <https://grants.nih.gov/grants/guide/notice-files/NOT-HL-17-495.html>
National Heart, Lung, and Blood Institute
- Notice of Intent to Publish a Funding Opportunity Announcement for Senator Paul D. Wellstone Muscular Dystrophy Specialized Research Centers Research Centers (P50) (NOT-AR-18-006) <https://grants.nih.gov/grants/guide/notice-files/NOT-AR-18-006.html>
- Notice of Intent to Publish a Funding Opportunity Announcement for Exploratory Clinical Trial Grants in Arthritis and Musculoskeletal and Skin Diseases (R21) (NOT-AR-18-007) <https://grants.nih.gov/grants/guide/notice-files/NOT-AR-18-007.html> National Institute of Arthritis and Musculoskeletal and Skin Diseases
- NIH Director's Transformative Research Awards (R01) [RFA-RM-17-007](#)
- Coordinating Center for Claude D. Pepper Older Americans Independence Centers (U24) [RFA-AG-18-008](#)
- Paul B Beeson Emerging Leaders Career Development Award in Aging (K76) [RFA-AG-18-006](#)
- Translational Outcomes Project in Neurotrauma (TOP-NT) (UG3/UH3) [RFA-NS-17-023](#)
- Research Innovations for Scientific Knowledge (RISK) for Musculoskeletal Diseases (R61/R33) [RFA-AR-17-009](#)
- NIMH Biobehavioral Research Awards for Innovative New Scientists (NIMH BRAINS) (R01) [RFA-MH-18-200](#)

In the News

- [Enzyme drives middle-age weight and fitness changes](#)
- [The healthiest way to improve your sleep: exercise](#)
- [Colon Cancer Survivors Live Longer With Healthy Habits](#)
- [Why exercise is the best medicine for your brain](#)
- [A 1-Hour Walk, 3 Times a Week, Has Benefits for Dementia](#)