PhenX Toolkit
consensus measures for Phenotypes and eXposures

https://www.phenxtoolkit.org

Cardiovascular Measures for PhenX Toolkit

	Measure	Description of Measurement Protocol
1	Abdominal Aortic Aneurysm	Questions asking about his or her personal history of abdominal aortic aneurysm and an assessment of the presence of an abdominal aortic aneurysm through the use of an ultrasound.
2	Angina	Interviewer-administered questions asking the respondent about his or her personal history of angina and chest discomfort characteristics to determine presence of angina.
3	Arrhythmia (Atrial and Ventricular)	Measure to assess presence of arrhythmias through collection of personal history, treatments and procedures, medication usage, and administration of an electrocardiograph (ECG).
4	Blood Pressure (Adult/Primary)	Assesses a respondent's systolic and diastolic blood pressure, which is used to determine high blood pressure. Assessment must also include measures for personal history of high blood pressure (hypertension) and a history of medication usage.
5	Deep Venous Thrombosis	Questions asked of those diagnosed with deep venous thrombosis about treatment for the condition, and methods for abstracting additional information from the person's medical record about the history and laboratory findings of deep venous thrombosis.
6	Family History of Heart Attack	Assesses if respondent's biological parents, siblings, and children have had a heart attack.
7	Heart Valve Function	Combination of 2D and Doppler echocardiographic examinations to assess the structure and function of the valves within the heart to determine the presence of dysfunction. Assessment also includes measures for personal history of heart valve problems.
8	High Blood Pressure During Pregnancy	A measure to assess high blood pressure during a current pregnancy.
9	Lipid Profile	Measure of plasma lipid levels in blood samples to predict risk for the development of heart attack or to define metabolic syndrome.
10	Myocardial Infarction	Measure to assess if an individual has had a myocardial infarction through collection of personal history of disease, treatment and procedure history, and medical record abstraction.
11	Peripheral Arterial Disease	A set of interviewer-administered questions about whether the person has been told by a physician that he or she has poor blood flow to the legs or blocked or narrowed arteries to the legs and whether they have had any procedures—such as angiography, angioplasty, or surgery—for the condition. A protocol is provided to assess the presence of peripheral arterial disease (PAD) using the ankle brachial index (ABI). The ABI involves the use of ultrasound to measure blood pressure.
12	Pulmonary Embolism	Provides a method for abstracting additional information from respondents diagnosed with pulmonary embolus or blood clots using their medical records about the history of pulmonary embolism.
13	Rheumatic Fever/ Rheumatic Heart Disease	Questions to assess history of rheumatic fever or rheumatic heart disease.
14	Sudden Cardiac Arrest	Measure to assess if patient died of sudden cardiac arrest by reviewing symptoms prior to death, timing of death, possible cardiac origin via autopsy evidence, and/or demonstration of a history of cardiac disease via physician questionnaire and medical records review.

NOTE: Complete protocols and links to common data elements are available through the PhenX Survey at https://www.phenxtoolkit.org.

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What Is PhenX?

PhenX is a collaborative, consensus project between RTI International, the National Human Genome Research Institute (NHGRI) of the National Institutes of Health, and the larger research community. The objective of PhenX is to recommend measures with specified measurement protocols that have a high priority for inclusion in genome-wide association studies (GWAS). The consistent use of some measurement protocols across studies will facilitate cross-study comparisons. High-priority measures are, therefore, those measures that are broadly relevant to multiple health outcomes or assessments of health outcomes, although the measures are not focused on differential diagnosis.

Research Domains

The PhenX Steering Committee (SC) chose 21 research domains. A research domain is a field of research with a unifying theme and easily enumerated quantitative and qualitative measures. Working Groups (WGs) of experts in a specific domain were constituted, and they:

- Evaluated the scope of the domain and the broad elements of that scope, and then
- Recommended potential high-priority measures with specific measurement protocols.

These measures were vetted with the larger research community, and final recommendations from the WGs were reviewed by the SC. The primary goal of the project is to collect these recommendations in a Toolkit that will enable scientists to select measures and implement those measures in studies.

For more information on the PhenX project, please visit the project's website at https://www.phenx.org/.

Research Area (Domain)	Status	WG Chair(s)	SC Liaison
Alcohol, Tobacco and Other Substances	In Toolkit	Deborah S Hasin	Erin M Ramos
Anthropometrics	In Toolkit	Michele Forman	Michelle Williams
Cancer	In Toolkit	Neil Caporaso and Christine B Ambrosone	Margaret R Spitz
Cardiovascular	In Toolkit	Thomas A Pearson	William R Harlan
Demographics	In Toolkit	Myles Cockburn	Peter Kraft
Diabetes	In Toolkit	Craig L Hanis	William R Harlan
Environmental Exposures	In Toolkit	Lynn R Goldman	Diane Wagener
Gastrointestinal	In Toolkit	David Whitcomb	William R Harlan
Infectious Diseases and Immunity	In Toolkit	Richard Kaslow	Jonathan Haines
Neurology	In Toolkit	Jeffery M Vance	Lindsay A Farrer
Nutrition and Dietary Supplements	In Toolkit	Patrick J Stover	Jose M Ordovas
Ocular	In Toolkit	Janey L Wiggs	Jonathan Haines
Oral Health	In Toolkit	James Beck and Bryan Michalowicz	Mary L Marazita
Physical Activity and Physical Fitness	In Toolkit	Bill Haskell and Rick Troiano	Jose M Ordovas
Psychiatric	In Toolkit	Jordan Smoller and Kenneth Kendler	Carlos N Pato
Psychosocial	In Toolkit	Bernice Pescosolido	Carlos N Pato
Reproductive Health	In Toolkit	Carol Hogue	Michelle Williams
Respiratory	In Toolkit	Edwin K Silverman	Terri H Beaty
Skin, Bone, Muscle and Joint	In Toolkit	Douglas P Kiel	Lindsay A Farrer
Social Environments	In Toolkit	Barbara Entwisle	Peter Kraft
Speech and Hearing	In Toolkit	Cynthia Morton and Mabel Rice	Mary L Marazita