The Energy Balance Core Laboratory offers various analytical techniques to evaluate energy expenditure, energy intake, physical activity, and body composition to investigators researching relations between nutrition, physical activity, and health and nutrition-related conditions and diseases in humans. The Core focuses on high quality services while providing consultation and state-of-the-science tools and resources to investigators involved in clinical and translational research. In addition, the Core provides research training and education and encourages collaborative research and resource sharing.

**Keywords:** Energy Metabolism, Energy Balance, physical activity intensity, Methods

The Core is dedicated to measure energy expenditure and energy intake as the key determinants of energy balance. Body composition and function are in turn impacted by energy balance, with ultimate health and disease outcomes. This fundamental approach to energy balance is critical to a better understanding of chronic nutrition- and sedentary behavior-related disorders like obesity and diabetes type 2 so that appropriate prevention and intervention strategies can be developed and tested.

**Specific Objectives:**
- Provide services to investigators conducting research in the area of energy balance in healthy and diseased humans.
- Promote service capabilities to provide needed consultative expertise and tools/resources.
- Provide quality control standards for all investigations using Core services.
- Foster interaction among investigators to encourage collaborative research and the sharing of resources.
- Provide research training and education.

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**Publications / Citations**

   - Primary publication · 25335442 (PubMed) · PMC4748955 (PubMed Central) · Added on 7/30/2015
   - Primary publication · 25026915 (PubMed) · PMC4115362 (PubMed Central) · Added on 1/20/2015
   - Primary publication · 24727999 (PubMed) · PMC3984076 (PubMed Central) · Added on 7/30/2015
4. **Doubly labeled water is a validated and verified reference standard in nutrition research.** Buchowski MS (2014) *J Nutr* 144(5): 573-4
   - Primary publication · 24572040 (PubMed) · PMC3985818 (PubMed Central) · Added on 7/30/2015
   - Primary publication · 23296459 (PubMed) · PMC3775931 (PubMed Central) · Added on 12/10/2013
   - Primary publication · 23229731 (PubMed) · PMC3610772 (PubMed Central) · Added on 12/10/2013
   - Primary publication · 23162610 (PubMed) · PMC3498462 (PubMed Central) · Added on 12/10/2013


MeSH Terms

Abdomen | Absorptiometry, Photon | Acceleration | Accelerometry | Actigraphy | Activities of Daily Living | Adiponectin | Adipose Tissue
Adiposity | Adolescent | Adult | African Americans | Aged | Aged, 80 and over | Age Factors | Age of Onset | Aging | Algorithms
Anemia, Sickle Cell | Ankle | Anthropometry | Basal Metabolism | Biomarkers | Blood Glucose | Blood Pressure | Body Composition
Body Fluid Compartments | Body Height | Body Mass Index | Body Water | Body Weight | Bone Density | Bromides | C-Reactive Protein
Caloric Restriction | Calorimetry | Calorimetry, Indirect | Cannabis | Cardiovascular Diseases | Case-Control Studies | Child | Child, Preschool
Chronic Disease | Cross-Sectional Studies | Deuterium | Deuterium Oxide | Diet, High-Fat | Disease Susceptibility | Educational Status
Electric Impedance | Energy Intake | Energy Metabolism | European Continental Ancestry Group | Exercise | Exercise Test | Exercise Therapy
Exercise Tolerance | F2-Isoprostanes | Familial Primary Pulmonary Hypertension | Fatigue | Feasibility Studies | Female | Follow-Up Studies
Forecasting | Gastric Bypass | Geriatric Assessment | Glucose Intolerance | Glycated Hemoglobin A | Health Behavior | Health Status Disparities
Hip | Hispanic Americans | Hospitalization | Humans | Hypertension, Pulmonary | Inflammation | Insulin | Insulin Resistance | Intra-Abdominal Fat
Isoprostanes | Isotope Labeling | Leptin | Life Style | Linear Models | Longitudinal Studies | Male | Marijuana Abuse | Meals
Metabolic Syndrome | Metabolism | Methylhistidines | Middle Aged | Models, Statistical | Molecular Sequence Data | Monitoring, Ambulatory
Monitoring, Physiologic | Motor Activity | Multivariate Analysis | Muscle Proteins | Myofibrils | Nonlinear Dynamics | Norepinephrine | Obesity
Obesity, Morbid | Osmolar Concentration | Overweight | Oxidation-Reduction | Oxidative Stress | Oxygen Consumption | Oxygen Isotopes
Parent-Child Relations | Parenting | Patient Compliance | Pediatric Obesity | Phenotype | Pilot Projects | Plethysmography, Impedance
Polymorphism, Single Nucleotide | Postprandial Period | Predictive Value of Tests | Premenopause | Prospective Studies
Pseudohypoparathyroidism | Puberty | Pure Autonomic Failure | Radiation-Protective Agents | Radiography | Reference Values
Regression Analysis | Reproducibility of Results | Rest | Risk Factors | Seasons | Sedentary Behavior | Self Report | Sensitivity and Specificity
Severity of Illness Index | Sex Factors | Sleep | Socioeconomic Factors | Sodium Compounds | Southeastern United States | Sports Equipment
Surveys and Questionnaires | Tennessee | Thermogenesis | Time Factors | Triglycerides | United States | Urine | Wakefulness | Walking
Water | Water-Electrolyte Balance | Weight Gain | Weight Loss | Wrist | Young Adult