

# National Longitudinal Study of Adolescent Health

Wave III  
Cotinine



Carolina Population Center  
University of North Carolina at Chapel Hill

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Frequency	Code	Response	Variable Name	Type/Length
		Respondent Identifier	<b>AID</b>	char 8
963		range 10000000 to 99999999		
		Cotinine (ng/mL)	<b>COTININE</b>	num 6, 1
963		range 1.7 to 5737.3		
		3-Hydroxycotinine (ng/mL)	<b>H_COTIN</b>	num 7, 1
963		range 3.8 to 60536.9		
		Cotinine or 3-Hydroxycotinine Minimum Flag	<b>MIN_FLAG</b>	num 1
5	1	results less than 10 ng/mL		
958	•	missing		
		3-Hydroxycotinine Flag	<b>HC_FLAG</b>	num 1
25	1	result greater than highest control, value is an estimate		
938	•	missing		

The Add Health Wave III survey asked all respondents to provide a urine specimen for STI testing. From the urine collected for STI testing, two milliliter aliquots of urine were archived for further research purposes. A study to measure urine nicotine metabolites in a multiracial/ethnic sample used these archived urine specimens from the respondent smokers to test for cotinine (COT) and trans-3'-hydroxycotinine (3HC).

At Wave III, 2,982 youths (excluding genetic cases) reported having smoked 30 out of the last 30 days and were assumed to have smoked on the survey day. A subsample of 1,016 cases was selected, which included all the minorities [African American (N=307), Hispanics (N=274), Asians (N=125)] and a random subsample of whites to match the number of African Americans (N=310). Out of the 1,016 cases, 967 respondents had urine samples that could be tested for cotinine and trans-3'-hydroxycotinine.

The Clinical Pharmacology Laboratory at the University of California, San Francisco, assayed the urine samples for COT and 3HC, using liquid chromatography mass spectrometry, as described by Dempsey *et al.* in *Clinical Pharmacology and Therapeutics*.<sup>1</sup> Since cotinine has a half-life of 16-20 hours,<sup>2</sup> the current smokers in the sample were expected to have detectable cotinine levels. Five cases with 3HC or COT values lower than 10 ng/mL have been flagged as they are below the limit of quantitation. The 3HC values above 20,000 ng/mL are flagged as the highest control for 3HC is 20,000 ng/mL.

<sup>1</sup> Dempsey D, Tutka P, Jacob III P, *et al.* Nicotine metabolic ratio as an index of cytochrome P450 2A6 metabolic activity. *Clin Pharmacol Ther* 2004; 76: 64-72.

<sup>2</sup> Hukkanen J, Jacob III P, Benowitz NL. Metabolism and disposition kinetics of nicotine. *Pharmacol Rev* 2005; 1: 79-115.