

ASSESSING SECONDHAND SMOKE EXPOSURE WITH REPORTED MEASURES

SUPPLEMENTARY TABLES

Supplementary Table S1. Validation of questions about exposure to secondhand smoke using nicotine in the air and respirable suspended particulates at home

Reference Population	Validation Method	SHSe Question	Values
SHSe status (Yes/No)			
Air Nicotine			
O'Connor et al. 1995 [1] 254 NSMK pregnant women	Air nicotine (passive personal monitor) 1-week sampling period exposed ($>0.01 \mu\text{g}/\text{m}^3$)	SHSe status† “Exposed to someone else’s smoking for at least one hour during the monitoring week”	$\kappa = 0.29$ Sens = 51.9; Spec. = 77.0 PPV = 70.8; 36.0% miss.
Gehring et al. 2006 [2] Multi-country study presenting validation results by site. Homes with children in: Germany (aged 3-7 years) Netherlands (aged 4-6 years) Sweden (aged 5-9 years)	Air nicotine (passive monitor)† 2-week sampling period exposed ($\geq 0.24 \mu\text{g}/\text{m}^3$)	Smoking in the living room Any questionnaire reported smoking during measurement period	Germany (N=347) Sens=61.4; Spec=95.7 PPV=67.5; NPV=94.5 Netherlands (N=335) Sens=77.8; Spec=80.6 PPV=32.6; NPV=96.8 Sweden (N=354) Sens=0.00; Spec=96.8 PPV=0.00; NPV=97.4
Gehring et al. 2006 [2] Multi-country study presenting validation results by site. Homes with children in: Germany (aged 3-7 years) Netherlands (aged 4-6 years) Sweden (aged 5-9 years)	Air nicotine (passive monitor)† 2-week sampling period exposed ($\geq 0.24 \mu\text{g}/\text{m}^3$)	Smoking in the living room Daily questionnaire reported smoking during measurement period	Germany (N=347) Sens=55.3; Spec=98.0 PPV=77.8; NPV=94.5 Netherlands (N=335) Sens=73.3; Spec=95.6 PPV=66.7; NPV=96.8
		Smoking in the living room Any questionnaire reported smoking at child’s age 4 years (cohort data)	Germany (N=347) Sens=66.5; Spec=87.2 PPV=42.9; NPV=95.0 Netherlands (N=335) Sens=66.7; Spec=91.0 PPV=45.8; NPV=96.0 Sweden (N=354) Sens=55.6; Spec=81.2 PPV=7.20; NPV=98.6
Intensity of Exposure			
Air Nicotine			
Berman et al. 2003 [3] 123 households with children with asthma age 2-14 years	Air nicotine (passive monitor) 2 consecutive 1-week sampling periods	CPD smoked in the home	$r=0.36^*$
Leaderer et al. 1991 [4] 96 homes	Air nicotine (passive monitor) Main living area 1-week sampling period	No. of cigarettes smoked Diary	All samples: $r=0.82$ Samples with detectable nicotine (N=47): $r=0.74$
Marbury et al. 1993 [5] 48 families including 25 smoking families	Air nicotine (passive monitor) Activity room 1-week sampling period	No. of cigarettes smoked in the home	Activity room: All families: $r=0.86$ Smoking families: $r=0.77$ Bedroom: All families: $r=0.80$ Smoking families: $r=0.77$

Reference Population	Validation Method	SHSe Question	Values
Emerson et al. 1995 [6] 91 families with an asthmatic child 6-17 years old	Air nicotine (passive monitor) 2-week sampling period at baseline, 2-month and 6-month follow-up	No. of cigarettes smoked in the home Diary (2-week period)	Per week: $r=0.24-0.35^{**}$ Workday: $r=0.25-0.39^{**}$ Nonworkday: $r=0.19-0.29^{**}$
		No. of cigarettes smoked in the room where the filter was installed Diary	$r=0.25-0.41^{**}$
Zakarian et al. 2004 [7] 24 mothers with children aged ≤ 4 years recruited in a randomized controlled trial	Air nicotine (active monitor) 1-week sampling period	No. of cigarettes smoked inside the home per week by all smokers	Intervention $r=0.69$ Control $r=0.88^{**}$
O'Connor et al. 1995[1] 254 NSMK pregnant women	Air nicotine (passive personal monitor) 1-week sampling period	No. of cigarettes	At home: $r=0.34^{***}$ At work: $r=0.17^{**}$
		No. of smokers	At home: $r=0.35^{***}$ At work: $r=0.16^*$
Particulate Matter			
Leaderer et al. 1991 [4] 96 homes	RSP sampling	No. of cigarettes Diary	All samples $r=0.74$ Samples with detectable nicotine $r=0.63(N=47)$
Duration of Exposure			
Air Nicotine			
O'Connor et al. 1995 [1] 254 non-smoking pregnant women	Air nicotine (passive personal monitor) 1-week sampling period	Minutes of SHSe	All locations: $r=0.41^{***}$ At home: $r=0.34^{***}$ At work: $r=0.18^{**}$ In social settings: $r=0.28^{***}$
Berman et al. 2003 [3] 68 children with asthma age 2-14 years	Air nicotine (passive monitor) 2 consecutive 1-week sampling periods	Hours per week when someone in the household is smoking	$r=0.49^*$
Eisner et al. 2006 [8] 77 non-smoking adults with COPD	Air nicotine (passive personal monitor) 1-week sampling period	Hours of SHSe (Categorized: None, Lower (1-3 hours/week), Higher (≥ 4 hours/week))	$r=0.06$

Abbreviations: SHSe=secondhand smoke exposure; NSMK= Nonsmoking; κ =kappa; Sens=sensitivity; Spec=specificity; PPV=positive predictive value; NPV=negative predictive value; miss=misclassified; r =correlation coefficient; CPD: cigarettes per day; RSP=respiratory suspended particles; COPD= Chronic Obstructive Pulmonary Disease; †gold standard; * $p<0.05$; ** $p<0.01$; *** $p<0.001$.

Supplementary Table S2. Validation of questions about exposure to secondhand smoke using nicotine in the air and respirable suspended particulates at work

Reference Population	Validation Method	SHSe Question	Values
Intensity of Exposure			
<i>Air Nicotine</i>			
Thompson et al. 1989 [9] 36 restaurants	Air nicotine (active personal monitor) At least 1 hour	No. of cigarettes during sampling air time	r=0.78***
		No. of smokers	r=0.67***
Coultas et al. 1990 [10] 15 NSMK adults	Air nicotine (active personal monitor) 1 work shift sampling	No. of smokers	r=0.62*
Bolte et al. 2008 [11] 28 restaurants	Air nicotine (active monitor) 4 hours during main visiting hours	No. of smokers	r=0.61**
<i>Particulate Matter</i>			
Bolte et al. 2008 [11] 28 restaurants	RSP sampling 4 hours during main visiting hours Gravimetry or Spectrometry	No. of smokers	r=0.5*
Duration of Exposure			
<i>Air Nicotine</i>			
Coultas et al. 1990[10] 15 NSMK adults	Air nicotine (active personal monitor) 1 work shift sampling	Hours of exposure at work	r=0.54*
<i>Particulate Matter</i>			
Coultas et al. 1990 [10] 15 NSMK adults	RSP sampling	Hours of exposure at work	r= 0.53*

Abbreviations: SHSe=secondhand smoke exposure; NSMK= Nonsmoking; r=correlation coefficient; RSP=respiratory suspended particles; *p<0.05; **p<0.01; ***p<0.001.

Supplementary Table S3. Validation questions about exposure to secondhand smoke using nicotine in the air and respirable suspended particulates among children

Reference Population	Validation Method	SHSe Question	Values
Intensity of Exposure			
Emerson et al. 1995 [6] 91 families with an asthmatic child 6-17 years old	Air nicotine (passive monitor) 2-week sampling period at baseline, 2-month and 6-month follow-up	No. of cigarettes to which the child is exposed at home from parent Diary (2-week period)	Per week: $r=0.13-0.26^*$ Workday: $r=0.15-0.25^{**}$ Nonworkday: $r=0.07-0.23^{**}$
		No. of cigarettes to which the child is exposed at home from all smokers	Per week: $r=0.22-.35^{**}$
		No. of cigarettes to which the child is exposed in the room where the filter was installed Diary	$r=0.27-0.30^{**}$
		CPD to which the child is exposed in the entire home Diary	$r=0.23-0.31^{**}$
		Average CPD to which the child is exposed at home Diary	$r=0.27-0.43^{**}$
Zakarian et al. 2004 [7] 24 mothers with children aged ≤ 4 years recruited in a randomized controlled trial	Air nicotine (active monitor) 1-week sampling period	No. of cigarettes smoked by the mother	Per week: Intervention $r=0.43^*$ Control $r=0.66$
		No. of cigarettes to which the child was exposed from the mother	Intervention $r=0.66$ Control $r=0.83^*$
		No. of cigarettes to which the child was exposed at home from the mother	Intervention $r=0.50$ Control $r=0.64^*$
		No. of cigarettes smoked inside the home per week by the mother	Intervention $r=0.65$ Control $r=0.84^*$
Wong et al. 2004 [12] 130 children with asthma age 2-14 years	Air nicotine (passive monitor) 2-week sampling period	Hours of smoking indoors at home	Child's report (age >7 years) $r=0.42^{**}$ Parents' report $r=0.56^{**}$
Duration of Exposure			
Berman et al. 2003 [3] 48 children with asthma age 2-14 years	Air nicotine (passive monitor) 2 consecutive 1-week sampling periods	Hours per week that the child is exposed to SHS in the home	$r=0.36^*$
Wong et al. 2004 [12] 125 children with asthma age 2-14 years	Air nicotine (passive monitor) 2-week sampling period	Hours of SHSe of child at home indoors	Child's report (age >7 years) $r=0.25^{**}$ Parents' report $r=0.36^{**}$

SHSe=secondhand smoke exposure; r =correlation coefficient; CPD= cigarettes per day; * $p<0.05$; ** $p<0.01$; *** $p<0.001$.

Supplementary Table S4. Validation questions on indices of exposure to secondhand smoke using nicotine in the air

Reference Population	Validation Method	SHSe Question	Values
Index of Exposure			
<i>Air Nicotine</i>			
Coghlin et al. 1989 [13] 19 non-smoking adults age 25-54 years	Air nicotine (passive personal monitor) 1-week sampling period	Indices of SHSe 7-day Diary	h: r=0.84
			hs: r=0.79
			hsp: r=0.91
			hspi(3-point scale): r=0.890
			see reference for other indexes
			Indices of SHSe
			h: r=0.82
			hs: r=0.87
			hsp: r=0.95
			hspi(3-point scale): r=0.88
see reference for other indexes			
Indices of SHSe Refined hsp (hsp*)= (hsp)/ hsi(5,10 scale)	Among subjects with high levels of social exposure (N=33)	hsp: r=0.631 hsp*: r=0.890	
	Among all subjects: hsp*: r=0.980		
	see reference for other indexes		

Abbreviations: SHSe=secondhand smoke exposure; r=correlation coefficient; h=hours; s=no. of smokers; p= proximity; i=intensity (e.g. hs: hours*smokers); * p<0.05;** p<0.01; ***p<0.001.

Supplementary Table S5. Validation questions about exposure to secondhand smoke among children using nicotine in the hair

Reference Population	SHSe Question	Exposure Source	Values
Intensity of Exposure			
Nafstad et al. 1995 [14] 72 children 1-3 yrs old	CPD to which the child is exposed		r=0.64***
Al-Delaimy et al. 2000 [15] 112 children 3 mo.- 10 yrs old vs. 76 SMK or NSMK mothers	No. of smokers	None 1 smoker 2 smokers >2 smokers	<0.1 ng/mg 0.28 1.46 2.02 ***
Al-Delaimy et al. 2002 [16] 297 children 3–27 months old	No. of smokers		0.69***
Al-Delaimy et al. 2000 [15] 112 children 3 mo.- 10 yrs old vs. 76 SMK or NSMK mothers	CPD smoked in the house	Among smoking households, there was an increase in hair nicotine levels per CPD smoked by:	
		Total	4.5%**
		Mother	10.5%***
		Father	4.0%*
		All other adults	5.0%*
Al-Delaimy et al. 2002 [16] 297 children 3–27 months old	CPD smoked inside the house	Total	r=0.7
		Parents	r=0.68
Woodruff et al. 2003 [17] 134 children 1-9 yrs old	No. of cigarettes smoked in the presence of the child in the past month		r=0.23** r=0.22* ^a
Wipfli et al. 2008 [18]	No. of smokers	Total	None 1.0 ^b 1 smoker 2.3 (1.8, 2.8) ≥2 smokers 3.8 (3.0, 4.9)
	CPD		<10 1.0 ^b 10-19 1.5 (1.2, 1.9) ≥20 1.5 (1.2, 1.9)
	Policy restricting smoking in the home		Yes 1.0 ^b No 2.6 (2.0, 3.3)
	Smokers sharing child's bedroom		None 1.0 ^b 1 2.1 (1.6, 2.5) 2 3.4 (2.3, 5.0) 3 4.7 (1.5, 14.2)
	Mother also smokes		No 1.0 ^b Yes 2.9 (2.1, 4.0)
	Mother's CPD		<10 1.0 ^b 10-19 2.6 (1.6, 4.4) ≥20 3.7 (2.3, 6.1)

Abbreviations: SHSe=secondhand smoke exposure; SMK: Smoker; NSMK: Nonsmoking; CPD: cigarettes per day. r=correlation coefficients; * p<0.05;** p<0.01; ***p<0.001. ^a hair cotinine; ^bGeometric Mean Ratio.

Supplementary Table S6. Validation of questions about exposure to secondhand smoke using cotinine in urine among adults and children

Reference Population	Validation Method of Biomarker	Exposure Source	Values
Adults			
SHSe status (Yes/No)			
Question details			
O'Connor et al. 1995 [1] 282 NSMK pregnant women	ng cotinine per mL exposed (>2 ng/mL)	All sources	$\kappa = 0.08$; Sens. = 56.0; Spec. = 51.8 PPV = 53.7; 46.1% miss.
SHSe status (Yes/No): "Exposed to someone else's smoking for at least one hour during the monitoring week"			
Duration of exposure			
Coultas et al. 1989 [19] 145 NSMK adults	ng cotinine per mg creatinine	All sources	$r=0.29-0.32$
No. of hours of SHSe 24 hours before			
Cummings et al. 1990 [20] 663 NSMK and ex-smokers adults	ng cotinine per mL	All sources	0.18* Adjusted for number of exposures to SHS
No. of minutes of SHSe in the previous 4 days			
Intensity of exposure			
Cummings et al. 1990 [20] 663 NSMK and ex-smokers adults	ng cotinine per mL	All sources	0.19* Adjusted for number of exposures to SHS:
Number of smokers			
SHSe at work			
Coultas et al. 1990 [10] 14 NSMK adults	ng cotinine per mg creatinine	All sources at work	Hours of exposure at work $r=0.57^*$
Hours of exposure at work			Number of smokers during a work shift
Total number of smokers during a work shift			$r=0.39$
Children			
SHSe status (Yes/No)			
Question details			
Seifert et al. 2002 [21] 50 children 8.5 mo-9.5 yrs old	ng cotinine per mg creatinine exposed (>30ng/mg)	Parents	76% [†]
		Parents and others	80% [†]
SHSe status (Yes/No)			
Wong et al. 2002 [22] 145 children aged ≥ 7 yrs	ng cotinine per mL	Mother	$r=0.38$
SHSe status (Yes/No)			

Reference Population	Validation Method of Biomarker	Exposure Source	Values
Callais et al. 2003 [23] 310 children	CCR	Father Parents	r=0.35 k=0.08
SHSe status (Yes/No) within 2 days			with asthma N=154 k=0.11 without asthma N=156 k=0.054
Johansson et al. 2005 [24] 153 smoking parents of children aged 2.5 to 3 years	ng cotinine per mL exposed (>6 ng/mL)	Parents	Sens.=0.3;Spec.=0.9;ROC=0.69
SHSe status (Yes/No) Non SHSe: parents smoking outside with door closed	ng cotinine per mL exposed (>3 ng/mL)	Parents	Sens.=0.6;Spec.=0.7
Boyaci et al. 2006 [25] 188 children aged 6-11 years	ng cotinine per mL exposed (>10 ng/mL)	All sources	Home κ = 0.33***;Sens. =70;Spec. =71
SHSe status (Yes/No) in the home		All sources	Same room κ = 0.11***;Sens. =38.9;Spec. =79.5
SHSe status (Yes/No) in the same room			
Gehring et al. 2006 [2] 347 homes with children aged from 3 to 7 years	ng cotinine per mL exposed (>2 ng/mL)	All sources	24 hrs before urine sampling Sens=46.2;Spec=97.6 PPV=75.0;NPV=92.2
SHSe status (Yes/No) 24 hours before urine sampling			Daily questionnaire Sens =42.3;Spec =93.0 PPV =47.8;NPV =91.4
SHSe status (Yes/No) Daily questionnaire reporting smoking			Daily questionnaire at 4 years old Sens =52.2;Spec =89.5 PPV =49.0;NPV =90.7
SHSe status (Yes/No) Any questionnaire reported smoking at child's age 4 years			
Ekerbicer et al. 2007 [26] 347 children aged 9-11 yrs	ng cotinine per mL exposed (>10 ng/mL)	Parents and others <i>Children's self-report</i>	Sens= 89% Spec =92%
SHSe status (Yes/No)			
Intensity of exposure			
Question details			
Willers et al. 2000 [27] 104 children aged 8-13 years with asthma	µg cotinine per g creatinine	Parents and others	r=0.76***
CPD smoked in the home		Mother	r=0.74***
		Father	N=102 r=0.41**
Al-Delaimy et al 2002 [16] 158 children 3–27 months old	ng cotinine per mg creatinine	Parents	r=0.67***
CPD smoked inside the home		Household members	r=0.61
		Household members and visitors	r=0.59
Wong et al. 2002 [22] 146 children aged ≥7	ng cotinine per mL	Parents and others	r=0.41
CPD smoked in the home			
Berman et al. 2003 [3] 137 households with children with asthma age 2-14 years	ng cotinine per mL	Parents and others	r=0.44*
CPD smoked in the home			

Reference Population	Validation Method of Biomarker	Exposure Source	Values
Tyc et al. 2009 [28] 124 parents of a child with cancer aged <18 years In parenthesis is listed which parent reported the exposure	ng cotinine per mL	All parents (all sources)	r=0.48**
		All parents (SMK parent)	N=123 r=0.34**
		SMK parent (Self)	N=90 r=0.35***
		SMK parent (all sources)	N=90 r=0.54***
		NSMK parent (SMK parent)	N=33 r=0.16
		NSMK parent (all sources)	N=34 r=0.38*
3-Day Average CPD to which the child is exposed in the entire home ("How many cigarettes did you smoke in your home and to how many was your child exposed?")			
Marbury et al. 1993 [5] 48 children age under 2 years 25 smoking families	ng cotinine per mg creatinine	All sources	r=0.80 Smoking families: r=0.74
No. of cigarettes smoked in the home			
Callais et al. 2003 [23] 310 children 154 children with asthma 156 children without asthma	CCR	Parents	r=0.22*** with asthma r=0.27*** without asthma r=0.17*
Cigarette equivalents smoked at home 2 days prior to collection.			
Hovell et al. 2002 [29] 204 children with asthma 3-17 years old	ng cotinine per mL	All smokers	r=0.34-0.47***
No. of cigarettes smoked while the child was in the same room or car in the past 7 days			
Zakarian et al. 2004 [7] 64 mothers with children aged ≤4 years recruited in a randomized controlled trial. Baseline, 3-, 6-, and 12-month follow-up.	ng cotinine per mL	Mother	At home r=0.42-0.59**
		All sources	At home, in the car, and elsewhere r=0.43-0.67**
		Mother	Inside the home r=0.40-0.63**
		All smokers	Inside the home r=0.45-0.65***
No. of cigarettes to which the child was exposed: 1) at home; 2) at home, in the car, and elsewhere, or 3) inside the home			
No. of cigarettes smoked per week		Mother	Cigarettes smoked per week r=0.25-0.53**
Jurado et al. 2004 [30] 115 parents of children aged 3 to 6 years	ng cotinine per mg creatinine	Parents	r=0.31***
No. of smoking parents			
Al-Delaimy et al 2002 [16] 158 children 3–27 months old	ng cotinine per mg creatinine	Household members	r=0.59***
		Household members and visitors	r=0.61
No. of smokers			
Wong et al. 2002 [22] 144 children aged ≥7 yrs	ng cotinine per mL	Parents and others	r=0.12

Reference Population	Validation Method of Biomarker	Exposure Source	Values
Number of smokers			
Chan et al. 1995 [31] 4 families (1 NSMK 3 SMK) 9 children aged 5-14 yrs	Day-averaged CCR (ng/mg)	Father	in the living room N=52 r=0.77 in the living room in a week N=48 r=0.77
Stepans et al. 1999 [32] 15 newborns	ng cotinine per mg creatinine	Mother	At 2 weeks r=0.71** At 4 weeks (N=14) r=-0.14 At 6 weeks (N=14) r= 0.61
No. of butts collected during 24 hours			
Exposure Scores			
Question details			
Stepans et al. 1999 [32] 15 newborn babies	ng cotinine per mg creatinine		At 2 weeks r=0.09 At 4 weeks r=-0.44 At 6 weeks r=-0.02
Composite score of SHSe			
Seifert et al. 2002 [21] Parents of 50 children aged 8.5 months to 9.5 years	ng cotinine per mg creatinine	Both parents and another source at least once a week	r=0.62***
SHSe intensity score: from 0=no exposure to 5=highest rank of exposure			
Willers et al. 2004 [33] 23 children aged 1-13 years	nmol cotinine per mg creatinine	Parents and others	r=0.61**
SHSe Intensity[‡]			

Abbreviations: SHSe=secondhand smoke exposure; SHS: Secondhand smoke; † Percent agreement; NSMK: Nonsmoking; r: correlation coefficient; κ: kappa; Sens: sensitivity; Spec: specificity; PPV :positive predictive value; NPV: negative predictive value; CPD: cigarettes per day; miss: misclassified; CCR: Cotinine Creatinine ratio; SMK: smoking; *p<0.05; ** p<0.01; ***p<0.001. ‡ 0=none of the family members smokes or has smoked since their child's birth; 1=none smokes indoors or had quit smoking since 6 months; 2=only father smokes indoors at home; 3=only mother smokes indoors at home; 4= two family members or more smoke indoors at home.

Supplementary Table S7. Validation of questions about exposure to secondhand smoke among adults and children using cotinine in saliva, serum, plasma, or blood.

Reference Population Question details	Validation Method of Biomarker	Exposure Source	Values
Adults			
Chen et al. 2002 [34] 1153 NSMK adults	ng cotinine per mL serum	All sources	$\kappa = 0.13-0.15^{**}$
Daily SHSe status	exposed (>0.0 ng/mL)		
Emmons et al 1994 [35] 184 NSMK adults	ng cotinine per mL saliva	All sources	$r=0.36^{***}$
No. of minutes of SHSe			
Chen et al. 2002 [34] 1153 NSMK adults	ng cotinine per mL serum	All sources	$r=0.34-0.35^{***}$
Daily hours of SHSe	exposed (>0.0 ng/mL)		
SHSe at work			
Coultas et al. 1990 [10] 11 NSMK adults	ng cotinine per mL saliva	All sources at work	Hours of SHSe $r=0.45$
Hours of SHSe at work		All sources at work	Number of smokers $r=0.63^*$
No. of smokers during a work shift			
Children			
SHSe status (Yes/No)			
Jarvis et al. 1985 [36] 2594 children	ng cotinine per mL saliva	Mother	$r=0.56$
		Father	$r=0.51$
Smoking status of parent			
Lee et al 2005 [37] 341 children age 13-17 years 304 parents	ng cotinine per mL exposed (>0.10 ng/mL) saliva	Parents <i>Children's self-report</i>	$\kappa = 0.44 [0.31-0.56]$ Sens. = 46; Spec. = 93 PPV = 63; NPV = 87
SHSe status		Parents <i>Parents' report</i>	$\kappa = 0.44 [0.29-0.59]$ Sens. = 69; Spec. = 90 PPV = 39; NPV = 97
		Parents <i>Both report</i>	$\kappa = 0.47 [0.32-0.62]$ Sens. = 85; Spec. = 90 PPV = 37 NPV = 99
Duration of exposure			
Jedrychowski et al 2008 [38] 467 NSMK pregnant women (third trimester) 18-35 years of age	μg cotinine per mL cord blood	Household members	$r= 0.52$
Hours of SHSe at home			
Intensity of exposure			
Willers et al. 2000 [27] 72 children aged 8-13 years with asthma	μg cotinine per L plasma	Parents and others	$r=0.59^{***}$
CPD		Mother	$r=0.59^{***}$
		Father	$r=0.40^{**}$
Wilkinson et al 2006 [39] 2,516 participants aged 4-16 years (NHANES III). Results available by gender, race, education, poverty, region, and urban/rural.	μg cotinine per mL serum	Parents and others	$\kappa = 0.54 [0.51-0.57]$ Sens. =65 Spec. = 92
Any household smoker ("Does anyone who lives here smoke cigarettes in the home?")		Parents and others	$r= 0.67$
No. of household smokers			
Jedrychowski et al 2008 [38] 467 NSMK pregnant women (third trimester) 18-35 years of age	μg cotinine per mL cord blood	Household members	$r= 0.52$
CPD smoked in their presence: 1) at home or 2) at home or work		Household members and co-workers	$r= 0.54$

Abbreviations: SHSe=secondhand smoke exposure; SHS: Secondhand smoke; NSMK= Nonsmoking; r=correlation coefficient; κ =kappa; Sens=sensitivity; Spec=specificity; PPV=positive predictive value; miss=misclassified; CCR=Cotinine Creatinine ratio; * $p<0.05$; ** $p<0.01$; *** $p<0.001$. †Percent agreement; NPV: negative predictive value; CPD: cigarettes per day; miss=misclassified;

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