



PhenX Toolkit

consensus measures for Phenotypes and eXposures

<https://www.phenxtoolkit.org>

Obesity Measures for PhenX Toolkit

	Measure	Description of Measurement Protocol
1	Adipocytokines	This is a bioassay to measure leptin and high-molecular weight (HMW) adiponectin (primary bioactive form with insulin-sensitizing activity whose circulating levels negatively correlate with obesity, insulin resistance, and coronary artery disease). This measure utilizes the National Health and Nutrition Examination Study (NHANES) protocol instructions for drawing, processing, and storing blood and commercial specimen collection kits and enzyme-linked immunosorbent assay (ELISA) methods to quantify protein levels of human leptin in serum, plasma, supernatant, and other biological fluids.
2	Basal Metabolic and Resting Metabolic Rate	This is a 30- to 40-minute process (not including the 30-minute rest period required prior to the start of the measure) for measuring basal and resting metabolic rates using indirect calorimetry, a measure of resting energy expenditure. Using an indirect calorimeter or similar instrument, investigators measure the concentrations of oxygen and carbon dioxide in airstreams entering and exiting a clear plastic hood placed over the participant's head. Oxygen consumption and carbon dioxide production are calculated from the change in concentration and flow rate.
3	Dietary Intake	The Dietary Screener Questionnaire (DSQ) is a 30-item questionnaire from the National Health and Nutrition Examination Survey (NHANES) 2009-2010 series. The interview includes items about frequency of intake of various food items (per month, daily, etc.).
4	Dietary Restraint	The Three-Factor Eating Questionnaire (TFEQ-18) is an 18-item, self-administered questionnaire with Likert-style questions.
5	Free Fatty Acids	This protocol provides instructions for drawing, processing, and storing blood according to the National Health and Nutrition Examination Survey (NHANES) and uses capillary gas chromatography with flame ionization or electron ionization to capture negative chemical ionization mass spectrometry to measure the plasma sample.
6	Gut and Pancreatic Peptides	This protocol provides instructions for drawing, processing, and storing blood from the National Health and Nutrition Examination Survey (NHANES) 2007-2008 protocol. Analysis of the following gut and pancreatic peptides is recommended: amylin, ghrelin, pancreatic polypeptide (PPY) (3-36), PPY (total), gastric inhibitory polypeptide (GIP) (total), glucagon-like peptide-1 (GLP-1) (active), and pancreatic polypeptide (PP).
7	Metabolomics	This Metabolomic Studies protocol provides general sample collection recommendations for metabolomic studies, giving input on quantity, preparation, and handling of specimens. It also includes the general procedure for cell treatment for metabolomic analysis.
8	Night Eating	The Night Eating Questionnaire © (NEQ) is a self-administered, 14-item questionnaire with Likert-style responses to assess night eating behaviors and identify night eating syndrome (NES).
9	Psychopathology of Eating Disorders	<p>The Eating Disorder Examination © (EDE) (Edition 17.0D) is a clinical interview assessment of eating disorder psychopathology. The interview includes items related to respondent behaviors that are potentially indicative of an eating disorder over the past four weeks (28 days).</p> <p>The Eating Disorder Examination Questionnaire © (EDE-Q) is a self-report questionnaire based on the Eating Disorder Examination (EDE) interview. The questionnaire includes 28 questions related to the respondent behaviors over the past four weeks (28 days) which may be indicative of an eating disorder.</p> <p>Bariatric Surgery Version - Adult: The Eating Disorder Examination© (EDE) (14th edition) Version 14.3-Bariatric Surgery Version (EDE-BSV) is a clinical interview assessment of eating disorder psychopathology for individuals considering bariatric surgery or with a history of bariatric surgery. The interview includes items related to respondent behaviors that potentially are indicative of an eating disorder over the past four weeks (28 days).</p> <p>The Eating Disorder Examination (EDE) interview for children is a clinical interview assessment of eating disorder psychopathology (including anorexia nervosa, bulimia nervosa, and binge-eating disorder) based on the <i>Diagnostic and Statistical Manual of Mental Disorders</i>, 5th ed. (DSM-5). The interview includes items related to respondent behaviors that potentially are indicative of an eating disorder over the past four weeks (28 days).</p>
10	Use of Creatine Growth Hormone and Steroids	This is a single-item, three-part measure taken from the Growing Up Today Study (GUTS), which assesses use and frequency of various products (e.g., creatine, growth hormone, steroids) to improve muscle mass or strength in the past year.
11	Weight Change Goals	This is a single-item measure of an individual's weight-change goals.

NOTE: Complete protocols, links to common data elements, and a list of other measures relevant to obesity are available through the PhenX Toolkit at <https://www.phenxtoolkit.org>.

What is the PhenX Toolkit?

The PhenX Toolkit is an online catalog of recommended, standard measures and is available for use at no cost at <https://www.phenxtoolkit.org>.

The purpose of the PhenX Toolkit is to:

- Provide recommended, standard measures of phenotypes and exposures for use in biomedical research
- Facilitate acceptance and use of standard PhenX measures
- Promote collaboration and facilitate cross-study analyses

PhenX Toolkit features:

- The Smart Query Tool provides two search options: a Smart Search based on keywords (and synonyms) and a Text Search that searches all text
- Browse options: Domains, Measures, Collections, Supplemental Information, and hierarchical tree view
- Register your study to find other researchers using the same measures and to explore opportunities for cross-study analysis
- Standards included: cancer Data Standards Registry and Repository (caDSR) Common Data Elements (CDEs) and Logical Observation Identifiers Names and Codes (LOINC)
- Registered Users have access to additional features and functionality, e.g., saving more than one “My Toolkit”
- Quick Start and Tutorial resources help new users become familiar with the Toolkit
- Annotation Tool in Toolkit Resources: Annotate the PhenX protocols that you use to assess rare genetic diseases and conditions
- REDCap Instrument Zip files for PhenX protocols can be uploaded directly to REDCap



PhenX Register Your Study

The PhenX Register Your Study feature makes it possible for Toolkit Registered Users to see what PhenX measures other investigators are using. After you register and log in, you can register your study by filling out a short form with the following information:

- Name of funded study
- Selected PhenX protocols
- Principal investigator
- Primary contact name
- Primary contact email
- Number of participants
- Funding source
- Primary research focus

This will only take you a few minutes and will foster collaboration and cross-study analysis.

If you need assistance, please email contact@phenxtoolkit.org, and we will be happy to help you Register Your Study.



PhenX Research Domains

- Alcohol, Tobacco, and Other Substances
- Anthropometrics
- Cancer
- Cardiovascular
- Demographics
- Diabetes
- Environmental Exposures
- Gastrointestinal
- Infectious Diseases and Immunity
- Neurology
- Nutrition and Dietary Supplements
- Obesity
- Ocular
- Oral Health
- Physical Activity and Physical Fitness
- Psychiatric
- Psychosocial
- Rare Genetic Conditions
- Reproductive Health
- Respiratory
- Skin, Bone, Muscle, and Joint
- Social Environments¹
- Speech and Hearing

¹ Funding for the Social Environments domain provided by the Office of Behavioral and Social Sciences Research (OBSSR).



Annotate PhenX Measures

PhenX developed a web-based Annotation Tool to collect information about the use of PhenX measures to assess rare genetic diseases and conditions.

If you would like to enhance the PhenX measures by providing information about rare genetic conditions or other diseases, please use the Annotation Tool under the “Resource” navigation bar. There are five steps to using the Annotation Tool:

1. Select a condition
2. Select a PhenX measure by browsing or searching
3. Provide a publication citation
4. Add comments
5. Hit the “Submit” button

By annotating PhenX measures, you will help the biomedical community use PhenX measures to assess rare genetic conditions and promote using of common measures.

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Dr. Carol M. Hamilton is the RTI International Principal Investigator, and Dr. Erin M. Ramos is the NHGRI Project Scientist.

More information is available at the project web portal: <https://www.phenx.org>