

Supplementary files

Supplementary table 1. Characteristics of participants in the validation with and without biological sample. Cuernavaca y Mexico City, 2011

	Without sample	With sample	Overall
	n=341(%)	n=1316(%)	n=1657(%)
Cigarette consumption			
Nonsmoker	274(21.6)	994(78.4)	1268
Smoker	57(17.8)	263(82.2)	320
Missing	10(14.5)	59(85.5)	69
Sex*			
Men	196(22.6)	672(77.4)	868
Women	127(16.5)	644(83.5)	771
Missing	18(100.0)	0(0.0)	18
Age			
<= 11	17(23.3)	56(76.7)	73(4.41)
12	31(19.3)	130(80.8)	161(9.7)
13	68(17.9)	313(82.2)	381(22.3)
14	56(16.4)	281(83.4)	337(20.3)
15	91(22.5)	314(77.5)	405(24.4)
16	45(25.3)	133(74.7)	178(10.7)
>=17	14(26.9)	38(73.1)	52(3.1)
Missing	19(27.1)	51(72.9)	70(4.2)
School grade*			
Seventh grade	98(18.8)	424(81.2)	522(31.5)
Eighth grade	55(16.8)	272(83.2)	327(19.7)
Ninth grade	98(19.8)	396(80.2)	494(29.8)
First school	89(28.8)	220(71.2)	309(18.7)
Missing	1(20.0)	4(80.0)	5(0.3)

*Value p <0.05

Supplementary table 2. Diagnostic performance of self-reported smoking by smoking frequency

Cotinine	Non-smokers	Smokers	Smokers (smoking days/month)					
			1-2	3-5	6-9	10-19	20-29	Daily
<50 ng/mL	991	222	129	47	24	12	6	4
≥50 ng/mL	3	41	5	5	5	7	6	13
Sensitivity		0.932	0.625	0.625	0.625	0.7	0.667	0.813
Specificity		0.817	0.885	0.955	0.976	0.988	0.994	0.996
PPV		0.156	0.037	0.096	0.172	0.368	0.5	0.765
NPV		0.997	0.997	0.997	0.997	0.997	0.997	0.997

Supplementary table 3. Sensitivity and specificity of “During the past 30 days (one month), on how many days did you smoke cigarettes” by two different urinary cotinine cut-offs: 30 ng/mL and 50 ng/mL (LOD).

Cotinine cut-off	AUC	Sensitivity	Specificity	PPV	PNV	LR(+)	Rho
50ng/mL	0.874	93.2(80.3-98.2)	81.7(79.4-83.8)	15.6(11.5-20.7)	99.7(99.0-99.9)	5.1	0.8
30ng/mL	0.793	76.0(64.5-84.8)	82.6(80.3-84.7)	21.7(17.0-27.2)	98.2(97.1-98.9)	5.0	0.7

*Limit of detection

Supplementary table 4. Diagnostic performance of self-reported smoking by ETS exposure

Cotinine	Unexposed to ETS		Exposed to ETS	
	Non-smokers	Smokers	Non-smokers	Smokers
<50 ng/mL	597	107	394	115
≥50 ng/mL	2	12	1	29
Sensitivity		0.857		0.967
Specificity		0.848		0.774
PPV		0.101		0.201
NPV		0.997		0.997

*Unexposed to ETS are adolescents reporting 0 days of exposure to ETS at home in the last week; exposed are adolescents reported any days of exposure to ETS at home in the last week

Supplementary table 5. Percentiles 50, 75 and 90 of urinary cotinine concentration by each combination of smoking status and ETS exposure

Smoking/ETS combinations		Urinary cotinine (ng/mL)		
		p50	p75	p90
Smoker	ETS exposure			
No	No	12.5	16.4	21.8
No	Yes	13.6	18.0	22.4
Yes	No	14.3	21.7	56.1
Yes	Yes	17.3	32.1	170.0
Total		13.5	18	23.7