



Oral Health Measures for PhenX Toolkit

| | Measure | Description of Measurement Protocol |
|----|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Breast or Bottle Feeding Patterns | These parent-reported questions obtain information on the infant's feeding schedule, frequency of adding supplemental foods, and feeding lengths. |
| 2 | Consumption of Sweet Beverages | These parent-reported questions provide information on the amount of concentrated sweets a 3- to 5-year-old child consumes in a given week. |
| 3 | Dental Caries Experience – Prevalence | The Decayed, Missing, or Filled Tooth Surfaces Index is used by a dentist or dental hygienist to determine the prevalence of coronal caries in permanent and primary teeth through an examination that records the three components. |
| 4 | Dry Mouth | These interviewer-administered questions are used to determine if the participant has xerostomia (dry mouth). |
| 5 | Existence of Cleft Lip or Palate | These interviewer-administered questions ask the subject or biological parents of a child with cleft lip and/or palate for a description of the orofacial defects present, the extent of the defect, and if another family member has been diagnosed with the same condition. |
| 6 | Fluoride Use | These questions address fluoride use by adults and children. The participant is asked about the use of fluoridated toothpaste and other fluoride supplements. |
| 7 | Malocclusion | Angle's Classification is a set of criteria that categorizes the three different types of malocclusion. The interviewer-administered questions are used to determine if the participant has ever had orthodontic treatment. |
| 8 | Number of Natural Teeth | These questions ask for self-reports about the number of natural teeth an adult and/or child has in his or her mouth. In addition, the question asks a parent or caregiver to record information on the number of teeth in his or her infant's mouth at 3 to 12 months of age. |
| 9 | Oral Hygiene – Personal Care | These interviewer-administered questions are administered during a participant visit that included a complete dental examination. The questions address an individual's dental hygiene, including the frequency of brushing and flossing. |
| 10 | Oral Mucosal Lesions | These interviewer-administered questions address painful sores around or in the mouth and assess the existence of oral mucosal lesions. |
| 11 | Periodontal Disease – Prevalence | This is a clinical examination performed by a dentist or dental hygienist that consists of probing up to 28 teeth at six sites per tooth with a periodontal probe to determine prevalence of periodontal disease. |
| 12 | Presence of Dental Fluorosis | The Tooth Surface Index of Fluorosis (TSIF) assesses dental fluorosis for each tooth surface. |
| 13 | Professional Dental Care | These interviewer-administered questions for adults determine when the participant last visited the dentist and the purpose of the visit. |
| 14 | Tobacco (non-cigarette) – Product Use | These questions provide information on a participant's cigars, pipe smoking, snuff, and chewing tobacco use during an entire lifetime. |
| 15 | Toothache and Orofacial Pain | These interviewer-administered questions assess toothaches and chronic orofacial pain in the past 6-month time frame. |

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 |