<table>
<thead>
<tr>
<th>Measure</th>
<th>Brief Description of Recommended Protocols</th>
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</thead>
<tbody>
<tr>
<td>1 Child-Reported Parental Education Attainment</td>
<td>This protocol includes two self- or interviewer-administered questions from the National Longitudinal Study on Adolescent Health (Add Health) study that ask the respondent to report on the highest level of education achieved by his or her residential parents.</td>
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<td>2 Childhood Maltreatment</td>
<td>The Childhood Trauma Questionnaire (CTQ) is a 28-item, self-report questionnaire for adolescents and adults that includes five subscales (physical abuse, emotional abuse, sexual abuse, physical neglect, and emotional neglect) to identify traumatic childhood conditions.</td>
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<tr>
<td>3 Discrimination</td>
<td>The Major Experiences and Everyday Discrimination Scales is a 19-item, interviewer-administered questionnaire that includes questions about employment, housing, education, interactions with other people, and the reason for discrimination.</td>
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</table>
| 4 Family Conflict                           | **a. Intimate Relationship** The Revised Conflict Tactics Scales (CTS 2) is a 78-item, self-administered questionnaire that assesses both positive and negative behaviors during conflict between romantic partners in the past year.  
**b. Parent-Child** The Conflict Tactics Scale: Parent-Child Version (CTS PC) is a 35-item, self-administered questionnaire for parents or children that evaluates nonviolent discipline, psychological aggression, and physical assault in the parent-child relationship. |
| 5 Family Control and Organization           | The Organization and Control subscales from the Family Environment Scale include 18 self-administered questions that assess the importance of organization and control, based on family activities and responsibilities and on how much set rules and procedures influence family life. |
| 6 Family Interpersonal Relationships        | The Cohesion, Expressiveness, and Conflict subscales from the Family Environment Scale include 27 self-administered questions that assess family cohesion (support and commitment), expressiveness, and conflict. |
| 7 Healthy Food Environments                 | The Perceived Availability of Healthy Foods Scale from the Multi-Ethnic Study of Atherosclerosis (MESA) is a three-item, interviewer-administered questionnaire that measures the quality and availability of fresh fruit and vegetables and of low-fat products in the local neighborhood. |
| 8 Job Strain                                | The Skill Discretion, Decision Authority, and Psychological Job Demands subscales of the Job Content Questionnaire (JCQ) include 15 self-administered questions that assess how much stress a person experiences in his or her job. |
| 9 Life Events                               | **a. Adult** The Traumatic Life Events Questionnaire (TLEQ) is a self-administered questionnaire to assess current and prior exposure to potentially traumatic events (e.g., natural disasters, sexual abuse).  
**b. Child** The Adverse Life Events Scale is a self- or proxy-administered, 25-item questionnaire that reports events experienced during the previous year over which the child had little or no control. |
| 10 Neighborhood Collective Efficacy - Community Cohesion and Informal Social Control | This protocol includes 10 interviewer-administered questions from the Project on Human Development in Chicago Neighborhoods that assess the mutual trust and shared experiences among neighbors. |
| 11 Neighborhood Concentrated Disadvantage   | This protocol is based on extracting secondary data from the U.S. Census Bureau to examine various population characteristics at the neighborhood level to determine the concentration of poverty in neighborhoods. |
| 12 Neighborhood Safety                      | This protocol includes three interviewer-administered questions to assess the respondent’s perceptions about safety and crime in his or her neighborhood. |
| 13 Race/Ethnic Residential Segregation      | This protocol is based on extracting secondary data from the U.S. Census Bureau to examine various population characteristics to determine the degree of race/ethnic residential segregation, the degree to which various groups reside in different neighborhoods. |
| 14 School Social Environment                | This protocol includes 39 self-administered questions that assess an adolescent respondent’s perceptions of the quality and character of his or her school social environment. |
| 15 Social Networks                          | The Important and Health Matters Social Network Battery is an interviewer-administered survey that captures the names of all individuals within a respondent’s social network and the relationship between these individuals to assess whom the respondent depends on for help in important general matters and specific health matters. |

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

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**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 Entwistle | Peter Kraft
Speech and Hearing | In Toolkit | Cynthia Morton and Mabel Rice | Mary L Marazita

For more information on the PhenX project, please visit the project’s website at [https://www.phenx.org/](https://www.phenx.org/).