



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).

## July 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, August 8, 2017 at 10am CST.

### Upcoming Meetings and Conferences

- [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
- [UAB Center for Exercise Medicine Annual Symposium](#) September 22, 2017, Birmingham, Alabama
- [6<sup>th</sup> Annual International Symposium on Regenerative Rehabilitation](#) November 1-2, 2017, Pittsburgh, PA
- [Physiology and Pathophysiology Consequences of Sickle Cell Disease](#) November 6-8, 2017, Washington, DC

### New Findings from NExTNet Investigators

#### Aging

- [Mitochondrial proteostasis as a shared characteristic of slowed aging: the importance of considering cell proliferation.](#)
- [A viewpoint on considering physiological principles to study stress resistance and resilience with aging.](#)
- [Effects of  \$\beta\$ -hydroxy- \$\beta\$ -methylbutyrate \(HMB\) on skeletal muscle mitochondrial content and dynamics, and lipids](#)

[after 10 days of bed rest in older adults.](#)

- [\(Dis\)Trust your gut: the gut microbiome in age-related inflammation, health, and disease.](#)
- [Intestinal Permeability Biomarker Zonulin is Elevated in Healthy Aging.](#)
- [Depletion of Pax7+ satellite cells does not affect diaphragm adaptations to running in young or aged mice.](#)
- [Differential requirement for satellite cells during overload-induced muscle hypertrophy in growing versus mature mice.](#)
- [Aging-related effects of bed rest followed by eccentric exercise rehabilitation on skeletal muscle macrophages and insulin sensitivity.](#)

### **Cancer**

- [Exercise in the Prevention and Treatment of Breast Cancer: What Clinicians Need to Tell Their Patients.](#)
- [Comparison of Pharmaceutical, Psychological, and Exercise Treatments for Cancer-Related Fatigue: A Meta-analysis.](#)

### **Cardiovascular**

- [Atherogenic Lipoprotein Determinants of Cardiovascular Disease and Residual Risk Among Individuals With Low Low-Density Lipoprotein Cholesterol.](#)
- [The effects of strict prolonged bedrest on cardio-respiratory fitness: systematic review and meta-analysis.](#)
- [Small Sample Sizes Confound Understanding of Cardiometabolic Responses to Exercise.](#)
- [Effect of alternating standing and sitting on blood pressure and pulse wave velocity during a simulated workday in adults with overweight/obesity.](#)

### **Cell and Molecular Biology**

- [Precarious maintenance of simple DNA repeats in eukaryotes.](#)

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

- [Aspirin as a COX Inhibitor and Anti-inflammatory Drug in Human Skeletal Muscle.](#)
- [Long-term rates of mitochondrial protein synthesis are increased in mouse skeletal muscle with high fat feeding regardless of insulin sensitizing treatment.](#)
- [Randomized trial reveals that physical activity and energy expenditure are associated with weight and body composition after RYGB.](#)
- [Performance of wells score to predict deep vein thrombosis and pulmonary embolism in endurance athletes.](#)
- [Soy compared with milk protein in a Western diet changes fecal microbiota and decreases hepatic steatosis in obese OLETF rats.](#)
- [Exercise Attenuates Negative Effects of Abstinence During 72 Hours of Smoking Deprivation.](#)

### **Metabolic**

- [Diet and Exercise and Serum Markers of Oxidative Stress-Response.](#)
- [Principles, Insights and Potential Pitfalls of the Non-invasive Determination of Muscle Oxidative Capacity by Near-Infrared Spectroscopy.](#)
- [Potential Causes of Elevated REE following High-Intensity Exercise.](#)
- [The metabolic fate of isotopically labeled trimethylamine-N-oxide \(TMAO\) in humans.](#)
- [Preventing Fat Gain by Blocking Follicle-Stimulating Hormone.](#)
- [Effects of blood flow restriction combined with post-activation potentiation stimuli on jump performance in recreationally active males.](#)
- [The effect of intentional weight loss on fracture risk in persons with diabetes: results from the Look AHEAD Randomized Clinical Trial.](#)

### **Neuroscience and Stroke**

- [tDCS does not enhance the effects of robot-assisted gait training in patient with subacute stroke.](#)
- [Prediction of treatment outcomes to exercise in patients with nonremitted major depressive disorder.](#)
- [Cardiorespiratory fitness and body composition of stimulant users: A baseline analysis of the STRIDE cohort.](#)

## Pediatric

- [Association Between Linear Growth and Bone Accrual in a Diverse Cohort of Children and Adolescents.](#)

## Other

- [Large meta-analysis of genome-wide association studies identifies five loci for lean body mass.](#)
- [Longer Concentric Action Increases Muscle Activation And Neuromuscular Fatigue Responses In Protocols Equalized By Repetition Duration.](#)

## Additional New Findings

- [Randomized Controlled Trial of a Peer Led Multimodal Intervention for Men with Prostate Cancer to Increase Exercise Participation.](#)
- [Recreational Physical Activity in Relation to Prostate Cancer-specific Mortality Among Men with Nonmetastatic Prostate Cancer.](#)
- [Home-based exercise during preoperative therapy for pancreatic cancer.](#)
- [The Effect on Bone Outcomes of Home-based Exercise Intervention for Prostate Cancer Survivors Receiving Androgen Deprivation Therapy: A Pilot Randomized Controlled Trial.](#)
- [Effectiveness of behavioural change techniques in physiotherapy interventions to promote physical activity adherence in patients with hip and knee osteoarthritis: a systematic review protocol.](#)
- [Exercise-induced GLUT4 transcription via inactivation of HDAC4/5 in mouse skeletal muscle in an AMPKa2-dependent manner.](#)
- [The association between leisure-time physical activity, low HDL-cholesterol and mortality in a pooled analysis of nine population-based cohorts.](#)
- [Hearts lacking plasma-membrane KATP channels display changes in basal aerobic metabolic substrate preference and AMPK activity.](#)
- [The role of cardiac rehabilitation in secondary prevention after coronary events.](#)
- [Continuous Cardiac Autonomic and Hemodynamic Responses to Isometric Exercise.](#)
- [Exercise training to reduce sympathetic nerve activity in heart failure patients. A systematic review and meta-analysis.](#)
- [Accuracy of step count measured by physical activity monitors: The effect of gait speed and anatomical placement site.](#)
- [The effect of an 8-week stabilization exercise program on the lumbopelvic rhythm and flexion-relaxation phenomenon.](#)
- [Barriers to exercise for patients with renal disease: an integrative review.](#)
- [A high fat breakfast attenuates the suppression of appetite and acylated ghrelin during exercise at simulated altitude.](#)
- [Cerebrocortical activity during self-paced exercise in temperate, hot and hypoxic conditions.](#)
- [Effect of exercise therapy on quality of life of patients with multiple sclerosis in Iran: a systematic review and meta-analysis.](#)
- [Variable Accuracy of Wearable Heart Rate Monitors during Aerobic Exercise.](#)
- [Skeletal Muscle Microvascular-Linked Improvements in Glycemic Control From Resistance Training in Individuals With Type 2 Diabetes.](#)
- [Delayed Onset of Reoxygenation in Inactive Muscles After High-Intensity Exercise.](#)
- [Human skeletal muscle type 1 fibre distribution and response of stress-sensing proteins along the titin molecule after submaximal exhaustive exercise.](#)
- [Prevalence of Non-responders for Glucose Control Markers after 10 Weeks of High-Intensity Interval Training in Adult Women with Higher and Lower Insulin Resistance.](#)
- [Promoting Optimal Physical Exercise for Life \(PROPEL\): aerobic exercise and self-management early after stroke to increase daily physical activity-study protocol for a stepped-wedge randomised trial.](#)
- [Context-specific Activity Repetition Training for Functional Outcome in Stroke Rehabilitation.](#)
- [The efficacy of treadmill training on balance dysfunction in individuals with chronic stroke: a systematic review.](#)
- [Physical activity and the mediating effect of fear, depression, anxiety, and catastrophizing on pain related disability in people with chronic low back pain.](#)

- [Inter-individual Differences in Exercise-Induced Spatial Working Memory Improvement: A Near-Infrared Spectroscopy Study.](#)
- [Effects of a Preschool Intervention on Physical Activity and Body Composition.](#)
- [High-intensity interval exercise and glycemic control in adolescents with type one diabetes mellitus: a case study.](#)
- [Urinary leakage during exercise: problematic activities, adaptive behaviors, and interest in treatment for physically active Canadian women.](#)
- [Regulatory Fit Improves Fitness for People With Low Exercise Experience.](#)
- [Health benefits of physical activity: a systematic review of current systematic reviews.](#)
- [The effects of therapeutic hip exercise with abdominal core activation on recruitment of the hip muscles.](#)

#### **RFAs / FOAs**

- 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](#)
- NIMH Biobehavioral Research Awards for Innovative New Scientists (NIMH BRAINS) (R01) [RFA-MH-18-200](#)

#### **In the News**

- [High-Intensity Workouts May Be Good at Any Age](#)
- [Bring On the Exercise, Hold the Painkillers](#)
- [Lifestyle changes to stave off Alzheimer's? Hints, no proof](#)