<table>
<thead>
<tr>
<th>Measure</th>
<th>Description of Measurement Protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of Initiation of First Cigarette Use</td>
<td>Questions asking the respondent how old she/he was when she/he first smoked cigarettes and first smoked cigarettes regularly.</td>
</tr>
<tr>
<td>a. Adolescent</td>
<td>As appropriate, questions asked of respondents 12–17 years of age about when they first smoked a cigarette and when they started smoking every day.</td>
</tr>
<tr>
<td>b. Adult</td>
<td>As appropriate, questions asked of respondents ≥18 years of age about the age when they initiated smoking every day and when they initiated smoking every day.</td>
</tr>
<tr>
<td>Alcohol – 30-Day Quantity and Frequency</td>
<td>Questions asking about the quantity and the frequency of alcohol consumption during the past 30 days.</td>
</tr>
<tr>
<td>Alcohol – Lifetime Use</td>
<td>Question asking the respondent if she/he has ever consumed any alcoholic beverage during her/his entire life.</td>
</tr>
<tr>
<td>Alcohol – Maximum Drinks in 24 Hours</td>
<td>Question asks respondent about her/his maximum consumption of alcoholic beverages in a 24-hour period.</td>
</tr>
<tr>
<td>Alcohol – Age of First Use</td>
<td>Question asking the respondent how old she/he was when she/he first consumed an alcoholic beverage.</td>
</tr>
<tr>
<td>Alcohol – Lifetime Abuse and Dependence</td>
<td>Questions query respondent about whether she/he has ever had symptoms of alcohol abuse and/or dependence.</td>
</tr>
<tr>
<td>Cigarette Nicotine Dependence</td>
<td>Questions query respondent on whether she/he has symptoms of nicotine dependence.</td>
</tr>
<tr>
<td>Cigarette Smoking Status</td>
<td>Questions asking the respondent about smoking status in her/his entire life.</td>
</tr>
<tr>
<td>a. Adolescent</td>
<td>Measurement to determine respondent’s cigarette smoking status.</td>
</tr>
<tr>
<td>b. Adult</td>
<td>Measurement to determine respondent’s cigarette smoking status.</td>
</tr>
<tr>
<td>Substances – 30-Day Frequency</td>
<td>Questions asking the respondent how many days in the past 30 days she/he used a drug.</td>
</tr>
<tr>
<td>Substances – Age of First Use</td>
<td>Question asking the respondent how old she/he was when she/he first use the substance.</td>
</tr>
<tr>
<td>Substances – Lifetime Abuse and Dependence</td>
<td>Questions query respondent on whether she/he has signs of substance abuse and dependence.</td>
</tr>
<tr>
<td>Substances – Lifetime Use</td>
<td>Question asking the respondent if she/he has ever used a drug during her/his entire life.</td>
</tr>
<tr>
<td>Tobacco – 30-Day Quantity and Frequency</td>
<td>Questions asking the respondent about quantity and frequency of cigarette smoking during the past 30 days.</td>
</tr>
<tr>
<td>a. Adolescent</td>
<td>Questions asking respondents 12–17 years of age if they smoked part or all of a cigarette in the last 30 days and, if appropriate, the quantity and frequency of cigarette smoking.</td>
</tr>
<tr>
<td>b. Adult</td>
<td>Three question protocols asked of respondents ≥18 years of age, depending on responses to the tobacco smoking status question.</td>
</tr>
<tr>
<td>Tobacco – Age of Offset of Cigarette Use</td>
<td>Questions asking a former smoker respondent how long it has been since she/he has quit smoking.</td>
</tr>
<tr>
<td>a. Adolescent</td>
<td>As appropriate, questions asked of respondents 12–17 years of age about how long it has been since they smoked and how old they were when they last smoked.</td>
</tr>
<tr>
<td>b. Adult</td>
<td>As appropriate, questions asked of respondents ≥18 years of age about how long it has been since they completely quit smoking.</td>
</tr>
</tbody>
</table>
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

Researchers visit the Toolkit to:
• Select and incorporate standard measures into ongoing studies
• Consider PhenX measures when planning new studies
• Review and select high-quality, recommended, standard measures in order to expand a study beyond the primary research focus
• Review and select PhenX measures that relate to researchers’ primary research focus

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
• Link 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); 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
• Data Dictionaries compatible with submission to the database of Genotypes and Phenotypes (dbGaP) and Custom Data Collection Worksheets can be downloaded
• REDCap Instrument Zip files for PhenX protocols can be uploaded directly to REDCap

For each PhenX measure, the following information is provided:
• Brief description of the measure
• Rationale for selecting the measure for inclusion in the Toolkit
• Detailed protocol(s) for collecting the measure
• Information about the personnel, training, and equipment needed to collect the measure
• Any special requirements
• Related measures
• References

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
- Pregnancy
- Psychiatric
- Psychosocial
- Rare Genetic Conditions
- Reproductive Health
- Respiratory
- Skin, Bone, Muscle and Joint
- Social Environments
- Speech and Hearing

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

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Several National Institutes of Health (NIH) institutes and programs have contributed supplemental funding to add depth to the Toolkit in specific areas of research.

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PhenX Measures for Tobacco Regulatory Research were supported by NIH and the Food and Drug Administration’s Center for Tobacco Products (CTP).

PhenX Measures for Mental Health Research funded by the National Institute of Mental Health (NIMH).

PhenX Measures for Substance Abuse and Addiction Research funded by the National Institute on Drug Abuse (NIDA).

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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