

Free online toolkit provides standard measures for genome and population studies

April 20 2009

The National Human Genome Research Institute (NHGRI), part of the National Institutes of Health, today announced the release of the first version of a free online toolkit aimed at standardizing measurements of research subjects' physical characteristics and environmental exposures. The tools will give researchers more power to compare data from multiple studies, accelerating efforts to understand the complex genetic and environmental factors that cause cancer, heart disease, depression and other common diseases.

The toolkit, which is available at <https://www.phenxtoolkit.org/>, is the first product of the Consensus Measures for Phenotypes and eXposures (PhenX) initiative. Supported by a \$6.8 million cooperative agreement from NHGRI and conducted by RTI International in Research Triangle Park, N.C., PhenX is a three-year project to develop a set of standard measures across 20 research categories related to health and common diseases.

"The PhenX toolkit will allow researchers to more easily combine and compare results across a wide range of studies, strengthening our efforts to untangle the complex genetic and environmental roots of common diseases," said Alan E. Guttmacher, M.D., acting director of NHGRI.

Cross-study comparisons can help researchers to refine estimates of disease risk, as well as to extend the findings of one study to other population groups.

Theoretically, by comparing studies that utilize the standard measures in the PhenX toolkit, researchers could more easily combine the results for each measurement from an [obesity](#) study with the results from a [diabetes](#) study to examine the overlap of genetic factors in the two health conditions.

"We encourage researchers to begin including the measures from the PhenX toolkit in new and existing studies now, so that they are familiar with the process and can add additional measures seamlessly to their research in the future," said Erin Ramos, Ph.D., an epidemiologist in NHGRI's Office of Population Genomics and an NIH project scientist with the PhenX project.

The first release of the PhenX toolkit contains standard measures selected by experts in three categories. They include demographics, with information on measurements such as current age, ethnicity, gender and current educational attainment; anthropometrics, or measurements of the human body and its proportions such as height, weight and waist circumference; and alcohol, tobacco and other substances, with measures such as alcohol - maximum drinks in 24 hours -, and nicotine dependence.

In addition to measures under each category, the toolkit includes information about each measure such as the rationale for its selection, standard data collection protocols, and a summary of research personnel and required training. Other categories of measures such as cardiovascular, nutrition, and dietary supplements, will be added in the next several months. The process used to develop the measures is being driven by the scientific community through the PhenX steering committee, working groups and surveys.

Researchers using the toolkit will soon have an option to register on the secure PhenX Web site. Researchers who choose to register will be

given a password-protected account that allows them to save the measures they select for their studies. In the long term, the PhenX Web site has plans to develop a social networking platform that will allow registered researchers to interact and foster collaborations with other researchers.

Additional categories and measures will be added to the PhenX toolkit over the next few months. Along with its goal of listing 20 standardized measures, the toolkit will include supplemental information about each measure, such as current scientific thinking about its significance and influences upon health status. The process used to develop the measures is being driven by the scientific community through the PhenX steering committee, working groups and surveys.

Source: NIH/National Human Genome Research Institute

Citation: Free online toolkit provides standard measures for genome and population studies (2009, April 20) retrieved 19 April 2024 from <https://medicalxpress.com/news/2009-04-free-online-toolkit-standard-genome.html>

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