

# NEXtNet

National Exercise Clinical Trials Network

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).

## January 2016

### Announcements

- Internship Opportunities
  - Duke University Integrated Health Sciences Internship Program <http://dmpi.duke.edu/center-living-internship>
  - UAB Center for Exercise Medicine <http://www.uab.edu/medicine/exercise/training-ed/125-training-ed/81-undergradinternship>
- Monthly NEXtNet Teleconference February 9, 2016 10am CST – Tim Lightfoot (Texas A&M) presenting
- NIH Position Posting: Title 42 Senior Scientific Officer position, Director of Prevention Research Coordination <https://prevention.nih.gov/about/job-opportunities>
- The Center of Excellence for Mobile Sensor Data-to-Knowledge (MD2K) has recently launched mHealthHub, a “virtual collaboratory” for the greater mHealth community. For more information please visit <http://mhealth.md2k.org>
- The U.S. Department of Health and Human Services (HHS) has begun planning for the 2nd edition of the Physical Activity Guidelines for Americans (PAG). Nominations to serve on the 2018 PAG Advisory Committee will be accepted through February 5, 2016. See the [Federal Register Notice](#) for more information.

### Upcoming Meetings and Conferences

- [ACSM Health & Fitness Summit & Expo](#) March 29 - April 1, 2016, Orlando, FL
- [ACSM Annual Meeting, World Congress on Exercise is Medicine and World Congress on The Basic Science of Energy Balance](#) May 31 - June 4, 2016, Boston, MA
- [Rehabilitation Research at NIH: Moving the Field Forward](#) May 25-26, 2016, Bethesda, MD

### New Findings from NEXtNet Investigators

#### Aging

- [Amino acids in healthy aging skeletal muscle.](#)
- [Effect of Caloric Restriction or Aerobic Exercise Training on Peak Oxygen Consumption and Quality of Life in](#)

### Arthritis

- [Improved Function and Reduced Pain after Swimming and Cycling Training in Patients with Osteoarthritis.](#)
- [Is there a dose response relationship between weight loss and symptom improvement in persons with knee osteoarthritis?](#)

### Cancer

- [The effects of neoadjuvant chemoradiotherapy and an in-hospital exercise training programme on physical fitness and quality of life in locally advanced rectal cancer patients \(The EMPOWER Trial\): study protocol for a randomised controlled trial.](#)
- [TREC to WHERE? Transdisciplinary Research on Energetics and Cancer.](#)
- [Exercise adherence in a randomized trial of exercise on aromatase inhibitor arthralgias in breast cancer survivors: the Hormones and Physical Exercise \(HOPE\) study.](#)

### Cardiovascular

- [Effects of Standing and Light-Intensity Activity on Ambulatory Blood Pressure.](#)
- [High-density lipoprotein subclass measurements improve mortality risk prediction, discrimination and reclassification in a cardiac catheterization cohort.](#)
- [Prognostic Implications of Long-Chain Acylcarnitines in Heart Failure and Reversibility With Mechanical Circulatory Support.](#)
- [Blood Pressure: Return of the Sympathetics?](#)
- [Microvascular Dysfunction as Opposed to Conduit Artery Disease Explains Sex-Specific Chest Pain in Emergency Department Patients With Low to Moderate Cardiac Risk.](#)
- [Autonomic Findings in Takotsubo Cardiomyopathy.](#)
- [Effects on carotid-femoral pulse wave velocity 24h post exercise in young healthy adults.](#)

### Cell and Molecular Biology

- [Myonuclear transcription is responsive to mechanical load and DNA content but uncoupled from cell size during hypertrophy.](#)
- [The Spatial Distribution of Absolute Skeletal Muscle Deoxygenation During Ramp-Incremental Exercise Is Not Influenced by Hypoxia.](#)

### Exercise – Drug/Diet/Device/Surgery Interactions

- [Impact of Exercise Timing on Appetite Regulation in Individuals with Type 2 Diabetes.](#)
- [Role of Ingested Amino Acids and Protein in the Promotion of Resistance Exercise-Induced Muscle Protein Anabolism.](#)
- [How sweet is acute exercise after pure fructose ingestion?](#)
- [Biological quality control for cardiopulmonary exercise testing in multicenter clinical trials.](#)
- [Variations in Repetition Duration and Repetition Numbers Influence Muscular Activation and Blood Lactate Response in Protocols Equalized by Time Under Tension.](#)

### Metabolic

- [Blood pressure and all-cause mortality among patients with type 2 diabetes.](#)
- [Two Nights of Recovery Sleep Reverses the Effects of Short-term Sleep Restriction on Diabetes Risk.](#)
- [Elevated ghrelin predicts food intake during experimental sleep restriction.](#)

### Pediatric

- [Kids are not little adults: what MET threshold captures sedentary behavior in children?](#)
- [Individual and School-Level Socioeconomic Gradients in Physical Activity in Australian Schoolchildren.](#)
- [Cardiopulmonary Exercise Testing in Children and Adolescents With High Body Mass Index.](#)

### Respiratory

- [Association Between Functional Small Airways Disease and FEV<sub>1</sub> Decline in COPD.](#)
- [Use of exercise testing in the evaluation of interventional efficacy: an official ERS statement.](#)

### Additional New Findings

- [Lifestyle interventions targeting dietary habits and exercise in bipolar disorder: A systematic review.](#)
- [Treadmill exercise ameliorates ischemia-induced brain edema while suppressing Na<sup>+</sup>/H<sup>+</sup> exchanger 1 expression.](#)
- [Greater impact of acute high-intensity interval \*\*exercise\*\* on post-\*\*exercise\*\* executive function compared to moderate-intensity continuous \*\*exercise\*\*.](#)
- [High-intensity cardiac rehabilitation training of a commercial pilot who, after percutaneous coronary intervention, wanted to continue participating in a rigorous strength and conditioning program.](#)
- [Patterns of sedentary behaviour and physical activity in people following curative intent treatment for non-small cell lung cancer.](#)
- [Tai Chi Exercise for Cancer-Related Fatigue in Patients with Lung Cancer Undergoing Chemotherapy: A Randomized Controlled Trial.](#)
- [Inflammatory, lipid, and body composition responses to interval training or moderate aerobic training.](#)
- [Blood volume changes induced by low-intensity intradialytic exercise in long-term hemodialysis patients.](#)
- [Exercise prescription for patients with type 2 diabetes-a synthesis of international recommendations: narrative review.](#)
- [Obesity, Exercise, Obstructive Sleep Apnea, and Modifiable Atherosclerotic Cardiovascular Disease Risk Factors in Atrial Fibrillation.](#)
- [Strength does not influence knee function in the ACL-deficient knee but is a correlate of knee function in the and ACL-reconstructed knee.](#)
- [Recommendations for the conduct of clinical trials for drugs to treat or prevent sarcopenia.](#)
- [Hormonal Neuroendocrine and Vasoconstrictor Peptide Responses of Ball Game and Cyclic Sport Elite Athletes by Treadmill Test.](#)
- [Determining the Importance of Meeting Muscle-Strengthening Activity Guidelines: Is the Behavior or the Outcome of the Behavior \(Strength\) a More Important Determinant of All-cause Mortality?](#)
- [Prevalence and predictors of treatment dropout from physical activity interventions in schizophrenia: a meta-analysis.](#)
- [The impact of 10-min activity breaks outside the classroom on male students' on-task behaviour and sustained attention: a randomised crossover design.](#)
- [Sedentary Behavior and Light Physical Activity Are Associated with Brachial and Central Blood Pressure in Hypertensive Patients.](#)
- [Serratus anterior or pectoralis minor: Which muscle has the upper hand during protraction exercises?](#)
- [Physical activity using wrist-worn accelerometers: comparison of dominant and non-dominant wrist.](#)
- [The lactate and ventilatory thresholds in resistance training.](#)
- [The Effects of Free-Living Physical Activity on Mortality After Coronary Artery Disease Diagnosis.](#)
- [A randomized controlled trial into the effects of neurofeedback, methylphenidate, and physical activity on EEG power spectra in children with ADHD.](#)
- [PGC-1α Overexpression via Local Transfection Attenuates Mitophagy Pathway in Muscle Disuse Atrophy.](#)
- [Changes in Ultrasound Assessed Markers of Inflammation Following Intra-Articular Steroid Injection Combined With Exercise in Knee Osteoarthritis: Exploratory Outcome From a Randomised Trial.](#)
- [Individual Responses to a Barefoot Running Program: Insight Into Risk of Injury.](#)
- [\[Factors associated with low levels of aerobic fitness among adolescents\].](#)
- ['Keeping your body and mind active': an ethnographic study of aspirations for healthy ageing.](#)
- [Could the two-minute step test be an alternative to the six-minute walk test for patients with systolic heart failure?](#)
- [Text Messaging for Exercise Promotion in Older Adults From an Upper-Middle-Income Country: Randomized Controlled Trial.](#)
- [Acute Exercise Improves Mood and Motivation in Young Men with ADHD Symptoms.](#)

- [Physical Activity and Survival After Prostate Cancer.](#)
- [Ascorbic acid supplementation improves skeletal muscle oxidative stress and insulin sensitivity in people with type 2 diabetes: Findings of a randomized controlled study.](#)
- [Promoting gross motor skills and physical activity in childcare: A translational randomized controlled trial.](#)
- [Impact of physical exercise on catechol-O-methyltransferase activity in depressive patients: A preliminary communication.](#)
- [Association of aerobic fitness level with exercise-induced hypoglycaemia in Type 1 diabetes.](#)
- [Improved Function and Reduced Pain after Swimming and Cycling Training in Patients with Osteoarthritis.](#)
- [A Group-Based Mobile Application to Increase Adherence in Exercise and Nutrition Programs: A Factorial Design Feasibility Study.](#)
- [A Randomized Controlled Trial Investigating the Effects of Neurofeedback, Methylphenidate, and Physical Activity on Event-Related Potentials in Children with Attention-Deficit/Hyperactivity Disorder.](#)
- [Effect of Exercise Intensity on Spontaneous Physical Activity Energy Expenditure in Overweight Boys: A Crossover Study.](#)
- [Maternal Exercise during Pregnancy Increases BDNF Levels and Cell Numbers in the Hippocampal Formation but Not in the Cerebral Cortex of Adult Rat Offspring.](#)
- [Nutrition and Physical Activity in Nonalcoholic Fatty Liver Disease.](#)
- [Exercise and Physical Activity for the Post-Aortic Dissection Patient: The Clinician's Conundrum.](#)
- [\[Adherence to a stability exercise program in patients with chronic low back pain\].](#)
- [Nordic walking in the second half of life.](#)
- [An Intervention to Increase Physical Activity in Children: A Randomized Controlled Trial With 4-Year-Olds in Preschools.](#)
- [Exercise Responses to Gravity-Independent Flywheel Aerobic and Resistance Training.](#)
- [The effect of age and unilateral leg immobilization for 2 weeks on substrate utilization during moderate intensity exercise in human skeletal muscle.](#)
- [Physical activity guidelines and cardiovascular risk in children: a cross sectional analysis to determine whether 60 minutes is enough.](#)
- [A 5-year exercise program in children improves muscle strength without affecting fracture risk.](#)

## RFAs

- Rehabilitation Research Resources to Enhance Clinical Trials RFA for Pilot Studies <https://react.center/funding/pilot-studies/>
- Regenerative Rehabilitation Pilot Grant Applications <http://www.ar3t.pitt.edu/pilot/pilot.html>
- NIH Precision Medicine Initiative Funding Opportunities <http://www.nih.gov/precision-medicine-initiative-cohort-program/funding-opportunities>
- MoTrPAC Genomics, Epigenomics, and Transcriptomics Chemical Analysis Sites and Metabolomics and Proteomics Chemical Analysis Sites <http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-15-010.html> and <http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-15-011.html>
- MoTrPAC Bioinformatics Center <http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-15-012.html>
- MoTrPAC Preclinical Animal Study Sites <http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-15-013.html>
- MoTrPAC Consortium Coordination Center <http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-15-014.html>
- MoTrPAC Clinical Centers <http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-15-015.html>
- Physical Activity and Weight Control Interventions Among Cancer Survivors: Effects on Biomarkers of Prognosis and Survival (R01) <http://grants.nih.gov/grants/guide/pa-files/PA-15-311.html>
- Diet and Physical Activity Assessment Methodology (R01) <http://grants.nih.gov/grants/guide/pa-files/PAR-15-170.html>
- Diet and Physical Activity Assessment Methodology <http://grants.nih.gov/grants/guide/pa-files/PAR-15-171.html>
- Testing Interventions for Health-Enhancing Physical Activity (R01) <http://grants.nih.gov/grants/guide/pa-files/PAR-14-315.html>
- School Nutrition and Physical Activity Policies, Obesogenic Behaviors, and Weight Outcomes (R21)

- <http://grants.nih.gov/grants/guide/pa-files/PA-13-098.html>
- School Nutrition and Physical Activity Policies, Obesogenic Behaviors and Weight Outcomes (R03)  
<http://grants.nih.gov/grants/guide/pa-files/PA-13-099.html>
- School Nutrition and Physical Activity Policies, Obesogenic Behaviors and Weight Outcomes (R01)  
<http://grants.nih.gov/grants/guide/pa-files/PA-13-100.html>
- [L'Oréal USA For Women In Science grant](#)
- [NIH Blueprint Training in Computational Neuroscience: From Biology to Model and Back Again \(T90/R90\)](#)
- [Neuroimaging Informatics Tools and Resources Clearinghouse \(U24\)](#)

### **In the News**

- [How to Exercise When You Can't Get Outside](#)
- ['Standing Desks' in Classrooms May Kickstart Kids' Activity](#)
- [Out-of-Shape Teens May Face High Blood Pressure Later](#)
- [Coils in Lungs Might Boost Ability to Exercise with Emphysema](#)
- [Exercise May Lower Heart Disease Risk in Depressed People](#)
- [New Brief Recommends Increased Insurance Coverage for Exercise Programming for Individuals with Mental Illness](#)