



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).

## August 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 will take place on Tuesday, October 10 , 2017 at 10am CST.

### Upcoming Meetings and Conferences

- [UAB Center for Exercise Medicine Annual Symposium and REACT Center Clinical Trials Workshop](#) September 22, 2017, Birmingham, Alabama
- [6<sup>th</sup> Annual International Symposium on Regenerative Rehabilitation](#) November 1-3, 2017, Pittsburgh, PA
- [Clinical Research for Regenerative Rehabilitation and Rehabilitation Strategies in Preclinical Models: An Overview of the Fundamentals](#) November 3, 2017, Pittsburgh, PA
- [Physiology and Pathophysiology Consequences of Sickle Cell Disease](#) November 6-8, 2017, Washington, DC

### New Findings from NExTNet Investigators

#### Aging

- [Dose of physical activity, physical functioning and disability risk in mobility-limited older adults: Results from the LIFE study randomized trial.](#)
- [Thoughts after marital conflict and punch biopsy wounds: Age-graded pathways to healing.](#)
- [Device-Measured Physical Activity As a Predictor of Disability in Mobility-Limited Older Adults.](#)
- [Long-term supplementation with EGCG and beta-alanine decreases mortality but does not affect cognitive or](#)

[muscle function in aged mice.](#)

- [Energy expenditure responses to exercise training in older women.](#)
- [Effects of concurrent and aerobic exercises on postexercise hypotension in elderly hypertensive men.](#)

#### **Cancer**

- [Patient preference and timing for exercise in breast cancer care.](#)
- [Diet and Exercise and Serum Markers of Oxidative Stress-Response.](#)
- [Combining quantitative and qualitative breast density measures to assess breast cancer risk.](#)
- [Resistance training reduces inflammation and fatigue and improves physical function in older breast cancer survivors.](#)

#### **Cardiovascular**

- [The effect of exercise training on biventricular myocardial strain in heart failure with preserved ejection fraction.](#)
- [Fine particulate matter and cardiovascular disease: Comparison of assessment methods for long-term exposure.](#)
- [Sex-Specific Maximum Predicted Heart Rate and Its Prognosis for Mortality and Myocardial Infarction.](#)
- [Muscle contraction induced arterial shear stress increases endothelial nitric oxide synthase phosphorylation in humans.](#)
- [Clinical relevance of the modified physical performance test versus the short physical performance battery for detecting mobility impairments in older men with peripheral arterial disease.](#)
- [Relationships between central arterial stiffness, lean body mass, and absolute and relative strength in young and older men and women.](#)

#### **Cell and Molecular Biology**

- [Anti-inflammatory effects of exercise training in adipose tissue do not require FGF21.](#)

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

- [Prognostic value of exercise capacity among men undergoing pharmacologic treatment for erectile dysfunction: The FIT Project.](#)
- [Role of Inactivity in Chronic Diseases: Evolutionary Insight and Pathophysiological Mechanisms.](#)
- [Comparing Performance During Morning vs. Afternoon Training Sessions in Intercollegiate Basketball Players.](#)

#### **Metabolic**

- [Defects in skeletal muscle subsarcolemmal mitochondria in a non-obese model of type 2 diabetes mellitus.](#)

#### **Neuroscience and Stroke**

- [Persistent uncrossed corticospinal connections in patients with intractable focal epilepsy.](#)
- [Concussion: Evaluation and management.](#)

#### **Pulmonary**

- [Pulmonary Endpoints in Duchenne Muscular Dystrophy. A Workshop Summary.](#)

#### **Other**

- [Dissociating external power from intramuscular exercise intensity during intermittent bilateral knee-extension in humans.](#)

#### **Additional New Findings**

- [The Combined Intervention with Germinated Vigna radiata and Aerobic Interval Training Protocol Is an Effective Strategy for the Treatment of Non-Alcoholic Fatty Liver Disease \(NAFLD\) and Other Alterations Related to the Metabolic Syndrome in Zucker Rats.](#)
- [Muscular fatigue in response to different modalities of CrossFit sessions.](#)
- [Impact of Exercise on Cardiometabolic Component Risks in Spinal Cord-injured Humans.](#)
- [Number and Severity of Type 2 Diabetes among Family Members Are Associated with Nutrition and Physical Activity Behaviors.](#)

- [Does Regular Exercise Counter T Cell Immunosenescence Reducing the Risk of Developing Cancer and Promoting Successful Treatment of Malignancies?](#)
- [Different weight bearing push-up plus exercises with and without isometric horizontal abduction in subjects with scapular winging: A randomized trial.](#)
- [Lifestyle Risk Factors Increase the Risk of Hospitalization for Sciatica: Findings of Four Prospective Cohort Studies.](#)
- [The facilitators and barriers of physical activity among Aboriginal and Torres Strait Islander regional sport participants.](#)
- [Reliability of heart rate mobile apps in young healthy adults: exploratory study and research directions.](#)
- [Multiple Risk Factor Counseling to Promote Heart-healthy Lifestyles in the Chest Pain Observation Unit: Pilot Randomized Controlled Trial.](#)
- [Training and acute exercise modulates mitochondrial dynamics in football players' blood mononuclear cells.](#)
- [Study protocol: a mixed methods feasibility study for a loaded self-managed exercise programme for patellofemoral pain.](#)
- [Prolonged running increases knee moments in sidestepping and cutting manoeuvres in sport.](#)
- [Cytokine responses to exercise and activity in patients with chronic fatigue syndrome: Case control study.](#)
- [Effects of interventions with a physical activity component on bone health in obese children and adolescents: a systematic review and meta-analysis.](#)
- [Digital health behaviour change interventions targeting physical activity and diet in cancer survivors: a systematic review and meta-analysis.](#)
- [Endurance performance is enhanced by intermittent hyperbaric exposure via up-regulation of proteins involved in mitochondrial biogenesis in mice.](#)
- [Improvement of obesity-linked skeletal muscle insulin resistance by strength and endurance training.](#)
- [The relationship between physical activity, and physical performance and psycho-cognitive functioning in older adults living in residential aged care facilities.](#)
- [Training load does not affect detraining's effect on muscle volume, muscle strength and functional capacity among older adults.](#)
- [Exercise-associated extrapyramidal symptoms during treatment with long-acting injectable antipsychotic medications: A case report.](#)
- [Are Physical activity and Benefits Maintained After Long-Term Telerehabilitation in COPD?](#)
- [Delivering an in-Home Exercise Program via Telerehabilitation: A Pilot Study of Lung Transplant Go \(LTGO\).](#)
- [Prevalence of Mental Health Problems and Factors Associated with Psychological Distress in Mountain Exercisers: A Cross-Sectional Study in Austria.](#)
- [Energy expenditure responses to exercise training in older women.](#)
- [Understanding health care provider barriers to hospital affiliated medical fitness center facility referral: a questionnaire survey and semi structured interviews.](#)
- [Physical activity, sedentary behaviour and sleep in COPD guidelines: A systematic review.](#)
- [Physical activity patterns and clusters in 1001 patients with COPD.](#)
- [Experiences of patients undergoing pulmonary rehabilitation during an exacerbation of chronic respiratory disease.](#)
- [Motoneuron activity is required for enhancements in functional recovery after peripheral nerve injury in exercised female mice.](#)
- [Exercise Predicts Long-Term Weight Loss in Women with Class 1 and 2 Obesity Through Effects on Emotional Eating and Its Correlates.](#)
- [Hypercapnia in diving: a review of CO<sub>2</sub> retention in submersed exercise at depth.](#)
- [Cytokine responses to exercise and activity in patients with chronic fatigue syndrome: Case control study.](#)
- [Effects of interventions with a physical activity component on bone health in obese children and adolescents: a systematic review and meta-analysis.](#)
- [Corrigendum to "Physical activity and sedentary behavior in people with major depressive disorder: A systematic review and meta-analysis" \[J. Affect. Disord. 210 \(2017\) 139-150\].](#)
- [Heritability estimates of endurance-related phenotypes: A systematic review and meta-analysis.](#)
- [Effects of training status on PDH regulation in human skeletal muscle during exercise.](#)

- [Activity Demands During Multi-Directional Team Sports: A Systematic Review.](#)
- [Association between pregravid physical activity and family history of stroke and risk of stillbirth: population-based cohort study.](#)
- [Systematic review of preoperative physical activity and its impact on postcardiac surgical outcomes.](#)
- [PGC-1a in aging and lifelong exercise training-mediated regulation of UPR in mouse liver.](#)
- [The influence of 3 months of physical exercises and verbal stimulation on functional efficiency and use of free time in an older population under institutional care: study protocol for a randomized controlled trial.](#)
- [Effects of Exercise on Cognitive Function in Older People with Dementia: A Randomized Controlled Trial.](#)
- [An investigation into regional medical practitioners' knowledge of exercise during pregnancy guidelines.](#)
- [The Effect of Intelligent Physical Exercise Training on Sickness Presenteeism and Absenteeism Among Office Workers.](#)
- [Longitudinal Effects of Personality on Physical Activity Among College Students: Examining Executive Function as a Potential Moderator.](#)
- [Exercise leads to unfavourable cardiac remodelling and enhanced metabolic homeostasis in obese mice with cardiac and skeletal muscle autophagy deficiency.](#)
- [Effectiveness of Resistance Circuit-Based Training for Maximum Oxygen Uptake and Upper-Body One-Repetition Maximum Improvements: A Systematic Review and Meta-Analysis.](#)
- [Transcriptomic and epigenetic regulation of disuse atrophy and the return to activity in skeletal muscle.](#)
- [Effect of a Behavioral Intervention Strategy for Adoption and Maintenance of a Physically Active Lifestyle: The Italian Diabetes and Exercise Study \(IDES\) 2: A Randomized Controlled Trial.](#)
- [Targeting miR-423-5p Reverses Exercise Training-Induced HCN4 Channel Remodeling and Sinus Bradycardia.](#)
- [Physical Exercise Following Esophageal Cancer Treatment \(PERFECT\) study: design of a randomized controlled trial.](#)
- [Kinematic And Neuromuscular Measures Of Intensity During Plyometric Jumps.](#)
- [Effectiveness of a 16-Week High-Intensity Cardioresistance Training Program in Adults.](#)
- [Noninvasive Assessment of Skeletal Muscle Myosin Heavy Chain Expression in Trained and Untrained Men.](#)
- [Circulating extracellular vesicles in the aging process: impact of aerobic exercise.](#)
- [The effects of 8 weeks voluntary wheel running on the contractile performance of isolated locomotory \(soleus\) and respiratory \(diaphragm\) skeletal muscle during early ageing.](#)
- [Can exercise training counteract doxorubicin-induced oxidative damage of testis proteome?](#)
- [The association between bouts and non-bouts physical activity on retinopathy prevalence.](#)
- [A similar pro/anti-inflammatory cytokine balance is present in the airways of competitive athletes and non-exercising asthmatics.](#)
- [Use of an Exercise Technology in Post-Acute Care of a Skilled Nursing Facility: A Feasibility Study.](#)
- [Glucose effectiveness, but not insulin sensitivity, is improved after short-term interval training in individuals with type 2 diabetes mellitus: a controlled, randomised, crossover trial.](#)
- [Exercise and Diabetes: A Narrative Review.](#)
- [Effect of classroom-based physical activity interventions on academic and physical activity outcomes: a systematic review and meta-analysis.](#)
- [Effect of instructions on EMG during the bench press in trained and untrained males.](#)
- [Physical activity and change in fasting glucose and HbA1c: a quantitative meta-analysis of randomized trials.](#)
- [Closed-loop glucose control in young people with type 1 diabetes during and after unannounced physical activity: a randomised controlled crossover trial.](#)
- [Piezo1 channels sense whole body physical activity to reset cardiovascular homeostasis and enhance performance.](#)
- [Rethinking exercise identity: a qualitative study of physically inactive cancer patients' transforming process while undergoing chemotherapy.](#)
- [Smartphone-Enabled Health Coaching Intervention \(iMOVE\) to Promote Long-Term Maintenance of Physical Activity in Breast Cancer Survivors: Protocol for a Feasibility Pilot Randomized Controlled Trial.](#)
- [The Effect of Physical Activity Interventions on Children's Cognition and Metacognition: A Systematic Review and Meta-Analysis.](#)
- [Ventilatory response to carbon monoxide during exercise in hypoxia and hypercapnia.](#)

- [Mild exercise in female subjects impairs complex learning independent of hydration status and emotion.](#)

#### **RFAs / FOAs**

- Tailoring Cardiac Rehabilitation to Enhance Participation of Older Adults (R01) [RFA-AG-18-016](#)
- Increasing Use of Cardiovascular and Pulmonary Rehabilitation in Traditional and Community Settings (R61/R33) [RFA-HL-18-019](#)
- 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](#)
- NIMH Biobehavioral Research Awards for Innovative New Scientists (NIMH BRAINS) (R01) [RFA-MH-18-200](#)
- Notice of Change of the Review and Selection Process of NIH Director's Transformative Research Awards (R01) [NOT-RM-17-03](#)

#### **In the News**

- [Moving When Young May Strengthen the Adult Brain](#)
- [The Right Dose of Exercise for the Aging Brain](#)
- [Resistance Training May Slow MS, Study Says](#)
- [Sitting Could Be Big Health Risk for Frail Folks](#)
- [Working to Avoid Frailty](#)
- [Young at heart: why children who exercise become healthier adults](#)