

Attachment 6

**PATH Study
Additional Information on Biospecimens**

June 26, 2014

PATH Biospecimen Analytes by Specimen and Biomarker, Wave 2

Analyte	Preferred Matrix	Biomarker
Tobacco Biomarkers in Tobacco Users and Non-tobacco Users		
Nicotine and nicotine metabolites Tobacco user: cotinine and trans-3'-hydroxycotinine Non-tobacco user: cotinine	Serum	Exposure
Nicotine and nicotine metabolites Tobacco user: cotinine, trans-3'-hydroxycotinine, cotinine N-oxide, nicotine N-oxide, nornicotine, norcotinine; analogues: anabasine, anatabine Non-tobacco user: cotinine and trans-3'-hydroxycotinine	Urine	Exposure
Tobacco specific nitrosamines (TSNAs): NNAL, NNN, NNA, NAT, NAB, NNK	Urine	Exposure
Polycyclic aromatic hydrocarbons (pyrene, naphthalene, phenanthrene, fluorene)	Urine	Combustion
Cadmium, cobalt, uranium, lead, strontium, beryllium, manganese, and thallium	Urine, prescreened container	Toxicity
Speciated arsenic (As III, As V, dimethylarsinic acid (DMA), and monomethylarsonic acid (MMA))	Urine, prescreened container	Toxicity
Creatinine	Urine	For correction
4-ABP hemoglobin	Red blood cells, EDTA	Toxicity
VOCs metabolites	Urine	Combustion
Volatile nitrosamines	Urine	Combustion
Aromatic amines	Urine	Combustion
Cyanide	Urine	Combustion
Other Biomarkers in Tobacco Users and Non-tobacco Users		
C-reactive protein	Serum, red top or SST	Inflammation; Cardiovascular risk
Fibrinogen	Plasma, citrate	Cardiovascular risk
Interleukin 6	Plasma	Inflammation
sICAM (soluble intercellular adhesion molecule)	Plasma, EDTA or Serum, SST	Cardiovascular risk
F2-isoprostane / 8-epi-prostaglandin F2a	Urine	Oxidative stress

Population Assessment of Tobacco and Health (PATH) Study (NIDA)

Note. At Wave 2, blood will be collected and analyzed from the adults who age into the adult cohort from the youth cohort.

At Wave 2, urine will be collected and analyzed from a sample of 10,000 adults who also provided urine and blood for analysis at baseline. In addition, urine will be collected and analyzed from the adults who age into the adult cohort from the youth cohort.