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| **Domain:** | Environmental Exposures |
| **Measure:** | Residential History |
| **Definition:** | Questions about the respondent's current and previous residences. Each residence is also geocoded. |
| **Purpose:** | Many studies have linked the physical location of a person's residence with environmental exposures such as air pollution or other environmental toxins in soil or water which can cause adverse effects to the cardiac, pulmonary, or nervous systems. Researchers can use the geographic coordinates ("geocoordinates") of a person's residence to determine the residence's location and determine proximity or exposure to local and ambient pollutants. Information about not only the current residence but also previous residences is more useful because relevant exposures may have occurred in the past and many diseases have a long latency period (e.g., cancers or nervous system diseases). Additional information such as water source and whether or not the property was located on a farm serve as additional indicators for potential environmental exposures. |
| **Essential PhenX Measures:** | Current Address |
| **Related PhenX Measures:** | Characteristics of Current Residence |
| **Collections:** |  |
| **Keywords:** | Residence, farm, geocoordinates, latitude, longitude, landmark, global positioning systems (GPS), Water Supply, Filtered Water, Bottled Water, Private Well, Environmental Exposures |

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| **Protocol Release Date:** | October 30, 2009 |
| **PhenX Protocol Name:** | Residential History |
| **Protocol Name from Source:** | The Expert Review Panel has not reviewed this measure yet. |
| **Description:** | This protocol captures information about every residence the respondent has lived in for 3 months or longer. It includes questions concerning topics such as the dates lived, exact address and/or landmarks near the residence, whether the residence was located on or near a farm, the type of water supply, whether the residence was near fields or orchards, and whether it was located in the center or margin of town. After the interview has been completed the interviewer should determine the geocoordinates of each residence. Some geocoordinates will not be accurate based on the data obtained from these questions and may be improved with additional quality control measures or by obtaining a GPS measurement at the residence. |
| **Specific Instructions:** | If the complete address is not provided the interviewer should ask about landmarks near the respondent's residence. Closest intersections (cross streets), closest major streets, churches, major stores, and schools, museums, hospitals, city halls, post offices, other state or federal administrative buildings, historical monuments, memorial places, parks or ponds are good landmarks to allow for manual geocoding when exact street addresses are not remembered. It is also important to ask for distance to and direction from the landmark (e.g., S.W. corner of Northwestern High School property, near northern edge of Madson's Tree Farm). |
| **Protocol:** | Ask the respondent about current and previous residences in which he/she has lived for 3 months or longer. Begin with the current residence and complete one row for each residence. Geocoordinates are obtained after the interview is completed by entering the complete address into a web-based geocoding tool such as the one developed by the University of Southern California's GIS Research Laboratory at http://webgis.usc.edu/Services/Geocode. Utilize this or a similar tool or other reliable geocoding databases to determine the geocoordinates for each residence. The accuracy of geocoordinates may also be improved by using the geocode correction tool.

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| **Dates Lived**  | **Address:** **Street/Crosstreets** **City, State or Landmark**  | **Was this on a farm?**  | **What was your water supply?**  | **Near fields or orchards?**  | **Did you live close to the center or margin of town?**  |
| 1a.From:To: | 1b.  | 1c. [ ] on farm[ ] no  | 1d.[ ] city [ ] private well [ ] filtered water[ ] bottled water[ ] other:\_\_\_\_\_\_\_\_\_\_\_\_\_\_  | 1e.[ ] yes[ ] no | 1f.[ ] center[ ] margin |
| 2a.From:To: | 2b. | 2c.[ ] on farm[ ] no | 2d. [ ] city [ ] private well [ ] filtered water[ ] bottled water[ ] other:\_\_\_\_\_\_\_\_\_\_\_\_\_\_  | 2e.[ ] yes [ ] no  | 2f.[ ] center[ ] margin |
| 3a.From:To: | 3b. | 3c.[ ] on farm[ ] no | 3d.[ ] city[ ] private well [ ] filtered water[ ] bottled water[ ] other:\_\_\_\_\_\_\_\_\_\_\_\_\_\_  | 3e.[ ] yes[ ] no | 3f. [ ] center[ ] margin |

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| **After the interview has been completed, enter the geocoordinates for the residence.**  | **Were the geocoordinates verified?**  |
| 1g.latitude \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ longitude \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ] not available, incomplete address | 1h.[ ] 1 yes - if yes, how? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ] 2 no  |
| 2g.latitude \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ longitude \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ] not available, incomplete address  | 2h. [ ] 1 yes - if yes, how? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ] 2 no  |
| 3g.latitude \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_longitude \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ] not available, incomplete address | 3h.[ ] 1 yes - if yes, how? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ] 2 no  |

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| **Selection Rationale:** | A detailed residential history assessment is preferable for exposure assessment because more information about each residence may be obtained as long as its location is known. Many chronic diseases have a long latency such that current address only may be insufficient for exposure assessment. |
| **Source:** | Goldberg DW, Wilson JP. 2009. USC WebGIS Services. Ritz, Beate. University of California, Los Angeles. Parkinson's Disease, Environment, and Genes Study (PEG Study),2001, Question numbers 1a. through 3f. |
| **Life Stage:** | Adult |
| **Language of source:** | English, Spanish |
| **Participant:** | Adult 18 + |
| **Personnel and Training Required:** | The interviewer must be trained to conduct personal interviews with individuals from the general population. The interviewer must be trained and found to be competent (i.e., tested by an expert) at the completion of personal interviews\*. The interviewer should be trained to prompt respondents further if a "don't know" response is provided. Manual geocoding requires some training and the individual who performs this activity should be tested to determine his/her competency at obtaining acceptable results. Training would also be necessary to perform quality control measures. \* There are multiple modes to administer this question (e.g., pencil and paper and computer-assisted interviews). |
| **Equipment Needs:** | While the source protocol was developed to be administered by a computer-assisted telephone instrument, the PhenX Working Group acknowledges these questions can be administered in a non-computerized format (i.e. pencil and paper instrument). Computer software is necessary to develop computer-assisted instruments. The interviewer will require a laptop computer/handheld computer to administer a computer-assisted questionnaire. Geocoding can be performed by web-based computer application or vendor. Mapping software, such as ArcGIS®, is essential to map geocoordinates. |
| **Standards:** |

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| **Standard** | **Name** | **ID** | **Source** |
| Common Data Element (CDE) | Person Residence History Text | 2954143 | [CDE Browser](https://cdebrowser.nci.nih.gov/CDEBrowser/search?elementDetails=9&FirstTimer=0&PageId=ElementDetailsGroup&publicId=2954143&version=1.0) |
| Logical Observation Identifiers Names and Codes (LOINC) | Environ exp residential hx proto | 62518-6 | [LOINC](http://s.details.loinc.org/LOINC/62518-6.html?sections=Web) |

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| **General references:** | Environmental Systems Research Institute, Inc. (ESRI). ArcGIS® software. |
| **Mode of Administration:** | Interviewer-administered questionnaire |
| **Derived Variables:** | None |
| **Requirements:** |

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| **Requirement Category** | **Required** |
| Major equipment | No |
| Specialized training | No |
| Specialized requirements for biospecimen collection | No |
| Average time of greater than 15 minutes in an unaffected individual | No |

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| **Process and Review:** | The Expert Review Panel has not reviewed this measure yet. |