

**TITLE** Misclassification of smoking habits. An updated review  
of the literature

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### **Supplementary File 1**

#### **Avoidance of overlaps**

For some studies, misclassification results are provided in several reports. Our analyses aim to include the greatest amount of data available but not include the same participants more than once, that is to say they aim to avoid double-counting. The details included in each study report vary, so some difficult decisions had to be made on which of them to include. Also, some reports give details that are useful for some of our analyses but not for others. For example, a study report may compare misclassification as measured using several different body fluids. For such a study, our analyses of misclassification categorised by the body fluid should include all these results, but our overall analyses should include just one of them. This means that some study reports can be excluded from all analyses while others are excluded only from some of them, by careful selection of the result used in each analysis. The table below concerns each study for which there is more than one study report and each report that provides multiple estimates of misclassification. It identifies those that are excluded from all analyses (as “Reports excluded”). It also identifies those study reports that should be included in only some analyses.

The study reports are listed according to the name of the study they report (or a study name based on the first author’s name) and then by the earliest study year reported. Study reports of more than one year generally report data pooled for those years. Where results for individual years are available, this is mentioned. Under “Reports included” and “Reports excluded” the source reference is given, together with details of the types of information available from that source. The smoker categories mentioned are those for which misclassification details are available; they exclude those categories reporting only the number of participants with cotinine measurements. “M, F” means that details are provided for the sexes separately. Cut point 1 is the lower cut point; cut point 2 is the higher, more conservative cut point. The Notes column gives additional information. For excluded reports it gives the reason for exclusion.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
ABC (Aboriginal Birth Cohort)	2005-08	M, F <sup>[1]</sup>	Sexes combined <sup>[1]</sup>	Single sex results preferred.
Arnold	1995-96	F; African American <sup>[2]</sup>		Separate populations: no overlap of data.
	1995-96	F; White <sup>[2]</sup>		
Audrain-McGovern	2007-09	Non-smokers; sexes combined; 12-week follow-up <sup>[3]</sup>		Non-smokers: 54.
	2007-09		Non-smokers; sexes combined; 24-week follow-up ( <sup>[3]</sup> )	Non-smokers: 43. Smaller sample size.
Birmingham II	1986-91	Ex and current smokers; F <sup>[4]</sup>		Ex-smokers: 126. Current smokers: 566.
	NS		Ex and current smokers; F <sup>[5]</sup>	Ex-smokers: 107. Current smokers: 441.
				Cites <sup>[4]</sup> as its source reference. Smaller sample size.
BRHS baseline (British Regional Heart Study)	1978-80		Non-smokers; M only; age 40-59 <sup>[6]</sup>	Non-smokers: 2158. Smaller sample size.
	1978-80	Non-smokers; M only; age 40-59 <sup>[7]</sup>		Non-smokers: 2183.
BRHS follow-up (British Regional Heart Study + study of women)	1998-2000		Non-smokers; M only; age 60-79 <sup>[7]</sup>	Non-smokers: 2183. Smaller sample size.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
	1998-2001	Non-smokers; sexes combined; age 60-79 <sup>[8]</sup>		Non-smokers: 7161.
	1998-2001		Non-smokers; sexes combined; age 60-79 <sup>[9]</sup>	Non-smokers: 4833. Smaller sample size.
BUPA	NS	Non- and current smokers; M only <sup>[10]</sup>		Non-smokers: 221 Current smokers: 232  Includes colleagues in Oxford.
	NS		Non- and current smokers; sexes combined <sup>[11]</sup>	Non-smokers: 184 Current smokers: 49  Smaller sample size.
CHDS (Child Health and Development Studies in California)	1964-67	Non- and current smokers; cut point 14 ng/ml serum <sup>[12]</sup>		Non-smokers: 2140. Current smokers: 1203.  Greatest sample size, Cut point nearer to our ideal value.
	1964-67		Non-smokers, cut point 10 ng/ml serum <sup>[13]</sup>	Non-smokers: 2292.  Smaller sample size.
	1964-67		Non- and current smokers, cut point 10 ng/ml serum <sup>[14]</sup>	Non-smokers: 1740. Current smokers: 935.  Smaller sample size.
	1964-67		Non- and current smokers, cut point 10 ng/ml serum <sup>[15]</sup>	Non-smokers: 1459. Current smokers: 708.  Smaller sample size.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
CHMS (Canadian Health Measures Survey)	2007-09	Non- and current smokers; sexes combined; age 12-79 <sup>[16]</sup>		Non-smokers: 3426. Current smokers: 797.
	2007-09		Non-smokers; sexes combined age 6-79 <sup>[17]</sup>	Non-smokers: 4590.  Includes children (hence larger non-smoker sample size); no current-smoker results.
Copenhagen	1985-86		Men without CVD; never and current smokers <sup>[18]</sup>	Never-smokers: 363. Current smokers: 1710.  Smaller sample.
	1985-86	Men with or without CVD; non and current smokers <sup>[19]</sup>		Non-smokers: 1405. Current smokers: 1865.  No data available separately for men with CVD that could have been used in study type analysis.
	1985-86		Men; never, ex and current smokers <sup>[20]</sup>	Never smokers: 364. Ex-smokers 1112. Current smokers 1829.  Unpublished analysis. Prefer the published results.
				This report was used in the earlier review <sup>[21]</sup> where it was identified as the Gyntelberg study.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
DC_HOPE	2001-03	Ex-smokers; F; cut point 2 <sup>[22]</sup>		Ex-smokers: 305.
				Ex-smoker values provide estimates for additional rate types.
	2001-03		Non-smokers; F; cut point 1 <sup>[23]</sup>	Non-smokers: 691.
				Smaller overall sample size. Some inconsistency in the values reported. Single cut-point.
de Chazeron	2001-03	Non- and current smokers; F; cut points 1 and 2 <sup>[24]</sup>		Non-smokers: 588. Current smokers: 126. Total: 714.
	2001-03		Non-smokers; F; cut point 1 <sup>[25]</sup>	Non-smokers: 491.
				Smaller sample size. Single cut-point.
de Chazeron	2003-04		Non- and current smokers; F <sup>[26]</sup>	Non-smokers: 698. Current smokers: 211.
				Smaller sample size
EHLS (Epidemiology of Hearing Loss Study)	2003-04	Non- and current smokers; F <sup>[27]</sup>		Non-smokers: 781. Current smokers: 226.
	1998-2000	Non-, never, ex- and current smokers; sexes combined; cut points 1 and 2 <sup>[28]</sup>		Non-smokers: 525. Current smokers: 55.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
	1998-2000		Non- and current smokers; sexes combined; cut point 1 only <sup>[29]</sup>	Non-smokers: 514. Current smokers: 128.
Fidler	1999		Non- and current smokers; sexes combined; school year 7 <sup>[30]</sup>	All else being similar, this report was excluded as having results for only one cut point.
	2000		Non- and current smokers; sexes combined; school year 8 <sup>[30]</sup>	Non-smokers: 1937. Current smokers: 104. Total: 2041.
	2001		Non- and current smokers; sexes combined; school year 9 <sup>[30]</sup>	Non-smokers: 2018. Current smokers: 23. Total: 2041.
	2002		Non- and current smokers; sexes combined; school year 10 <sup>[30]</sup>	Non-smokers: 1576. Current smokers: 465. Total: 2041.
	2003	Non- and current smokers; sexes combined; school year 11 ( <sup>[30]</sup> )		Non-smokers: 1457. Current smokers: 584. Total: 2041.
				This study gathered data annually on the same set of participants.
				Keep the result for the age group closest to adult age.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
FINRISK	1992	Non-, never, ex- and current smokers; M, F; cut points 1 and 2; four areas of Finland including North Karelia <sup>[31]</sup>		Non-smokers: 4355. Never-smokers: 2508. Ex-smokers: 1847. Current smokers: 1489.
	1992		Non-, never, ex- and current smokers; M, F; cut points 1 and 2; North Karelia <sup>[32]</sup>	Non-smokers: 1069. Never-smokers: 802. Ex-smokers: 267. Current smokers: 362.  Smaller sample size.
Fontham (controls)	1985-88		Never-smokers; F <sup>[33]</sup>	Never-smokers: 684.  Smaller sample size.
	1985-90	Population controls; never-smokers; F <sup>[34]</sup>		Never-smokers: 1064
Fontham (cases)	1985-90	Lung cancer patients; never-smokers; F <sup>[34]</sup>		Never-smokers: 356.  No overlap with Fontham controls.
George	1996-98	Non- and current smokers; F, early pregnancy <sup>[35]</sup>		Non-smokers: 725. Current smokers: 60. Total: 785.
	1996-98		Non- and current smokers; F, late pregnancy ( <sup>[35]</sup> )	Non-smokers: 737. Current smokers: 48. Total: 785.
				No real difference between these two reports. One needs to be rejected.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
Haddow II	1979-83	Non- and current smokers <sup>[36]</sup>		Non-smokers: 3341. Current smokers: 4722.
	1981-82		Non-smokers only <sup>[37]</sup>	Non-smokers: 586.  Smaller sample size.
Haddow III	1984-85	<sup>[38]</sup>		No overlap in dates with study Haddow II.
HALS2 (Health and Lifestyle Survey 1991-1992)	1992	Non-smokers; sexes combined <sup>[39]</sup>		Non-smokers: 2649.
	1991-92		Non-smokers; sexes combined <sup>[40]</sup>	Non-smokers: 1842.  Smaller sample size
Hegaard	1996-98	Non- and current smokers; F <sup>[41]</sup>		Non-smokers: 261. Current smokers: 359.
	1996-98	Ex-smokers; F <sup>[42]</sup>		Ex-smokers: 63.  Ex-smoker values provide estimates for additional rate types.
Hellemons	2001-03	Non-, never, ex- and current smokers; sexes combined; urine; cut points 1 and 2 <sup>[43]</sup>		Non-smokers: 472. Current smokers: 131.  Include in all analyses.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
	2001-03	Non-, never, ex- and current smokers; sexes combined; plasma; cut points 1 and 2 <sup>[43]</sup>		Non-smokers: 472. Current smokers: 131.  Include only in analyses by body fluid tested.
Holiday	NS	Non- and current smokers; sexes combined; smokers considered <sup>[44]</sup>		Non-smokers: 343. Current smokers: 271. Total: 614.
	NS	Non- and current tobacco users; sexes combined; smokers and smokeless tobacco users considered <sup>[44]</sup>		Non-users: 277. Current users: 337. Total: 614.  Include only in analyses by tobacco products considered.
HSE (Health Survey for England)	1993	M, F <sup>[45]</sup>		We have no alternative source for this year.
	1994	Non-, never, ex- and current smokers; sexes combined <sup>[46]</sup>		
	1994 and 1996		Non-, never and ex-smokers; sexes combined ([ <sup>47</sup> ])	Excluding this source loses some information (never-smoker / ex-smoker split in 1996) but avoids double-counting in 1994 and 1996.
	1996 – 2004	Non- and current smokers; sexes combined; any smoking <sup>[48]</sup>		
	1996 – 2004	Non- and current smokers; sexes combined; cigarette smoking <sup>[48]</sup>		Include only in analyses by tobacco products considered.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
	1998 - 2001	Never-smokers; M, F; individual years <sup>[49]</sup>	Never-smokers; M, F; years combined ( <sup>[49]</sup> )	Other reports for these years provide non-smoker and current-smoker values only. Never-smoker values provide estimates for additional rate types.
	1999	Non-smokers; M, F <sup>[50]</sup>		All the information is available in the data for individual years. Including the years-combined values would double-count.
	1999 and 2004		Bangladeshi women ( <sup>[51]</sup> )	Non-representative sub-sample.
	2001	With COPD, without COPD <sup>[52]</sup>		Include only in study type analyses.
	2002	Non-, never, ex- and current smokers; M, F <sup>[53]</sup>		Use never and ex-smoker data in all analyses.
	2003	Non-, never, ex- and current smokers; sexes combined <sup>[54]</sup>		Use non- and current smoker data in comparison of male and female rates only.
				Use never and ex-smoker data only. These values provide estimates for additional rate types for 2003.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
INMA	2003-08		Non-smokers, F only, cut point 50 ng/ml urine <sup>[55]</sup>	Results presented are very similar to those in <sup>[56]</sup> .  Non-smokers: 1868.
	2004-08	Non-smokers; F only; cut point 100 ng/ml urine <sup>[57]</sup>		All else being very similar, this report was excluded as having a cut point further from our ideal value.  Non-smokers: 1845.
	2004-08	Non- and current smokers; F only; cut point 50 ng/ml urine <sup>[56]</sup>		Non-smokers: 1845. Current smokers: 418.  Exclude the non-smoker data as it uses a cut point further from our ideal value.  Use the current-smoker data only.
KNHANES (Korean NHANES)	2008	Non-, never, ex- and current smokers; M, F <sup>[58]</sup>		KNHANES IV year 2008 only. Non-smokers: 1319 M, 2887 F. Current smokers: 1098 M, 181 F.  Use never and ex-smoker data only.
	2008-09		Non- and current smokers; M, F <sup>[59]</sup>	KNHANES IV years 2008 and 2009. Non-smokers: 2574 M, 5281 F. Current smokers: 2072 M, 350 F.  Smaller sample size.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
	2008-09	Never smokers only; F only; age 55+[60]		KNHANES IV years 2008 and 2009. Never-smokers: 1472 F.  Include in analysis by age only.
	2008-10	Non- and current smokers; M, F[61]		KNHANES IV (years 2008 and 2009) and V (2010 only). Non-smokers: 3004 M, 5857 F. Current smokers: 2354 M, 344 F.  This provides the greatest sample size.
	2008-10		Non- and current smokers; F only[62]	KNHANES IV (years 2008 and 2009) and V (2010 only).  Only participants with spirometry measurements were considered. Non-smokers: 4313 F. Current smokers: 271 F.  Smaller sample size.
	2008-10		Non-smokers only; F only [63]	KNHANES IV (years 2008 and 2009) and V (2010 only). Non-smokers: 5307 F.  Smaller sample size.
	2008-10		Never and current smokers; M only[64]	Due to the cut point values used, relevant results are available for current smokers only.

Study	Years reported	Reports included	Reports excluded	Notes
	2010-12	Never smokers only; F only <sup>[65]</sup>		KNHANES V years 2010-12. Never-smokers: 1568 F.  Other reports for 2010 provide non-smoker and current-smoker values only. Never-smoker values provide estimates for additional rate types.
Lifestyle and Appetite Study	1985	Non- and current smokers; cut points 1 and 2; M, F <sup>[66]</sup>		Non-smokers: 808. Current smokers: 176.
	1985		Non- and current smokers; cut points 1 and 2; sexes combined <sup>[67]</sup>	Non-smokers: 808. Current smokers: 176.  Sexes separately preferred.
	1985		Non-smokers; cut points 1 and 2; sexes combined <sup>[68]</sup>	Non-smokers: 808. Current smokers: 176.  Sexes separately preferred.
MFHS (Mini Finland Health Survey)	1978-80	Non-, never and ex-smokers; sexes combined; cut point 2 only <sup>[69]</sup>		Non-smokers: 5296. Never-smokers: 3852. Ex-smokers: 1444.
	1978-80 participants re-examined in 2000-01	Non- and current smokers; sexes combined; cut point 2 only <sup>[70]</sup>		Non-smokers: 632. Current smokers: 152.  Smaller sample size.  Use the current-smoker data only.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
MONICA Germany	1984-85	M; age 25-44 <sup>[71]</sup>		
	1984-85	M; age 45-64 <sup>[71]</sup>		
	1984-85		M; all ages <sup>[71]</sup>	No additional information in the all-ages results.
	1984-85	F; age 25-44 <sup>[71]</sup>		
	1984-85	F; age 45-64 <sup>[71]</sup>		
	1984-85		F; all ages <sup>[71]</sup>	No additional information in the all-ages results.
MONICA Scotland	1986, 1989, 1992 and 1995	Non-, never, ex- and current smokers; M, F <sup>[72]</sup>		Non-smokers: 2783. Current smokers: 2123.
	1995		Non-smokers; sexes combined <sup>[73]</sup>	Non-smokers: 301.  Smaller sample size.
NHANES (early years)	1988-1991		Data by race; sexes combined <sup>[74]</sup>	Non-smokers: 5046. Current smokers: 2136.  Smaller sample size.
	1988-1994		Sexes combined <sup>[75]</sup>	Non-smokers: 11083. Current smokers: 1894.  Smaller sample size.
	1988-1994		Sexes combined <sup>[76]</sup>	Non-smokers: 11421. Current smokers: 4990.  Similar sample size. Separate sexes preferred.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
	1988-1994	Non- and current smokers; age 18+; M, F <sup>[77]</sup>		Non-smokers: 11629. Current smokers: 3553.  Separate sexes preferred.
	1988-1994	Non- and current smokers; adolescents aged 12-17; M, F <sup>[78]</sup>		Non-smokers: 1894. Current smokers: 213.  Adolescents: additional participants.
	1988-1994		Non- and current smokers; sexes combined <sup>[79]</sup>	Non-smokers: 1839. Current smokers: 434.  Smaller sample size.
	1988-1994	Never-smokers; sexes combined <sup>[80]</sup>		Never-smokers: 7828.  Never-smoker values provide estimates for additional rate types.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
NHANES (later years)	1999-2000		Sexes combined <sup>[81]</sup>	Non-smokers: 2761. Current smokers: 923.  Smaller sample size than <sup>[82]</sup> .
	1999-2000	Non- and current smokers; adolescents and adults separately; sexes combined <sup>[82]</sup>		Age 12-19: Non-smokers: 1430. Current smokers: 244.
				Age 20+: Non-smokers: 2688. Current smokers: 935.
	1999-2002			Smaller sample size than the total in <sup>[83]</sup> and no data by sex but, in combination with <sup>[84]</sup> , provides data for all years 1999-2012.
	1999-2002	Non-smokers only; sexes combined <sup>[85]</sup>		Non-smokers: 2585.  Smaller sample size than <sup>[82]</sup> .
	1999-2004	Hispanics only; non-smokers only, M, F <sup>[86]</sup>		Non-smokers: 1925.  Smaller sample size than <sup>[82]</sup> .
		Non- and current smokers; age 18+; M, F <sup>[87]</sup>		Non-smokers: 11386. Current smokers: 5625.  Overlaps data from <sup>[82]</sup> and <sup>[84]</sup> .

Study	Years reported	Reports included	Reports excluded	Notes
	1999-2004		Non- and current smokers; adolescents and adults separately; M, F <sup>[83]</sup>	Age 12-19: Non-smokers: 4623. Current smokers: 515.  Age 20+: Non-smokers: 7561. Current smokers: 2340.
	1999-2004	Non-, never, ex- and current smokers; Age 40+; sexes combined <sup>[88]</sup>		Using [82] and [84] instead of this source loses separate sex results for 1999-2000 but avoids double- counting.
	1999-2004			Non-smokers: 5981. Never smokers: 3451 Ex-smokers: 2530 Current smokers: 1570.
				Overlaps data from [82] and [84].
				Use Never and Ex-smoker data only.
	1999-2004		Non-smokers only; sexes combined <sup>[89]</sup>	Non-smokers: 8523.  Overlaps data from [82] and [84].

Study	Years reported	Reports included	Reports excluded	Notes
	1999-2006	F only; pregnant and non-pregnant separately <sup>[90]</sup>		Pregnant: Non-smokers: 902. Current smokers: 92.
				Non-pregnant: Non-smokers: 2421. Current smokers: 782.
				Use data for pregnant participants in analyses of pregnant women only.
	2001-2002		Sexes combined <sup>[54]</sup>	Non-smokers: 3553. Current smokers: 1134.
				Overlaps data from [84].
	2001-2008		Data in 2-year groups; sexes combined <sup>[91]</sup>	2001-02: Non-smokers: 3240. 2001-02: Current smokers: 1446.
				2003-04: Non-smokers: 3031. 2003-04: Current smokers: 1445.
				2005-06: Non-smokers: 3081. 2005-06: Current smokers: 1403.
				2007-08: Non-smokers: 3636. 2007-08: Current smokers: 1700.
				Overlaps data from [84].

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
	2001-2012	Non- and current smokers; non-Hispanics only; data by age and race but not by year; M, F <sup>[84]</sup>		Total over ages, races and sexes: Non-smokers: 21768. Current smokers: 6219.  In combination with [82], provides data for all years 1999-2012.
	2003-2006		Non-smokers only; black people and Mexican Americans oversampled; sexes combined <sup>[92]</sup>	Non-smokers: 6120.  Overlaps data from [84].
	2003-2012	Data in 2-year groups; age 20+; never-smokers only; sexes combined <sup>[93]</sup>		Never-smokers: 2003-04: 2238. 2005-06: 2358. 2007-08: 2801. 2009-10: 3059. 2011-12: 2818.  Never-smoker values provide estimates for additional rate types.
				Exclude results for 2003-04: they overlap [88] above.
Ogden	NS	Non-, never, ex- and current smokers; F <sup>[94]</sup>		This is the formal publication of the results.
	1992		Non-, never and ex-smokers; F <sup>[95]</sup>	An unpublished report.
Osaka Factory	2003	Non- and current smokers; sexes combined <sup>[96]</sup>		Non-smokers: 161. Current smokers: 95.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
	2003		Non- and current smokers; sexes combined <sup>[97]</sup>	Non-smokers: 126. Current smokers: 74.  Smaller sample size.
Parker	NS	Non- and current smokers; sexes combined; gas chromatography method <sup>[98]</sup>		Non-smokers: 134. Current smokers: 122.
	NS		Non- and current smokers; sexes combined; test strip method <sup>[98]</sup>	Non-smokers: 134. Current smokers: 122.  Could have been included in analyses by assay method but both methods reported (gas chromatography and test strip) are categorised as 'Chromatography' so this one is excluded.
Peacock	1982-84	Non- and current smokers; F; booking visit <sup>[99]</sup>		Non-smokers: 873. Current smokers: 381.
	1982-84		Non- and current smokers; F; 28 weeks <sup>[99]</sup>	Non-smokers: 772. Current smokers: 325.  Smaller sample size.
	1982-84		Non- and current smokers; F; 36 weeks <sup>[99]</sup>	Non-smokers: 690. Current smokers: 300.  Smaller sample size.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
S-Germany-I (Southern Germany I)	1984-85	Non-, never and ex-smokers; M, F <sup>[100]</sup>		First random sample
	1987-88		Non-, never and ex-smokers; M, F <sup>[100]</sup>	Follow-up of first random sample. Smaller sample size.
S-Germany-II (Southern Germany II)	1989-90	Non-, never and ex-smokers; M, F <sup>[100]</sup>		Second random sample
SEASD (Studio Epidemiologico su Ambiente e Salute nelle Donne)	1997-98	Non-smokers, F only, plasma, cut point 1 <sup>[101]</sup>		Include in analysis by body fluid only.
	1997-98	Non-smokers, F only, saliva, cut point 1 <sup>[101]</sup>		Include in analysis by body fluid only.
	1997-98	Non-smokers, F only, urine, cut point 1 <sup>[101]</sup>		Greatest sample size. Include in all analyses.
	1997-98	Non-smokers, F only, saliva, cut point 2 <sup>[102]</sup>		Only source for cut point 2 data. Include in all analyses.
	1997-98		Non-smokers, F only, urine <sup>[103]</sup>	Smaller sample size.
	1997-98	Never-smokers, F only, urine, cut point 1 <sup>[104]</sup>		Useful for Never smoker rates. Never-smoker values provide estimates for additional rate types.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
SHHS (Scottish Heart Health Study)	1984-86	Non-smokers; M, F; cut points 1 and 2 <sup>[105]</sup>		Non-smokers: 1873 M, 2271 F.
	1984-86	Never-smokers; M, F <sup>[106]</sup>		Other reports provide non-smoker values only. Never-smoker values provide estimates for additional rate types.
	1984-86		Non-smokers; M, F <sup>[107]</sup>	Non-smokers: 1505 M, 1708 F.
				Assessment used a combination of biochemical evidence of smoking (carbon monoxide, cotinine and serum thiocyanate) not just cotinine.
	1984-86		Non-smokers; sexes combined <sup>[108]</sup>	Non-smokers: 5764.
				Assessment used a combination of biochemical evidence of smoking (carbon monoxide, cotinine and serum thiocyanate) not just cotinine.
SHS (Scottish Health Surveys)	NS		Non-smokers; sexes combined <sup>[109]</sup>	Non-smokers: 3977. Smaller sample size.
	1998-2010		Non-smokers, sexes combined <sup>[110]</sup>	Non-smokers: 4434 Smaller sample size.
	1998-2010	Non- and current smokers, sexes combined <sup>[111]</sup>		Non-smokers: 7729 Current smokers: 2767

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
TEC (Top End Cohort)	2007-09	M, F <sup>[1]</sup>	Sexes combined <sup>[1]</sup>	Single sex results preferred.
Waggoner	1997-2000	Non- and current smokers; F <sup>[112]</sup>		Non-smokers: 163. Current smokers: 112.
	1997-2000		Non- and current smokers; F <sup>[113]</sup>	Non-smokers: 163. Current smokers: 112.
				No difference between these two reports. One needs to be rejected.
Windham	1990-91		Non-smokers; F <sup>[114]</sup>	Non-smokers: 93.  Smaller sample size.
	1990-91	Non- and current smokers; F <sup>[115]</sup>		Non-smokers: 347. Current smokers: 63.
Windsor	A 5-year trial, 1997-2001	Non- and ex-smokers; F <sup>[116]</sup>		Non-smokers: 328. Ex-smokers: 39.
	A 5-year trial, years NS		Ex-smokers; F <sup>[117]</sup>	Ex-smokers: 324.  Smaller sample size.

<b>Study</b>	<b>Years reported</b>	<b>Reports included</b>	<b>Reports excluded</b>	<b>Notes</b>
Yeh	2007-08	Non- and current smokers; sexes combined; liquid chromatography-mass spectrometry method <sup>[118]</sup>		Non-smokers: 100. Current smokers: 201.  Spectrometry method.
	2007-08	Non- and current smokers; sexes combined; test strip method <sup>[118]</sup>		Non-smokers: 100. Current smokers: 201.  Chromatography method.  Include only in analyses by assay method.

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**TITLE** Misclassification of smoking habits. An updated review of the literature

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## **Supplementary File 2**

### **Study characteristics**

The table below lists all the studies included in the analyses. This consists of the studies listed as “Reports included” in Supplementary File 1 (Avoidance of overlaps) together with the individual study reports for which no overlap was identified (and so were not mentioned in Supplementary File 1).

The table gives brief details of the studies. Each study is given a study name: either the name given to the dataset by the study reports or a study name assigned by us, based on the name of the first author. This study name is used to identify the study in the detailed analyses (see Supplementary File 3). The country in which the study was carried out is also given for each study.

The rest of the columns give details for each of the sources used to provide misclassification data. The source reference is given under “Sources used” with details given in the References section below the table. The Sex value is coded as M: data for males only; F: data for females only; M+F: data provided for sexes combined only; M, F: data provided for males and females separately. The age range considered is given in as much detail as possible. Some studies reported only the mean age of participants while others (especially studies of pregnant women) gave no age details. Body fluid represents the substance tested for cotinine. Urine CCR represents cotinine-creatinine ratio measured in urine. Cut point values are given, where available, for both cut point 1 (the lower cut point) and cut point 2 (the higher, more conservative cut point). Where only one value is given this represents cut point 1 unless “cut point 2” is specified. The Notes column gives some further details; in particular, for studies with several sources, noting the individual contributions made by each of the sources. More detail of this is given in Supplementary File 1.

While this table presents all the sources of data used in analysis, it does not describe each misclassification rate value used. For example, many studies give separate results for males and females; <sup>[1]</sup> gives separate results for African American and White participants. Additionally, if misclassification in a single smoking group (such as non-smokers) is reported then only a single misclassification rate can be calculated, but if misclassification in various smoking groups (such as never-smokers, ex-smokers and current smokers) is reported then several misclassification

rates can be estimated from the data. The details of each rate used in analysis, together with its source, are given in the listings sections of Supplementary File 3.

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
ABC	Australia	[2]	M, F	16-21	Urine	51 ng/ml and 551 ng/ml	
Agewall	Sweden	[3]	M	54-77	Urine	352.11 ng/ml (cut point 2)	
Ahluwalia	USA	[4]	M+F	18+	Saliva	20 ng/ml	
Akiyama	Japan	[5]	M, F	20+	Urine CCR	100 ng/mg	
Anderson	Denmark	[6]	F	Mean age 30	Serum	10 ng/ml	
Apseloff	USA	[7]	M+F	NS	Urine	500 ng/ml (cut point 2)	
Arnold	USA	[1]	F	12-45	Urine	100 ng/ml	African American and White populations were reported separately
Assaf	USA	[8]	M, F	18-65	Serum	M: 58 ng/ml (cut point 2), F: 30 ng/ml	
Attebring	Sweden	[9]	M+F	1-75	Plasma	20 ng/ml and 100 ng/ml	
Audrain-McGovern	USA	[10]	M+F	14-18	Saliva	15 ng/ml	

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
Badger	N Ireland	[11]	M+F	Mean age 70	Serum	25 ng/ml	
Baltar	Multinational	[12]	M+F	NS	Serum	88.03 ng/ml (cut point 2)	
Bardy	Finland	[13]	F	Mean age 29	Serum	100 ng/ml (cut point 2)	
Barlow	England	[14]	F	NS	Urine	105.6 ng/ml	
Bauld	England	[15]	F	NS	Urine	49.7 ng/ml	
Benowitz III	USA	[16]	M+F	18+	Plasma	14 ng/ml	
Bernert	USA	[17]	M+F	18-61	Serum	15 ng/ml and 100 ng/ml	
Birmingham II	USA	[18]	F	Mean age 25	Saliva	30 ng/ml	
BRHS baseline	UK	[19]	M	40-59	Serum	15 ng/ml	
BRHS follow-up	UK	[20]	M+F	60-79	Serum	15 ng/ml	
Brunet	South Africa	[21]	M+F	18+	Plasma	15 ng/ml	
BUPA	England	[22]	M	NS	Urine	128 ng/ml and 512 ng/ml	

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
Burstyn	Canada	[23]	F	18+	Serum	121 ng/ml (cut point 2)	
Carey	UK	[24]	M+F	18-73	Saliva	14.7 ng/ml	
Ceppa	France	[25]	M+F	Mean age 57	Urine	20 ng/ml	
CHDS	USA	[26]	F	Mean age 26.9	Serum	14 ng/ml	
CHMS	Canada	[27]	M+F	12-79	Urine	50 ng/ml	
Cooley	USA	[28]	F	Mean age 65	Urine	50 ng/ml	
Copenhagen	Denmark	[29]	M	53-75	Serum	100 ng/ml (cut point 2)	
Coultas	USA	[30]	M, F	18+	Saliva	10% of mean smoker value	
Cummings	USA	[30]	M, F	18-84	Urine	10% and 30% of mean smoker value	
DC-HOPE	USA	[31]	F	18+	Saliva	20 ng/ml and 100 ng/ml	Non- and current smokers.
		[32]	F	Mean age 25	Saliva	100 ng/ml (cut point 2)	Ex-smokers.

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
de Chazeron	France	[33]	F	Mean age 30	Plasma	21.5 ng/ml	
Delfino	Canada	[34]	M+F	20+	Saliva	20 ng/ml	
Dell'Orco	Italy	[35]	M, F	12-15	Urine	100 ng/ml	
Dickinson	Australia	[36]	M+F	18+	Saliva	35 ng/ml	
Dolcini	USA	[37]	M+F	12-14	Saliva	10 ng/ml	
EHLS	USA	[38]	M+F	53-75	Serum	15 ng/ml and 190 ng/ml	
Ellard II	Scotland	[39]	F	Mean age 27	Urine CCR	100 ng/mg	
Emmons	USA	[40]	M+F	Mean age 42	Saliva	10 ng/ml	
England	USA	[41]	F	Mean age 22	Urine	50 ng/ml	
Etter	Switzerland	[42]	M+F	Mean age 28	Saliva	13 ng/ml	
Everett-Murphy	South Africa	[43]	F	14+	Urine	100 ng/ml	
Feldman	USA	[44]	M+F	Mean age 15	Plasma	25 ng/ml	
Fendrich	USA	[45]	M+F	18-40	Saliva	20 ng/ml	
Fidler	England	[46]	M+F	15-16	Saliva	15 ng/ml	Data for the highest school year.

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
FINRISK	Finland	[47]	M, F	25-64	Serum	10 ng/ml and 50 ng/ml	
Fontham	USA	[48]	F	20-79	Urine CCR	100 ng/mg	Controls and cases, separately.
Ford	New Zealand	[49]	F	NS	Serum	15 ng/ml and 100 ng/ml	
Fritz	Austria	[50]	M+F	NS	Urine	13 ng/ml	
Gariti	USA	[51]	M+F	19-65	Urine	50 ng/ml	
George	Sweden	[52]	F	NS	Plasma	15 ng/ml	Early pregnancy data.
Gill	South Africa	[53]	M+F	Mean age 47	Urine CCR	1000 ng/ml (cut point 2)	
Gilligan	Australia	[54]	F	16+	Urine	250 ng/ml (cut point 2)	
Glasgow I	USA	[55]	M+F	Mean age 40	Saliva	25 ng/ml	
Glasgow II	USA	[55]	M+F	Mean age 44	Saliva	25 ng/ml	
Glasgow III	USA	[55]	M+F	Mean age 41	Saliva	25 ng/ml	
Goniewicz	Multinational	[56]	M+F	Mean age 38	Urine	31.5 ng/ml	
Griffin	England	[57]	M+F	40-69	Plasma	15 ng/ml	

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
Haddow I	USA	[58]	F	NS	Serum	16 ng/ml and 64 ng/ml	
Haddow II	USA	[59]	F	NS	Serum	10 ng/ml	
Haddow III	USA	[60]	F	NS	Serum	10 ng/ml and 50 ng/ml	
Haley	USA	[61]	M+F	Mean age 39	Urine CCR	100 ng/mg	
HALS2	UK	[62]	M+F	26+	Saliva	15 ng/ml	
Hegaard	Denmark	[63]	F	18+	Saliva	13 ng/ml	Non- and current smokers.
		[64]	F	18+	Saliva	30 ng/ml	Ex-smokers.
Hellemons	Netherlands	[65]	M+F	Mean age 51	Urine	100 ng/ml and 500 ng/ml	
					Plasma	10 ng/ml and 50 ng/ml	Used in analysis by body fluid.
Hennrikus	USA	[66]	M+F	18-75	Saliva	15 ng/ml	
Holiday	USA	[67]	M+F	24-78	Serum	22.2 ng/ml	
Hoseini	Iran	[68]	M+F	Mean age 32	Urine CCR	100 ng/ml	
HSE	England	[69]	M, F	16+	Serum	20 ng/ml	

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
		[70]	M+F	16+	Serum	20 ng/ml	
		[71]	M+F	16+	Saliva	11 ng/ml	
		[72]	M, F	NS	Saliva	30 ng/ml	
		[73]	M, F	16+	Saliva	15 ng/ml	Used in analysis by sex.
		[74]	M+F	35+	Saliva	30 ng/ml	Participants with COPD used in study type analysis.
		[75]	M, F	16-24	Saliva	15 ng/ml	
		[76]	M+F	16+	Saliva	15 ng/ml	Never and ex-smoker data for 2003.
INMA	Spain	[77]	F	16	Urine	100 ng/ml	Non-smoker data.
		[78]	F	16	Urine	50 ng/ml	Current smoker data.
Jarvis I	England	[79]	M+F	Mean age 56	Plasma	14 ng/ml	
Jarvis II	England	[80]	M+F	16-19	Saliva	10 ng/ml	
Jedrychowski	Poland	[81]	F	18-35	Serum	15 ng/ml	
Jenkins	USA	[82]	M, F	18+	Saliva	15 ng/ml and 100 ng/ml	
Jhun	Korea	[83]	F	18+	Urine	100 ng/ml	
Kandel	USA	[84]	M+F	11-16	Saliva	11.4 ng/ml	

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
Kaufman	USA	[85]	F	Mean age 26	Serum	10 ng/ml	
Kendrick	USA	[86]	F	NS	Urine CCR	85 ng/ml	
Kharrazi	USA	[87]	F	Mean age 26	Serum	10 ng/ml	
Khuri	USA	[88]	M+F	Mean age 62	Serum	15 ng/ml	
Kim	USA	[89]	M+F	18+	Saliva	15.53 ng/ml	
Klebanoff	USA	[90]	F	NS	Serum	10 ng/ml	
KNHANES	Korea	[91]	M, F	20	Urine	50 ng/ml	
		[92]	M, F	19	Urine	50 ng/ml	
		[93]	F	19	Urine	100 ng/ml	
		[94]	F	55	Urine	100 ng/ml	Used in analysis by age.
Laatikainen I	Russia	[95]	M, F	25-64	Serum	20 ng/ml and 50 ng/ml	
Lando	USA	[96]	M+F	18-75	Saliva	15 ng/ml	
Lee Anna	Hong Kong	[97]	M+F	18+	Urine CCR	50 ng/ml	
Lee Chung Yul	Korea	[98]	M, F	NS	Urine	400 ng/ml (cut point 2)	

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
Lee II	Japan	[99]	F	20-55	Urine CCR	100 ng/mg and 500 ng/mg	
Lee So Ryong	Korea	[100]	M+F	19+	Urine	100 ng/ml	
Lerman	USA	[101]	M+F	19-73	Blood NOS	15 ng/ml	
Levine	Israel	[102]	M+F	20-74	Urine CCR	100 ng/ml	
Levy	USA	[103]	M+F	18+	Saliva	15 ng/ml	
Lifestyle and Appetite	UK	[104]	M, F	16-74	Saliva	30 ng/ml and 100 ng/ml	
Lindqvist	Sweden	[105]	F	Mean age 29	Serum	17.5 ng/ml and 113 ng/ml	
Luepker	USA	[106]	M+F	17-21	Saliva	20 ng/ml	
Ma	USA	[107]	F	Mean age 26	Saliva	20 ng/ml	
MacFarlane	England	[108]	M+F	15-31	Urine CCR	1000 ng/mg (cut point 2)	
Markovic	USA	[109]	F	14-40	Urine	500 ng/ml (cut point 2)	
Marshall	USA	[110]	M	18+	Serum	10 ng/ml	

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
Martinez	USA	[111]	M+F	40-80	Plasma	20 ng/ml and 50 ng/ml	
Martinez-Sanchez	Spain	[112]	M+F	16+	Saliva	20 ng/ml	
Mathews	England	[113]	F	Mean age 25	Serum	15 ng/ml	
McNeill	England	[114]	F	11-16	Saliva	14.7 ng/ml	
Messeri	USA	[115]	M+F	12-17	Saliva	10 ng/ml	
MFHS	Finland	[116]	M+F	50-94	Serum	100 ng/ml (cut point 2)	Current smokers.
		[117]	M+F	30+	Serum	100 ng/ml (cut point 2)	Non-, never and ex-smokers.
Molina	Spain	[118]	F	17-25	Saliva	10 ng/ml	
MONICA	Germany	[119]	M, F	25-44 and 45- 64	Serum	15 ng/ml	
MONICA	Scotland	[120]	M, F	25-74	Serum	17.5 ng/ml	
Mons	Germany	[121]	M+F	36-75	Serum	15 ng/ml	
Moore	England	[122]	F	Mean age 27	Urine	80 ng/ml	

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
Morales	USA	[123]	M+F	NS	Blood	10 ng/ml	
Mullen	USA	[124]	F	18+	Urine	50 ng/ml	
Muramoto	USA	[125]	M+F	14-17	Urine	50 ng/ml	
Muranaka	Japan	[126]	M+F	Mean age 35	Urine CCR	46.78 ng/mg	
Murray	USA and Canada	[127]	M+F	35-60	Saliva	20 ng/ml	
Naraghi	England	[128]	M, F	Mean age 59	Serum	13.7 ng/ml	
Nguyen	Belgium	[129]	M+F	18+	Serum	10 ng/ml	
NHANES	USA	[130]	M, F	12-17	Serum	11.4 ng/ml	
		[131]	M, F	18+	Serum	15 ng/ml	
		[132]	M+F	17+	Serum	15 ng/ml	
		[133]	F	20-44	Serum	10.0 ng/ml	Used in analyses by pregnant/non-pregnant.
		[134]	M+F	12-19 and 20+	Serum	10 ng/ml	Non- and current smokers.
		[135]	M, F	12-17, 18-25 and 26+	Serum	10 ng/ml	Non- and current smokers.
		[136]	M+F	40+	Serum	10 ng/ml	Never and ex-smokers.

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
		[137]	M+F	20+	Serum	15 ng/ml	Never smokers. Overlapping years excluded.
Niedbala	USA	[138]	M+F	NS	Urine	500 ng/ml (cut point 2)	
Noland	USA	[139]	M+F	12-17	Saliva	25 ng/ml	
Noonan	USA	[140]	M+F	Mean age 55	Urine	50 ng/ml	
O'Connor	Canada	[141]	F	Mean age 27	Urine	64 ng/ml	
Ogden	USA	[142]	F	18+	Saliva	35 ng/ml and 106 ng/ml	
Olivieri	Italy	[143]	M+F	Mean age 33	Serum	14 ng/ml	
Osaka factory	Japan	[144]	M+F	18-62	Saliva	8 ng/ml	
Owen	England	[145]	F	Mean age 28	Saliva	14 ng/ml	
Palmier	USA	[146]	M+F	18+	Urine	500 ng/ml (cut point 2)	
Parker	USA	[147]	M+F	Mean age 34	Urine	100 ng/ml and 250 ng/ml	Gas chromatography data.
Parna	Estonia	[148]	F	NS	Serum	15 ng/ml and 100 ng/ml	

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
Peacock	England	[149]	F	15+	Plasma	15 ng/ml and 75 ng/ml	Booking visit data.
Pell ACS	Scotland	[150]	M+F	NS	Serum	12 ng/ml	
Pell HEPS	Scotland	[150]	M+F	16-74	Saliva	15 ng/ml	
Perez-Stable	USA	[151]	M+F	20-74	Serum	14 ng/ml and 100 ng/ml	
Phillipou	Australia	[152]	M+F	Mean age 60	Urine	88 ng/ml	
Phillips	England	[153]	M+F	21-61	Saliva	25 ng/ml and 100 ng/ml	
Phillips I	Sweden	[154]	M+F	20-64	Saliva	25 ng/ml and 100 ng/ml	
Phillips II	Italy	[155]	M+F	20-64	Saliva	25 ng/ml	
Phillips III	Spain	[156]	M+F	20-64	Saliva	25 ng/ml	
Phillips IV	Australia	[157]	M+F	20-64	Saliva	25ng/ml	
Phillips V	Portugal	[158]	M+F	20-64	Saliva	25 ng/ml	
Phillips VI	Germany	[159]	M+F	20-64	Saliva	25 ng/ml	

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
Phillips VII	Czech Republic	[160]	M+F	20-64	Saliva	25 ng/ml	
Phillips VIII	China	[161]	M+F	20-64	Saliva	25 ng/ml	
Pierce	Australia	[162]	M+F	14+	Saliva	18 ng/ml and 70 ng/ml	
Pojer	Australia	[163]	M+F	NS	Plasma	22 ng/ml and 88 ng/ml	
Quinn	USA	[164]	M+F	Mean age 24	Serum	75 ng/ml (cut point 2)	
Rebagliato	Spain	[165]	F	16-44	Saliva	14 ng/ml	
Riboli	Worldwide	[166]	F	42-60	Urine CCR	100 ng/mg	
Rodriguez	USA	[167]	M+F	45-84	Urine	100 ng/ml	
S-Germany-I	Germany	[168]	M, F	25-64	Serum	15 ng/ml and 100 ng/ml	First random sample.
S-Germany-II	Germany	[168]	M, F	25-64	Serum	15 ng/ml and 100 ng/ml	Second random sample.
Salzer	Sweden	[169]	M+F	Mean age 26	Blood	10 ng/ml	
Sarrafzadegan	Iran	[170]	M+F	14-18	Plasma	13 ng/ml	

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
Sasaki	Japan	[171]	F	NS	Plasma	11.48 ng/ml	
Sato	Japan	[172]	M+F	Mean age 58	Serum	50 ng/ml (cut point 2)	
Savitz	USA	[173]	F	NS	Urine	50 ng/ml	
SEASD	Italy	[174]	F	25-74	Urine CCR	100 ng/mg	Never smokers.
		[175]	F	13-80	Plasma	14 ng/ml	Used in analysis by body fluid.
					Saliva	10 ng/ml	Used in analysis by body fluid.
					Urine	150 ng/ml	Non-smokers
		[176]	F	13-97	Saliva	106 ng/ml (cut point 2)	
Seccareccia	Italy	[177]	M+F	20-79	Serum	15 ng/ml	
Secker-Walker	USA	[178]	F	Mean age 22	Urine CCR	550 ng/ml (cut point 2)	
Seersholtz	Denmark	[179]	M+F	15-69	Plasma	10 ng/ml	
Semple	Scotland	[180]	M+F	15-70	Saliva	20 ng/ml	
Shaffer	USA	[181]	M+F	17-75	Plasma	25 ng/ml	

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
SHHS	Scotland	[182]	M, F	40-59	Serum	20 ng/ml and 100 ng/ml	Non-smokers.
		[183]	M, F	40-59	Serum	17.5 ng/ml	Never-smokers.
Shipton	Scotland	[184]	F	Mean age 29	Serum	13.7 ng/ml	
SHS	Scotland	[185]	M+F	16+	Saliva	15 ng/ml	
Slattery II	USA	[186]	F	17-59	Serum	15 ng/ml	
Smith UK	England	[187]	M+F	19-84	Urine	100 ng/ml and 500 ng/ml	
Smith USA	USA	[188]	F	Mean age 26	Saliva	10 ng/ml and 100 ng/ml	
Spencer I	England	[189]	F	NS	Serum	50 ng/ml	
Spencer II	England	[190]	F	Mean age 27	Serum	13.7 ng.ml	
Stanton	New Zealand	[191]	M+F	18 only	Saliva	14 ng/ml	
Stick	Australia	[192]	F	NS	Serum	25 ng/ml	
Stookey	USA	[193]	M+F	NS	Saliva	10 ng/ml	
Tabara	Japan	[194]	M+F	NS	Urine	400 ng/ml (cut point 2)	

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
TEC	Australia	[2]	M, F	16-21	Urine	51 ng/ml and 551 ng/ml	
Tikkanen	Finland	[195]	F	Mean age 31	Serum	15 ng/ml	
Tong	Argentina and Uruguay	[196]	F	20-29	Saliva	15 ng/ml	
Townsend	UK	[197]	M+F	13-17	Saliva	14 ng/ml	
Tsutsumi	Japan	[198]	M, F	35-55	Urine CCR	M: 63.1 ng/mg F: 79.4 ng/mg	
Twardella I	Germany	[199]	M+F	36-75	Serum	15 ng/ml	
Twardella II	Germany	[200]	M+F	30-70	Serum	15 ng/ml and 280 ng/ml	
Ulvik I	Norway	[201]	M+F	Mean age 63	Plasma	14 ng/ml	
Ulvik II	Norway	[201]	M+F	Mean age 62	Plasma	14 ng/ml	
Ussher	England	[202]	F	16-50	Saliva	10 ng/ml	
Valladolid-Lopez	Mexico	[203]	M+F	11-17	Urine	50 ng/ml	
van Vunakis	USA	[204]	M+F	NS	Saliva	25 ng/ml	
Vardavas	Greece	[205]	F	NS	Urine	120 ng/ml	

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
Vasankari	Finland	[206]	M+F	30+	Serum	100 ng/ml (cut point 2)	
Vineis	Europe	[207]	M+F	35-74	Plasma	10 ng/ml	
Wagenknecht	USA	[208]	M+F	18-30	Serum	14 ng/ml and 100 ng/ml	
Waggoner	USA	[209]	F	27-84	Urine	50 ng/ml	
Wallner-Liebmann	Germany	[210]	M+F	NS	Serum	15 ng/ml	
Weeks	USA	[211]	M+F	Mean age 65	Urine	50 ng/ml	
West III	Poland	[76]	M+F	15+	Saliva	15 ng/ml	
Wewers I	USA	[212]	M, F	Mean age 37	Saliva	14 ng/ml	
Wewers II	USA	[213]	F	18+	Saliva	14 ng/ml	
Wilminck	England	[214]	M	50-89	Serum	25 ng/ml	
Windham	USA	[215]	F	18-39	Urine	25 ng/ml	
Windsor	USA	[216]	F	Mean age 23	Saliva	31 ng/ml	
Xie I	China	[217]	M+F	20-70	Serum	15 ng/ml	

Study	Country	Sources used	Sexes	Age range	Body fluid	Cut point values	Notes
Xie II	China	[218]	F	Mean age 29	Serum	15 ng/ml	
Yeh	Canada	[219]	M+F	Mean age 39	Urine	100 ng/ml	Liquid chromatography-mass spectrometry method.
Yel	Cambodia	[220]	M	NS	Saliva	10 ng/ml	
Zielinska-Danch	Poland	[221]	M+F	19-60	Urine	50 ng/ml and 550 ng/ml	

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**TITLE** Misclassification of smoking habits. An updated review of the literature

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### **Supplementary File 3**

**Full details of all the meta-analyses and meta-regressions**

Introduction

Sets of analyses are given below, one set for each misclassification rate (M1 to M11).

Below each set of analyses, listings give details of the study results selected for those analyses.

Each set of analyses gives estimates of overall misclassification rates, then rates by the levels of several factors.

The factors and their levels are described in the analyses but are given in coded form in the listings. They are as follows:

<u>Factor description</u>	<u>Title in listings</u>	<u>Values</u>
Body fluid tested	Fluid	1: Urine      2: Saliva      3: Blood
Cotinine assay method	Assay	1: Chromatography      2: Spectrometry      3: Immunoassay      4: Other
Study type	Type	1: General pop.      2: Pregnancy      3: Diseased or CC
Age group	AgeGp	1: Young      2: Not young      3: All ages      4: NS (not specified)
Awareness of validation by cotinine	Aware	1: Yes      2: No      3: NS
Time of publication	Publ	1: In 1995 review      2: Before 2003      3: 2003 onwards
Study quality	Quality	1: Good      2: Not good
Pregnancy	Pregn	1: Not pregnant      2: Pregnant
Tobacco products considered	Prod	1: Cigarettes      2: Any smoking      3: Any tobacco      4: NS
Sex	RSex	F: Females only      M: Males only      M+F: Both sexes considered
Location	Locn	1: Canada/USA      2: Europe      3: Asia      4: Other

Cotinine assay method values are defined as follows:

- 1: Chromatography: high performance liquid chromatography (LC), gas chromatography (GC), thin layer chromatography (TLC), test strip methods, other colorimetric methods  
2: Spectrometry: GC-MS, GC-MS/MS, TMS, TMS-MS/MS, LC-MS, LC-MS/MS (MS = mass spectrometry; T = tandem)  
3: Immunoassay: radio-immunoassay, ELISA, chemiluminescent immunoassay (CIA), immunoassay not otherwise specified  
4: Other: not specified or mixed methods (TLC, ELISA and CIA all used in a single study)

Age group values are defined as follows:

- 1: Young: upper age limit <50 or mean age <30 or a pregnancy study  
2: Not young: lower age limit 30+ or mean age 60+  
3: All ages: lower age limit <30 and upper age limit 50+ or lower age limit <30 and mean age 30+  
4: Not specified: all other combinations

Study quality values, which depend on the definition of smoking used in the study, are defined as follows (NRT = nicotine replacement therapy):

- 1: Good:  
Smoking definition      Definition of good quality  
Any tobacco use:      The study excluded NRT users  
Any smoking:      The study excluded both smokeless tobacco users and NRT users  
Cigarette smoking:      The study excluded pipe and cigar smokers, smokeless tobacco users and NRT users  
2: Not good:      all other combinations

Counts and rates relating to the rate calculations are also given in the listings:

<u>Title in listings</u>	<u>Meaning</u>
RateC1 / RateC2	Misclassification rate (percentage) for Cut 1 / Cut 2
N_Cut1 / N_Cut2	Number of participants considered who have cotinine > Cut 1 / Cut 2 (except for current smoker analyses: cotinine < Cut 1 / Cut 2)
Weight1 / Weight2	Weight value (the denominator of the rate calculation), Cut 1 / Cut 2

Note that Cut 1 is the lower cut point; Cut 2 is the more conservative cut point.

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M1: Percentage of self-reported Non-smokers whose cotinine implies Current smoking

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Overall percentage, cut point 1, unweighted

**Misclassification rate, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		7.4938	0.7311	0.0000 ***	7.4938	6.0524	8.9352

Overall percentage, cut point 2, unweighted

**Misclassification rate, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		5.8061	0.8996	0.0000 ***	5.8061	4.0090	7.6032

Overall percentage, cut point 1

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Non-smokers, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		4.9563	0.3247	0.0000 ***	4.9563	4.3162	5.5963

Overall percentage, cut point 2

**Misclassification rate, cut point 2**

**WEIGHTED on Number of self-reported Non-smokers, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		3.6635	0.4919	0.0000 ***	3.6635	2.6808	4.6461

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M1: Percentage of self-reported Non-smokers whose cotinine implies Current smoking

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Overall misclassification rate (percentage) for the Palmier study, cut point 2 = 2.0110

By Body fluid tested

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Non-smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P	
	Constant		5259602.220	(209)	15160.7963	0.7402	
			6				
<b>Body fluid tested</b>							
Urine	50	Aliased				4.4590	2.9700
Saliva	60	0.3707	0.9718	0.0000 +++	0.7032	4.8297	3.6242
Blood	102	0.6609	0.8732		0.4500	5.1199	6.0352
						4.2560	5.9838

By cotinine assay method used

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Non-smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P	
	Constant		5195887.060	(206)	49366.4122	0.5823	
			8				
<b>Cotinine assay method</b>							
Chromatography	62	Aliased				4.5808	3.4814
Spectrometry	56	0.2508	0.7663	0.0000 +++	0.7438	4.8316	5.6802
Immunoassay	80	0.8334	0.8651		0.3365	5.4143	3.7954
Other	12	2.0106	1.7529		0.2527	6.5915	6.7183
						3.3150	9.8679

By Study type

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Non-smokers, cut point 1**

	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>			
		4991996.962	(207)	251266.4659	0.0062 **			
		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>	
	<b>Constant</b>	4.5274	0.3587	0.0000 ***	4.5274	3.8202	5.2346	
	<b>Study type</b>							
General pop.	138	Aliased			4.5274	3.8202	5.2346	
Pregnancy	38	1.0242	0.9088	0.2611	5.5515	3.9052	7.1978	
Diseased or CC	34	3.8167	1.2173	0.0020 ++	8.3441	6.0506	10.6375	

By Age group

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Non-smokers, cut point 1**

	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>			
		5194858.881	(205)	47939.1528	0.5960			
		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>	
	<b>Constant</b>	5.3177	0.6280	0.0000 ***	5.3177	4.0795	6.5559	
	<b>Age group</b>							
Young	78	Aliased			5.3177	4.0795	6.5559	
Not young	21	-0.8825	1.1434	0.4411	4.4352	2.5513	6.3192	
All ages	81	-0.2509	0.7681	0.7442	5.0668	4.1950	5.9386	
NS	29	-1.6795	1.3569	0.2172	3.6382	1.2666	6.0098	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M1: Percentage of self-reported Non-smokers whose cotinine implies Current smoking

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By Awareness of validation by cotinine

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Non-smokers, cut point 1**

		<b>Model 2</b>	<b>Deviance</b> 5169744.614 4	<b>(DF)</b> (206)	<b>Drop Dev</b> 73053.4201	<b>P</b> 0.2357		
		<b>Constant</b>	<b>Estimate</b> 8.0744	<b>S.E.</b> 1.8740	<b>P</b> 0.0000 ***	<b>LSMean</b> 8.0744	<b>95%CI</b> 4.3797	<b>95%Clu</b> 11.7692
<b>Aware of checking by cotinine?</b>								
Yes	12	Aliased				8.0744	4.3797	11.7692
No	37	-3.4115	2.0740	0.1015	4.6630	2.9108	6.4151	
NS	160	-3.1829	1.9072	0.0967 (-)	4.8915	4.1935	5.5896	

By Time of publication

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Non-smokers, cut point 1**

		<b>Model 2</b>	<b>Deviance</b> 5191977.374 6	<b>(DF)</b> (206)	<b>Drop Dev</b> 50820.6599	<b>P</b> 0.3667		
		<b>Constant</b>	<b>Estimate</b> 3.5764	<b>S.E.</b> 1.0282	<b>P</b> 0.0006 ***	<b>LSMean</b> 3.5764	<b>95%CI</b> 1.5493	<b>95%Clu</b> 5.6035
<b>Time of publication</b>								
In 1995 review	28	Aliased				3.5764	1.5493	5.6035
Before 2003	81	1.4767	1.1714	0.2089	5.0531	3.9463	6.1600	
2003 onwards	100	1.5657	1.1151	0.1618	5.1422	4.2913	5.9930	

By Quality of study

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Non-smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		5219521.980	(207)	23276.0536	0.3378		
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		5.6978	0.8374	0.0000 ***	5.6978	4.0470	7.3487
Study quality							
Good	23	Aliased			5.6978	4.0470	7.3487
Not good	186	-0.8728	0.9085	0.3378	4.8250	4.1305	5.5196

By Pregnancy (women only)

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Non-smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		1562352.967	(80)	31142.4597	0.2103		
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		4.2368	0.6380	0.0000 ***	4.2368	2.9672	5.5065
Pregnancy							
Not pregnant	43	Aliased			4.2368	2.9672	5.5065
Pregnant	39	1.2356	0.9785	0.2103	5.4724	3.9961	6.9487

By Tobacco products considered

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Non-smokers, cut point 1**

	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>			
		5151498.430	(208)	92469.5048	0.1572			
		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>	
	<b>Constant</b>	5.3026	0.4642	0.0000 +++	5.3026	4.3874	6.2178	
<b>Tobacco products considered</b>								
Cigarettes	77	Aliased			5.3026	4.3874	6.2178	
Any smoking	119	-0.7326	0.6217	0.2400	4.5700	3.7548	5.3853	
Any tobacco	15	2.4280	1.8844	0.1990	7.7306	4.1300	11.3312	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M1: Percentage of self-reported Non-smokers whose cotinine implies Current smoking

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By Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Non-smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		5208245.155	(210)	105544.3147	0.1217		
		8					
	<b>Constant</b>	4.7500	0.5317	0.0000 +++	4.7500	3.7018	5.7982
	<b>CARD3: RSex</b>						
F	83	Aliased			4.7500	3.7018	5.7982
M	36	1.7207	0.9541	0.0728 (+)	6.4707	4.9089	8.0326
M+F	94	-0.0983	0.6977	0.8880	4.6517	3.7612	5.5421

By Location

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Non-smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		5204494.014	(205)	38304.0197	0.6807		
		8					
	<b>Constant</b>	5.3805	0.5629	0.0000 +++	5.3805	4.2708	6.4903
	<b>Location</b>						
Canada/USA	81	Aliased			5.3805	4.2708	6.4903
Europe	90	-0.7123	0.7252	0.3272	4.6683	3.7666	5.5699
Asia	17	-0.7034	1.0785	0.5150	4.6771	2.8633	6.4910
Other	21	0.8045	1.9125	0.6745	6.1850	2.5812	9.7888

By Location x Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Non-smokers, cut point 1**

Model 2	Deviance		(DF) (197)	Drop Dev 301950.3403	P 0.3674			
	2	4940847.694				LSMean	95%CIl	95%Clu
<b>Constant</b>		4.3390	0.8434	0.0000 +++	4.3390	2.6756	6.0023	
<b>Location x Sex</b>								
Canada/USA, F	33	Aliased			4.3390	2.6756	6.0023	
Canada/USA, M	13	3.2519	1.4620	0.0273 +	7.5908	5.2358	9.9459	
Canada/USA, M+F	35	0.9627	1.2769	0.4518	5.3017	3.4111	7.1922	
Europe, F	35	0.4633	1.2242	0.7055	4.8023	3.0525	6.5520	
Europe, M	15	-0.1118	1.6118	0.9448	4.2272	1.5185	6.9358	
Europe, M+F	40	0.3502	1.0200	0.7317	4.6892	3.5581	5.8203	
Asia, F	7	1.4573	1.6286	0.3720	5.7963	3.0488	8.5438	
Asia, M	3	3.6951	2.6815	0.1698	8.0341	3.0143	13.0539	
Asia, M+F	7	-1.7413	1.6158	0.2825	2.5977	-0.1203	5.3157	
Other, F	6	1.3640	3.2626	0.6763	5.7030	-0.5124	11.9184	
Other, M	3	10.5988	10.2362	0.3017	14.9378	-5.1805	35.0560	
Other, M+F	12	1.6614	2.4292	0.4948	6.0004	1.5079	10.4929	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M1: Percentage of self-reported Non-smokers whose cotinine implies Current smoking  
 Results included in all analyses, cut point 1

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>Age</b>	<b>Gp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
Anderson_ANDERS2009A	F		Blood	3	2	Young	NS	3	2	2	2	2	2	0.0000	0.0000	208.0000
Yeh_YEH2011	M+F	LC-MS/MS method	Urine	2	1	NS	Yes	3	2		3	1	0.0000	0.0000	100.0000	
Windham_WINDHA1999A	F		Urine	2	1	Young	NS	2	2	1	1	1	0.0000	0.0000	347.0000	
Valladolid-Lopez_VALLAD2015	M+F		Urine	1	1	Young	NS	3	2		1	4	0.3018	3.0000	994.0000	
Rebagliato_REBAGL1995	F		Saliva	1	2	Young	NS	2	2	2	2	2	0.5587	4.0000	716.0000	
Noland_NOLAND1988	M+F		Saliva	3	1	Young	Yes	2	2		3	1	0.6711	1.0000	149.0000	
Tabara_TABARA2013	M+F		Urine	2	1	NS	NS	3	2		2	Asia	0.7342	54.0000	7355.0000	
Carey_CAREY1999	M+F		Saliva	1	1	3	NS	2	2	1	2	2	0.7864	13.0000	1653.0000	
Cummings_WELLS1998C	F		Urine	1	1	3	NS	1	2	1	2	1	0.8152	3.0000	368.0000	
Fidler_FIDLER2006	M+F	yr 11	Saliva	1	1	Young	NS	3	2		1	2	0.8922	13.0000	1457.0000	
BUPA_WALD1984	M		Urine	3	1	NS	NS	1	2		2	2	0.9050	2.0000	221.0000	
Cummings_WELLS1998C	M		Urine	1	1	3	NS	1	2		2	1	1.0169	3.0000	295.0000	
SEASD_SIMONI2006-urine	F	urine	Urine	3	1	3	NS	3	2	1	2	2	1.0323	15.0000	1453.0000	
BRHS follow-up_JEFFER2010A	M+F	1998-2000, men and 1999-2001, women	Blood	2	1	2	No	3	2		2	2	1.0613	76.0000	7161.0000	
Delfino_DELFIN1993	M+F		Saliva	3	1	3	NS	1	2		2	1	1.1952	3.0000	251.0000	
Glasgow III_GLASGO1993	M+F		Saliva	2	1	NS	No	2	2		2	1	1.2500	1.0000	80.0000	
Tsutsumi_TSUTSU2002A-M	M		Urine	1	1	2	NS	2	2	1	Asia	1.3497	11.0000	815.0000		
NHANES_CARABA2004	F	1988-1994, age 12-17	Blood	2	1	Young	NS	3	Good	1	1	1	1.3682	11.0000	804.0000	
TEC_PEARCE2014	F	Non-indigenous	Urine	Other	1	Young	NS	3	2	1	2	4	1.3889	1.0000	72.0000	
S-Germany-II_HELLER1993	F	second random sample in 1989/90	Blood	3	1	3	NS	1	2	1	2	2	1.4222	19.0000	1336.0000	
Weeks_WEEKS2011	M+F		Urine	1	3	2	NS	3	2	2	1	2	1.4634	3.0000	205.0000	
MONICA Germany_HELLER1998-older	F	45-64	Blood	3	1	2	NS	2	2	1	2	2	1.4688	12.0000	817.0000	
McNeill_MCNEIL1987	F		Saliva	1	1	Young	Yes	2	2	1	1	2	1.4925	5.0000	335.0000	
Messeri_MESSER2007A	M+F		Saliva	Other	1	Young	NS	3	2		1	1	1.5582	63.0000	4043.0000	
Phillips II_PHILLI1997	M+F		Saliva	3	1	3	No	2	2		2	2	1.5707	3.0000	191.0000	
Spencer I_SPENCE1998	F		Blood	3	2	Young	NS	2	2	2	2	2	1.6129	6.0000	372.0000	
Bauld_BAULD2012	F		Urine	1	2	Young	NS	3	2	2	2	2	1.6168	20.0000	1237.0000	
Phillips VII_PHILLI1998C	M+F		Saliva	3	1	3	No	2	2	2	2	2	1.6529	4.0000	242.0000	
Savitz_SAVITZ2001A	F		Urine	3	2	Young	NS	2	2	2	1	1	1.6611	5.0000	301.0000	
Haley_HALEY1989	M+F		Urine	3	1	NS	NS	1	2	2	1	2	1.6667	5.0000	300.0000	
NHANES_LINDSA2014-adult	M+F	1999-2000, age 20+	Blood	2	1	3	NS	3	Good	2	1	2	1.7485	47.0000	2688.0000	
S-Germany-I_HELLER1993	F	first random sample in 1984/85	Blood	3	1	3	NS	1	2	1	2	2	1.7833	26.0000	1458.0000	
NHANES_CARABA2004	M	1988-1994, age 12-17	Blood	2	1	Young	NS	3	Good	1	1	1	1.7884	12.0000	671.0000	
George_GEORGE2006	F	early pregnancy	Blood	1	2	Young	No	3	Good	2	2	2	1.7931	13.0000	725.0000	
Tsutsumi_TSUTSU2002A-F	F		Urine	1	1	2	NS	2	2	1	1	Asia	1.8036	9.0000	499.0000	
Peacock_PEACOC1998	F	booking visit	Blood	1	2	Young	NS	2	2	2	1	2	1.8328	16.0000	873.0000	
Phillipou_PHILLI1994C	M+F		Urine	3	3	NS	No	2	2	2	4	2	1.8405	3.0000	163.0000	
Phillips IV_PHILLI1998	M+F		Saliva	3	1	3	No	2	2	2	4	2	1.8462	6.0000	325.0000	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
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Id	RSex		Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
	M	F														
MONICA Germany_HELLER1998-young	M	25-44		Blood	3	1	Young	NS	2	2		2	2	1.8692	8.0000	428.0000
NHANES_LINDSA2014-young	M+F	1999-2000, age12-19		Blood	2	1	Young	NS	3	Good		2	1	1.8881	27.0000	1430.0000
Riboli_RIBOLI1990	F			Urine	3	1	2	NS	1	2	1	3	4	1.8992	26.0000	1369.0000
Haddow III_HADDOW1988	F			Blood	3	2	Young	No	1	2	2	2	1	1.9231	29.0000	1508.0000
Cooley_COOLEY2007	F			Urine	1	3	2	NS	3	2	1	2	1	1.9608	4.0000	204.0000
CHDS_ENGLIS1994	F			Blood	3	2	Young	NS	2	2	2	2	1	1.9626	42.0000	2140.0000
CHMS_WONG2012	M+F			Urine	2	1	3	NS	3	Good		1	1	1.9848	68.0000	3426.0000
Kaufman_KAUFMA2002A	F			Blood	2	2	Young	NS	2	2	2	2	1	2.0025	16.0000	799.0000
Seccareccia_SECCAR2003	M+F			Blood	3	1	3	No	3	2		1	2	2.0816	50.0000	2402.0000
Slattery II_SLATTE1989A	F			Blood	3	3	3	NS	1	2	1	1	1	2.1108	8.0000	379.0000
Haddow I_HADDOW1986	F			Blood	3	1	NS	NS	1	2	1	1	1	2.1552	5.0000	232.0000
Vardavas_VARDAV2013	F			Urine	2	2	Young	NS	3	2	2	3	2	2.1798	8.0000	367.0000
Lifestyle and Appetite_LEE1986B	F			Saliva	1	1	3	No	2	2	1	3	2	2.1834	10.0000	458.0000
MONICA Germany_HELLER1998-young	F	25-44		Blood	3	1	Young	NS	2	2	1	2	2	2.1841	14.0000	641.0000
HALS2_BATTY2014	M+F			Saliva	1	1	3	NS	3	2		2	2	2.2273	59.0000	2649.0000
Naraghi_NARAGH2011	F			Blood	3	3	NS	NS	3	2	1	2	2	2.2346	4.0000	179.0000
Dell'Orco_DELLOR1995	M			Urine	3	1	Young	NS	2	2		2	2	2.2569	13.0000	576.0000
Emmons_EMMONS1996	M+F			Saliva	3	1	NS	NS	2	2		2	1	2.3438	21.0000	896.0000
MONICA Scotland_CHEN2002D	F	Surveys 3 and 4		Blood	1	1	3	NS	2	2	1	1	2	2.3739	24.0000	1011.0000
Townsend_TOWNSE1991A	M+F	All ages		Saliva	Other	1	Young	Yes	2	2		1	2	2.4038	10.0000	416.0000
NHANES_CARABA2016-young	F	2001-2012, NH black, 12-17yrs		Blood	2	1	Young	NS	3	Good	1	1	1	2.4155	20.0000	828.0000
MONICA Scotland_CHEN2002D	M	Surveys 1 and 2		Blood	1	1	3	NS	2	2		1	2	2.4719	11.0000	445.0000
Osaka factory_YAMAMO2005	M+F			Saliva	3	1	3	NS	3	2		2	Asia	2.4845	4.0000	161.0000
Lee Anna_LEE2013TE	M+F			Urine	2	3	3	NS	3	2		1	Asia	2.5445	10.0000	393.0000
Phillips VI_PHILLI1998B	M+F			Saliva	3	1	3	No	2	2		2	2	2.5641	5.0000	195.0000
Vineis_VINEIS2005	M+F			Blood	2	1	2	NS	3	2		2	2	2.6048	41.0000	1574.0000
BRHS baseline_JEFFER2009	M	1978-1980		Blood	2	1	2	No	3	2		2	2	2.6569	58.0000	2183.0000
Jhun_JHUN2010	F			Urine	1	2	Young	No	3	2	2	1	Asia	2.6641	28.0000	1051.0000
MONICA Scotland_CHEN2002D	F	Surveys 1 and 2		Blood	1	1	3	NS	2	2	1	1	2	2.6749	13.0000	486.0000
Smith USA_SMITH2014B	F			Saliva	2	2	Young	NS	3	2	2	2	1	2.6923	7.0000	260.0000
Benowitz III_BENOWI2012A	M+F			Blood	2	1	3	NS	3	Good		3	1	2.7273	3.0000	110.0000
Dickinson_DICKIN1988	M+F			Saliva	1	1	3	NS	1	2		2	4	2.8169	10.0000	355.0000
Lifestyle and Appetite_LEE1986B	M			Saliva	1	1	3	No	2	2		3	2	2.8571	10.0000	350.0000
HSE_OPCS1995A	F	1993		Blood	1	1	3	NS	1	2	1	2	2	2.8662	54.0000	1884.0000
Mullen_MULLEN1991	F			Urine	3	2	Young	No	2	2	2	2	1	2.9446	25.0000	849.0000
NHANES_CARABA2016-young	F	2001-2012, NH white, 12-17yrs		Blood	2	1	Young	NS	3	Good	1	1	1	2.9501	39.0000	1322.0000
Feldman_FELDMA1991	M+F			Blood	3	1	Young	NS	2	2		1	1	2.9777	12.0000	403.0000
SHHS_TUNSTA1991	F	1984-1986		Blood	1	1	2	NS	1	2	1	2	2	2.9943	68.0000	2271.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
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Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1	
Luepker_LUEPK1989	M+F	home IV	Saliva	1	1	Young	NS	1	2			1	1	3.0136	6.6902	222.0000
Sasaki_SASAKI2011	F		Blood	3	2	Young	NS	3	2	2	2	Asia	3.0221	134.0000	4434.0000	
Hegaard_HEGAAR2007	F		Saliva	1	2	Young	NS	3	2	2	2	2	3.0651	8.0000	261.0000	
NHANES_FISHER2008	F	1988-1994, age 18+	Blood	2	1	3	NS	3	2	1	1	1	3.0783	204.0000	6627.0000	
MONICA Scotland_CHEN2002D	M	Surveys 3 and 4	Blood	1	1	3	NS	2	2		1	2	3.0916	26.0000	841.0000	
NHANES_CARABA2016-adult	F	2001-2012, NH white, 26+yr	Blood	2	1	3	NS	3	Good	1	1	1	3.1207	159.0000	5095.0000	
HSE_OPCS1996A	M+F	1994	Blood	1	1	3	NS	2	2		2	2	3.1996	232.0000	7251.0000	
Dell'Orco_DELLOR1995	F		Urine	3	1	Young	NS	2	2	1	2	2	3.2319	17.0000	526.0000	
TEC_PEARCE2014	M	Non-indigenous	Urine	Other	1	Young	NS	3	2		2	4	3.3333	2.0000	60.0000	
INMA_AURREK2014	F	2004-08	Urine	3	2	Young	NS	3	2	2	2	2	3.3604	62.0000	1845.0000	
Levy_LEVY2015	M+F		Saliva	2	1	3	NS	3	2		2	1	3.3670	10.0000	297.0000	
Barlow_BARLOW1987	F		Urine	3	2	Young	NS	2	2	2	1	2	3.3943	13.0000	383.0000	
Phillips VIII_PHILLI1998D	M+F		Saliva	3	1	3	No	2	2		2	Asia	3.4351	9.0000	262.0000	
Jarvis II_JARVIS1991	M+F		Saliva	1	1	Young	NS	2	2		1	2	3.4398	14.0000	407.0000	
Griffin_GRIFFI2014	M+F		Blood	3	3	2	NS	3	2		2	2	3.6810	12.0000	326.0000	
Jedrychowski_JEDRYC2008	F		Blood	2	2	Young	NS	3	2	2	2	2	3.7118	17.0000	458.0000	
Phillips I_PHILLI1996	M+F		Saliva	3	1	3	No	2	2		2	2	3.7433	7.0000	187.0000	
van Vunakis_VANVUN1989	M+F		Saliva	3	1	NS	NS	1	2		1	1	3.7634	7.0000	186.0000	
Stick_STICK1996	F		Blood	3	2	Young	NS	2	2	2	1	4	3.8674	7.0000	181.0000	
Jenkins_JENKIN1999	F		Saliva	3	1	3	NS	3	2	1	2	1	3.8922	39.0000	1002.0000	
SHHS_TUNSTA1991	M	1984-1986	Blood	1	1	2	NS	1	2		2	2	3.8975	73.0000	1873.0000	
Kharrazi_KHARRA1999	F		Blood	2	2	Young	NS	2	2	2	1	1	3.9191	31.0000	791.0000	
NHANES_FISHER2008	M	1988-1994, age 18+	Blood	2	1	3	NS	3	2		1	1	4.0384	202.0000	5002.0000	
Etter_ETTER2000A	M+F		Saliva	1	1	Young	NS	2	2		1	2	4.1237	4.0000	97.0000	
Owen_OWEN2001	F		Saliva	1	2	Young	NS	2	2	2	1	2	4.1565	17.0000	409.0000	
Wagenknecht_WAGENK1992	M+F		Blood	3	1	Young	NS	1	Good		1	1	4.2090	145.0000	3445.0000	
HSE_OPCS1995A	M	1993	Blood	1	1	3	NS	1	2		2	2	4.2567	67.0000	1574.0000	
Assaf_ASSAF2002-F	F		Blood	1	1	3	NS	2	2	1	1	1	4.4521	13.0000	292.0000	
Parker_PARKER2002	M+F	GC method	Urine	1	1	NS	NS	2	2		1	1	4.4776	6.0000	134.0000	
Olivieri OLIVIE2002	M+F		Blood	3	1	NS	NS	2	2		2	2	4.5082	11.0000	244.0000	
S-Germany-II_HELLER1993	M	second random sample in 1989/90	Blood	3	1	3	NS	1	2		2	2	4.5187	46.0000	1018.0000	
Arnold_ARNOLD2001	F	African American women	Urine	3	2	Young	Yes	2	2	2	2	1	4.5455	12.0000	264.0000	
Muranaka_MURANA1988	M+F		Urine	1	3	NS	NS	2	2		1	Asia	4.5977	4.0000	87.0000	
Wallner-Liebmann_WALLNE2013	M+F		Blood	3	3	NS	NS	3	2		2	2	4.6206	123.0000	2662.0000	
Martinez-Sanchez_MARTIN2009C	M+F		Saliva	2	1	3	NS	3	2		2	2	4.6740	38.0000	813.0000	
S-Germany-I_HELLER1993	M	first random sample in 1984/85	Blood	3	1	3	NS	1	2		2	2	4.7131	46.0000	976.0000	
de Chazeron_DECHAZ2008	F		Blood	2	2	Young	NS	3	2	2	2	2	4.7375	37.0000	781.0000	
Waggoner_WAGGON2010	F		Urine	3	3	3	NS	3	2	1	1	1	4.9080	8.0000	163.0000	

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Coultas_WELLS1998C	F		Saliva	Other	1	3	NS	1	2	1	1	1	4.9356	23.0000	466.0000
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	4.9652	34.7064	699.0000
SHS_LU2014A	M+F		Saliva	1	1	3	NS	3	2			2	4.9683	384.0000	7729.0000
HSE_JARVIS2008-any-smoking	M+F	1996-2004, Any smoking at nurse visit	Saliva	1	1	3	NS	2	2			2	4.9982	1388.0000	27770.0000
Haddow II_HADDOW1988A	F		Blood	3	2	Young	No	2	2	2	2	1	4.9985	167.0000	3341.0000
Klebanoff_KLEBAN1998	F		Blood	3	2	Young	NS	3	2	2	1	1	5.0781	13.0000	256.0000
Ceppa_CEPPA2000	M+F		Urine	1	3	NS	NS	2	2			2	5.0802	19.0000	374.0000
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2			1	5.1429	27.0000	525.0000
Lee So Ryong_LEE2014N	M+F		Urine	2	1	3	NS	3	2			1	5.1776	223.0000	4307.0000
Levine_LEVINE2013	M+F		Urine	2	1	3	Yes	3	2			2	5.2288	8.0000	153.0000
Molina_MOLINA2010	F		Saliva	3	1	Young	NS	3	2			2	5.3459	17.0000	318.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1		2	5.3586	133.0000	2482.0000
Goniewicz_GONIEW2011	M+F		Urine	2	1	NS	NS	3	2			2	5.3640	14.0000	261.0000
Hoseini_HOSEIN2016	M+F		Urine	3	1	NS	NS	3	2			2	5.4795	8.0000	146.0000
NHANES_CARABA2016-young	M	2001-2012, NH white, 12-17yrs	Blood	2	1	Young	NS	3	Good			1	5.5514	74.0000	1333.0000
Jenkins_JENKIN1999	M		Saliva	3	1	3	NS	3	2			2	5.5785	27.0000	484.0000
Ulvik_I_ULVIK2010	M+F		Blood	2	3	2	NS	3	2			2	5.7547	114.0000	1981.0000
Glasgow_I_GLASGO1993	M+F		Saliva	1	3	NS	No	2	2			2	5.8559	13.0000	222.0000
Xie I_XIE2009	M+F		Blood	1	3	3	NS	3	2			1	6.1033	39.0000	639.0000
Coultas_WELLS1998C	M		Saliva	Other	1	3	NS	1	2			1	6.1151	17.0000	278.0000
Lindqvist_LINDQV2002	F		Blood	1	2	Young	No	2	2	2	1	2	6.1425	25.0000	407.0000
Dolcini_DOLCIN2003	M+F	Adolescents	Saliva	3	1	Young	Yes	3	2			1	6.2185	111.0000	1785.0000
Perez-Stable_PEREZS1992	M+F		Blood	1	1	3	NS	1	2			1	6.3492	12.0000	189.0000
Pell HEPSPELL2008A	M+F	HEPS	Saliva	1	1	3	NS	3	2			2	6.4343	48.0000	746.0000
NHANES_CARABA2016-young	M	2001-2012, NH black, 12-17yrs	Blood	2	1	Young	NS	3	Good			1	6.4851	50.0000	771.0000
Tikkanen_TIKKAN2010	F		Blood	3	2	Young	NS	3	2	2	2	2	6.5315	29.0000	444.0000
NHANES_CARABA2016-adult	M	2001-2012, NH white, 26+yrs	Blood	2	1	3	NS	3	Good			1	6.5678	310.0000	4720.0000
Kim_KIM2014J	M+F		Saliva	2	1	3	NS	3	Good			2	6.5934	12.0000	182.0000
Ford_FORD1997	F		Blood	3	2	Young	NS	2	2	2	2	4	6.6372	30.0000	452.0000
Semple_SEMPLE2007	M+F		Saliva	1	1	3	NS	3	2			2	6.6667	9.0000	135.0000
Naraghi_NARAGH2011	M		Blood	3	3	NS	NS	3	2			2	6.6667	3.0000	45.0000
Ellard II_ELLARD1996	F		Urine	1	2	Young	NS	2	2	2	2	2	6.7150	139.0000	2070.0000
Sarrafzadegan_SARRAF1997	M+F		Blood	1	1	Young	NS	2	2			2	6.8605	59.0000	860.0000
MONICA Germany_HELLER1998-older	M	45-64	Blood	3	1	2	NS	2	2			2	6.9343	38.0000	548.0000
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2			2	6.9941	131.0000	1873.0000
Pojer_POJER1984	M+F		Blood	1	1	NS	NS	2	2			1	7.1823	13.0000	181.0000
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2			2	7.2034	34.0000	472.0000
Pell ACSPELL2008A	M+F	ACS	Blood	1	3	NS	No	3	2			2	7.2573	77.0000	1061.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M1: Percentage of self-reported Non-smokers whose cotinine implies Current smoking  
 Results included in all analyses, cut point 1

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Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
KNHANES_KANG2015-F	F	2008-2009	Urine	2	1	3	NS	3	2	1	1	Asia	7.5295	441.0000	5857.0000
NHANES_CARABA2016-young-adult	F	2001-2012, NH white, 18-25yrs	Blood	2	1	Young	NS	3	Good	1	1	1	7.5829	64.0000	844.0000
Akiyama_AKIYAM1994	M		Urine	2	1	3	NS	2	2		2	Asia	7.6923	4.0000	52.0000
Fritz_FRITZ2010A	M+F		Urine	2	1	NS	NS	3	2		2	2	7.9861	23.0000	288.0000
Seersholt_SEERSH1999	M+F		Blood	1	1	3	NS	2	2		2	2	8.0586	22.0000	273.0000
Shipton_SHIPTO2009	F	N adjusted	Blood	3	2	Young	No	3	2	2	2	2	8.1266	190.0000	2338.0000
NHANES_CARABA2016-adult	F	2001-2012, NH black, 26+yrs	Blood	2	1	3	NS	3	Good	1	1	1	8.1471	226.0000	2774.0000
Shaffer_SHAFFE2000	M+F		Blood	Other	1	3	Yes	2	2		3	1	8.7131	195.0000	2238.0000
Wilmink_WILMIN1999	M		Blood	3	3	2	NS	2	2		2	2	8.7209	30.0000	344.0000
Lee II_LEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	8.8050	28.0000	318.0000
Akiyama_AKIYAM1994	F		Urine	2	1	3	NS	2	2	1	2	Asia	9.1667	11.0000	120.0000
Ulvik II_ULVIK2010	M+F		Blood	2	3	2	NS	3	2		2	2	9.3063	216.0000	2321.0000
Wewers I_WEWERS1995	M		Saliva	1	1	NS	No	2	2		1	1	9.3074	43.0000	462.0000
Kandel_KANDEL2006	M+F		Saliva	3	1	Young	Yes	3	2		3	1	9.4361	82.0000	869.0000
Pierce_PIERCE1987	M+F		Saliva	1	1	3	No	1	2		2	4	9.4855	59.0000	622.0000
West III_WEST2007	M+F		Saliva	1	1	3	NS	3	2		2	2	9.5041	23.0000	242.0000
Laatikainen I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	9.6000	12.0000	125.0000
KNHANES_KANG2015-M	M	2008-2009	Urine	2	1	3	NS	3	2		1	Asia	9.8535	296.0000	3004.0000
DC-HOPE_ELMOHA2009	F	Non, current smokers	Saliva	2	2	Young	NS	3	2	2	1	1	10.0340	59.0000	588.0000
Glasgow II_GLASGO1993	M+F		Saliva	1	3	NS	No	2	2		1	1	10.6061	14.0000	132.0000
Wewers I_WEWERS1995	F		Saliva	1	1	NS	No	2	2	1	1	1	10.9402	64.0000	585.0000
Phillips III_PHILLI1997A	M+F		Saliva	3	1	3	No	2	2		2	2	10.9827	19.0000	173.0000
Nguyen_NGUYEN2007	M+F		Blood	1	3	3	No	3	2		2	2	11.0048	23.0000	209.0000
Laatikainen I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2	1	2	4	11.4883	44.0000	383.0000
Twardella II_TWARDE2004	M+F		Blood	3	3	2	No	3	2		1	2	11.5801	107.0000	924.0000
NHANES_CARABA2016-young-adult	F	2001-2012, NH black, 18-25yrs	Blood	2	1	Young	NS	3	Good	1	1	1	11.6071	65.0000	560.0000
Phillips_PHILLI1994A	M+F		Saliva	2	1	3	NS	1	2		2	2	12.5382	41.0000	327.0000
Morales_MORALE2013	M+F		Blood	3	3	NS	No	3	2		1	1	12.8079	26.0000	203.0000
Badger_BADGER2009	M+F		Blood	3	3	2	NS	3	2		2	2	12.8834	42.0000	326.0000
Fendrich_FENDRI2005	M+F		Saliva	Other	1	Young	No	3	2		3	1	12.9310	45.0000	348.0000
Smith UK_SMITH1998C	M+F		Urine	1	3	3	NS	2	2		2	2	13.0435	18.0000	138.0000
Brunet_BRUNET2011	M+F		Blood	3	3	3	NS	3	2		1	4	13.5870	25.0000	184.0000
Stanton_STANTO1996	M+F		Saliva	3	1	Young	Yes	2	2		2	4	13.9219	82.0000	589.0000
NHANES_CARABA2016-adult	M	2001-2012, NH black, 26+yrs	Blood	2	1	3	NS	3	Good		1	1	14.1862	326.0000	2298.0000
Khuri_KHURI2001	M+F		Blood	Other	3	2	NS	2	2		2	1	14.3421	109.0000	760.0000
Salzer_SALZER2013	M+F		Blood	3	3	Young	No	3	2		3	2	15.0407	37.0000	246.0000
Xie II_XIE2014	F		Blood	3	2	Young	NS	3	Good	2	2	Asia	15.2411	98.0000	643.0000
Stookey_STOOKE1987	M+F		Saliva	1	1	NS	NS	2	2		2	1	15.7334	19.1947	122.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M1: Percentage of self-reported Non-smokers whose cotinine implies Current smoking  
 Results included in all analyses, cut point 1

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Id	RSex		Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
	M	F														
NHANES_CARABA2016-young-adult	M		2001-2012, NH white, 18-25yrs	Blood	2	1	Young	NS	3	Good		1	1	17.1196	126.0000	736.0000
Jarvis I_JARVIS1987A	M+F			Blood	1	3	NS	NS	1	2		2	2	17.3554	21.0000	121.0000
Phillips V_PHILLI1998A	M+F			Saliva	3	1	3	No	2	2		2	2	17.9167	43.0000	240.0000
Arnold_ARNOLD2001	F		White women	Urine	3	2	Young	Yes	2	2	2	2	1	20.1031	39.0000	194.0000
Mathews_MATHEW1999A	F			Blood	3	2	Young	NS	2	2	2	1	2	20.6612	125.0000	605.0000
Martinez_MARTIN2004	M+F			Blood	1	3	2	NS	3	2		2	1	21.2620	155.0000	729.0000
Parna_PARNA2005	F			Blood	3	2	Young	NS	3	2	2	2	2	21.6772	274.0000	1264.0000
Spencer II_SPENCE2013	F			Blood	3	2	Young	No	3	2	2	2	2	21.7195	96.0000	442.0000
NHANES_CARABA2016-young-adult	M		2001-2012, NH black, 18-25yrs	Blood	2	1	Young	NS	3	Good		1	1	22.7926	111.0000	487.0000
Windsor_WINDSO2000	F		Phase 1	Saliva	Other	2	Young	NS	2	2	2	2	1	24.0854	79.0000	328.0000
Holiday_HOLIDA1995	M+F		Non-smokers v Smokers	Blood	3	3	3	NS	2	2		3	1	24.4898	84.0000	343.0000
Bernert_BERNER2000	M+F			Blood	2	1	3	NS	2	2		3	1	25.0000	39.0000	156.0000
Wewers II_WEWERS2009	F			Saliva	2	1	3	NS	3	2	1	3	1	35.5556	16.0000	45.0000
ABC_PEARCE2014	M		Indigenous	Urine	Other	1	Young	NS	3	2		2	4	39.2857	22.0000	56.0000
ABC_PEARCE2014	F		Indigenous	Urine	Other	1	Young	NS	3	2	1	2	4	52.9412	36.0000	68.0000
Audrain-McGovern_AUDRAI2011	M+F		12-wk follow-up	Saliva	3	1	Young	Yes	3	2		1	1	59.2593	32.0000	54.0000
Muramoto_MURAMO2007	M+F			Urine	3	1	Young	NS	3	Good		1	1	62.3188	43.0000	69.0000
Marshall_MARSHA2011A	M			Blood	3	3	3	NS	3	2		1	1	68.0000	34.0000	50.0000
Zielinska-Danch_ZIELIN2007	M+F			Urine	1	1	3	NS	3	2		1	2	70.3704	152.0000	216.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M1: Percentage of self-reported Non-smokers whose cotinine implies Current smoking  
 Additional results included in analysis by Sex, cut point 1

Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
HSE_BOREHA2001	F	1999, by sex	Saliva	1	1	3	NS	2	2	1	3	2	2.7397	109.3600	3991.6400	
HSE_BOREHA2001	M	1999, by sex	Saliva	1	1	3	NS	2	2	3	2	5.8824	201.6800	3428.5600		
HSE_WARDLE2003-non-curr	F	2002, by sex	Saliva	1	1	Young	NS	3	2	1	1	2	8.9438	105.0000	1174.0000	
HSE_WARDLE2003-non-curr	M	2002, by sex	Saliva	1	1	Young	NS	3	2	1	2	10.1928	111.0000	1089.0000		
Additional results included in analysis by Body fluid tested, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
SEASD_SIMONI2006-plasma	F	plasma	Blood	1	1	3	NS	3	2	1	2	2	0.9722	14.0000	1440.0000	
SEASD_SIMONI2006-saliva	F	saliva	Saliva	3	1	3	NS	3	2	1	2	2	2.4322	35.0000	1439.0000	
Hellemons_HELLEM2015	M+F	plasma	Blood	3	3	NS	No	3	2		2	2	5.7203	27.0000	472.0000	
Additional results included in analysis by Assay method, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
Yeh_YEH2011-strip	M+F	Test strip method	Urine	1	1	NS	Yes	3	2		3	1	0.0000	0.0000	100.0000	
Additional results included in analysis by Study Type, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
HSE_SHAHAB2006A-with-COPD	M+F	2001, with COPD	Saliva	1	3	2	NS	3	2		1	2	5.7665	41.0000	711.0000	
Additional results included in analysis by Pregnancy, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
NHANES_DIETZ2011-pregnant	F	1999-2006, pregnant	Blood	2	2	Young	NS	3	Good	2	1	1	2.4390	22.0000	902.0000	
Additional results included in analysis by Smoking product considered, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
HSE_JARVIS2008-cig-smoking	M+F	1996-2004, Cigarette smoking at nurse visit	Saliva	1	1	3	NS	2	2		1	2	5.1015	1418.0000	27796.0000	
Holiday_HOLIDA1995	M+F	Non-users v Tobacco users	Blood	3	3	3	NS	2	2		3	1	6.4982	18.0000	277.0000	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M1: Percentage of self-reported Non-smokers whose cotinine implies Current smoking  
 Results included in overall analyses, cut point 2

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC2</b>	<b>N_Cut2</b>	<b>Weight2</b>
TEC_PEARCE2014	F	Non-indigenous	Urine	Other	1	Young	NS	3	2	1	2	4	0.0000	0.0000	72.0000
SEASD_SIMONI2007	F	saliva, cut point 2	Saliva	3	1	3	No	3	2	1	2	2	0.0000	0.0000	1359.0000
TEC_PEARCE2014	M	Non-indigenous	Urine	Other	1	Young	NS	3	2		2	4	0.0000	0.0000	60.0000
BUPA_WALD1984	M		Urine	3	1	NS	NS	1	2		2	2	0.0000	0.0000	221.0000
Haddow III_HADDOW1988	F		Blood	3	2	Young	No	1	2	2	2	1	0.1326	2.0000	1508.0000
Cummings_WELLS1998C	M		Urine	1	1	3	NS	1	2		2	1	0.3390	1.0000	295.0000
Haddow I_HADDOW1986	F		Blood	3	1	NS	NS	1	2	1	1	1	0.4310	1.0000	232.0000
Cummings_WELLS1998C	F		Urine	1	1	3	NS	1	2	1	2	1	0.5435	2.0000	368.0000
S-Germany-II_HELLER1993	F	second random sample in 1989/90	Blood	3	1	3	NS	1	2	1	2	2	0.6737	9.0000	1336.0000
S-Germany-I_HELLER1993	F	first random sample in 1984/85	Blood	3	1	3	NS	1	2	1	2	2	0.7545	11.0000	1458.0000
Smith USA_SMITH2014B	F		Saliva	2	2	Young	NS	3	2	2	2	1	0.7692	2.0000	260.0000
Peacock_PEACOC1998	F	booking visit	Blood	1	2	Young	NS	2	2	2	1	2	0.8018	7.0000	873.0000
Lifestyle and Appetite_LEE1986B	F		Saliva	1	1	3	No	2	2	1	3	2	1.0917	5.0000	458.0000
Pojer_POJER1984	M+F		Blood	1	1	NS	NS	2	2		1	4	1.1050	2.0000	181.0000
SHHS_TUNSTA1991	F	1984-1986	Blood	1	1	2	NS	1	2	1	2	2	1.3210	30.0000	2271.0000
Wagenknecht_WAGENK1992	M+F		Blood	3	1	Young	NS	1	Good		1	1	1.4514	50.0000	3445.0000
S-Germany-I_HELLER1993	M	first random sample in 1984/85	Blood	3	1	3	NS	1	2		2	2	1.5369	15.0000	976.0000
Perez-Stable_PEREZS1992	M+F		Blood	1	1	3	NS	1	2		1	1	1.5873	3.0000	189.0000
SHHS_TUNSTA1991	M	1984-1986	Blood	1	1	2	NS	1	2		2	2	1.6017	30.0000	1873.0000
Lifestyle and Appetite_LEE1986B	M		Saliva	1	1	3	No	2	2		3	2	1.7143	6.0000	350.0000
S-Germany-II_HELLER1993	M	second random sample in 1989/90	Blood	3	1	3	NS	1	2		2	2	1.7682	18.0000	1018.0000
Bardy_BARDY1993	F		Blood	2	2	Young	No	2	2	2	2	2	1.9286	20.0000	1037.0000
Copenhagen_SUADIC1997	M	1985-86, with or without CVD	Blood	3	3	2	NS	2	2		3	2	1.9929	28.0000	1405.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1	2	2	2.0548	51.0000	2482.0000
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	2.0952	11.0000	525.0000
Jenkins_JENKIN1999	F		Saliva	3	1	3	NS	3	2	1	2	1	2.1956	22.0000	1002.0000
Balтар_BALTAR2011	M+F		Blood	2	3	NS	No	3	2		2	4	2.2222	9.0000	405.0000
Pierce_PIERCE1987	M+F		Saliva	1	1	3	No	1	2		2	4	2.4116	15.0000	622.0000
Lindqvist_LINDQV2002	F		Blood	1	2	Young	No	2	2	2	1	2	2.4570	10.0000	407.0000
Phillips I_PHILLI1996	M+F		Saliva	3	1	3	No	2	2		2	2	2.6738	5.0000	187.0000
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2		2	2	2.7763	52.0000	1873.0000
Coultas_WELLS1998C	F		Saliva	Other	1	3	NS	1	2	1	1	1	2.7897	13.0000	466.0000
Ford_FORD1997	F		Blood	3	2	Young	NS	2	2	2	2	4	3.0973	14.0000	452.0000
Hellemons_HELEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	3.3898	16.0000	472.0000
Jenkins_JENKIN1999	M		Saliva	3	1	3	NS	3	2		2	1	3.5124	17.0000	484.0000
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	3.6077	25.2178	699.0000
Parker_PARKER2002	M+F	GC method	Urine	1	1	NS	NS	2	2		1	1	3.7313	5.0000	134.0000
Coultas_WELLS1998C	M		Saliva	Other	1	3	NS	1	2		1	1	3.9568	11.0000	278.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45

Rate M1: Percentage of self-reported Non-smokers whose cotinine implies Current smoking  
Results included in overall analyses, cut point 2

Id	RSex		Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC2	N_Cut2	Weight2
DC-HOPE_ELMOHA2009	F	Non, current smokers		Saliva	2	2	Young	NS	3	2	2	1	1	4.0816	24.0000	588.0000
Laatikainen_I_LAATIK1999	M	Pitkäranta		Blood	2	1	3	NS	2	2		2	4	4.8000	6.0000	125.0000
Sato_SATO2003A	M+F			Blood	1	3	NS	NS	3	2		1	Asia	4.9808	13.0000	261.0000
Quinn_QUINN1996	M+F			Blood	3	1	Young	NS	2	2		2	1	5.0420	12.0000	238.0000
Burstyn_BURSTY2009	F			Blood	3	2	Young	No	3	2	2	2	1	5.1000	14.5350	285.0000
Martinez_MARTIN2004	M+F			Blood	1	3	2	NS	3	2		2	1	5.4870	40.0000	729.0000
Phillips_PHILLI1994A	M+F			Saliva	2	1	3	NS	1	2		2	2	6.7278	22.0000	327.0000
Vasankari_VASANK2011	M+F			Blood	3	1	2	NS	3	2		2	2	6.8898	35.0000	508.0000
Niedbala_NIEDBA2002	M+F			Urine	3	1	NS	NS	2	Good		3	1	6.8966	4.0000	58.0000
Lee II_LEE1995B	F			Urine	3	1	3	No	1	2	1	2	Asia	7.2327	23.0000	318.0000
Smith UK_SMITH1998C	M+F			Urine	1	3	3	NS	2	2		2	2	7.2464	10.0000	138.0000
MFHS_KORPIL2004	M+F			Blood	3	1	2	No	3	2		2	2	7.4962	397.0000	5296.0000
Assaf_ASSAF2002-M	M			Blood	1	1	3	NS	2	2		1	1	8.0214	15.0000	187.0000
Laatikainen_I_LAATIK1999	F	Pitkäranta		Blood	2	1	3	NS	2	2	1	2	4	8.0940	31.0000	383.0000
Zielinska-Danch_ZIELIN2007	M+F			Urine	1	1	3	NS	3	2		1	2	9.7222	21.0000	216.0000
Lee Chung Yul_LEE2009TC	M			Urine	1	1	NS	No	3	2		2	Asia	9.8160	16.0000	163.0000
Bernert_BERNER2000	M+F			Blood	2	1	3	NS	2	2		3	1	10.2564	16.0000	156.0000
Parna_PARNA2005	F			Blood	3	2	Young	NS	3	2	2	2	2	10.2848	130.0000	1264.0000
Markovic_MARKOV2000	F			Urine	2	2	Young	NS	2	2	2	1	1	10.4027	62.0000	596.0000
MacFarlane_MACFAR2001	M+F			Urine	1	3	Young	NS	2	2		2	2	13.4228	20.0000	149.0000
Agewall_AGEWAL2002	M			Urine	3	3	2	NS	2	2		2	2	15.2824	46.0000	301.0000
Apseloff_APSELO1994	M+F			Urine	Other	1	NS	NS	1	2		2	1	15.9574	45.0000	282.0000
Lee Chung Yul_LEE2009TC	F			Urine	1	1	NS	No	3	2	1	2	Asia	16.3793	19.0000	116.0000
Gill_GILL1996	M+F			Urine	1	3	NS	NS	2	2		1	4	20.4420	37.0000	181.0000
Gilligan_GILLIG2010	F			Urine	3	2	Young	Yes	3	2	2	2	4	23.9130	22.0000	92.0000
ABC_PEARCE2014	M	Indigenous		Urine	Other	1	Young	NS	3	2		2	4	32.1429	18.0000	56.0000
ABC_PEARCE2014	F	Indigenous		Urine	Other	1	Young	NS	3	2	1	2	4	36.7647	25.0000	68.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M1: Percentage of self-reported Non-smokers whose cotinine implies Current smoking  
 Multivariate analysis  
 Variables selected according to significance (no variables forced in)

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**WEIGHTED on Number of self-reported Non-smokers, cut point 1**

Misclassification rate, cut point 1	Deviance		(DF)					
	Model 1	5242798.034 5	(208)					
Constant	Estimate 4.9563	S.E. 0.3247	P 0.0000 +++	LSMean 4.9563	95%CI 4.3162	95%Clu 5.5963		
Model 2	Deviance 4987076.906 2	(DF) (206)	Drop Dev 255721.1283	P 0.0058 **				
	Constant	Estimate 4.5274	S.E. 0.3594	P 0.0000 +++	LSMean 4.5274	95%CI 3.8188	95%Clu 5.2360	
Study type								
General pop.	138	Aliased			4.5274	3.8188	5.2360	
Pregnancy	38	1.0242	0.9106	0.2620	5.5515	3.9020	7.2011	
Diseased or CC	33	3.9238	1.2426	0.0018 ++	8.4512	6.1060	10.7964	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M2: Percentage of self-reported Never-smokers whose cotinine implies Current smoking

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Overall percentage, cut point 1, unweighted

**Misclassification rate, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	1015.2758	(85)				
		3.2698	0.3727	0.0000 ***	3.2698	2.5288	4.0107

Overall percentage, cut point 2, unweighted

**Misclassification rate, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	127.9149	(21)				
		2.1345	0.5262	0.0006 ***	2.1345	1.0403	3.2288

Overall percentage, cut point 1

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Never-smokers, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	516275.7174	(85)				
		2.9953	0.2739	0.0000 ***	2.9953	2.4507	3.5399

Overall percentage, cut point 2

**Misclassification rate, cut point 2**

**WEIGHTED on Number of self-reported Never-smokers, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	81003.4469	(21)				
		2.3425	0.5120	0.0002 ***	2.3425	1.2779	3.4072

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M2: Percentage of self-reported Never-smokers whose cotinine implies Current smoking

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By Body fluid tested

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Never-smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P		
	Constant		Estimate	S.E.	P	LSMean	95%CI	95%Clu
<b>Body fluid tested</b>								
Urine	16	Aliased				2.5893	1.3840	3.7947
Saliva	22	0.8412	0.9408	0.3738	0.0001 +++	3.4305	1.9996	4.8614
Blood	49	0.4374	0.6946	0.5306		3.0267	2.3519	3.7015

By cotinine assay method used

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Never-smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P		
	Constant		Estimate	S.E.	P	LSMean	95%CI	95%Clu
<b>Cotinine assay method</b>								
Chromatography	35	Aliased				2.6143	1.6129	3.6157
Spectrometry	19	0.9558	0.6395	0.1389	0.0000 +++	3.5701	2.7855	4.3548
Immunoassay	27	-0.5067	0.7742	0.5146		2.1076	0.9375	3.2777
Other	5	1.2562	1.6090	0.4372		3.8705	0.8303	6.9106

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M2: Percentage of self-reported Never-smokers whose cotinine implies Current smoking

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By Study type

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Never-smokers, cut point 1**

	<b>Model 2</b>		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
	<b>Constant</b>		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
<b>Study type</b>								
General pop.	66	Aliased				2.9207	2.3427	3.4986
Pregnancy	2	1.5408	1.6897	0.3645	0.0000 +++	4.4615	1.1508	7.7722
Diseased or CC	18	0.4413	1.0573	0.6775		3.3619	1.3399	5.3839

By Age group

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Never-smokers, cut point 1**

	<b>Model 2</b>		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
	<b>Constant</b>		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
<b>Age group</b>								
Young	9	Aliased				4.2444	2.6072	5.8817
Not young	17	-1.4849	1.0409	0.1575	0.0000 +++	2.7595	1.4923	4.0267
All ages	41	-0.9530	0.8939	0.2895		3.2915	2.5982	3.9848
NS	20	-2.9239	1.0350	0.0059 --		1.3205	0.0726	2.5684

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M2: Percentage of self-reported Never-smokers whose cotinine implies Current smoking

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By Awareness of validation by cotinine

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Never-smokers, cut point 1**

		<b>Model 2</b>	<b>Deviance</b> 488704.5444	<b>(DF)</b> (83)	<b>Drop Dev</b> 27571.1730	<b>P</b> 0.1025		
		<b>Constant</b>	<b>Estimate</b> 3.8919	<b>S.E.</b> 1.7840	<b>P</b> 0.0320 +	<b>LSMean</b> 3.8919	<b>95%CI</b> 0.3436	<b>95%Clu</b> 7.4402
<b>Aware of checking by cotinine?</b>								
Yes	2	Aliased				3.8919	0.3436	7.4402
No	11	1.3091	2.0923	0.5333	5.2010	3.0267	7.3753	
NS	73	-1.0654	1.8061	0.5569	2.8265	2.2662	3.3868	

By Time of publication

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Never-smokers, cut point 1**

		<b>Model 2</b>	<b>Deviance</b> 504051.2393	<b>(DF)</b> (83)	<b>Drop Dev</b> 12224.4781	<b>P</b> 0.3699		
		<b>Constant</b>	<b>Estimate</b> 2.0528	<b>S.E.</b> 0.7345	<b>P</b> 0.0065 ++	<b>LSMean</b> 2.0528	<b>95%CI</b> 0.5918	<b>95%Clu</b> 3.5137
<b>Time of publication</b>								
In 1995 review	17	Aliased				2.0528	0.5918	3.5137
Before 2003	33	1.2291	0.8979	0.1748	3.2818	2.2546	4.3090	
2003 onwards	36	1.0296	0.8179	0.2116	3.0823	2.3670	3.7977	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M2: Percentage of self-reported Never-smokers whose cotinine implies Current smoking

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By Quality of study

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Never-smokers, cut point 1**

		<b>Model 2</b>	<b>Deviance</b> 498406.0843	<b>(DF)</b> (84)	<b>Drop Dev</b> 17869.6331	<b>P</b> 0.0863 (*)		
		<b>Constant</b>	<b>Estimate</b> 1.5964	<b>S.E.</b> 0.8503	<b>P</b> 0.0639 (+)	<b>LSMean</b> 1.5964	<b>95%CI</b> -0.0946	<b>95%Clu</b> 3.2874
	<b>Study quality</b>							
Good		9	Aliased			1.5964	-0.0946	3.2874
Not good		77	1.5567	0.8970	0.0863 (+)	3.1531	2.5852	3.7209

By Pregnancy (women only)

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Never-smokers, cut point 1**

		<b>Model 2</b>	<b>Deviance</b> 235250.1862	<b>(DF)</b> (29)	<b>Drop Dev</b> 3804.9651	<b>P</b> 0.4989		
		<b>Constant</b>	<b>Estimate</b> 3.0914	<b>S.E.</b> 0.5884	<b>P</b> 0.0000 +++	<b>LSMean</b> 3.0914	<b>95%CI</b> 1.8879	<b>95%Clu</b> 4.2949
	<b>Pregnancy</b>							
Not pregnant		29	Aliased			3.0914	1.8879	4.2949
Pregnant		2	1.3701	2.0005	0.4989	4.4615	0.5510	8.3719

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M2: Percentage of self-reported Never-smokers whose cotinine implies Current smoking

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By Tobacco products considered

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Never-smokers, cut point 1**

	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
		424694.6230	(83)	91581.0944	0.0003 ***	<b>LSMean</b>	<b>95%CI</b>
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	4.3478	3.5298	5.1658
<b>Tobacco products considered</b>							
Cigarettes	30	Aliased			4.3478	3.5298	5.1658
Any smoking	53	-2.2222	0.5256	0.0001 ---	2.1256	1.4746	2.7767
Any tobacco	3	-1.1470	1.3759	0.4069	3.2008	0.5893	5.8123

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M2: Percentage of self-reported Never-smokers whose cotinine implies Current smoking

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By Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Never-smokers, cut point 1**

		<b>Model 2</b>	<b>Deviance</b> 513623.9525	<b>(DF)</b> (83)	<b>Drop Dev</b> 2651.7650	<b>P</b> 0.8076		
		<b>Constant</b>	<b>Estimate</b> 3.2099	<b>S.E.</b> 0.4912	<b>P</b> 0.0000 ***	<b>LSMean</b> 3.2099	<b>95%CI</b> 2.2329	<b>95%Clu</b> 4.1869
<b>CARD3: RSex</b>								
	F	31	Aliased			3.2099	2.2329	4.1869
	M	23	-0.0293	0.9473	0.9754	3.1807	1.5696	4.7917
	M+F	32	-0.3727	0.6133	0.5451	2.8373	2.1069	3.5676

By Location

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Never-smokers, cut point 1**

		<b>Model 2</b>	<b>Deviance</b> 461429.1813	<b>(DF)</b> (82)	<b>Drop Dev</b> 54846.5361	<b>P</b> 0.0260 *		
		<b>Constant</b>	<b>Estimate</b> 3.6356	<b>S.E.</b> 0.4101	<b>P</b> 0.0000 ***	<b>LSMean</b> 3.6356	<b>95%CI</b> 2.8197	<b>95%Clu</b> 4.4515
<b>Location</b>								
	Canada/USA	26	Aliased			3.6356	2.8197	4.4515
	Europe	48	-1.4102	0.5730	0.0160 -	2.2254	1.4294	3.0215
	Asia	9	-0.4456	0.8027	0.5804	3.1900	1.8173	4.5628
	Other	3	5.3250	3.2020	0.1001	8.9606	2.6433	15.2779

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M2: Percentage of self-reported Never-smokers whose cotinine implies Current smoking

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By Location x Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Never-smokers, cut point 1**

Model 2	Deviance		(DF) (74)	Drop Dev 171480.6737	P 0.0009 ***		
	Constant	Estimate 3.6220				S.E. 1.1608	P 0.0026 ++
<b>Location x Sex</b>							
Canada/USA, F	7	Aliased				3.6220	1.3091
Canada/USA, M	3	1.6495	2.9649	0.5796	5.2716	-0.1645	10.7076
Canada/USA, M+F	16	-0.0197	1.2272	0.9872	3.6023	2.8087	4.3959
Europe, F	18	-1.5801	1.2760	0.2195	2.0419	0.9863	3.0975
Europe, M	16	-0.9564	1.3966	0.4956	2.6656	1.1185	4.2128
Europe, M+F	14	-1.4294	1.3336	0.2873	2.1926	0.8844	3.5008
Asia, F	5	2.4711	1.4967	0.1030	6.0931	4.2104	7.9758
Asia, M	3	1.5367	2.4433	0.5313	5.1587	0.8748	9.4427
Asia, M+F	1	-3.4968	1.4768	0.0205 -	0.1252	-1.6938	1.9442
Other, F	1	7.5193	3.7428	0.0482 +	11.1413	4.0513	18.2313
Other, M	1	9.2351	8.2408	0.2661	12.8571	-3.3992	29.1135
Other, M+F	1	-3.6220	6.3384	0.5694	-0.0000	-12.4160	12.4160

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45

Rate M2: Percentage of self-reported Never-smokers whose cotinine implies Current smoking  
Results included in all analyses, cut point 1

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>	
HSE_LEE2005TF	M	1999 never-smokers	Saliva	1	1	NS	NS	3	Good	2	2	0.0000	0.0000	47.0000		
Stookey_STOKE1987	M+F		Saliva	1	1	NS	NS	2	2	2	1	0.0000	0.0000	79.4379		
Nguyen_NGUYEN2007	M+F		Blood	1	3	3	No	3	2	2	2	0.0000	0.0000	106.0000		
Morales_MORALE2013	M+F		Blood	3	3	NS	No	3	2	1	1	0.0000	0.0000	30.0000		
Naraghi_NARAGH2011	M		Blood	3	3	NS	NS	3	2	2	2	0.0000	0.0000	9.0000		
Naraghi_NARAGH2011	F		Blood	3	3	NS	NS	3	2	1	2	0.0000	0.0000	81.0000		
Phillipou_PHILLI1994C	M+F		Urine	3	3	NS	No	2	2	2	4	0.0000	0.0000	120.0000		
MONICA Germany_HELLER1998-young	M	25-44	Blood	3	1	Young	NS	2	2	2	2	0.0000	0.0000	207.0000		
Tabara_TABARA2013	M+F		Urine	2	1	NS	NS	3	2	2	Asia	0.1252	7.0000	5591.0000		
Tsutsumi_TSUTSU2002A-M	M		Urine	1	1	2	NS	2	2	1	Asia	0.4149	2.0000	482.0000		
MONICA Germany_HELLER1998-older	F	45-64	Blood	3	1	2	NS	2	2	1	2	2	0.4438	3.0000	676.0000	
HSE_LEE2005TF	F	2001 never-smokers	Saliva	1	1	NS	NS	3	Good	1	2	2	0.4573	6.0000	1312.0000	
Fontham_FONTHA1994-cases	F	Cases	Urine	3	3	3	NS	1	2	1	3	1	0.5618	2.0000	356.0000	
S-Germany-II_HELLER1993	F	second random sample in 1989/90	Blood	3	1	3	NS	1	2	1	2	2	0.5994	6.0000	1001.0000	
S-Germany-I_HELLER1993	F	first random sample in 1984/85	Blood	3	1	3	NS	1	2	1	2	2	0.6119	7.0000	1144.0000	
MONICA Scotland_CHEN2002D	F	Surveys 3 and 4	Blood	1	1	3	NS	2	2	1	1	2	0.6299	4.0000	635.0000	
SEASD_FORAST2000	F	urine, never-smokers	Urine	3	1	3	NS	2	2	1	1	2	0.6405	8.0000	1249.0000	
MONICA Scotland_CHEN2002D	M	Surveys 3 and 4	Blood	1	1	3	NS	2	2	1	2	2	0.6897	3.0000	435.0000	
HSE_LEE2005TF	F	1998 never-smokers	Saliva	1	1	NS	NS	3	Good	1	2	2	0.7519	11.0000	1463.0000	
S-Germany-I_HELLER1993	M	first random sample in 1984/85	Blood	3	1	3	NS	1	2	2	2	2	0.7557	3.0000	397.0000	
HSE_LEE2005TF	M	2000 never-smokers	Saliva	1	1	NS	NS	3	Good	2	2	2	0.7634	2.0000	262.0000	
Rodriguez_RODRIG2010	M+F		Urine	3	1	2	NS	3	2	2	1	2	0.8025	13.0000	1620.0000	
MONICA Germany_HELLER1998-young	F	25-44	Blood	3	1	Young	NS	2	2	1	2	2	0.8547	4.0000	468.0000	
Cummings_WELLS1998C	F		Urine	1	1	3	NS	1	2	1	2	1	0.8889	2.0000	225.0000	
MONICA Scotland_CHEN2002D	F	Surveys 1 and 2	Blood	1	1	3	NS	2	2	1	1	2	0.9615	3.0000	312.0000	
Ulvik II_ULVIK2010	M+F		Blood	2	3	2	NS	3	2	2	2	2	1.0899	8.0000	734.0000	
Owen_OWEN2001	F		Saliva	1	2	Young	NS	2	2	2	1	2	1.2097	3.0000	248.0000	
HSE_LEE2005TF	F	2000 never-smokers	Saliva	1	1	NS	NS	3	Good	1	2	2	1.2723	5.0000	393.0000	
HSE_OPSCS1996A	M+F	1994	Blood	1	1	3	NS	2	2	2	2	2	1.3043	60.0000	4600.0000	
Slattery II_SLATTE1989A	F		Blood	3	3	3	NS	1	2	1	1	1	1.3072	4.0000	306.0000	
Townsend_TOWNSE1991A	M+F	All ages	Saliva	Other	1	Young	Yes	2	2		1	2	1.3245	4.0000	302.0000	
Wallner-Liebmann_WALLNE2013	M+F		Blood	3	3	NS	NS	3	2	2	2	2	1.3400	16.0000	1194.0000	
Tsutsumi_TSUTSU2002A-F	F		Urine	1	1	2	NS	2	2	1	1	Asia	1.4433	7.0000	485.0000	
MONICA Germany_HELLER1998-older	M	45-64	Blood	3	1	2	NS	2	2	2	2	2	1.5789	3.0000	190.0000	
HSE_OPSCS1995A	F	1993	Blood	1	1	3	NS	1	2	1	2	2	1.5957	21.0000	1316.0000	
HSE_LEE2005TF	M	2001 never-smokers	Saliva	1	1	NS	NS	3	Good	2	2	1	1.6251	15.0000	923.0000	
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2	1	1	1	1.6260	4.0000	246.0000	
MONICA Scotland_CHEN2002D	M	Surveys 1 and 2	Blood	1	1	3	NS	2	2	1	2	1	1.6327	4.0000	245.0000	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M2: Percentage of self-reported Never-smokers whose cotinine implies Current smoking  
 Results included in all analyses, cut point 1

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Id	RSex		Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
	M	F														
S-Germany-II_HELLER1993	M		second random sample in 1989/90	Blood	3	1	3	NS	1	2		2	2	1.6360	8.0000	489.0000
HSE_LEE2005TF	M		1998 never-smokers	Saliva	1	1	NS	NS	3	Good		2	2	1.6878	16.0000	948.0000
Cummings_WELLS1998C	M			Urine	1	1	3	NS	1	2		2	1	1.7241	2.0000	116.0000
SHHS_TUNSTA1995	F		1984-1986	Blood	1	1	2	NS	2	2	1	2	2	1.8421	28.0000	1520.0000
Pell ACS_PELL2008A	M+F		ACS	Blood	1	3	NS	No	3	2		2	2	1.8779	8.0000	426.0000
HSE_WEST2007	M+F		2003	Saliva	1	1	3	NS	3	2		2	2	1.8939	15.0000	792.0000
Fontham_FONTHA1994-controls	F		Controls	Urine	3	1	3	NS	1	2	1	3	1	2.3496	25.0000	1064.0000
Wagenknecht_WAGENK1992	M+F			Blood	3	1	Young	NS	1	Good		1	1	2.5806	72.0000	2790.0000
SHHS_TUNSTA1995	M		1984-1986	Blood	1	1	2	NS	2	2		2	2	2.6022	21.0000	807.0000
FINRISK_VARTIA2002	M			Blood	2	1	3	NS	2	2		2	2	2.6570	22.0000	828.0000
FINRISK_VARTIA2002	F			Blood	2	1	3	NS	2	2	1	2	2	2.6786	45.0000	1680.0000
Luepker_LUEPK1989	M+F		home IV	Saliva	1	1	Young	NS	1	2		1	1	2.8571	6.0616	212.1560
HSE_OPSCS1995A	M		1993	Blood	1	1	3	NS	1	2		2	2	2.8670	25.0000	872.0000
NHANES_VENN2007	M+F		1988-1994	Blood	2	1	3	NS	3	2		2	1	2.9254	229.0000	7828.0000
Olivieri_OLIVIE2002	M+F			Blood	3	1	NS	NS	2	2		2	2	3.0303	5.0000	165.0000
Pell HEPS_PELL2008A	M+F		HEPS	Saliva	1	1	3	NS	3	2		2	2	3.0635	14.0000	457.0000
Coultas_WELLS1998C	F			Saliva	Other	1	3	NS	1	2	1	1	1	3.1008	12.0000	387.0000
KNHANES_JUNG2015	F		2010-2012	Urine	2	1	3	NS	3	2	1	2	Asia	3.1250	49.0000	1568.0000
Ogden_OGDEN1997	F			Saliva	3	1	3	No	2	2	1	1	1	3.5000	19.2458	549.8800
NHANES_ALSHAA2015	M+F		2009-10	Blood	2	1	3	NS	3	2		1	1	3.5959	110.0000	3059.0000
NHANES_AGARWA2009	M+F		1999-2004	Blood	2	1	2	NS	3	2		1	1	3.7960	131.0000	3451.0000
Perez-Stable_PEREZS1992	M+F			Blood	1	1	3	NS	1	2		1	1	4.0323	5.0000	124.0000
Khuri_KHURI2001	M+F			Blood	Other	3	2	NS	2	2		2	1	4.0323	5.0000	124.0000
NHANES_ALSHAA2015	M+F		2011-12	Blood	2	1	3	NS	3	2		1	1	4.2583	120.0000	2818.0000
Shaffer_SHAFFE2000	M+F			Blood	Other	1	3	Yes	2	2		3	1	4.3928	68.0000	1548.0000
Ulvik I_ULVIK2010	M+F			Blood	2	3	2	NS	3	2		2	2	4.4020	53.0000	1204.0000
NHANES_ALSHAA2015	M+F		2005-06	Blood	2	1	3	NS	3	2		1	1	4.4953	106.0000	2358.0000
Hellemons_HELLEM2015	M+F		urine	Blood	3	3	NS	No	3	2		2	2	4.6083	10.0000	217.0000
NHANES_ALSHAA2015	M+F		2007-08	Blood	2	1	3	NS	3	2		1	1	4.7483	133.0000	2801.0000
Shipton_SHIPTO2009	F		N adjusted	Blood	3	2	Young	No	3	2	2	2	2	4.8706	96.0000	1971.0000
Wilmink_WILMIN1999	M			Blood	3	3	2	NS	2	2		2	2	4.9180	3.0000	61.0000
Coultas_WELLS1998C	M			Saliva	Other	1	3	NS	1	2		1	1	5.2632	9.0000	171.0000
Twardella II_TWARDE2004	M+F			Blood	3	3	2	No	3	2		1	2	5.7692	18.0000	312.0000
HSE_LEE2005TF	F		1999 never-smokers	Saliva	1	1	NS	NS	3	Good	1	2	2	5.8824	4.0000	68.0000
Wewers I_WEWERS1995	M			Saliva	1	1	NS	No	2	2		1	1	6.4897	22.0000	339.0000
Akiyama_AKIYAM1994	M			Urine	2	1	3	NS	2	2		2	Asia	6.8966	2.0000	29.0000
Lee II_LEE1995B	F			Urine	3	1	3	No	1	2	1	2	Asia	7.6923	22.0000	286.0000
Akiyama_AKIYAM1994	F			Urine	2	1	3	NS	2	2	1	2	Asia	7.8261	9.0000	115.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M2: Percentage of self-reported Never-smokers whose cotinine implies Current smoking  
 Results included in all analyses, cut point 1

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<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
HSE_WARDLE2003-never-ex	F	2002, by sex	Saliva	1	1	Young	NS	3	2	1	1	2	7.9812	85.0000	1065.0000
HSE_WARDLE2003-never-ex	M	2002, by sex	Saliva	1	1	Young	NS	3	2		1	2	8.0357	81.0000	1008.0000
West III_WEST2007	M+F		Saliva	1	1	3	NS	3	2		2	2	8.1250	13.0000	160.0000
KNHANES_JUNGCH2012	F	2008	Urine	2	1	3	NS	2	2	1	1	Asia	8.3544	231.0000	2765.0000
Badger_BADGER2009	M+F		Blood	3	3	2	NS	3	2		2	2	9.2857	13.0000	140.0000
KNHANES_JUNGCH2012	M	2008	Urine	2	1	3	NS	2	2		1	Asia	9.6579	48.0000	497.0000
Wewers I_WEWERS1995	F		Saliva	1	1	NS	No	2	2	1	1	1	10.7018	61.0000	570.0000
Laatikainen I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2	1	2	4	11.1413	41.0000	368.0000
Laatikainen I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	12.8571	9.0000	70.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	19.7880	56.0000	283.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M2: Percentage of self-reported Never-smokers whose cotinine implies Current smoking  
 Additional results included in analysis by Body fluid tested, cut point 1

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>	
Hellemons_HELEM2015	M+F plasma		Blood		3	3	NS	No	3	2		2	2	3.2258	7.0000	217.0000
Additional results included in analysis by Age group, cut point 1																
<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>	
KNHANES_KIM2013H	F 2008-2009, age 55+		Urine		1	1	2	NS	3	2	1	3	Asia	0.8832	13.0000	1472.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45

Rate M2: Percentage of self-reported Never-smokers whose cotinine implies Current smoking  
Results included in overall analyses, cut point 2

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC2</b>	<b>N_Cut2</b>	<b>Weight2</b>
Sato_SATO2003A	M+F		Blood	1	3	NS	NS	3	2		1	Asia	0.0000	0.0000	84.0000
S-Germany-I_HELLER1993	M	first random sample in 1984/85	Blood	3	1	3	NS	1	2		2	2	0.0000	0.0000	397.0000
S-Germany-I_HELLER1993	F	first random sample in 1984/85	Blood	3	1	3	NS	1	2	1	2	2	0.1748	2.0000	1144.0000
S-Germany-II_HELLER1993	F	second random sample in 1989/90	Blood	3	1	3	NS	1	2	1	2	2	0.1998	2.0000	1001.0000
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	0.4065	1.0000	246.0000
Rodriguez_RODRIG2010	M+F		Urine	3	1	2	NS	3	2		2	1	0.4321	7.0000	1620.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1	2	2	0.5952	10.0000	1680.0000
Baltar_BALTAR2011	M+F		Blood	2	3	NS	No	3	2		2	4	0.7874	2.0000	254.0000
S-Germany-II_HELLER1993	M	second random sample in 1989/90	Blood	3	1	3	NS	1	2		2	2	0.8180	4.0000	489.0000
Cummings_WELLS1998C	M		Urine	1	1	3	NS	1	2		2	1	0.8621	1.0000	116.0000
Cummings_WELLS1998C	F		Urine	1	1	3	NS	1	2	1	2	1	0.8889	2.0000	225.0000
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2		2	2	0.9662	8.0000	828.0000
Coultas_WELLS1998C	F		Saliva	Other	1	3	NS	1	2	1	1	1	1.2920	5.0000	387.0000
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	1.3825	3.0000	217.0000
Coultas_WELLS1998C	M		Saliva	Other	1	3	NS	1	2		1	1	1.7544	3.0000	171.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	2.1201	6.0000	283.0000
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	2.5000	13.7470	549.8800
MFHS_KORPIL2004	M+F		Blood	3	1	2	No	3	2		2	2	5.1661	199.0000	3852.0000
Markovic_MARKOV2000	F		Urine	2	2	Young	NS	2	2	2	1	1	5.5679	25.0000	449.0000
Lee_II_LEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	6.2937	18.0000	286.0000
Laatikainen_I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	7.1429	5.0000	70.0000
Laatikainen_I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2	1	2	4	7.6087	28.0000	368.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M2: Percentage of self-reported Never-smokers whose cotinine implies Current smoking  
 Multivariate analysis  
 Variables selected according to significance (no variables forced in)

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**WEIGHTED on Number of self-reported Never-smokers, cut point 1**

Misclassification rate, cut point 1	Deviance		(DF)					
	Model 1	516275.7174	(85)					
Constant		Estimate 2.9953	S.E. 0.2739	P 0.0000 ***	LSMean 2.9953	95%CI 2.4507	95%Clu 3.5399	
Model 2		Deviance 424694.6230	(DF) (83)	Drop Dev 91581.0944	P 0.0003 ***			
Constant		Estimate 4.3478	S.E. 0.4113	P 0.0000 ***	LSMean 4.3478	95%CI 3.5298	95%Clu 5.1658	
<b>Tobacco products considered</b>								
Cigarettes	30	Aliased			4.3478	3.5298	5.1658	
Any smoking	53	-2.2222	0.5256	0.0001 ---	2.1256	1.4746	2.7767	
Any tobacco	3	-1.1470	1.3759	0.4069	3.2008	0.5893	5.8123	

Overall percentage, cut point 1, unweighted

**Misclassification rate, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
		12658.0809	(87)				
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		14.0942	1.2858	0.0000 ***	14.0942	11.5385	16.6499

Overall percentage, cut point 2, unweighted

**Misclassification rate, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
		969.5028	(23)				
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		7.4311	1.3253	0.0000 ***	7.4311	4.6895	10.1726

Overall percentage, cut point 1

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Ex-smokers, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
		1948863.578	(87)				
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		10.9178	0.8512	0.0000 ***	10.9178	9.2259	12.6097

Overall percentage, cut point 2

**Misclassification rate, cut point 2**

**WEIGHTED on Number of self-reported Ex-smokers, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
		202745.4474	(23)				
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		6.7871	1.0590	0.0000 ***	6.7871	4.5963	8.9778

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M3: Percentage of self-reported Ex-smokers whose cotinine implies Current smoking

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By Body fluid tested

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Ex-smokers, cut point 1**

	<b>Model 2</b>	<b>Deviance</b>		<b>(DF)</b> (86)	<b>Drop Dev</b> 116493.5835	<b>P</b> 0.0709 (*)	<b>LSMean</b>	<b>95%CI</b> 8.0111	<b>95%Clu</b> 16.1904
		<b>7</b>	<b>1834760.869</b>						
	<b>Constant</b>		<b>Estimate</b> 12.1008	<b>S.E.</b> 2.0572	<b>P</b> 0.0000 ***		<b>LSMean</b> 12.1008	<b>95%CI</b> 8.0111	<b>95%Clu</b> 16.1904
	<b>Body fluid tested</b>								
	Urine	18	Aliased				12.1008	8.0111	16.1904
	Saliva	25	3.4794	3.1376	0.2705		15.5801	10.8707	20.2895
	Blood	46	-2.2790	2.2776	0.3198		9.8217	7.8785	11.7650

By cotinine assay method used

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Ex-smokers, cut point 1**

	<b>Model 2</b>	<b>Deviance</b>		<b>(DF)</b> (84)	<b>Drop Dev</b> 229327.9201	<b>P</b> 0.0142 *	<b>LSMean</b>	<b>95%CI</b> 5.8107	<b>95%Clu</b> 11.8414
		<b>3</b>	<b>1719535.658</b>						
	<b>Constant</b>		<b>Estimate</b> 8.8261	<b>S.E.</b> 1.5163	<b>P</b> 0.0000 ***		<b>LSMean</b> 8.8261	<b>95%CI</b> 5.8107	<b>95%Clu</b> 11.8414
	<b>Cotinine assay method</b>								
	Chromatography	29	Aliased				8.8261	5.8107	11.8414
	Spectrometry	15	1.2975	2.0395	0.5264		10.1236	7.4113	12.8359
	Immunoassay	32	2.7173	2.1846	0.2170		11.5434	8.4160	14.6707
	Other	12	10.2146	3.1297	0.0016 ++		19.0406	13.5962	24.4851

By Study type

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Ex-smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P	
			1453794.061	(85)	495069.5173	0.0000 ***	
<b>Constant</b>			8.7315	0.9380	0.0000 +++	8.7315	6.8665 10.5966
<b>Study type</b>							
General pop.	53	Aliased			8.7315	6.8665	10.5966
Pregnancy	13	13.9318	2.6248	0.0000 +++	22.6634	17.7892	27.5375
Diseased or CC	22	3.2369	1.6916	0.0590 (+)	11.9685	9.1696	14.7674

By Age group

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Ex-smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P	
			1577819.009	(84)	371044.5690	0.0005 ***	
<b>Constant</b>			18.8324	2.1126	0.0000 +++	18.8324	14.6314 23.0335
<b>Age group</b>							
Young	20	Aliased			18.8324	14.6314	23.0335
Not young	16	-7.2010	2.5843	0.0066 --	11.6315	8.6713	14.5917
All ages	38	-9.4592	2.4260	0.0002 ---	9.3732	7.0012	11.7452
NS	14	-11.6879	2.8634	0.0001 ---	7.1445	3.3007	10.9883

By Awareness of validation by cotinine

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Ex-smokers, cut point 1**

		<b>Model 2</b>	<b>Deviance</b> 1742662.814 2	<b>(DF)</b> (85)	<b>Drop Dev</b> 206200.7643	<b>P</b> 0.0086 **		
		<b>Constant</b>	<b>Estimate</b> 20.1787	<b>S.E.</b> 3.2823	<b>P</b> 0.0000 ***	<b>LSMean</b> 20.1787	<b>95%CI</b> 13.6526	<b>95%Clu</b> 26.7048
<b>Aware of checking by cotinine?</b>								
Yes	9	Aliased				20.1787	13.6526	26.7048
No	13	-6.7011	4.2249	0.1164	13.4775	8.1884	18.7667	
NS	66	-10.2197	3.3998	0.0035 --	9.9590	8.1973	11.7206	

By Time of publication

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Ex-smokers, cut point 1**

		<b>Model 2</b>	<b>Deviance</b> 1845718.616 7	<b>(DF)</b> (85)	<b>Drop Dev</b> 103144.9618	<b>P</b> 0.0992 (*)		
		<b>Constant</b>	<b>Estimate</b> 6.8567	<b>S.E.</b> 2.2292	<b>P</b> 0.0028 ++	<b>LSMean</b> 6.8567	<b>95%CI</b> 2.4246	<b>95%Clu</b> 11.2889
<b>Time of publication</b>								
In 1995 review	15	Aliased				6.8567	2.4246	11.2889
Before 2003	39	3.7578	2.6181	0.1549	10.6145	7.8846	13.3444	
2003 onwards	34	5.4744	2.5326	0.0335 +	12.3311	9.9411	14.7212	

By Quality of study

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Ex-smokers, cut point 1**

	<b>Model 2</b>		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>	
			1947707.182	(86)	1156.3964	0.8218	
		1					
	<b>Constant</b>		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>
			11.8472	4.2015	0.0060 ++	11.8472	3.4950
	<b>Study quality</b>						
	Good	4	Aliased			11.8472	20.1995
	Not good	84	-0.9697	4.2914	0.8218	10.8775	9.1396
							12.6154

By Pregnancy (women only)

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Ex-smokers, cut point 1**

	<b>Model 2</b>		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>	
			555716.6440	(31)	354402.8538	0.0001 ***	
	<b>Constant</b>		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>
			7.8526	2.1902	0.0011 ++	7.8526	3.3857
	<b>Pregnancy</b>						
	Not pregnant	20	Aliased			7.8526	12.3195
	Pregnant	13	14.8108	3.3310	0.0001 +++	22.6634	17.5447
							27.7820

By Tobacco products considered

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Ex-smokers, cut point 1**

	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>			
		1842147.537	(85)	106716.0413	0.0913 (*)	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>				
		12.4832	1.5404	0.0000 ***		12.4832	9.4204	15.5460
	<b>Tobacco products considered</b>							
	Cigarettes	36	Aliased			12.4832	9.4204	15.5460
	Any smoking	49	-2.6403	1.8489	0.1569	9.8429	7.8098	11.8760
	Any tobacco	3	6.0002	4.7870	0.2135	18.4834	9.4718	27.4950

By Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Ex-smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		1827556.063	(85)	121307.5148	0.0651 (*)		
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		14.2556	1.8072	0.0000 ***	14.2556	10.6623	17.8488
	CARD3: RSex						
F	33	Aliased			14.2556	10.6623	17.8488
M	19	-6.0583	2.5836	0.0214 -	8.1972	4.5262	11.8683
M+F	36	-3.6049	2.1116	0.0914 (-)	10.6506	8.4792	12.8221

By Location

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Ex-smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		1633267.705	(84)	315595.8731	0.0019 **		
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		15.2128	1.4834	0.0000 ***	15.2128	12.2630	18.1626
	Location						
Canada/USA	31	Aliased			15.2128	12.2630	18.1626
Europe	43	-5.7122	1.8099	0.0022 --	9.5006	7.4386	11.5627
Asia	9	-9.3428	2.8326	0.0014 --	5.8700	1.0712	10.6688
Other	5	2.5954	5.6387	0.6465	17.8082	6.9900	28.6265

By Location x Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Ex-smokers, cut point 1**

Model 2	Deviance	(DF)	Drop Dev	P		
	1497566.611	(76)	451296.9674	0.0317 *		
Constant	18.0975	3.3622	0.0000 ***	18.0975		
<b>Location x Sex</b>						
Canada/USA, F	11	Aliased		18.0975	11.4010	24.7939
Canada/USA, M	3	-10.7625	7.7125	0.1669	7.3350	-6.4894
Canada/USA, M+F	17	-3.1549	3.7752	0.4060	14.9426	11.5230
Europe, F	15	-6.3643	4.0126	0.1169	11.7332	7.3711
Europe, M	11	-9.8786	3.9675	0.0150 -	8.2189	4.0235
Europe, M+F	17	-8.9617	3.6567	0.0166 -	9.1357	6.2724
Asia, F	4	-0.7564	11.1895	0.9463	17.3410	-3.9150
Asia, M	4	-9.6096	5.0358	0.0601 (-)	8.4879	1.0211
Asia, M+F	1	-15.4331	4.7408	0.0017 --	2.6644	-3.9923
Other, F	3	1.7594	6.8231	0.7972	19.8569	8.0319
Other, M	1	-12.6429	19.2243	0.5127	5.4545	-32.2440
Other, M+F	1	-11.1207	21.6692	0.6093	6.9767	-35.6588
						49.6123

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M3: Percentage of self-reported Ex-smokers whose cotinine implies Current smoking  
 Results included in all analyses, cut point 1

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
Cummings_WELLS1998C	M		Urine	1	1	3	NS	1	2		2	1	0.5587	1.0000	179.0000
Cummings_WELLS1998C	F		Urine	1	1	3	NS	1	2	1	2	1	0.6993	1.0000	143.0000
Tabara_TABARA2013	M+F		Urine	2	1	NS	NS	3	2		2	Asia	2.6644	47.0000	1764.0000
Tsutsumi_TSUTSU2002A-M	M		Urine	1	1	2	NS	2	2		1	Asia	2.7027	9.0000	333.0000
MONICA Scotland_CHEN2002D	M	Surveys 1 and 2	Blood	1	1	3	NS	2	2		1	2	3.4826	7.0000	201.0000
MONICA Germany_HELLER1998-young	M	25-44	Blood	3	1	Young	NS	2	2		2	2	3.6199	8.0000	221.0000
S-Germany-II_HELLER1993	F	second random sample in 1989/90	Blood	3	1	3	NS	1	2	1	2	2	3.8806	13.0000	335.0000
Naraghi_NARAGH2011	F		Blood	3	3	NS	NS	3	2	1	2	2	4.0816	4.0000	98.0000
HSE_WEST2007	M+F	2003	Saliva	1	1	3	NS	3	2		2	2	4.5226	18.0000	398.0000
Townsend_TOWNSE1991A	M+F	All ages	Saliva	Other	1	Young	Yes	2	2		1	2	5.2632	6.0000	114.0000
MONICA Scotland_CHEN2002D	F	Surveys 3 and 4	Blood	1	1	3	NS	2	2	1	1	2	5.3191	20.0000	376.0000
Attebring_ATTEBR2001	M+F		Blood	1	3	3	Yes	2	Good		2	2	5.3254	9.0000	169.0000
Yel_YEL2005	M		Saliva	3	1	NS	No	3	2		2	Asia	5.3571	12.0000	224.0000
Laatikainen_I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	5.4545	3.0000	55.0000
Slattery_II_SLATTE1989A	F		Blood	3	3	3	NS	1	2	1	1	1	5.4795	4.0000	73.0000
MONICA Scotland_CHEN2002D	M	Surveys 3 and 4	Blood	1	1	3	NS	2	2		1	2	5.6650	23.0000	406.0000
MONICA Scotland_CHEN2002D	F	Surveys 1 and 2	Blood	1	1	3	NS	2	2	1	1	2	5.7471	10.0000	174.0000
MONICA Germany_HELLER1998-young	F	25-44	Blood	3	1	Young	NS	2	2	1	2	2	5.7803	10.0000	173.0000
HSE_OPSCS1995A	F	1993	Blood	1	1	3	NS	1	2	1	2	2	5.8099	33.0000	568.0000
HSE_OPSCS1995A	M	1993	Blood	1	1	3	NS	1	2		2	2	5.9829	42.0000	702.0000
S-Germany-I_HELLER1993	F	first random sample in 1984/85	Blood	3	1	3	NS	1	2	1	2	2	6.0510	19.0000	314.0000
MONICA Germany_HELLER1998-older	F	45-64	Blood	3	1	2	NS	2	2	1	2	2	6.3830	9.0000	141.0000
Luepker_LUEPK1989	M+F	home IV	Saliva	1	1	Young	NS	1	2		1	1	6.3830	0.6286	9.8482
HSE_OPSCS1996A	M+F	1994	Blood	1	1	3	NS	2	2		2	2	6.4881	172.0000	2651.0000
Phillipou_PHILLI1994C	M+F		Urine	3	3	NS	No	2	2		2	4	6.9767	3.0000	43.0000
S-Germany-II_HELLER1993	M	second random sample in 1989/90	Blood	3	1	3	NS	1	2		2	2	7.1834	38.0000	529.0000
Wallner-Liebmann_WALLNE2013	M+F		Blood	3	3	NS	NS	3	2		2	2	7.2888	107.0000	1468.0000
S-Germany-I_HELLER1993	M	first random sample in 1984/85	Blood	3	1	3	NS	1	2		2	2	7.4266	43.0000	579.0000
Coultas_WELLS1998C	M		Saliva	Other	1	3	NS	1	2		1	1	7.4766	8.0000	107.0000
Olivieri OLIVIE2002	M+F		Blood	3	1	NS	NS	2	2		2	2	7.5949	6.0000	79.0000
Ulvik_I_ULVIK2010	M+F		Blood	2	3	2	NS	3	2		2	2	7.8507	61.0000	777.0000
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	8.2437	23.0000	279.0000
Naraghi_NARAGH2011	M		Blood	3	3	NS	NS	3	2		2	2	8.3333	3.0000	36.0000
Tong_TONG2015	F		Saliva	2	2	Young	NS	3	2	2	2	4	8.3900	37.0000	441.0000
Owen_OWEN2001	F		Saliva	1	2	Young	NS	2	2	2	1	2	8.6957	14.0000	161.0000
Akiyama_AKIYAM1994	M		Urine	2	1	3	NS	2	2		2	Asia	8.6957	2.0000	23.0000
Ma_MA2005	F		Saliva	Other	2	Young	NS	3	2	2	1	1	8.8757	15.0000	169.0000
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	9.4118	24.0000	255.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M3: Percentage of self-reported Ex-smokers whose cotinine implies Current smoking  
 Results included in all analyses, cut point 1

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Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1	
Wilmin_WILMIN1999	M		Blood	3	3	2	NS	2	2			2	2	9.5406	27.0000	283.0000
MONICA Germany_HELLER1998-older	M	45-64	Blood	3	1	2	NS	2	2			2	2	9.7765	35.0000	358.0000
NHANES_AGARWA2009	M+F	1999-2004	Blood	2	1	2	NS	3	2			1	1	10.1186	256.0000	2530.0000
Murray_MURRAY2002	M+F		Saliva	3	3	2	No	2	Good			2	1	10.2410	17.0000	166.0000
Windsor_WINDSO2000	F	Phase 2	Saliva	Other	2	Young	NS	2	2		2	2	1	10.2564	4.0000	39.0000
Lerman_LERMAN2002	M+F		Blood	Other	1	3	NS	2	2			1	1	10.3093	10.0000	97.0000
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	1	10.3679	15.4606	149.1200
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2			2	2	10.4306	109.0000	1045.0000
Nguyen_NGUYEN2007	M+F		Blood	1	3	3	No	3	2			2	2	10.6796	11.0000	103.0000
Perez-Stable_PEREZS1992	M+F		Blood	1	1	3	NS	1	2			1	1	10.7692	7.0000	65.0000
Pell ACS_PELL2008A	M+F	ACS	Blood	1	3	NS	No	3	2			2	2	10.8661	69.0000	635.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1		2	2	10.9726	88.0000	802.0000
Wagenknecht_WAGENK1992	M+F		Blood	3	1	Young	NS	1	Good			1	1	11.1450	73.0000	655.0000
KNHANES_JUNGCH2012	M	2008	Urine	2	1	3	NS	2	2			1	Asia	11.6788	96.0000	822.0000
Pell HEPS_PELL2008A	M+F	HEPS	Saliva	1	1	3	NS	3	2			2	2	11.7647	34.0000	289.0000
West III_WEST2007	M+F		Saliva	1	1	3	NS	3	2			2	2	12.1951	10.0000	82.0000
Ulvik II_ULVIK2010	M+F		Blood	2	3	2	NS	3	2			2	2	13.1065	208.0000	1587.0000
Twardella I_TWARDE2007	M+F		Blood	3	1	2	NS	3	2			1	2	13.8462	9.0000	65.0000
Coultas_WELLS1998C	F		Saliva	Other	1	3	NS	1	2	1	1	1	1	13.9241	11.0000	79.0000
Mons_MONS2016	M+F		Blood	3	1	2	NS	3	2			1	2	14.0625	9.0000	64.0000
Tsutsumi_TSUTSU2002A-F	F		Urine	1	1	2	NS	2	2	1	1	1	Asia	14.2857	2.0000	14.0000
Twardella II_TWARDE2004	M+F		Blood	3	3	2	No	3	2			1	2	14.5425	89.0000	612.0000
Morales_MORALE2013	M+F		Blood	3	3	NS	No	3	2			1	1	15.0289	26.0000	173.0000
Badger_BADGER2009	M+F		Blood	3	3	2	NS	3	2			2	2	15.5914	29.0000	186.0000
Khuri_KHURI2001	M+F		Blood	Other	3	2	NS	2	2			2	1	16.3522	104.0000	636.0000
KNHANES_JUNGCH2012	F	2008	Urine	2	1	3	NS	2	2	1	1	1	Asia	16.3934	20.0000	122.0000
O'Connor_OCONNNO1992	F		Urine	Other	2	Young	NS	2	2		1	1	1	16.6667	4.0000	24.0000
Wewers I_WEWERS1995	M		Saliva	1	1	NS	No	2	2			1	1	17.0732	21.0000	123.0000
Lando_LANDO2003	M+F		Saliva	1	3	3	Yes	3	Good			3	1	18.0887	53.0000	293.0000
HSE_WARDLE2003-never-ex	F	2002, by sex	Saliva	1	1	Young	NS	3	2	1	1	2		18.3486	20.0000	109.0000
Shaffer_SHAFFE2000	M+F		Blood	Other	1	3	Yes	2	2			3	1	18.4058	127.0000	690.0000
Lee II_LEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	18.7500	6.0000	32.0000	
Hennrikus_HENMRI2005	M+F		Saliva	Other	3	3	Yes	3	2			1	1	19.9170	48.0000	241.0000
Wewers I_WEWERS1995	F		Saliva	1	1	NS	No	2	2	1	1	1	1	20.0000	3.0000	15.0000
Laatikainen I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2	1	2	4		20.0000	3.0000	15.0000
Noonan_NOONAN2013	M+F		Urine	1	3	NS	Yes	3	2			3	1	20.8333	15.0000	72.0000
England_ENGLAN2007	F		Urine	2	2	Young	NS	3	2	2	2	1		21.5739	159.0000	737.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2			2	1	22.1973	99.0000	446.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45

Rate M3: Percentage of self-reported Ex-smokers whose cotinine implies Current smoking  
 Results included in all analyses, cut point 1

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<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
Gariti_GARITI2002A	M+F		Urine	3	1	3	Yes	2	2		1	1	23.1579	22.0000	95.0000
Moore_MOORE2002	F		Urine	Other	2	Young	NS	2	2	2	2	2	24.6334	84.0000	341.0000
Shipton_SHIPTO2009	F	N adjusted	Blood	3	2	Young	No	3	2	2	2	2	25.6131	94.0000	367.0000
Birmingham II_WINDSO1993	F		Saliva	3	2	Young	Yes	2	2	2	1	1	26.1905	33.0000	126.0000
Kendrick_KENDRI1995	F		Urine	3	2	Young	NS	2	2	2	1	1	34.9206	66.0000	189.0000
Ussher_USSHHER2015	F		Saliva	3	2	Young	NS	3	2	2	1	2	36.0465	31.0000	86.0000
HSE_WARDLE2003-never-ex	M	2002, by sex	Saliva	1	1	Young	NS	3	2		1	2	37.0370	30.0000	81.0000
Akiyama_AKIYAM1994	F		Urine	2	1	3	NS	2	2	1	2	Asia	40.0000	2.0000	5.0000
Stookey_STOOKE1987	M+F		Saliva	1	1	NS	NS	2	2		2	1	45.0980	19.1947	42.5621
Ahluwalia_AHLUWA2006	M+F		Saliva	Other	1	3	NS	3	2		1	1	51.0309	99.0000	194.0000
Hegaard_HEGAAR2003	F		Saliva	1	2	Young	NS	3	2	2	2	2	52.3810	33.0000	63.0000
Everett-Murphy_EVERET2010	F		Urine	3	2	Young	Yes	3	2	2	2	4	68.9320	71.0000	103.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M3: Percentage of self-reported Ex-smokers whose cotinine implies Current smoking  
 Additional results included in analysis by Body fluid tested, cut point 1

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>	
Hellemons_HELLEM2015	M+F	plasma	Blood		3	3	NS	No	3	2		2	2	7.8431	20.0000	255.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M3: Percentage of self-reported Ex-smokers whose cotinine implies Current smoking  
 Results included in overall analyses, cut point 2

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC2</b>	<b>N_Cut2</b>	<b>Weight2</b>
Cummings_WELLS1998C	M		Urine	1	1	3	NS	1	2		2	1	0.0000	0.0000	179.0000
Cummings_WELLS1998C	F		Urine	1	1	3	NS	1	2	1	2	1	0.0000	0.0000	143.0000
Laatikainen_I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	1.8182	1.0000	55.0000
S-Germany-II_HELLER1993	F	second random sample in 1989/90	Blood	3	1	3	NS	1	2	1	2	2	2.0896	7.0000	335.0000
S-Germany-I_HELLER1993	M	first random sample in 1984/85	Blood	3	1	3	NS	1	2		2	2	2.5907	15.0000	579.0000
S-Germany-II_HELLER1993	M	second random sample in 1989/90	Blood	3	1	3	NS	1	2		2	2	2.6465	14.0000	529.0000
S-Germany-I_HELLER1993	F	first random sample in 1984/85	Blood	3	1	3	NS	1	2	1	2	2	2.8662	9.0000	314.0000
Attebring_ATTEBR2001	M+F		Blood	1	3	3	Yes	2	Good		2	2	2.9586	5.0000	169.0000
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2	1	1	1	3.5842	10.0000	279.0000
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2		2	2	4.2105	44.0000	1045.0000
Balstar_BALTAR2011	M+F		Blood	2	3	NS	No	3	2		2	4	4.6358	7.0000	151.0000
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	5.0980	13.0000	255.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1	2	2	5.1122	41.0000	802.0000
Sato_SATO2003A	M+F		Blood	1	3	NS	NS	3	2		1	Asia	7.3446	13.0000	177.0000
Coultas_WELLS1998C	M		Saliva	Other	1	3	NS	1	2		1	1	7.4766	8.0000	107.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	7.6233	34.0000	446.0000
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	7.6923	11.4708	149.1200
DC-HOPE_ELMOMA2011A	F	Ex-smokers	Saliva	2	2	Young	NS	3	2	2	1	1	9.8361	30.0000	305.0000
Coultas_WELLS1998C	F		Saliva	Other	1	3	NS	1	2	1	1	1	10.1266	8.0000	79.0000
MFHS_KORPIL2004	M+F		Blood	3	1	2	No	3	2		2	2	13.7119	198.0000	1444.0000
Lee_II_LEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	15.6250	5.0000	32.0000
Secker-Walker_SECKER1997A	F		Urine	3	2	Young	NS	2	2	2	1	1	16.1290	20.0000	124.0000
Laatikainen_I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2	1	2	4	20.0000	3.0000	15.0000
Markovic_MARKOV2000	F		Urine	2	2	Young	NS	2	2	2	1	1	25.1701	37.0000	147.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M3: Percentage of self-reported Ex-smokers whose cotinine implies Current smoking  
 Multivariate analysis  
 Variables selected according to significance (no variables forced in)

**WEIGHTED on Number of self-reported Ex-smokers, cut point 1**

Misclassification rate, cut point 1	Deviance		(DF)							
	Model 1	1948863.578	(87)	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		5			10.9178	0.8512	0.0000 ***	10.9178	9.2259	12.6097
	Model 2		Deviance (DF)	1453794.061 (85)	495069.5173		P			
		2					0.0000 ***			
	Constant		Estimate	8.7315	0.9380	0.0000 ***		8.7315	6.8665	10.5966
	Study type									
	General pop.	53	Aliased					8.7315	6.8665	10.5966
	Pregnancy	13	13.9318	2.6248	0.0000 ***			22.6634	17.7892	27.5375
	Diseased or CC	22	3.2369	1.6916	0.0590 (+)			11.9685	9.1696	14.7674
	Model 3		Deviance (DF)	1292471.604 (83)	161322.4569		P			
		3					0.0076 **			
	Constant		Estimate	10.6863	1.3532	0.0000 ***		10.6863	7.9949	13.3777
	Study type									
	General pop.	53	Aliased					8.4840	6.6918	10.2762
	Pregnancy	13	14.6317	2.5140	0.0000 ***			23.1157	18.4539	27.7775
	Diseased or CC	22	3.8928	1.6451	0.0203 +			12.3768	9.6711	15.0825
	Tobacco products considered									
	Cigarettes	36	Aliased					13.1201	10.4873	15.7528
	Any smoking	49	-3.6131	1.5978	0.0264 -			9.5070	7.7728	11.2411
	Any tobacco	3	6.4503	4.0723	0.1170			19.5704	11.9147	27.2260

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking

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Overall percentage, cut point 1, unweighted

**Misclassification rate, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	12.9193	1.1421	0.0000 ***	12.9193	10.6614	15.1772

Overall percentage, cut point 2, unweighted

**Misclassification rate, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	25.3098	3.3603	0.0000 ***	25.3098	18.5330	32.0865

Overall percentage, cut point 1

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Current smokers, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	9.6705	0.9822	0.0000 ***	9.6705	7.7286	11.6124

Overall percentage, cut point 2

**Misclassification rate, cut point 2**

**WEIGHTED on Number of self-reported Current smokers, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	18.4792	1.9939	0.0000 ***	18.4792	14.4582	22.5003

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking

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Overall misclassification rate (percentage) for the Palmier study, cut point 2 = 53.0837

By Body fluid tested

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Current smokers, cut point 1**

		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
<b>Model 2</b>		8371568.782	(140)	252062.5027	0.1254		
	<b>1</b>						
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		7.0047	2.4498	0.0049 ++	7.0047	2.1612	11.8483
	<b>Body fluid tested</b>						
	Urine	36	Aliased		7.0047	2.1612	11.8483
	Saliva	33	0.8332	3.0001	7.8379	4.4138	11.2621
	Blood	74	4.5119	2.7900	11.5166	8.8769	14.1563

By cotinine assay method used

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Current smokers, cut point 1**

		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>			
<b>Model 2</b>		8113797.359	(139)	499566.8425	0.0396 *			
	<b>7</b>							
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>	
		6.5014	1.5437	0.0000 +++	6.5014	3.4490	9.5537	
	<b>Cotinine assay method</b>							
	Chromatography	45	Aliased		6.5014	3.4490	9.5537	
	Spectrometry	41	6.6237	2.3523	0.0056 ++	13.1251	9.6156	16.6346
	Immunoassay	49	3.3967	2.3949	0.1583	9.8981	6.2777	13.5185
	Other	8	6.4571	4.7323	0.1746	12.9585	4.1135	21.8036

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking

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By Study type

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Current smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		7418261.538	(139)	1194998.071	0.0000 ***		
<b>Constant</b>		2		6			
<b>Study type</b>							
General pop.	88	Aliased			8.0293	5.8525	10.2061
Pregnancy	28	0.4592	2.3643	0.8463	8.4885	4.3513	12.6257
Diseased or CC	26	13.8634	2.9559	0.0000 ***	21.8927	16.4685	27.3169

By Age group

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Current smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		7237532.956	(138)	1375726.653	0.0000 ***		
<b>Constant</b>		8		0			
<b>Age group</b>							
Young	59	Aliased			13.1589	9.9043	16.4134
Not young	12	7.2645	3.5280	0.0414 +	20.4233	14.2529	26.5937
All ages	46	-7.3651	2.0629	0.0005 ---	5.7937	3.3346	8.2529
NS	25	-2.1984	3.7369	0.5573	10.9605	4.3266	17.5944

By Awareness of validation by cotinine

### Misclassification rate, cut point 1

### **WEIGHTED on Number of self-reported Current smokers, cut point 1**

<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
	8547398.510 6	(139)	65861.0992	0.5866		
<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
Aware of checking by cotinine?						
Yes	11	Aliased		10.2275	2.0302	18.4247
No	22	-2.9763	4.8609	0.5413	7.2512	2.2330
NS	109	-0.1365	4.2910	0.9747	10.0910	7.9024
						12.2694
						12.2795

#### By Time of publication

### Misclassification rate, cut point 1

**WEIGHTED** on Number of self-reported Current smokers, cut point 1

	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
<b>Model 2</b>	7531027.831 7	(139)	1082231.778 1	0.0001 ***		
	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
<b>Constant</b>	6.8491	4.3150	0.1147	6.8491	-1.6828	15.3809
<b>Time of publication</b>						
In 1995 review	11	Aliased		6.8491	-1.6828	15.3809
Before 2003	55	-0.8052	4.4990	0.8582	6.0439	3.5257
2003 onwards	76	7.6122	4.5416	0.0960 (+)	14.4613	11.6604
						17.2622

By Quality of study

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Current smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		8613107.087	(140)	152.5220	0.9604		
		8					
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		9.7745	2.3099	0.0000 ***	9.7745	5.2074	14.3416
	Study quality						
	Good	21	Aliased		9.7745	5.2074	14.3416
	Not good	121	-0.1272	2.5542	9.6473	7.4923	11.8023

By Pregnancy (women only)

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Current smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		954822.6138	(57)	14928.3578	0.3491		
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		10.3028	1.5243	0.0000 ***	10.3028	7.2504	13.3553
	Pregnancy						
	Not pregnant	30	Aliased		10.3028	7.2504	13.3553
	Pregnant	29	-1.8128	1.9203	8.4900	6.1515	10.8286

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking

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By Tobacco products considered

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Current smokers, cut point 1**

Model 2	Deviance		(DF) (140)	Drop Dev 944.8487	P 0.9926			
	8845858.041	9				Estimate	S.E.	P
Constant		8.9001	1.4627	0.0000 +++	8.9001	8.9001	6.0081	11.7921
<b>Tobacco products considered</b>								
Cigarettes	63	Aliased			8.9001	6.0081	11.7921	
Any smoking	71	0.1753	1.9304	0.9278	9.0754	6.5847	11.5662	
Any tobacco	9	-0.2695	4.6546	0.9539	8.6306	-0.1059	17.3671	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking

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By Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Current smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P	LSMean	95%CI	95%Clu
		8513232.809	(141)	109271.3515	0.4069			
	Constant	Estimate	S.E.	P				
		9.2947	1.7377	0.0000 ***		9.2947	5.8593	12.7302
	CARD3: RSex							
F	59	Aliased				9.2947	5.8593	12.7302
M	24	-2.0943	2.9240	0.4750		7.2004	2.5513	11.8495
M+F	61	1.4674	2.1961	0.5051		10.7621	8.1072	13.4170

By Location

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Current smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P	LSMean	95%CI	95%Clu
		8478241.550	(138)	135018.0595	0.5343			
	Constant	Estimate	S.E.	P				
		9.6878	1.6016	0.0000 ***		9.6878	6.5208	12.8548
	Location							
Canada/USA	53	Aliased				9.6878	6.5208	12.8548
Europe	56	-0.1773	2.1356	0.9339		9.5104	6.7170	12.3039
Asia	15	-2.1256	3.5998	0.5558		7.5622	1.1873	13.9371
Other	18	6.3422	5.0579	0.2120		16.0300	6.5432	25.5167

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking

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By Location x Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-reported Current smokers, cut point 1**

Model 2	Deviance	(DF)	Drop Dev	P			
	8152437.629	(130)	460821.9806	0.7665			
	2						
Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu	
Location x Sex							
Canada/USA, F	21	Aliased		9.8591	5.0765	14.6416	
Canada/USA, M	8	1.0088	4.6897	0.8300	10.8679	2.9170	18.8188
Canada/USA, M+F	24	-0.8590	3.5441	0.8089	9.0000	3.8723	14.1278
Europe, F	26	-2.2550	3.8276	0.5568	7.6041	1.7325	13.4756
Europe, M	8	-2.7141	5.0309	0.5905	7.1450	-1.5843	15.8742
Europe, M+F	22	0.6881	2.9851	0.8181	10.5472	7.0820	14.0124
Asia, F	6	2.0296	7.6629	0.7915	11.8887	-2.4979	26.2753
Asia, M	4	-7.1058	5.2114	0.1751	2.7532	-6.3811	11.8876
Asia, M+F	5	2.7601	6.4043	0.6672	12.6192	0.8858	24.3526
Other, F	5	0.3902	13.3999	0.9768	10.2493	-15.8270	36.3256
Other, M	3	-7.5454	12.9249	0.5604	2.3136	-22.8067	27.4340
Other, M+F	10	10.0385	6.2064	0.1082	19.8975	8.5880	31.2071

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking  
 Results included in all analyses, cut point 1

Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	0.0000	0.0000	55.0000
Akiyama_AKIYAM1994	F		Urine	2	1	3	NS	2	2	1	2	Asia	0.0000	0.0000	16.0000
Windham_WINDHA1999A	F		Urine	2	1	Young	NS	2	2	1	1	1	0.0000	0.0000	63.0000
Morales_MORALE2013	M+F		Blood	3	3	NS	No	3	2		1	1	0.0000	0.0000	30.0000
Zielinska-Danch_ZIELIN2007	M+F		Urine	1	1	3	NS	3	2		1	2	0.0000	0.0000	111.0000
Laatikainen_I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	0.4000	1.0000	250.0000
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	0.7634	1.0000	131.0000
Fritz_FRITZ2010A	M+F		Urine	2	1	NS	NS	3	2		2	2	0.8333	1.0000	120.0000
Noonan_NOONAN2013	M+F		Urine	1	3	NS	Yes	3	2		3	1	0.8421	4.0000	475.0000
Murray_MURRAY2002	M+F		Saliva	3	3	2	No	2	Good		2	1	0.9181	13.0000	1416.0000
Stookey_STOOKE1987	M+F		Saliva	1	1	NS	NS	2	2		2	1	0.9259	0.4659	50.3164
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	1.0526	1.0000	95.0000
Hegaard_HEGAAR2007	F		Saliva	1	2	Young	NS	3	2	2	2	2	1.1142	0.9410	84.4581
Muranaka_MURANA1988	M+F		Urine	1	3	NS	NS	2	2		1	Asia	1.3423	2.0000	149.0000
HSE_OPACS1996A	M+F	1994	Blood	1	1	3	NS	2	2		2	2	1.6856	46.0000	2729.0000
van Vunakis_VANVUN1989	M+F		Saliva	3	1	NS	NS	1	2		1	1	1.7094	2.0000	117.0000
MONICA Scotland_CHEN2002D	M	Surveys 1 and 2	Blood	1	1	3	NS	2	2		1	2	2.0057	7.0000	349.0000
KNHANES_KANG2015-M	M	2008-2009	Urine	2	1	3	NS	3	2		1	Asia	2.0391	48.0000	2354.0000
Ellard II_ELLARD1996	F		Urine	1	2	Young	NS	2	2	2	2	2	2.0661	20.0000	968.0000
Tsutsumi_TSUTSU2002A-F	F		Urine	1	1	2	NS	2	2	1	1	Asia	2.0833	1.0000	48.0000
Naraghi_NARAGH2011	F		Blood	3	3	NS	NS	3	2	1	2	2	2.1277	1.0000	47.0000
Pojer_POJER1984	M+F		Blood	1	1	NS	NS	2	2		1	4	2.1390	1.8643	87.1550
Barlow_BARLOW1987	F		Urine	3	2	Young	NS	2	2	2	1	2	2.3438	3.0000	128.0000
Akiyama_AKIYAM1994	M		Urine	2	1	3	NS	2	2		2	Asia	2.3529	2.0000	85.0000
Smith UK_SMITH1998C	M+F		Urine	1	3	3	NS	2	2		2	2	2.6549	0.5475	20.6207
MONICA Scotland_CHEN2002D	F	Surveys 1 and 2	Blood	1	1	3	NS	2	2	1	1	2	2.7957	13.0000	465.0000
MONICA Scotland_CHEN2002D	M	Surveys 3 and 4	Blood	1	1	3	NS	2	2		1	2	2.8021	16.0000	571.0000
Gariti_GARITI2002A	M+F		Urine	3	1	3	Yes	2	2	1	1	1	2.8846	3.0000	104.0000
Osaka factory_YAMAMO2005	M+F		Saliva	3	1	3	NS	3	2		2	Asia	3.1579	3.0000	95.0000
KNHANES_KANG2015-F	F	2008-2009	Urine	2	1	3	NS	3	2	1	1	Asia	3.1977	11.0000	344.0000
MONICA Scotland_CHEN2002D	F	Surveys 3 and 4	Blood	1	1	3	NS	2	2	1	1	2	3.2520	24.0000	738.0000
Shaffer_SHAFFE2000	M+F		Blood	Other	1	3	Yes	2	2		3	1	3.3149	48.0000	1448.0000
SHS_LU2014A	M+F		Saliva	1	1	3	NS	3	2		2	2	3.3972	94.0000	2767.0000
Stick_STICK1996	F		Blood	3	2	Young	NS	2	2	2	1	4	3.5088	2.0000	57.0000
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2		2	2	3.6322	32.0000	881.0000
Khuri_KHURI2001	M+F		Blood	Other	3	2	NS	2	2		2	1	3.6649	7.0000	191.0000
Goniewicz_GONIEW2011	M+F		Urine	2	1	NS	NS	3	2	2	4	3.7234	14.0000	376.0000	
Yel_YEL2005	M		Saliva	3	1	NS	No	3	2		2	Asia	3.8462	1.0000	26.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking  
 Results included in all analyses, cut point 1

Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1	
Hoseini_HOSEIN2016	M+F		Urine	3	1	NS	NS	3	2			2	4	3.9474	3.0000	76.0000
Lifestyle and Appetite_LEE1986B	F		Saliva	1	1	3	No	2	2	1	3	2		4.1667	10.6739	256.1727
INMA_AURREK2013	F	2004-08	Urine	3	2	Young	NS	3	2	2	2	2		4.3062	18.0000	418.0000
Bauld_BAULD2012	F		Urine	1	2	Young	NS	3	2	2	2	2		4.3137	11.0000	255.0000
Jarvis I_JARVIS1987A	M+F		Blood	1	3	NS	NS	1	2			2	2	4.4444	4.0000	90.0000
ABC_PEARCE2014	M	Indigenous	Urine	Other	1	Young	NS	3	2		2	4	4.6154	6.0000	130.0000	
West III_WEST2007	M+F		Saliva	1	1	3	NS	3	2			2	2	4.7945	7.0000	146.0000
Wagenknecht_WAGENK1992	M+F		Blood	3	1	Young	NS	1	Good			1	1	5.0682	78.0000	1539.0000
Stanton_STANTO1996	M+F		Saliva	3	1	Young	Yes	2	2			2	4	5.0909	14.0000	275.0000
Phillipou_PHILLI1994C	M+F		Urine	3	3	NS	No	2	2			2	4	5.2632	2.0000	38.0000
Naraghi_NARAGH2011	M		Blood	3	3	NS	NS	3	2			2	2	5.2632	1.0000	19.0000
Owen_OWEN2001	F		Saliva	1	2	Young	NS	2	2	2	1	2		5.2941	9.0000	170.0000
Mathews_MATHEW1999A	F		Blood	3	2	Young	NS	2	2	2	1	2		5.8333	14.0000	240.0000
HSE_JARVIS2008-any-smoking	M+F	1996-2004, Any smoking at nurse visit	Saliva	1	1	3	NS	2	2			2	2	5.9032	582.0000	9859.0000
Tsutsumi_TSUTSU2002A-M	M		Urine	1	1	2	NS	2	2			1	Asia	6.2893	30.0000	477.0000
NHANES_CARABA2016-adult	M	2001-2012, NH white, 26+yr	Blood	2	1	3	NS	3	Good			1	1	6.3094	93.0000	1474.0000
BUPA_WALD1984	M		Urine	3	1	NS	NS	1	2			2	2	6.4655	13.4728	208.3800
Martinez-Sanchez_MARTIN2009C	M+F		Saliva	2	1	3	NS	3	2			2	2	6.6282	23.0000	347.0000
CHDS_ENGLIS1994	F		Blood	3	2	Young	NS	2	2	2	2	1		6.6500	80.0000	1203.0000
Wewers I_WEWEVERS1995	M		Saliva	1	1	NS	No	2	2			1	1	6.8536	22.0000	321.0000
Haddow II_HADDOW1988A	F		Blood	3	2	Young	No	2	2	2	2	1		7.0097	331.0000	4722.0000
Shipton_SHIPTO2009	F	N adjusted	Blood	3	2	Young	No	3	2	2	2	2	2	7.2706	61.0000	839.0000
CHMS_WONG2012	M+F		Urine	2	1	3	NS	3	Good			1	1	7.2773	58.0000	797.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1	2	2		7.4013	45.0000	608.0000
NHANES_CARABA2016-adult	F	2001-2012, NH white, 26+yr	Blood	2	1	3	NS	3	Good			1	1	7.5353	96.0000	1274.0000
Haddow I_HADDOW1986	F		Blood	3	1	NS	NS	1	2	1	1	1		7.8125	5.0000	64.0000
ABC_PEARCE2014	F	Indigenous	Urine	Other	1	Young	NS	3	2	1	2	4		8.0292	11.0000	137.0000
Waggoner_WAGGON2010	F		Urine	3	3	3	NS	3	2	1	1	1		8.0357	9.0000	112.0000
Tabara_TABARA2013	M+F		Urine	2	1	NS	NS	3	2			2	Asia	8.3195	100.0000	1202.0000
MONICA Germany_HELLER1998-older	F	45-64	Blood	3	1	2	NS	2	2	1	2	2		8.4615	11.0000	130.0000
Slattery II_SLATTE1989A	F		Blood	3	3	3	NS	1	2	1	1	1		8.5890	14.0000	163.0000
Olivieri_OLIVIE2002	M+F		Blood	3	1	NS	NS	2	2			2	2	8.8710	11.0000	124.0000
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1		9.0452	21.0754	233.0000
Semple_SEMPLE2007	M+F		Saliva	1	1	3	NS	3	2			2	2	9.1463	15.0000	164.0000
NHANES_LINDSA2014-adult	M+F	1999-2000, age 20+	Blood	2	1	3	NS	3	Good			2	1	9.1979	86.0000	935.0000
Pierce_PIERCE1987	M+F		Saliva	1	1	3	No	1	2			2	4	9.3484	33.0000	353.0000
Ford_FORD1997	F		Blood	3	2	Young	NS	2	2	2	2	4		9.4118	8.0000	85.0000
NHANES_CARABA2016-adult	M	2001-2012, NH black, 26+yr	Blood	2	1	3	NS	3	Good			1	1	9.4139	106.0000	1126.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking  
 Results included in all analyses, cut point 1

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Id	RSex		Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
NHANES_CARABA2016-adult	F	2001-2012, NH black, 26+yrs		Blood	2	1	3	NS	3	Good	1	1	1	9.5174	71.0000	746.0000
Seersholtz_SEERSH1999	M+F			Blood	1	1	3	NS	2	2		2	2	9.8101	31.0000	316.0000
Parker_PARKER2002	M+F	GC method		Urine	1	1	NS	NS	2	2		1	1	9.8361	12.0000	122.0000
Lee II_LEE1995B	F			Urine	3	1	3	No	1	2	1	2	Asia	10.2564	8.0000	78.0000
Luepker_LUEPK1989	M+F	home IV		Saliva	1	1	Young	NS	1	2		1	1	10.4348	10.1835	97.5917
Anderson_ANDERS2009A	F			Blood	3	2	Young	NS	3	2	2	2	2	10.8108	4.0000	37.0000
Yeh_YEH2011	M+F	LC-MS/MS method		Urine	2	1	NS	Yes	3	2		3	1	10.9453	3.9159	35.7773
Kim_KIM2014J	M+F			Saliva	2	1	3	NS	3	Good		2	1	11.2150	12.0000	107.0000
Assaf_ASSAF2002-F	F			Blood	1	1	3	NS	2	2	1	1	1	11.3208	18.0000	159.0000
Lifestyle and Appetite_LEE1986B	M			Saliva	1	1	3	No	2	2		3	2	11.5385	42.6955	370.0273
George_GEORGE2006	F	early pregnancy		Blood	1	2	Young	No	3	Good	2	2	2	11.6667	7.0000	60.0000
Tikkanen_TIKKAN2010	F			Blood	3	2	Young	NS	3	2	2	2	2	11.8812	12.0000	101.0000
Perez-Stable_PEREZS1992	M+F			Blood	1	1	3	NS	1	2		1	1	12.0658	9.6450	79.9366
NHANES_CARABA2016-young-adult	M	2001-2012, NH white, 18-25yrs		Blood	2	1	Young	NS	3	Good		1	1	12.0879	55.0000	455.0000
MONICA Germany_HELLER1998-older	M	45-64		Blood	3	1	2	NS	2	2		2	2	12.1053	46.0000	380.0000
NHANES_CARABA2016-young-adult	M	2001-2012, NH black, 18-25yrs		Blood	2	1	Young	NS	3	Good	1	1	1	12.2093	21.0000	172.0000
Nguyen_NGUYEN2007	M+F			Blood	1	3	3	No	3	2		2	2	12.5000	3.0000	24.0000
DC-HOPE_ELMOHA2009	F	Non, current smokers		Saliva	2	2	Young	NS	3	2	2	1	1	12.6984	16.0000	126.0000
Ulvik II_ULVIK2010	M+F			Blood	2	3	2	NS	3	2		2	2	12.9117	98.0000	759.0000
Klebanoff_KLEBAN1998	F			Blood	3	2	Young	NS	3	2	2	1	1	13.0208	25.0000	192.0000
Etter_ETTER2000A	M+F			Saliva	1	1	Young	NS	2	2		1	2	13.0631	4.5987	35.2039
Molina_MOLINA2010	F			Saliva	3	1	Young	NS	3	2	1	2	2	13.1579	15.0000	114.0000
Lindqvist_LINDQV2002	F			Blood	1	2	Young	No	2	2	2	1	2	13.4831	12.0000	89.0000
NHANES_CARABA2016-young-adult	F	2001-2012, NH black, 18-25yrs		Blood	2	1	Young	NS	3	Good	1	1	1	13.6752	16.0000	117.0000
Fendrich_FENDRI2005	M+F			Saliva	Other	1	Young	No	3	2		3	1	13.8298	26.0000	188.0000
Birmingham II_WINDSO1993	F			Saliva	3	2	Young	Yes	2	2	2	1	1	13.9576	79.0000	566.0000
Laatikainen I_LAATIK1999	F	Pitkäranta		Blood	2	1	3	NS	2	2	1	2	4	14.9254	10.0000	67.0000
MONICA Germany_HELLER1998-young	F	25-44		Blood	3	1	Young	NS	2	2	1	2	2	15.3285	42.0000	274.0000
Badger_BADGER2009	M+F			Blood	3	3	2	NS	3	2		2	2	15.3846	12.0000	78.0000
Brunet_BRUNET2011	M+F			Blood	3	3	3	NS	3	2		1	4	15.4167	37.0000	240.0000
Spencer I_SPENCE1998	F			Blood	3	2	Young	NS	2	2	2	2	2	15.4545	17.0000	110.0000
Peacock_PEACOC1998	F	booking visit		Blood	1	2	Young	NS	2	2	2	1	2	15.7480	60.0000	381.0000
MONICA Germany_HELLER1998-young	M	25-44		Blood	3	1	Young	NS	2	2		2	2	16.2528	72.0000	443.0000
NHANES_CARABA2016-young-adult	F	2001-2012, NH white, 18-25yrs		Blood	2	1	Young	NS	3	Good	1	1	1	16.5354	63.0000	381.0000
de Chazeron_DECHAZ2008	F			Blood	2	2	Young	NS	3	2	2	2	2	16.8142	38.0000	226.0000
Sasaki_SASAKI2011	F			Blood	3	2	Young	NS	3	2	2	2	2	17.1470	119.0000	694.0000
NHANES_CARABA2004	M	1988-1994, age 12-17		Blood	2	1	Young	NS	3	Good	1	1	1	17.5926	19.0000	108.0000
Spencer II_SPENCE2013	F			Blood	3	2	Young	No	3	2	2	2	2	17.7746	24.8096	139.5789

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking  
 Results included in all analyses, cut point 1

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Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1	
Dickinson_DICKIN1988	M+F		Saliva	1	1	3	NS	1	2			2	4	18.3333	22.0000	120.0000
Wewers I_WEWERS1995	F		Saliva	1	1	NS	No	2	2	1	1	1		20.0000	7.0000	35.0000
Kharrizi_KHARRA1999	F		Blood	2	2	Young	NS	2	2	2	1	1		20.3704	22.0000	108.0000
Smith USA_SMITH2014B	F		Saliva	2	2	Young	NS	3	2	2	2	1		20.6897	24.0000	116.0000
Parna_PARNA2005	F		Blood	3	2	Young	NS	3	2	2	2	2		21.7391	15.0000	69.0000
TEC_PEARCE2014	M	Non-indigenous	Urine	Other	1	Young	NS	3	2		2	4		22.2222	2.0000	9.0000
Noland_NOLAND1988	M+F		Saliva	3	1	Young	Yes	2	2		3	1		24.5283	39.0000	159.0000
NHANES_LINDSA2014-young	M+F	1999-2000, age12-19	Blood	2	1	Young	NS	3	Good		2	1		27.0492	66.0000	244.0000
Lee Anna_LEE2013TE	M+F		Urine	2	3	3	NS	3	2		1	Asia		28.5714	20.0000	70.0000
Ceppa_CEPPA2000	M+F		Urine	1	3	NS	NS	2	2		2	2		29.0323	18.0000	62.0000
Dolcini_DOLCIN2003	M+F	Adolescents	Saliva	3	1	Young	Yes	3	2		1	1		29.1667	28.0000	96.0000
Salzer_SALZER2013	M+F		Blood	3	3	Young	No	3	2		3	2		29.5302	44.0000	149.0000
McNeill_MCNEIL1987	F		Saliva	1	1	Young	Yes	2	2	1	1	2		30.6358	53.0000	173.0000
Jhun_JHUN2010	F		Urine	1	2	Young	No	3	2	2	1	Asia		33.3333	2.0000	6.0000
Messeri_MESSER2007A	M+F		Saliva	Other	1	Young	NS	3	2		1	1		34.0426	272.0000	799.0000
NHANES_CARABA2004	F	1988-1994, age 12-17	Blood	2	1	Young	NS	3	Good	1	1	1		36.1905	38.0000	105.0000
Levine_LEVINE2013	M+F		Urine	2	1	3	Yes	3	2		2	4		36.2637	33.0000	91.0000
Xie I_XIE2009	M+F		Blood	1	3	3	NS	3	2		1	Asia		37.4532	100.0000	267.0000
Kandel_KANDEL2006	M+F		Saliva	3	1	Young	Yes	3	2		3	1		39.3548	61.0000	155.0000
TEC_PEARCE2014	F	Non-indigenous	Urine	Other	1	Young	NS	3	2	1	2	4		40.0000	6.0000	15.0000
Wallner-Liebmann_WALLNE2013	M+F		Blood	3	3	NS	NS	3	2		2	2		42.8135	280.0000	654.0000
NHANES_CARABA2016-young	M	2001-2012, NH white, 12-17yrs	Blood	2	1	Young	NS	3	Good		1	1		46.4286	78.0000	168.0000
Twardella II_TWARDE2004	M+F		Blood	3	3	2	No	3	2		1	2		46.5116	20.0000	43.0000
NHANES_CARABA2016-young	M	2001-2012, NH black, 12-17yrs	Blood	2	1	Young	NS	3	Good		1	1		47.4576	28.0000	59.0000
NHANES_CARABA2016-young	F	2001-2012, NH white, 12-17yrs	Blood	2	1	Young	NS	3	Good	1	1	1		49.5495	110.0000	222.0000
Ulvik I_ULVIK2010	M+F		Blood	2	3	2	NS	3	2		2	2		50.2334	861.0000	1714.0000
NHANES_CARABA2016-young	F	2001-2012, NH black, 12-17yrs	Blood	2	1	Young	NS	3	Good	1	1	1		52.0000	13.0000	25.0000
Valladolid-Lopez_VALLAD2015	M+F		Urine	1	1	Young	NS	3	2		1	4		84.4106	222.0000	263.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking  
 Additional results included in analysis by Sex, cut point 1

Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
HSE_WARDLE2003-non-curr	M	2002, by sex	Saliva	1	1	Young	NS	3	2		1	2	9.1097	44.0000	483.0000	
HSE_WARDLE2003-non-curr	F	2002, by sex	Saliva	1	1	Young	NS	3	2		1	2	13.5906	81.0000	596.0000	
Additional results included in analysis by Body fluid tested, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
			Blood	3	3	NS	No	3	2		2	2	0.7634	1.0000	131.0000	
Additional results included in analysis by Assay method, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
			Urine	1	1	NS	Yes	3	2		3	1	7.9602	2.8479	35.7773	
Additional results included in analysis by Pregnancy, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
			Blood	2	2	Young	NS	3	Good	2	1	1	8.6957	8.0000	92.0000	
Additional results included in analysis by Smoking product considered, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
			Saliva	1	1	3	NS	2	2		1	2	4.2953	398.0000	9266.0000	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking  
 Results included in overall analyses, cut point 2

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC2</b>	<b>N_Cut2</b>	<b>Weight2</b>
Zielinska-Danch_ZIELIN2007	M+F		Urine	1	1	3	NS	3	2		1	2	0.0000	0.0000	111.0000
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	3.0534	4.0000	131.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	3.1579	3.0000	95.0000
Laatikainen I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	3.6000	9.0000	250.0000
Gilligan_GILLIG2010	F		Urine	3	2	Young	Yes	3	2	2	2	4	6.0870	7.0000	115.0000
Niedbala_NIEDBA2002	M+F		Urine	3	1	NS	NS	2		Good	3	1	6.8750	1.1000	16.0000
Agewall_AGEWAL2002	M		Urine	3	3	2	NS	2	2		2	2	7.5000	6.0000	80.0000
Secker-Walker_SECKER1997A	F		Urine	3	2	Young	NS	2	2	2	1	1	8.0605	32.0000	397.0000
Lifestyle and Appetite_LEE1986B	F		Saliva	1	1	3	No	2	2	1	3	2	8.3333	21.3477	256.1727
Assaf_ASSAF2002-M	M		Blood	1	1	3	NS	2	2		1	1	10.2740	15.0000	146.0000
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2		2	2	10.7832	95.0000	881.0000
Copenhagen_SUADC1997	M	1985-86, with or without CVD	Blood	3	3	2	NS	2	2		3	2	11.2064	209.0000	1865.0000
Poiger_POJER1984	M+F		Blood	1	1	NS	NS	2	2		1	4	11.2299	9.7875	87.1550
Coultas_WELLS1998C	M		Saliva	Other	1	3	NS	1	2		1	1	12.1739	14.0000	115.0000
Haddow I_HADDOW1986	F		Blood	3	1	NS	NS	1	2	1	1	1	12.5000	8.0000	64.0000
ABC_PEARCE2014	M	Indigenous	Urine	Other	1	Young	NS	3	2		2	4	14.6154	19.0000	130.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1	2	2	14.6382	89.0000	608.0000
Smith UK_SMITH1998C	M+F		Urine	1	3	3	NS	2	2		2	2	15.0442	3.1022	20.6207
Sato_SATO2003A	M+F		Blood	1	3	NS	NS	3	2		1	Asia	15.7143	11.0000	70.0000
Parker_PARKER2002	M+F	GC method	Urine	1	1	NS	NS	2	2		1	1	16.3934	20.0000	122.0000
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	16.5829	38.6382	233.0000
Lifestyle and Appetite_LEE1986B	M		Saliva	1	1	3	No	2	2		3	2	17.3077	64.0432	370.0273
Pierce_PIERCE1987	M+F		Saliva	1	1	3	No	1	2		2	4	18.6969	66.0000	353.0000
BUPA_WALD1984	M		Urine	3	1	NS	NS	1	2		2	2	19.3966	40.4185	208.3800
Laatikainen I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2	1	2	4	19.4030	13.0000	67.0000
Lee Chung Yul_LEE2009TC	M		Urine	1	1	NS	No	3	2		2	Asia	20.0000	6.0000	30.0000
ABC_PEARCE2014	F	Indigenous	Urine	Other	1	Young	NS	3	2	1	2	4	20.4380	28.0000	137.0000
TEC_PEARCE2014	M	Non-indigenous	Urine	Other	1	Young	NS	3	2		2	4	22.2222	2.0000	9.0000
Markovic_MARKOV2000	F		Urine	2	2	Young	NS	2	2	2	1	1	22.7979	44.0000	193.0000
Wagenknecht_WAGENK1992	M+F		Blood	3	1	Young	NS	1	Good		1	1	22.9370	353.0000	1539.0000
Coultas_WELLS1998C	F		Saliva	Other	1	3	NS	1	2	1	1	1	26.6304	49.0000	184.0000
Lee II_LEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	26.9231	21.0000	78.0000
Gill_GILL1996	M+F		Urine	1	3	NS	NS	2	2		1	4	33.3333	14.0000	42.0000
Ford_FORD1997	F		Blood	3	2	Young	NS	2	2	2	2	4	34.1176	29.0000	85.0000
Peacock_PEACOC1998	F	booking visit	Blood	1	2	Young	NS	2	2	2	1	2	38.0577	145.0000	381.0000
DC-HOPE_ELMOHA2009	F	Non, current smokers	Saliva	2	2	Young	NS	3	2	2	1	1	38.0952	48.0000	126.0000
Parna_PARNA2005	F		Blood	3	2	Young	NS	3	2	2	2	2	49.2754	34.0000	69.0000
EHLS_NONDAAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	50.9091	28.0000	55.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking  
 Results included in overall analyses, cut point 2

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<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC2</b>	<b>N_Cut2</b>	<b>Weight2</b>
Burstyn_BURSTY2009	F		Blood	3	2	Young	No	3	2	2	2	1	52.6000	20.8761	39.6883
Bardy_BARDY1993	F		Blood	2	2	Young	No	2	2	2	2	2	58.1921	103.0000	177.0000
Lindqvist_LINDQV2002	F		Blood	1	2	Young	No	2	2	2	1	2	62.9213	56.0000	89.0000
Smith USA_SMITH2014B	F		Saliva	2	2	Young	NS	3	2	2	2	1	71.5517	83.0000	116.0000
TEC_PEARCE2014	F	Non-indigenous	Urine	Other	1	Young	NS	3	2	1	2	4	80.0000	12.0000	15.0000
Lee Chung Yul_LEE2009TC	F		Urine	1	1	NS	No	3	2	1	2	Asia	100.0000	3.0000	3.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking  
 Multivariate analysis  
 Variables selected according to significance (no variables forced in)

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**WEIGHTED on Number of self-reported Current smokers, cut point 1**

	Deviance		(DF)							
	Model 1	8613259.609 8	(141)	Constant	Estimate 9.6705	S.E. 0.9822	P 0.0000 +++	LSMean 9.6705	95%CI 7.7286	95%Clu 11.6124
	<b>Model 2</b>				Deviance 7237532.956 8	(DF) (138)	Drop Dev 1375726.653 0	P 0.0000 ***		
	<b>Model 3</b>				Deviance 5988310.245 0	(DF) (136)	Drop Dev 1249222.711 7	P 0.0000 ***		
Classification rate, cut point 1	Constant	Estimate 13.1589	S.E. 1.6459	P 0.0000 +++	LSMean 13.1589	95%CI 9.9043	95%Clu 16.4134			
Age group	Young	59	Aliased		13.1589	9.9043	16.4134			
	Not young	12	7.2645	3.5280	0.0414 +	20.4233	14.2529	26.5937		
	All ages	46	-7.3651	2.0629	0.0005 ---	5.7937	3.3346	8.2529		
	NS	25	-2.1984	3.7369	0.5573	10.9605	4.3266	17.5944		
Study type	Constant	Estimate 20.8197	S.E. 2.4795	P 0.0000 +++	LSMean 20.8197	95%CI 15.9162	95%Clu 25.7232			
General pop.	Young	59	Aliased		19.9529	15.8643	24.0415			
	Not young	12	-11.2680	4.8595	0.0219 -	8.6849	0.8435	16.5263		
	All ages	46	-15.3818	2.7277	0.0000 ---	4.5711	1.9323	7.2099		
	NS	25	-14.7546	4.1661	0.0005 ---	5.1983	-1.2806	11.6772		
Pregnancy										
Diseased or CC										

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking  
 Multivariate analysis  
 Variables selected according to significance (no variables forced in)

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**WEIGHTED on Number of self-reported Current smokers, cut point 1**

		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
<b>Model 4</b>		5324328.535	(134)	663981.7095	0.0004 ***		
		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
	<b>Constant</b>	12.6980	3.8927	0.0014 ++	12.6980	4.9987	20.3974
	<b>Age group</b>						
Young	59	Aliased			20.1354	16.0294	24.2414
Not young	12	-10.7006	4.7972	0.0274 -	9.4348	1.8740	16.9957
All ages	46	-15.7164	2.7701	0.0000 ---	4.4190	1.8394	6.9987
NS	25	-15.4555	3.9950	0.0002 ---	4.6799	-1.4881	10.8479
	<b>Study type</b>						
General pop.	88	Aliased			10.7447	8.6047	12.8848
Pregnancy	28	-12.1718	3.1966	0.0002 ---	-1.4271	-6.8488	3.9946
Diseased or CC	26	11.3314	3.7433	0.0030 ++	22.0762	15.1828	28.9695
	<b>Time of publication</b>						
In 1995 review	11	Aliased			1.1589	-6.6000	8.9178
Before 2003	55	6.4154	4.1656	0.1259	7.5743	5.3302	9.8184
2003 onwards	76	12.0223	4.0590	0.0036 ++	13.1811	10.7178	15.6445
		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
<b>Model 5</b>		5042770.749	(133)	281557.7861	0.0073 **		
		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
	<b>Constant</b>	10.5524	3.8832	0.0075 ++	10.5524	2.8712	18.2336
	<b>Age group</b>						
Young	59	Aliased			20.9862	16.9277	25.0447
Not young	12	-11.0294	4.6877	0.0201 -	9.9568	2.5607	17.3528
All ages	46	-16.8643	2.7386	0.0000 ---	4.1219	1.5926	6.6512
NS	25	-18.2821	4.0380	0.0000 ---	2.7041	-3.4899	8.8980

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M4: Percentage of self-reported Current smokers whose cotinine implies Non-smoking  
 Multivariate analysis  
 Variables selected according to significance (no variables forced in)

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**WEIGHTED on Number of self-reported Current smokers, cut point 1**

		Estimate	S.E.	P	LSMean	95%CI	95%Clu
	<b>Study type</b>						
General pop.	88	Aliased			11.2121	9.0941	13.3302
Pregnancy	28	-14.2379	3.2133	0.0000 ---	-3.0257	-8.4479	2.3965
Diseased or CC	26	10.7097	3.6638	0.0041 ++	21.9219	15.1867	28.6571
	<b>Time of publication</b>						
In 1995 review	11	Aliased			2.8660	-4.8144	10.5464
Before 2003	55	3.8682	4.1752	0.3559	6.7343	4.4587	9.0098
2003 onwards	76	11.1704	3.9773	0.0057 ++	14.0364	11.5511	16.5217
	<b>Study quality</b>						
Good	21	Aliased			4.4996	0.4460	8.5531
Not good	121	6.3222	2.3200	0.0073 ++	10.8218	9.0778	12.5658

Overall percentage, cut point 1, unweighted

**Misclassification rate, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	45885.6497	(135)				
		19.4850	1.5809	0.0000 ***	19.4850	16.3584	22.6117

Overall percentage, cut point 2, unweighted

**Misclassification rate, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	18618.0316	(42)				
		19.5793	3.2108	0.0000 ***	19.5793	13.0997	26.0588

Overall percentage, cut point 1

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	10062702.05	(135)				
		33					
	<b>Constant</b>	14.5039	1.0833	0.0000 ***	14.5039	12.3614	16.6464

Overall percentage, cut point 2

**Misclassification rate, cut point 2**

**WEIGHTED on Number of True current smokers, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	1849168.029	(42)				
		2					
	<b>Constant</b>	10.4187	2.2320	0.0000 ***	10.4187	5.9143	14.9231

Overall misclassification rate (percentage) for the Palmier study, cut point 2 = 19.3146

By Body fluid tested

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
	<b>Model 2</b>	10047587.25	(134)	16251.0419	0.8974		
		24					
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		14.9772	2.7725	0.0000 +++	14.9772	9.4935	20.4609
	<b>Body fluid tested</b>						
	Urine	33	Aliased		14.9772	9.4935	20.4609
	Saliva	30	-1.2332	3.4082	13.7440	9.8232	17.6648
	Blood	74	-0.1774	3.1367	14.7998	11.8981	17.7015

By cotinine assay method used

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>			
	<b>Model 2</b>	9732162.548	(133)	337463.0653	0.2078			
		7						
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>	
		12.2346	1.6921	0.0000 +++	12.2346	8.8876	15.5816	
	<b>Cotinine assay method</b>							
	Chromatography	44	Aliased		12.2346	8.8876	15.5816	
	Spectrometry	41	5.4448	2.5701	0.0360 +	17.6794	13.8529	21.5058
	Immunoassay	44	1.7387	2.7579	0.5295	13.9733	9.6654	18.2813
	Other	8	3.4692	5.2113	0.5067	15.7039	5.9542	25.4535

By Study type

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P	
			9553820.081	(133)	508881.9716	0.0317 *	
<b>Constant</b>			13.8889	1.2378	0.0000 ***	13.8889	11.4404 16.3373
<b>Study type</b>							
General pop.	86	Aliased				13.8889	11.4404 16.3373
Pregnancy	26	-0.9504	2.7609	0.7312		12.9385	8.0569 17.8201
Diseased or CC	24	10.3876	4.0464	0.0114 +		24.2765	16.6562 31.8968

By Age group

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P	
			9770093.748	(132)	292608.3047	0.2714	
<b>Constant</b>			14.9970	1.9876	0.0000 ***	14.9970	11.0651 18.9289
<b>Age group</b>							
Young	57	Aliased				14.9970	11.0651 18.9289
Not young	11	7.5654	4.8817	0.1236		22.5624	13.7422 31.3827
All ages	45	-1.2935	2.4406	0.5970		13.7035	10.9019 16.5051
NS	23	-2.8263	4.6633	0.5455		12.1708	3.8257 20.5158

By Awareness of validation by cotinine

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		9981540.498	(133)	81161.5547	0.5836	LSMean	95%CI
	Constant	18.3552	5.3349	0.0008 ***	18.3552	7.8024	28.9079
	Aware of checking by cotinine?						
Yes	8	Aliased			18.3552	7.8024	28.9079
No	20	-6.0435	6.1093	0.3243	12.3117	6.4234	18.2000
NS	108	-3.6907	5.4675	0.5008	14.6644	12.2974	17.0314

By Time of publication

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		8681176.957	(133)	1381525.095	0.0001 ***	LSMean	95%CI
	Constant	10.0750	4.6534	0.0322 +	10.0750	0.8704	19.2796
	Time of publication						
In 1995 review	11	Aliased			10.0750	0.8704	19.2796
Before 2003	52	0.3606	4.8624	0.9410	10.4356	7.6460	13.2251
2003 onwards	73	9.7342	4.9002	0.0490 +	19.8092	16.7719	22.8464

By Quality of study

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		9946953.395	(134)	115748.6581	0.2139		
		2					
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		17.4691	2.6090	0.0000 ***	17.4691	12.3086	22.6295
	Study quality						
	Good	20	Aliased		17.4691	12.3086	22.6295
	Not good	116	-3.5797	2.8667	0.2139	13.8893	11.5400
							16.2387

By Pregnancy (women only)

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		5236404.940	(55)	172667.8405	0.1836		
		7					
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		19.0192	3.4530	0.0000 ***	19.0192	12.0993	25.9391
	Pregnancy						
	Not pregnant	30	Aliased		19.0192	12.0993	25.9391
	Pregnant	27	-6.0111	4.4636	0.1836	13.0081	7.3397
							18.6765

By Tobacco products considered

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>			
		9834202.691	(134)	233065.5060	0.2082			
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>	
	Cigarettes	61	Aliased		16.4611	13.4421	19.4801	
	Any smoking	68	-3.6174	2.0471	0.0795 (-)	12.8437	10.1455	15.5418
	Any tobacco	8	-3.2008	5.2858	0.5458	13.2603	3.2509	23.2697

By Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	<b>Model 2</b>		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>	
			10057406.61	(135)	26360.8887	0.8380	
			73				
			<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>
	<b>Constant</b>		15.4402	1.9110	0.0000 ***	15.4402	11.6606
							19.2198
	<b>CARD3: RSex</b>						
F	57	Aliased				15.4402	11.6606
M	23	-0.7604	3.1529	0.8098	14.6798	9.7200	19.6396
M+F	58	-1.4464	2.4389	0.5541	13.9937	10.9967	16.9908

By Location

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	<b>Model 2</b>		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>	
			10032271.36	(132)	30430.6862	0.9400	
			71				
			<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>
	<b>Constant</b>		14.5031	1.8412	0.0000 ***	14.5031	10.8610
							18.1453
	<b>Location</b>						
Canada/USA	49	Aliased				14.5031	10.8610
Europe	55	-0.3974	2.4016	0.8688	14.1057	11.0555	17.1560
Asia	14	1.9741	3.8809	0.6118	16.4773	9.7192	23.2353
Other	18	-0.0391	5.6917	0.9945	14.4640	3.8103	25.1178

By Location x Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

Model 2	Deviance	(DF)	Drop Dev	P			
	2	(124)	1	0.0030 **	LSMean	95%CI	95%Clu
<b>Constant</b>	10.1315	2.5244	0.0001 ***	10.1315	5.1348	15.1282	
<b>Location x Sex</b>							
Canada/USA, F	20	Aliased		10.1315	5.1348	15.1282	
Canada/USA, M	8	13.1789	4.5615	0.0046 ++	23.3104	15.7901	30.8307
Canada/USA, M+F	21	5.0148	3.8536	0.1956	15.1463	9.3830	20.9095
Europe, F	25	6.5828	3.8928	0.0934 (+)	16.7143	10.8489	22.5798
Europe, M	8	-3.0202	5.1577	0.5592	7.1113	-1.7915	16.0140
Europe, M+F	22	4.1229	3.0704	0.1818	14.2544	10.7950	17.7139
Asia, F	6	28.2529	6.6920	0.0000 ***	38.3844	26.1170	50.6519
Asia, M	3	-0.2491	5.2032	0.9619	9.8824	0.8767	18.8882
Asia, M+F	5	-3.4808	6.7383	0.6064	6.6507	-5.7156	19.0170
Other, F	5	16.5653	12.3999	0.1840	26.6968	2.6667	50.7270
Other, M	3	-1.4777	12.7660	0.9080	8.6538	-16.1159	33.4236
Other, M+F	10	2.6360	6.5832	0.6895	12.7675	0.7329	24.8020

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M5: Percentage of True current smokers who report being Non-smokers  
 Results included in all analyses, cut point 1

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
Anderson_ANDERS2009A	F		Blood	3	2	Young	NS	3	2	2	2	2	0.0000	0.0000	33.0000
Yeh_YEH2011	M+F	LC-MS/MS method	Urine	2	1	NS	Yes	3	2		3	1	0.0000	0.0000	31.8614
Windham_WINDHA1999A	F		Urine	2	1	Young	NS	2	2	1	1	1	0.0000	0.0000	63.0000
Noland_NOLAND1988	M+F		Saliva	3	1	Young	Yes	2	2		3	1	0.8264	1.0000	121.0000
BUPA_WALD1984	M		Urine	3	1	NS	NS	1	2		2	2	1.0157	2.0000	196.9072
MONICA Germany_HELLER1998-young	M	25-44	Blood	3	1	Young	NS	2	2		2	2	2.1108	8.0000	379.0000
Tsutsumi_TSUTSU2002A-M	M		Urine	1	1	2	NS	2	2		1	Asia	2.4017	11.0000	458.0000
Muranaka_MURANA1988	M+F		Urine	1	3	NS	NS	2	2		1	Asia	2.6490	4.0000	151.0000
MONICA Scotland_CHEN2002D	F	Surveys 1 and 2	Blood	1	1	3	NS	2	2	1	1	2	2.7957	13.0000	465.0000
Lifestyle and Appetite_LEE1986B	M		Saliva	1	1	3	No	2	2		3	2	2.9644	10.0000	337.3318
MONICA Scotland_CHEN2002D	M	Surveys 1 and 2	Blood	1	1	3	NS	2	2		1	2	3.1161	11.0000	353.0000
MONICA Scotland_CHEN2002D	F	Surveys 3 and 4	Blood	1	1	3	NS	2	2	1	1	2	3.2520	24.0000	738.0000
CHDS_ENGLIS1994	F		Blood	3	2	Young	NS	2	2	2	2	1	3.6052	42.0000	1165.0000
Haddow II_HADDOW1988A	F		Blood	3	2	Young	No	2	2	2	2	1	3.6639	167.0000	4558.0000
Goniewicz_GONIEW2011	M+F		Urine	2	1	NS	NS	3	2		2	4	3.7234	14.0000	376.0000
Lifestyle and Appetite_LEE1986B	F		Saliva	1	1	3	No	2	2	1	3	2	3.9139	10.0000	255.4989
McNeill_MCNEIL1987	F		Saliva	1	1	Young	Yes	2	2	1	1	2	4.0000	5.0000	125.0000
Osaka factory_YAMAMO2005	M+F		Saliva	3	1	3	NS	3	2		2	Asia	4.1667	4.0000	96.0000
MONICA Scotland_CHEN2002D	M	Surveys 3 and 4	Blood	1	1	3	NS	2	2		1	2	4.4750	26.0000	581.0000
Akiyama_AKIYAM1994	M		Urine	2	1	3	NS	2	2		2	Asia	4.5977	4.0000	87.0000
Laatikainen I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	4.5977	12.0000	261.0000
Tabara_TABARA2013	M+F		Urine	2	1	NS	NS	3	2		2	Asia	4.6713	54.0000	1156.0000
Peacock_PEACOC1998	F	booking visit	Blood	1	2	Young	NS	2	2	2	1	2	4.7478	16.0000	337.0000
Slattery II_SLATTE1989A	F		Blood	3	3	3	NS	1	2	1	1	1	5.0955	8.0000	157.0000
Parker_PARKER2002	M+F	GC method	Urine	1	1	NS	NS	2	2		1	1	5.1724	6.0000	116.0000
NHANES_LINDSA2014-adult	M+F	1999-2000, age 20+	Blood	2	1	3	NS	3	Good	2	1		5.2455	47.0000	896.0000
MONICA Germany_HELLER1998-young	F	25-44	Blood	3	1	Young	NS	2	2	1	2	2	5.6911	14.0000	246.0000
Semple_SEMPLE2007	M+F		Saliva	1	1	3	NS	3	2		2	2	5.6962	9.0000	158.0000
van Vunakis_VANVUN1989	M+F		Saliva	3	1	NS	NS	1	2		1	1	5.7377	7.0000	122.0000
Spencer I_SPENCE1998	F		Blood	3	2	Young	NS	2	2	2	2	2	6.0606	6.0000	99.0000
Valladolid-Lopez_VALLAD2015	M+F		Urine	1	1	Young	NS	3	2		1	4	6.8182	3.0000	44.0000
Smith USA_SMITH2014B	F		Saliva	2	2	Young	NS	3	2	2	2	1	7.0707	7.0000	99.0000
Luepker_LUEPK1989	M+F	home IV	Saliva	1	1	Young	NS	1	2		1	1	7.1098	6.6902	94.0985
Seersholm_SEERSH1999	M+F		Blood	1	1	3	NS	2	2		2	2	7.1661	22.0000	307.0000
Waggoner_WAGGON2010	F		Urine	3	3	3	NS	3	2	1	1	1	7.2072	8.0000	111.0000
Klebanoff_KLEBAN1998	F		Blood	3	2	Young	NS	3	2	2	1	1	7.2222	13.0000	180.0000
Bauld_BAULD2012	F		Urine	1	2	Young	NS	3	2	2	2	2	7.5758	20.0000	264.0000
Phillipou_PHILLI1994C	M+F		Urine	3	3	NS	No	2	2		2	4	7.6923	3.0000	39.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M5: Percentage of True current smokers who report being Non-smokers  
 Results included in all analyses, cut point 1

Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
Haddow I_HADDOW1986	F		Blood	3	1	NS	NS	1	2	1	1	1	7.8125	5.0000	64.0000
HSE_OPCS1996A	M+F	1994	Blood	1	1	3	NS	2	2	2	2	2	7.9588	232.0000	2915.0000
Naraghi_NARAGH2011	F		Blood	3	3	NS	NS	3	2	1	2	2	8.0000	4.0000	50.0000
CHMS_WONG2012	M+F		Urine	2	1	3	NS	3	Good	1	1	1	8.4263	68.0000	807.0000
Assaf_ASSAF2002-F	F		Blood	1	1	3	NS	2	2	1	1	1	8.4416	13.0000	154.0000
Hegaard_HEGAAR2007	F		Saliva	1	2	Young	NS	3	2	2	2	2	8.7415	8.0000	91.5171
Olivieri_OLIVIE2002	M+F		Blood	3	1	NS	NS	2	2	2	2	2	8.8710	11.0000	124.0000
Wagenknecht_WAGENK1992	M+F		Blood	3	1	Young	NS	1	Good	1	1	1	9.0286	145.0000	1606.0000
MONICA Germany_HELLER1998-older	F	45-64	Blood	3	1	2	NS	2	2	1	2	2	9.1603	12.0000	131.0000
Dickinson_DICKIN1988	M+F		Saliva	1	1	3	NS	1	2	2	4	2	9.2593	10.0000	108.0000
Barlow_BARLOW1987	F		Urine	3	2	Young	NS	2	2	2	1	2	9.4203	13.0000	138.0000
Owen_OWEN2001	F		Saliva	1	2	Young	NS	2	2	2	1	2	9.5506	17.0000	178.0000
Hoseini_HOSEIN2016	M+F		Urine	3	1	NS	NS	3	2	2	4	2	9.8765	8.0000	81.0000
TEC_PEARCE2014	F	Non-indigenous	Urine	Other	1	Young	NS	3	2	1	2	4	10.0000	1.0000	10.0000
MONICA Germany_HELLER1998-older	M	45-64	Blood	3	1	2	NS	2	2	2	2	2	10.2151	38.0000	372.0000
Martinez-Sanchez_MARTIN2009C	M+F		Saliva	2	1	3	NS	3	2	2	2	2	10.4972	38.0000	362.0000
Messeri_MESSER2007A	M+F		Saliva	Other	1	Young	NS	3	2	1	1	1	10.6780	63.0000	590.0000
Brunet_BRUNET2011	M+F		Blood	3	3	3	NS	3	2	1	4	1	10.9649	25.0000	228.0000
Kim_KIM2014J	M+F		Saliva	2	1	3	NS	3	Good	2	1	1	11.2150	12.0000	107.0000
Stick_STICK1996	F		Blood	3	2	Young	NS	2	2	2	1	4	11.2903	7.0000	62.0000
KNHANES_KANG2015-M	M	2008-2009	Urine	2	1	3	NS	3	2	1	2	Asia	11.3759	296.0000	2602.0000
Etter_ETTER2000A	M+F		Saliva	1	1	Young	NS	2	2	1	2	1	11.5590	4.0000	34.6052
Ulvik_I_ULVIK2010	M+F		Blood	2	3	2	NS	3	2	2	2	2	11.7890	114.0000	967.0000
NHANES_CARABA2004	M	1988-1994, age 12-17	Blood	2	1	Young	NS	3	Good	1	1	1	11.8812	12.0000	101.0000
NHANES_CARABA2016-adult	F	2001-2012, NH white, 26+yr	Blood	2	1	3	NS	3	Good	1	1	1	11.8923	159.0000	1337.0000
Levine_LEVINE2013	M+F		Urine	2	1	3	Yes	3	2	2	4	1	12.1212	8.0000	66.0000
Shaffer_SHAFFE2000	M+F		Blood	Other	1	3	Yes	2	2	3	1	1	12.2257	195.0000	1595.0000
SHS_LU2014A	M+F		Saliva	1	1	3	NS	3	2	2	2	2	12.5613	384.0000	3057.0000
Wewers I_WEWERS1995	M		Saliva	1	1	NS	No	2	2	1	1	1	12.5731	43.0000	342.0000
Ellard II_ELLARD1996	F		Urine	1	2	Young	NS	2	2	2	2	2	12.7875	139.0000	1087.0000
HSE_JARVIS2008-any-smoking	M+F	1996-2004, Any smoking at nurse visit	Saliva	1	1	3	NS	2	2	2	2	2	13.0145	1388.0000	10665.0000
NHANES_LINDSA2014-young	M+F	1999-2000, age12-19	Blood	2	1	Young	NS	3	Good	2	1	1	13.1707	27.0000	205.0000
Pojer_POJER1984	M+F		Blood	1	1	NS	NS	2	2	1	4	1	13.2261	13.0000	98.2908
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2	2	2	2	13.3673	131.0000	980.0000
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	14.0722	34.7064	246.6310
NHANES_CARABA2004	F	1988-1994, age 12-17	Blood	2	1	Young	NS	3	Good	1	1	1	14.1026	11.0000	78.0000
West III_WEST2007	M+F		Saliva	1	1	3	NS	3	2	2	2	2	14.1975	23.0000	162.0000
Naraghi_NARAGH2011	M		Blood	3	3	NS	NS	3	2	2	2	2	14.2857	3.0000	21.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M5: Percentage of True current smokers who report being Non-smokers  
 Results included in all analyses, cut point 1

Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
Perez-Stable_PEREZS1992	M+F		Blood	1	1	3	NS	1	2		1	1	14.5823	12.0000	82.2916
Molina_MOLINA2010	F		Saliva	3	1	Young	NS	3	2	1	2	2	14.6552	17.0000	116.0000
ABC_PEARCE2014	M	Indigenous	Urine	Other	1	Young	NS	3	2		2	4	15.0685	22.0000	146.0000
Pierce_PIERCE1987	M+F		Saliva	1	1	3	No	1	2		2	4	15.5673	59.0000	379.0000
Tsutsumi_TSUTSU2002A-F	F		Urine	1	1	2	NS	2	2	1	1	Asia	16.0714	9.0000	56.0000
Fritz_FRITZ2010A	M+F		Urine	2	1	NS	NS	3	2		2	2	16.1972	23.0000	142.0000
de Chazeron_DECHAZ2008	F		Blood	2	2	Young	NS	3	2	2	2	2	16.4444	37.0000	225.0000
Lee Anna_LEE2013TE	M+F		Urine	2	3	3	NS	3	2	1	1	Asia	16.6667	10.0000	60.0000
NHANES_CARABA2016-young-adult	F	2001-2012, NH white, 18-25yrs	Blood	2	1	Young	NS	3	Good	1	1	1	16.7539	64.0000	382.0000
NHANES_CARABA2016-adult	M	2001-2012, NH white, 26+yrs	Blood	2	1	3	NS	3	Good		1	1	18.3323	310.0000	1691.0000
Sasaki_SASAKI2011	F		Blood	3	2	Young	NS	3	2	2	2	Asia	18.8999	134.0000	709.0000
Xie I_XIE2009	M+F		Blood	1	3	3	NS	3	2		1	Asia	18.9320	39.0000	206.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1	2	2	19.1092	133.0000	696.0000
Jarvis I_JARVIS1987A	M+F		Blood	1	3	NS	NS	1	2		2	2	19.6262	21.0000	107.0000
Shipton_SHIPTO2009	F	N adjusted	Blood	3	2	Young	No	3	2	2	2	2	19.6281	190.0000	968.0000
George_GEORGE2006	F	early pregnancy	Blood	1	2	Young	No	3	Good	2	2	2	19.6970	13.0000	66.0000
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	20.7317	34.0000	164.0000
Fendrich_FENDRI2005	M+F		Saliva	Other	1	Young	No	3	2		3	1	21.7391	45.0000	207.0000
ABC_PEARCE2014	F	Indigenous	Urine	Other	1	Young	NS	3	2	1	2	4	22.2222	36.0000	162.0000
TEC_PEARCE2014	M	Non-indigenous	Urine	Other	1	Young	NS	3	2		2	4	22.2222	2.0000	9.0000
Stanton_STANTO1996	M+F		Saliva	3	1	Young	Yes	2	2		2	4	23.9067	82.0000	343.0000
NHANES_CARABA2016-young-adult	M	2001-2012, NH white, 18-25yrs	Blood	2	1	Young	NS	3	Good		1	1	23.9544	126.0000	526.0000
NHANES_CARABA2016-adult	M	2001-2012, NH black, 26+yrs	Blood	2	1	3	NS	3	Good		1	1	24.2199	326.0000	1346.0000
Lindqvist_LINDQV2002	F		Blood	1	2	Young	No	2	2	2	1	2	24.5098	25.0000	102.0000
Tikkkanen_TIKKAN2010	F		Blood	3	2	Young	NS	3	2		2	2	24.5763	29.0000	118.0000
Ulvik II_ULVIK2010	M+F		Blood	2	3	2	NS	3	2		2	2	24.6294	216.0000	877.0000
Wallner-Liebmann_WALLNE2013	M+F		Blood	3	3	NS	NS	3	2		2	2	24.7485	123.0000	497.0000
NHANES_CARABA2016-adult	F	2001-2012, NH black, 26+yrs	Blood	2	1	3	NS	3	Good	1	1	1	25.0832	226.0000	901.0000
NHANES_CARABA2016-young	F	2001-2012, NH white, 12-17yrs	Blood	2	1	Young	NS	3	Good	1	1	1	25.8278	39.0000	151.0000
Salzer_SALZER2013	M+F		Blood	3	3	Young	No	3	2		3	2	26.0563	37.0000	142.0000
Kharrazi_KHARRA1999	F		Blood	2	2	Young	NS	2	2	2	1	1	26.4957	31.0000	117.0000
Stookey_STOOKE1987	M+F		Saliva	1	1	NS	NS	2	2		2	1	27.8002	19.1947	69.0452
Ford_FORD1997	F		Blood	3	2	Young	NS	2	2	2	2	4	28.0374	30.0000	107.0000
Lee II_LEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	28.5714	28.0000	98.0000
Ceppa_CEPPA2000	M+F		Urine	1	3	NS	NS	2	2		2	2	30.1587	19.0000	63.0000
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	32.9268	27.0000	82.0000
DC-HOPE_ELMOHA2009	F	Non, current smokers	Saliva	2	2	Young	NS	3	2	2	1	1	34.9112	59.0000	169.0000
Mathews_MATHEW1999A	F		Blood	3	2	Young	NS	2	2	2	1	2	35.6125	125.0000	351.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M5: Percentage of True current smokers who report being Non-smokers  
 Results included in all analyses, cut point 1

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<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
Khuri_KHURI2001	M+F		Blood	Other	3	2	NS	2	2		2	1	37.2014	109.0000	293.0000
Badger_BADGER2009	M+F		Blood	3	3	2	NS	3	2		2	2	38.8889	42.0000	108.0000
NHANES_CARABA2016-young-adult	F	2001-2012, NH black, 18-25yrs	Blood	2	1	Young	NS	3	Good	1	1	1	39.1566	65.0000	166.0000
Akiyama_AKIYAM1994	F		Urine	2	1	3	NS	2	2	1	2	Asia	40.7407	11.0000	27.0000
NHANES_CARABA2016-young-adult	M	2001-2012, NH black, 18-25yrs	Blood	2	1	Young	NS	3	Good		1	1	42.3664	111.0000	262.0000
Laatikainen I_LAATIK1999	F	Pitkäransta	Blood	2	1	3	NS	2	2	1	2	4	43.5644	44.0000	101.0000
NHANES_CARABA2016-young	M	2001-2012, NH white, 12-17yrs	Blood	2	1	Young	NS	3	Good		1	1	45.1220	74.0000	164.0000
Spencer II_SPENCE2013	F		Blood	3	2	Young	No	3	2		2	2	45.5474	96.0000	210.7694
Morales_MORALE2013	M+F		Blood	3	3	NS	No	3	2		1	1	46.4286	26.0000	56.0000
Kandel_KANDEL2006	M+F		Saliva	3	1	Young	Yes	3	2		3	1	46.5909	82.0000	176.0000
Smith UK_SMITH1998C	M+F		Urine	1	3	3	NS	2	2		2	2	47.2773	18.0000	38.0732
Nguyen_NGUYEN2007	M+F		Blood	1	3	3	No	3	2		2	2	52.2727	23.0000	44.0000
KNHANES_KANG2015-F	F	2008-2009	Urine	2	1	3	NS	3	2	1	1	Asia	56.9767	441.0000	774.0000
Zielinska-Danch_ZIELIN2007	M+F		Urine	1	1	3	NS	3	2		1	2	57.7947	152.0000	263.0000
NHANES_CARABA2016-young	M	2001-2012, NH black, 12-17yrs	Blood	2	1	Young	NS	3	Good		1	1	61.7284	50.0000	81.0000
Dolcini_DOLCIN2003	M+F	Adolescents	Saliva	3	1	Young	Yes	3	2		1	1	62.0112	111.0000	179.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	62.2490	155.0000	249.0000
NHANES_CARABA2016-young	F	2001-2012, NH black, 12-17yrs	Blood	2	1	Young	NS	3	Good	1	1	1	62.5000	20.0000	32.0000
Wewers I_WEWERS1995	F		Saliva	1	1	NS	No	2	2	1	1	1	69.5652	64.0000	92.0000
Twardella II_TWARDE2004	M+F		Blood	3	3	2	No	3	2		1	2	82.3077	107.0000	130.0000
Parna_PARNA2005	F		Blood	3	2	Young	NS	3	2	2	2	2	83.5366	274.0000	328.0000
Jhun_JHUN2010	F		Urine	1	2	Young	No	3	2	2	1	Asia	87.5000	28.0000	32.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M5: Percentage of True current smokers who report being Non-smokers  
 Additional results included in analysis by Sex, cut point 1

Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
HSE_WARDLE2003-non-curr	F	2002, by sex	Saliva	1	1	Young	NS	3	2	1	1	2	16.9355	105.0000	620.0000	
HSE_WARDLE2003-non-curr	M	2002, by sex	Saliva	1	1	Young	NS	3	2	1	1	2	20.1818	111.0000	550.0000	
Additional results included in analysis by Body fluid tested, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
			Blood	3	3	NS	No	3	2		2	2	17.1975	27.0000	157.0000	
Additional results included in analysis by Assay method, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
			Urine	1	1	NS	Yes	3	2		3	1	0.0000	0.0000	32.9294	
Additional results included in analysis by Pregnancy, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
			Blood	2	2	Young	NS	3	Good	2	1	1	20.7547	22.0000	106.0000	
Additional results included in analysis by Smoking product considered, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
			Saliva	1	1	3	NS	2	2		1	2	13.7857	1418.0000	10286.0000	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M5: Percentage of True current smokers who report being Non-smokers  
 Results included in overall analyses, cut point 2

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC2</b>	<b>N_Cut2</b>	<b>Weight2</b>
TEC_PEARCE2014	F	Non-indigenous	Urine	Other	1	Young	NS	3	2	1	2	4	0.0000	0.0000	3.0000
TEC_PEARCE2014	M	Non-indigenous	Urine	Other	1	Young	NS	3	2		2	4	0.0000	0.0000	7.0000
BUPA_WALD1984	M		Urine	3	1	NS	NS	1	2		2	2	0.0000	0.0000	167.9615
Copenhagen_SUADIC1997	M	1985-86, with or without CVD	Blood	3	3	2	NS	2	2		3	2	1.6627	28.0000	1684.0000
Haddow_I_HADDOW1986	F		Blood	3	1	NS	NS	1	2	1	1	1	1.7544	1.0000	57.0000
Lifestyle_and_Appetite_LEE1986B	M		Saliva	1	1	3	No	2	2		3	2	1.9232	6.0000	311.9841
Lifestyle_and_Appetite_LEE1986B	F		Saliva	1	1	3	No	2	2	1	3	2	2.0849	5.0000	239.8250
Laatikainen_I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	2.4291	6.0000	247.0000
Pojer_POJER1984	M+F		Blood	1	1	NS	NS	2	2		1	4	2.5199	2.0000	79.3676
Peacock_PEACOC1998	F	booking visit	Blood	1	2	Young	NS	2	2		2	1	2.8807	7.0000	243.0000
Wagenknecht_WAGENK1992	M+F		Blood	3	1	Young	NS	1	Good		1	1	4.0453	50.0000	1236.0000
Parker_PARKER2002	M+F	GC method	Urine	1	1	NS	NS	2	2		1	1	4.6729	5.0000	107.0000
Pierce_PIERCE1987	M+F		Saliva	1	1	3	No	1	2		2	4	4.9669	15.0000	302.0000
Smith_USA_SMITH2014B	F		Saliva	2	2	Young	NS	3	2	2	2	1	5.7143	2.0000	35.0000
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2		2	2	6.2053	52.0000	838.0000
Coultas_WELLS1998C	F		Saliva	Other	1	3	NS	1	2	1	1	1	8.7838	13.0000	148.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1	2	2	8.9474	51.0000	570.0000
Coultas_WELLS1998C	M		Saliva	Other	1	3	NS	1	2		1	1	9.8214	11.0000	112.0000
Assaf_ASSAF2002-M	M		Blood	1	1	3	NS	2	2		1	1	10.2740	15.0000	146.0000
Hellemmons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	11.1888	16.0000	143.0000
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	11.4846	25.2178	219.5796
ABC_PEARCE2014	M	Indigenous	Urine	Other	1	Young	NS	3	2		2	4	13.9535	18.0000	129.0000
Zielinska-Danch_ZIELIN2007	M+F		Urine	1	1	3	NS	3	2		1	2	15.9091	21.0000	132.0000
Gilligan_GILLIG2010	F		Urine	3	2	Young	Yes	3	2	2	2	4	16.9231	22.0000	130.0000
Sato_SATO2003A	M+F		Blood	1	3	NS	NS	3	2		1	Asia	18.0556	13.0000	72.0000
ABC_PEARCE2014	F	Indigenous	Urine	Other	1	Young	NS	3	2	1	2	4	18.6567	25.0000	134.0000
Ford_FORD1997	F		Blood	3	2	Young	NS	2	2	2	2	4	20.0000	14.0000	70.0000
Niedbala_NIEDBA2002	M+F		Urine	3	1	NS	NS	2	Good		3	1	21.1640	4.0000	18.9000
Bardy_BARDY1993	F		Blood	2	2	Young	No	2	2	2	2	2	21.2766	20.0000	94.0000
Lindqvist_LINDQV2002	F		Blood	1	2	Young	No	2	2	2	1	2	23.2558	10.0000	43.0000
DC-HOPE_ELMOHA2009	F	Non, current smokers	Saliva	2	2	Young	NS	3	2	2	1	1	23.5294	24.0000	102.0000
Lee_II_LEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	28.7500	23.0000	80.0000
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	28.9474	11.0000	38.0000
Markovic_MARKOV2000	F		Urine	2	2	Young	NS	2	2	2	1	1	29.3839	62.0000	211.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	30.3030	40.0000	132.0000
Smith_UK_SMITH1998C	M+F		Urine	1	3	3	NS	2	2		2	2	36.3392	10.0000	27.5185
Laatikainen_I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2	1	2	4	36.4706	31.0000	85.0000
Agewall_AGEWAL2002	M		Urine	3	3	2	NS	2	2		2	2	38.3333	46.0000	120.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M5: Percentage of True current smokers who report being Non-smokers  
 Results included in overall analyses, cut point 2

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<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC2</b>	<b>N_Cut2</b>	<b>Weight2</b>
Lee Chung Yul_LEE2009TC	M		Urine	1	1	NS	No	3	2		2	Asia	40.0000	16.0000	40.0000
Burstyn_BURSTY2009	F		Blood	3	2	Young	No	3	2	2	2	1	43.5868	14.5350	33.3473
Gill_GILL1996	M+F		Urine	1	3	NS	NS	2	2		1	4	56.9231	37.0000	65.0000
Parna_PARNA2005	F		Blood	3	2	Young	NS	3	2	2	2	2	78.7879	130.0000	165.0000
Lee Chung Yul_LEE2009TC	F		Urine	1	1	NS	No	3	2	1	2	Asia	100.0000	19.0000	19.0000

**WEIGHTED on Number of True current smokers, cut point 1**

		<b>Deviance</b>	<b>(DF)</b>					
<b>Misclassification rate, cut point 1</b>		10062702.05						
		33						
	<b>Model 1</b>		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
	<b>Constant</b>		14.5039	1.0833	0.0000 ***	14.5039	12.3614	16.6464
		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>			
	<b>Model 2</b>	8681176.957	(133)	1381525.095	0.0001 ***			
		4		9				
	<b>Constant</b>		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
			10.0750	4.6534	0.0322 +	10.0750	0.8704	19.2796
<b>Time of publication</b>								
In 1995 review	11	Aliased				10.0750	0.8704	19.2796
Before 2003	52	0.3606	4.8624	0.9410		10.4356	7.6460	13.2251
2003 onwards	73	9.7342	4.9002	0.0490 +		19.8092	16.7719	22.8464
		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>			
	<b>Model 3</b>	7130814.066	(122)	1550362.891	0.0095 **			
		3		2				
	<b>Constant</b>		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
			6.1433	5.4177	0.2590	6.1433	-4.5820	16.8687
<b>Time of publication</b>								
In 1995 review	11	Aliased				9.8219	0.2869	19.3570
Before 2003	52	0.9587	5.1018	0.8513		10.7806	7.9474	13.6138
2003 onwards	73	9.6057	5.0527	0.0597 (+)		19.4277	16.3411	22.5143

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M5: Percentage of True current smokers who report being Non-smokers  
 Multivariate analysis  
 Variables selected according to significance (no variables forced in)

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**WEIGHTED on Number of True current smokers, cut point 1**

<b>Location x Sex</b>		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
Canada/USA, F	20	Aliased			10.8253	6.0651	15.5855
Canada/USA, M	8	8.2166	4.5005	0.0703 (+)	19.0420	11.6132	26.4707
Canada/USA, M+F	21	4.2467	3.8553	0.2728	15.0720	9.2360	20.9080
Europe, F	25	6.7330	3.6895	0.0705 (+)	17.5584	11.9528	23.1639
Europe, M	8	0.0115	4.9433	0.9981	10.8368	2.1962	19.4774
Europe, M+F	22	4.2894	2.9103	0.1431	15.1148	11.7629	18.4666
Asia, F	6	23.6136	6.4646	0.0004 +++	34.4389	22.6362	46.2416
Asia, M	3	-4.3691	5.0375	0.3875	6.4562	-2.2405	15.1528
Asia, M+F	5	-8.3161	6.4994	0.2032	2.5093	-9.3826	14.4012
Other, F	5	16.2299	11.7461	0.1696	27.0552	4.2826	49.8278
Other, M	3	-1.6700	12.0927	0.8904	9.1553	-14.3189	32.6295
Other, M+F	10	2.0295	6.3844	0.7511	12.8549	1.2182	24.4915

Overall percentage, cut point 1, unweighted

**Misclassification rate, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	9120.4571	(51)				
		8.2625	1.8545	0.0000 ***	8.2625	4.5394	11.9855

Overall percentage, cut point 2, unweighted

**Misclassification rate, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	1155.4713	(12)				
		7.2012	2.7216	0.0213 +	7.2012	1.2714	13.1309

Overall percentage, cut point 1

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	1934895.132	(51)				
		5					
		5.7018	1.2438	0.0000 ***	5.7018	3.2048	8.1988

Overall percentage, cut point 2

**Misclassification rate, cut point 2**

**WEIGHTED on Number of True current smokers, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	125996.9726	(12)				
		4.3427	1.9042	0.0416 +	4.3427	0.1937	8.4917

By Body fluid tested

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P		
			1773182.688	(50)	161953.5425	0.1125		
	Constant		Estimate	S.E.	P	LSMean	95%CI	95%Clu
<b>Body fluid tested</b>			9.2629	3.1647	0.0051 ++	9.2629	2.9065	15.6194
Urine	9	Aliased				9.2629	2.9065	15.6194
Saliva	10	1.6574	4.7644	0.7294	10.9203	3.7667	18.0739	
Blood	34	-5.0545	3.4566	0.1499	4.2084	1.4157	7.0011	

By cotinine assay method used

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P		
			1910122.709	(48)	24772.4230	0.8907		
	Constant		Estimate	S.E.	P	LSMean	95%CI	95%Clu
<b>Cotinine assay method</b>			5.0652	2.1649	0.0235 +	5.0652	0.7123	9.4182
Chromatography	19	Aliased				5.0652	0.7123	9.4182
Spectrometry	13	1.9038	3.0386	0.5339	6.9690	2.6819	11.2562	
Immunoassay	18	0.2243	3.4737	0.9488	5.2895	-0.1724	10.7515	
Other	2	-1.1987	5.0759	0.8143	3.8665	-5.3644	13.0974	

By Study type

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		1923182.299	(49)	11712.8330	0.8618		
	<b>Constant</b>	5.6623	1.4135	0.0002 +++	5.6623	2.8218	8.5028
	<b>Study type</b>						
General pop.	35	Aliased			5.6623	2.8218	8.5028
Pregnancy	2	2.9764	6.0205	0.6232	8.6387	-3.1217	20.3992
Diseased or CC	15	-0.6543	3.5368	0.8540	5.0080	-1.5072	11.5233

By Age group

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		1915560.295	(48)	19334.8373	0.9217		
	<b>Constant</b>	7.4780	2.9324	0.0140 +	7.4780	1.5821	13.3739
	<b>Age group</b>						
Young	8	Aliased			7.4780	1.5821	13.3739
Not young	12	-2.0885	3.9620	0.6005	5.3895	0.0326	10.7465
All ages	21	-2.0943	3.4676	0.5487	5.3837	1.6625	9.1048
NS	11	-2.8421	4.8876	0.5636	4.6359	-3.2262	12.4980

By Awareness of validation by cotinine

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P		
			1856168.374	(49)	78726.7584	0.3614		
			2					
		<b>Constant</b>	4.2633	4.8734	0.3859	4.2633	-5.5301	14.0567
		<b>Aware of checking by cotinine?</b>						
Yes	1	Aliased				4.2633	-5.5301	14.0567
No	10	7.1260	6.4132	0.2719	11.3893	3.0117	19.7670	
NS	41	0.9516	5.0572	0.8515	5.2149	2.4996	7.9302	

By Time of publication

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P		
			1920434.251	(49)	14460.8811	0.8321		
			4					
		<b>Constant</b>	5.3530	4.3860	0.2281	5.3530	-3.4609	14.1669
		<b>Time of publication</b>						
In 1995 review	5	Aliased				5.3530	-3.4609	14.1669
Before 2003	28	-0.2711	4.7066	0.9543	5.0819	1.6508	8.5130	
2003 onwards	19	1.3491	4.8550	0.7823	6.7021	2.5182	10.8859	

By Quality of study

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
		1932343.171	(50)	2551.9609	0.7983		
		6					
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		4.4832	4.9055	0.3652	4.4832	-5.3698	14.3362
	<b>Study quality</b>						
Good	1	Aliased			4.4832	-5.3698	14.3362
Not good	51	1.3040	5.0745	0.7983	5.7872	3.1789	8.3954

By Pregnancy (women only)

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
		1387081.673	(15)	16853.5344	0.6755		
		8					
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		12.9709	4.7206	0.0150 +	12.9709	2.9091	23.0327
	<b>Pregnancy</b>						
Not pregnant	15	Aliased			12.9709	2.9091	23.0327
Pregnant	2	-4.3322	10.1477	0.6755	8.6387	-10.5077	27.7852

By Tobacco products considered

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

Model 2	Deviance		(DF) (49)	Drop Dev 80804.4955	P 0.3516			
	1854090.637	0				Estimate	S.E.	P
Constant		7.8157	1.9069	0.0002 ***	7.8157	3.9837	3.9837	11.6478
<b>Tobacco products considered</b>								
Cigarettes	22	Aliased			7.8157	3.9837	3.9837	11.6478
Any smoking	29	-3.6873	2.5803	0.1593	4.1284	0.6352	0.6352	7.6215
Any tobacco	1	-3.5524	5.2306	0.5002	4.2633	-5.5246	-5.5246	14.0513

By Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		1662575.191	(49)	272319.9407	0.0243 *		
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		12.0334	2.5312	0.0000 ***	12.0334	6.9467	17.1201
	CARD3: RSex						
F	17	Aliased			12.0334	6.9467	17.1201
M	12	-8.5196	3.5341	0.0197 -	3.5138	-1.4425	8.4701
M+F	23	-7.8939	2.9821	0.0109 -	4.1395	0.9712	7.3078

By Location

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		1829542.283	(48)	105352.8495	0.4377		
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		6.6050	2.3566	0.0073 ++	6.6050	1.8667	11.3434
	Location						
Canada/USA	14	Aliased			6.6050	1.8667	11.3434
Europe	27	-2.4838	2.8852	0.3936	4.1212	0.7746	7.4679
Asia	8	2.7610	4.0543	0.4991	9.3661	2.7328	15.9993
Other	3	5.8638	10.0302	0.5615	12.4688	-7.1337	32.0714

By Location x Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

Model 2	Deviance		(DF) (40)	Drop Dev 9	P 0.0000 ***		
	Constant	Estimate 16.9977				S.E. 6.1272	P 0.0084 ++
<b>Location x Sex</b>							
Canada/USA, F	3	Aliased				16.9977	4.6141
Canada/USA, M	1	-10.5649	9.5891	0.2771	6.4327	-8.4750	21.3405
Canada/USA, M+F	10	-11.2377	6.3743	0.0855 (-)	5.7599	2.2083	9.3116
Europe, F	9	-11.0593	6.4877	0.0960 (-)	5.9384	1.6286	10.2482
Europe, M	7	-13.5057	6.5798	0.0467 -	3.4920	-1.3545	8.3384
Europe, M+F	11	-13.7162	6.3590	0.0371 -	3.2815	-0.1566	6.7196
Asia, F	4	27.3186	8.2582	0.0020 ++	44.3163	33.1263	55.5064
Asia, M	3	-14.0075	6.9457	0.0505 (-)	2.9902	-3.6209	9.6014
Asia, M+F	1	-16.3921	7.3239	0.0308 -	0.6055	-7.5031	8.7142
Other, F	1	23.5964	14.8921	0.1210	40.5941	13.1616	68.0266
Other, M	1	-13.5494	10.4325	0.2015	3.4483	-13.6167	20.5133
Other, M+F	1	-16.9977	22.6861	0.4581	0.0000	-44.1463	44.1463

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M6: Percentage of True current smokers who report being Never smokers  
 Results included in all analyses, cut point 1

Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
MONICA Germany_HELLER1998-young	M	25-44	Blood	3	1	Young	NS	2	2		2	2	0.0000	0.0000	379.0000
Morales_MORALE2013	M+F		Blood	3	3	NS	No	3	2		1	1	0.0000	0.0000	56.0000
Phillipou_PHILLI1994C	M+F		Urine	3	3	NS	No	2	2		2	4	0.0000	0.0000	39.0000
Nguyen_NGUYEN2007	M+F		Blood	1	3	3	No	3	2		2	2	0.0000	0.0000	44.0000
Naraghi_NARAGH2011	M		Blood	3	3	NS	NS	3	2		2	2	0.0000	0.0000	21.0000
Naraghi_NARAGH2011	F		Blood	3	3	NS	NS	3	2	1	2	2	0.0000	0.0000	50.0000
Stookey_STOOKE1987	M+F		Saliva	1	1	NS	NS	2	2		2	1	0.0000	0.0000	69.0452
Tsutsumi_TSUTSU2002A-M	M		Urine	1	1	2	NS	2	2		1	Asia	0.4367	2.0000	458.0000
MONICA Scotland_CHEN2002D	M	Surveys 3 and 4	Blood	1	1	3	NS	2	2		1	2	0.5164	3.0000	581.0000
MONICA Scotland_CHEN2002D	F	Surveys 3 and 4	Blood	1	1	3	NS	2	2	1	1	2	0.5420	4.0000	738.0000
Tabara_TABARA2013	M+F		Urine	2	1	NS	NS	3	2		2	Asia	0.6055	7.0000	1156.0000
MONICA Scotland_CHEN2002D	F	Surveys 1 and 2	Blood	1	1	3	NS	2	2	1	1	2	0.6452	3.0000	465.0000
MONICA Germany_HELLER1998-older	M	45-64	Blood	3	1	2	NS	2	2		2	2	0.8065	3.0000	372.0000
Ulvik II_ULVIK2010	M+F		Blood	2	3	2	NS	3	2		2	2	0.9122	8.0000	877.0000
MONICA Scotland_CHEN2002D	M	Surveys 1 and 2	Blood	1	1	3	NS	2	2		1	2	1.1331	4.0000	353.0000
MONICA Germany_HELLER1998-young	F	25-44	Blood	3	1	Young	NS	2	2	1	2	2	1.6260	4.0000	246.0000
Owen_OWEN2001	F		Saliva	1	2	Young	NS	2	2	2	1	2	1.6854	3.0000	178.0000
Khuri_KHURI2001	M+F		Blood	Other	3	2	NS	2	2		2	1	1.7065	5.0000	293.0000
HSE_OPSCS1996A	M+F	1994	Blood	1	1	3	NS	2	2		2	2	2.0583	60.0000	2915.0000
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2		2	2	2.2449	22.0000	980.0000
MONICA Germany_HELLER1998-older	F	45-64	Blood	3	1	2	NS	2	2	1	2	2	2.2901	3.0000	131.0000
Akiyama_AKIYAM1994	M		Urine	2	1	3	NS	2	2		2	Asia	2.2989	2.0000	87.0000
Slattery II_SLATTE1989A	F		Blood	3	3	3	NS	1	2	1	1	1	2.5478	4.0000	157.0000
Wallner-Liebmann_WALLNE2013	M+F		Blood	3	3	NS	NS	3	2		2	2	3.2193	16.0000	497.0000
HSE_WEST2007	M+F	2003	Saliva	1	1	3	NS	3	2		2	2	3.3937	15.0000	442.0000
Laatikainen I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	3.4483	9.0000	261.0000
KNHANES_JUNGCH2012	M	2008	Urine	2	1	3	NS	2	2		1	Asia	4.0201	48.0000	1194.0000
Olivieri_OLIVIE2002	M+F		Blood	3	1	NS	NS	2	2		2	2	4.0323	5.0000	124.0000
Shaffer_SHAFFE2000	M+F		Blood	Other	1	3	Yes	2	2		3	1	4.2633	68.0000	1595.0000
Wagenknecht_WAGENK1992	M+F		Blood	3	1	Young	NS	1	Good	1	1	1	4.4832	72.0000	1606.0000
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	4.8780	4.0000	82.0000
Ulvik I_ULVIK2010	M+F		Blood	2	3	2	NS	3	2		2	2	5.4809	53.0000	967.0000
Perez-Stable_PEREZS1992	M+F		Blood	1	1	3	NS	1	2		1	1	6.0760	5.0000	82.2916
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	6.0976	10.0000	164.0000
Wewers I_WEWERS1995	M		Saliva	1	1	NS	No	2	2		1	1	6.4327	22.0000	342.0000
Luepker_LUEPK1989	M+F	home IV	Saliva	1	1	Young	NS	1	2		1	1	6.4418	6.0616	94.0985
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1	2	2	6.4655	45.0000	696.0000
NHANES_AGARWA2009	M+F	1999-2004	Blood	2	1	2	NS	3	2		1	1	6.8984	131.0000	1899.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M6: Percentage of True current smokers who report being Never smokers  
 Results included in all analyses, cut point 1

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<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	7.8035	19.2458	246.6310
West III_WEST2007	M+F		Saliva	1	1	3	NS	3	2		2	2	8.0247	13.0000	162.0000
Shipton_SHIPTO2009	F	N adjusted	Blood	3	2	Young	No	3	2	2	2	2	9.9174	96.0000	968.0000
Badger_BADGER2009	M+F		Blood	3	3	2	NS	3	2		2	2	12.0370	13.0000	108.0000
Tsutsumi_TSUTSU2002A-F	F		Urine	1	1	2	NS	2	2	1	1	Asia	12.5000	7.0000	56.0000
HSE_WARDLE2003-never-ex	F	2002, by sex	Saliva	1	1	Young	NS	3	2	1	1	2	13.7097	85.0000	620.0000
Twardella II_TWARDE2004	M+F		Blood	3	3	2	No	3	2		1	2	13.8462	18.0000	130.0000
HSE_WARDLE2003-never-ex	M	2002, by sex	Saliva	1	1	Young	NS	3	2		1	2	14.7273	81.0000	550.0000
Lee II_LEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	22.4490	22.0000	98.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	22.4900	56.0000	249.0000
Akiyama_AKIYAM1994	F		Urine	2	1	3	NS	2	2	1	2	Asia	33.3333	9.0000	27.0000
Laatikainen I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2	1	2	4	40.5941	41.0000	101.0000
KNHANES_JUNGCH2012	F	2008	Urine	2	1	3	NS	2	2	1	1	Asia	54.2254	231.0000	426.0000
Wewers I_WEWERS1995	F		Saliva	1	1	NS	No	2	2	1	1	1	66.3043	61.0000	92.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M6: Percentage of True current smokers who report being Never smokers  
 Additional results included in analysis by Body fluid tested, cut point 1

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>	
Hellemons_HELLEM2015	M+F	plasma	Blood		3	3	NS	No	3	2		2	2	4.4586	7.0000	157.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M6: Percentage of True current smokers who report being Never smokers  
 Results included in overall analyses, cut point 2

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC2</b>	<b>N_Cut2</b>	<b>Weight2</b>
Sato_SATO2003A	M+F		Blood	1	3	NS	NS	3	2		1	Asia	0.0000	0.0000	72.0000
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2		2	2	0.9547	8.0000	838.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1	2	2	1.7544	10.0000	570.0000
Laatikainen I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	2.0243	5.0000	247.0000
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	2.0979	3.0000	143.0000
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	2.6316	1.0000	38.0000
Coultas_WELLS1998C	M		Saliva	Other	1	3	NS	1	2		1	1	2.6786	3.0000	112.0000
Coultas_WELLS1998C	F		Saliva	Other	1	3	NS	1	2	1	1	1	3.3784	5.0000	148.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	4.5455	6.0000	132.0000
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	6.2606	13.7470	219.5796
Markovic_MARKOV2000	F		Urine	2	2	Young	NS	2	2	2	1	1	11.8483	25.0000	211.0000
Lee II_LEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	22.5000	18.0000	80.0000
Laatikainen I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2	1	2	4	32.9412	28.0000	85.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M6: Percentage of True current smokers who report being Never smokers  
 Multivariate analysis  
 Variables selected according to significance (no variables forced in)

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**WEIGHTED on Number of True current smokers, cut point 1**

	Deviance		(DF)				
	Model 1	1934895.132	5	(DF)	P	LSMean	95%CI
<b>Constant</b>		5.7018	1.2438	0.0000 ***		5.7018	3.2048
<b>Model 2</b>		744299.7516	(40)	1190595.380	0.0000 ***		8.1988
<b>Constant</b>		16.9977	6.1272	0.0084 ++		16.9977	4.6141
<b>Location x Sex</b>							
Canada/USA, F	3	Aliased				16.9977	4.6141
Canada/USA, M	1	-10.5649	9.5891	0.2771		6.4327	-8.4750
Canada/USA, M+F	10	-11.2377	6.3743	0.0855 (-)		5.7599	2.2083
Europe, F	9	-11.0593	6.4877	0.0960 (-)		5.9384	1.6286
Europe, M	7	-13.5057	6.5798	0.0467 -		3.4920	-1.3545
Europe, M+F	11	-13.7162	6.3590	0.0371 -		3.2815	-0.1566
Asia, F	4	27.3186	8.2582	0.0020 ++		44.3163	33.1263
Asia, M	3	-14.0075	6.9457	0.0505 (-)		2.9902	-3.6209
Asia, M+F	1	-16.3921	7.3239	0.0308 -		0.6055	-7.5031
Other, F	1	23.5964	14.8921	0.1210		40.5941	13.1616
Other, M	1	-13.5494	10.4325	0.2015		3.4483	-13.6167
Other, M+F	1	-16.9977	22.6861	0.4581		0.0000	-44.1463
							44.1463

Overall percentage, cut point 1, unweighted

**Misclassification rate, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
		8853.5252	(51)				
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		11.4220	1.8271	0.0000 ***	11.4220	7.7538	15.0901

Overall percentage, cut point 2, unweighted

**Misclassification rate, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
		863.5885	(12)				
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		10.5504	2.3528	0.0007 ***	10.5504	5.4240	15.6768

Overall percentage, cut point 1

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
		1730367.915	(51)				
		3					
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		8.9312	1.1762	0.0000 ***	8.9312	6.5698	11.2925

Overall percentage, cut point 2

**Misclassification rate, cut point 2**

**WEIGHTED on Number of True current smokers, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
		106641.5701	(12)				
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		7.8903	1.7519	0.0007 ***	7.8903	4.0733	11.7074

By Body fluid tested

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P		
			1621066.406	(50)	111563.2964	0.1894		
<b>Constant</b>			5.2810	3.0259	0.0871 (+)	5.2810	-0.7967	11.3587
<b>Body fluid tested</b>								
Urine	9	Aliased				5.2810	-0.7967	11.3587
Saliva	10	0.1302	4.5555	0.9773		5.4112	-1.4287	12.2511
Blood	34	4.9238	3.3051	0.1426		10.2048	7.5346	12.8750

By cotinine assay method used

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P		
			1599850.771	(48)	130517.1438	0.2835		
<b>Constant</b>			5.8398	1.9813	0.0049 ++	5.8398	1.8561	9.8235
<b>Cotinine assay method</b>								
Chromatography	19	Aliased				5.8398	1.8561	9.8235
Spectrometry	13	4.6480	2.7809	0.1011		10.4878	6.5643	14.4113
Immunoassay	18	4.2751	3.1790	0.1850		10.1149	5.1163	15.1136
Other	2	6.3954	4.6454	0.1750		12.2352	3.7872	20.6831

By Study type

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2	Deviance		(DF) (49)	Drop Dev 681786.6282	P 0.0000 ***	LSMean	95%CI 4.4556	95%Clu 8.6505
		1	1048581.287						
	<b>Constant</b>		6.5530	1.0437	0.0000 +++		6.5530	4.4556	8.6505
	<b>Study type</b>								
General pop.	35	Aliased					6.5530	4.4556	8.6505
Pregnancy	2	2.8710	4.4455	0.5214			9.4241	0.7402	18.1080
Diseased or CC	15	14.7378	2.6116	0.0000 +++			21.2908	16.4800	26.1017

By Age group

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2	Deviance		(DF) (48)	Drop Dev 449385.9129	P 0.0022 **	LSMean	95%CI 0.5572	95%Clu 10.2001
		4	1280982.002						
	<b>Constant</b>		5.3787	2.3980	0.0295 +		5.3787	0.5572	10.2001
	<b>Age group</b>								
Young	8	Aliased					5.3787	0.5572	10.2001
Not young	12	11.0568	3.2399	0.0013 ++			16.4354	12.0548	20.8161
All ages	21	1.0883	2.8356	0.7028			6.4670	3.4239	9.5100
NS	11	4.7053	3.9969	0.2449			10.0839	3.6546	16.5132

By Awareness of validation by cotinine

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P		
			1681725.609	(49)	48642.3060	0.4973		
			3					
		Constant	7.9624	4.6387	0.0924 (+)	7.9624	-1.3595	17.2843
		Aware of checking by cotinine?						
Yes	1	Aliased				7.9624	-1.3595	17.2843
No	10	5.4555	6.1044	0.3759	13.4179	5.4436	21.3922	
NS	41	0.5719	4.8137	0.9059	8.5343	5.9498	11.1188	

By Time of publication

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P		
			1502501.654	(49)	227866.2606	0.0314 *		
			7					
		Constant	4.4483	3.8795	0.2571	4.4483	-3.3478	12.2443
		Time of publication						
In 1995 review	5	Aliased				4.4483	-3.3478	12.2443
Before 2003	28	2.5482	4.1631	0.5433	6.9965	3.9616	10.0313	
2003 onwards	19	8.3697	4.2944	0.0570 (+)	12.8180	9.1173	16.5186	

By Quality of study

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
		1697312.758	(50)	33055.1566	0.3285		
		7					
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		4.5455	4.5975	0.3276	4.5455	-4.6889	13.7798
	<b>Study quality</b>						
Good	1	Aliased			4.5455	-4.6889	13.7798
Not good	51	4.6930	4.7559	0.3285	9.2385	6.7940	11.6830

By Pregnancy (women only)

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
		54172.0062	(15)	15898.8716	0.0532 (*)		
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		5.2164	0.9329	0.0001 +++	5.2164	3.2279	7.2048
	<b>Pregnancy</b>						
Not pregnant	15	Aliased			5.2164	3.2279	7.2048
Pregnant	2	4.2077	2.0054	0.0532 (+)	9.4241	5.6403	13.2079

By Tobacco products considered

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		1679518.220	(49)	50849.6947	0.4815		
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
<b>Tobacco products considered</b>							
Cigarettes	22	Aliased			7.3908	3.7436	11.0380
Any smoking	29	2.9437	2.4558	0.2364	10.3345	7.0099	13.6591
Any tobacco	1	0.5716	4.9783	0.9091	7.9624	-1.3534	17.2781

By Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

		<b>Model 2</b>	<b>Deviance</b> 1580975.437 4	<b>(DF)</b> (49)	<b>Drop Dev</b> 149392.4778	<b>P</b> 0.1095		
		<b>Constant</b>	<b>Estimate</b> 6.1269	<b>S.E.</b> 2.4683	<b>P</b> 0.0165 +	<b>LSMean</b> 6.1269	<b>95%CI</b> 1.1666	<b>95%Clu</b> 11.0873
<b>CARD3: RSex</b>								
F	17	Aliased				6.1269	1.1666	11.0873
M	12	0.0760	3.4463	0.9825	6.2029	1.3698	11.0361	
M+F	23	5.0069	2.9080	0.0914 (+)	11.1339	8.0443	14.2234	

By Location

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

		<b>Model 2</b>	<b>Deviance</b> 1625191.380 5	<b>(DF)</b> (48)	<b>Drop Dev</b> 105176.5347	<b>P</b> 0.3854		
		<b>Constant</b>	<b>Estimate</b> 11.3402	<b>S.E.</b> 2.2211	<b>P</b> 0.0000 +++	<b>LSMean</b> 11.3402	<b>95%CI</b> 6.8743	<b>95%Clu</b> 15.8061
<b>Location</b>								
Canada/USA	14	Aliased				11.3402	6.8743	15.8061
Europe	27	-2.4799	2.7193	0.3663	8.8603	5.7061	12.0145	
Asia	8	-6.0860	3.8212	0.1178	5.2541	-0.9977	11.5060	
Other	3	-9.0958	9.4534	0.3408	2.2444	-16.2310	20.7198	

By Location x Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True current smokers, cut point 1**

Model 2	Deviance		(DF) (40)	Drop Dev 226199.5820	P 0.8589			
	1504168.333	3				Estimate	S.E.	P
<b>Constant</b>	4.5317	8.7104	0.6057	4.5317	-13.0727	22.1361		
<b>Location x Sex</b>								
Canada/USA, F	3	Aliased		4.5317	-13.0727	22.1361		
Canada/USA, M	1	1.6086	13.6318	6.1404	-15.0524	27.3331		
Canada/USA, M+F	10	7.6636	9.0616	0.4027	12.1954	7.1463	17.2444	
Europe, F	9	2.0421	9.2229	0.8259	6.5738	0.4470	12.7006	
Europe, M	7	2.1123	9.3537	0.8225	6.6440	-0.2456	13.5336	
Europe, M+F	11	6.8991	9.0399	0.4498	11.4308	6.5432	16.3184	
Asia, F	4	0.4106	11.7398	0.9723	4.9423	-10.9653	20.8500	
Asia, M	3	1.6212	9.8740	0.8704	6.1530	-3.2454	15.5513	
Asia, M+F	1	-0.4660	10.4116	0.9645	4.0657	-7.4614	15.5929	
Other, F	1	-1.5614	21.1705	0.9416	2.9703	-36.0275	41.9681	
Other, M	1	-3.3823	14.8307	0.8208	1.1494	-23.1100	25.4088	
Other, M+F	1	3.1606	32.2503	0.9224	7.6923	-55.0656	70.4502	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M7: Percentage of True current smokers who report being Ex-smokers  
 Results included in all analyses, cut point 1

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
Luepker_LUEPKE1989	M+F	home IV	Saliva	1	1	Young	NS	1	2		1	1	0.6680	0.6286	94.0985
Laatikainen_I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	1.1494	3.0000	261.0000
Tsutsumi_TSUTSU2002A-M	M		Urine	1	1	2	NS	2	2		1	Asia	1.9651	9.0000	458.0000
MONICA Scotland_CHEN2002D	M	Surveys 1 and 2	Blood	1	1	3	NS	2	2		1	2	1.9830	7.0000	353.0000
MONICA Germany_HELLER1998-young	M	25-44	Blood	3	1	Young	NS	2	2		2	2	2.1108	8.0000	379.0000
MONICA Scotland_CHEN2002D	F	Surveys 1 and 2	Blood	1	1	3	NS	2	2	1	1	2	2.1505	10.0000	465.0000
Akiyama_AKIYAM1994	M		Urine	2	1	3	NS	2	2		2	Asia	2.2989	2.0000	87.0000
Slattery II_SLATTE1989A	F		Blood	3	3	3	NS	1	2	1	1	1	2.5478	4.0000	157.0000
MONICA Scotland_CHEN2002D	F	Surveys 3 and 4	Blood	1	1	3	NS	2	2	1	1	2	2.7100	20.0000	738.0000
Laatikainen_I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2	1	2	4	2.9703	3.0000	101.0000
HSE_WARDLE2003-never-ex	F	2002, by sex	Saliva	1	1	Young	NS	3	2	1	1	2	3.2258	20.0000	620.0000
Wewers_I_WEWERS1995	F		Saliva	1	1	NS	No	2	2	1	1	1	3.2609	3.0000	92.0000
Tsutsumi_TSUTSU2002A-F	F		Urine	1	1	2	NS	2	2	1	1	Asia	3.5714	2.0000	56.0000
MONICA Scotland_CHEN2002D	M	Surveys 3 and 4	Blood	1	1	3	NS	2	2		1	2	3.9587	23.0000	581.0000
MONICA Germany_HELLER1998-young	F	25-44	Blood	3	1	Young	NS	2	2	1	2	2	4.0650	10.0000	246.0000
Tabara_TABARA2013	M+F		Urine	2	1	NS	NS	3	2		2	Asia	4.0657	47.0000	1156.0000
HSE_WEST2007	M+F	2003	Saliva	1	1	3	NS	3	2		2	2	4.0724	18.0000	442.0000
Wagenknecht_WAGENK1992	M+F		Blood	3	1	Young	NS	1	Good		1	1	4.5455	73.0000	1606.0000
KNHANES_JUNGCH2012	F	2008	Urine	2	1	3	NS	2	2	1	1	Asia	4.6948	20.0000	426.0000
Olivieri OLIVIE2002	M+F		Blood	3	1	NS	NS	2	2		2	2	4.8387	6.0000	124.0000
HSE_WARDLE2003-never-ex	M	2002, by sex	Saliva	1	1	Young	NS	3	2	1	2		5.4545	30.0000	550.0000
HSE_OPCS1996A	M+F	1994	Blood	1	1	3	NS	2	2		2	2	5.9005	172.0000	2915.0000
Lee II_LEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	6.1224	6.0000	98.0000
Wewers_I_WEWERS1995	M		Saliva	1	1	NS	No	2	2		1	1	6.1404	21.0000	342.0000
West III_WEST2007	M+F		Saliva	1	1	3	NS	3	2		2	2	6.1728	10.0000	162.0000
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	6.2687	15.4606	246.6310
Ulvik I_ULVIK2010	M+F		Blood	2	3	2	NS	3	2		2	2	6.3082	61.0000	967.0000
MONICA Germany_HELLER1998-older	F	45-64	Blood	3	1	2	NS	2	2	1	2	2	6.8702	9.0000	131.0000
Akiyama_AKIYAM1994	F		Urine	2	1	3	NS	2	2	1	2	Asia	7.4074	2.0000	27.0000
Phillipou_PHILLI1994C	M+F		Urine	3	3	NS	No	2	2		2	4	7.6923	3.0000	39.0000
Owen_OWEN2001	F		Saliva	1	2	Young	NS	2	2	2	1	2	7.8652	14.0000	178.0000
Shaffer_SHAFFE2000	M+F		Blood	Other	1	3	Yes	2	2		3	1	7.9624	127.0000	1595.0000
Naraghi_NARAGH2011	F		Blood	3	3	NS	NS	3	2	1	2	2	8.0000	4.0000	50.0000
KNHANES_JUNGCH2012	M	2008	Urine	2	1	3	NS	2	2		1	Asia	8.0402	96.0000	1194.0000
Perez-Stable_PEREZS1992	M+F		Blood	1	1	3	NS	1	2		1	1	8.5063	7.0000	82.2916
MONICA Germany_HELLER1998-older	M	45-64	Blood	3	1	2	NS	2	2		2	2	9.4086	35.0000	372.0000
Shipton_SHIPTO2009	F	N adjusted	Blood	3	2	Young	No	3	2	2	2	2	9.7107	94.0000	968.0000
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2		2	2	11.1224	109.0000	980.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M7: Percentage of True current smokers who report being Ex-smokers  
 Results included in all analyses, cut point 1

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<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1	2	2	12.6437	88.0000	696.0000
NHANES_AGARWA2009	M+F	1999-2004	Blood	2	1	2	NS	3	2		1	1	13.4808	256.0000	1899.0000
Naraghi_NARAGH2011	M		Blood	3	3	NS	NS	3	2		2	2	14.2857	3.0000	21.0000
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	14.6341	24.0000	164.0000
Wallner-Liebmann_WALLNE2013	M+F		Blood	3	3	NS	NS	3	2		2	2	21.5292	107.0000	497.0000
Ulvik II_ULVIK2010	M+F		Blood	2	3	2	NS	3	2		2	2	23.7172	208.0000	877.0000
Nguyen_NGUYEN2007	M+F		Blood	1	3	3	No	3	2		2	2	25.0000	11.0000	44.0000
Badger_BADGER2009	M+F		Blood	3	3	2	NS	3	2		2	2	26.8519	29.0000	108.0000
Stookey_STOOKE1987	M+F		Saliva	1	1	NS	NS	2	2		2	1	27.8002	19.1947	69.0452
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	28.0488	23.0000	82.0000
Khuri_KHURI2001	M+F		Blood	Other	3	2	NS	2	2		2	1	35.4949	104.0000	293.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	39.7590	99.0000	249.0000
Morales_MORALE2013	M+F		Blood	3	3	NS	No	3	2		1	1	46.4286	26.0000	56.0000
Twardella II_TWARDE2004	M+F		Blood	3	3	2	No	3	2		1	2	68.4615	89.0000	130.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M7: Percentage of True current smokers who report being Ex-smokers  
 Additional results included in analysis by Body fluid tested, cut point 1

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>	
Hellemons_HELLEM2015	M+F	plasma	Blood		3	3	NS	No	3	2		2	2	12.7389	20.0000	157.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M7: Percentage of True current smokers who report being Ex-smokers  
 Results included in overall analyses, cut point 2

<b>Id</b>	<b>RSex</b>		<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC2</b>	<b>N_Cut2</b>	<b>Weight2</b>
Laatikainen_I_LAATIK1999	M	Pitkäranta		Blood	2	1	3	NS	2	2		2	4	0.4049	1.0000	247.0000
Laatikainen_I_LAATIK1999	F	Pitkäranta		Blood	2	1	3	NS	2	2	1	2	4	3.5294	3.0000	85.0000
Ogden_OGDEN1997	F			Saliva	3	1	3	No	2	2	1	1	1	5.2240	11.4708	219.5796
FINRISK_VARTIA2002	M			Blood	2	1	3	NS	2	2		2	2	5.2506	44.0000	838.0000
Coultas_WELLS1998C	F			Saliva	Other	1	3	NS	1	2	1	1	1	5.4054	8.0000	148.0000
Lee_II_LEE1995B	F			Urine	3	1	3	No	1	2	1	2	Asia	6.2500	5.0000	80.0000
Coultas_WELLS1998C	M			Saliva	Other	1	3	NS	1	2		1	1	7.1429	8.0000	112.0000
FINRISK_VARTIA2002	F			Blood	2	1	3	NS	2	2	1	2	2	7.1930	41.0000	570.0000
Hellemons_HELLEM2015	M+F	urine		Blood	3	3	NS	No	3	2		2	2	9.0909	13.0000	143.0000
Markovic_MARKOV2000	F			Urine	2	2	Young	NS	2	2		2	1	17.5355	37.0000	211.0000
Sato_SATO2003A	M+F			Blood	1	3	NS	NS	3	2		1	Asia	18.0556	13.0000	72.0000
Martinez_MARTIN2004	M+F			Blood	1	3	2	NS	3	2		2	1	25.7576	34.0000	132.0000
EHLS_NONDAH2004	M+F			Blood	2	3	2	NS	3	2		1	1	26.3158	10.0000	38.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M7: Percentage of True current smokers who report being Ex-smokers  
 Multivariate analysis  
 Variables selected according to significance (no variables forced in)

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**WEIGHTED on Number of True current smokers, cut point 1**

		<b>Deviance</b>	<b>(DF)</b>					
<b>Misclassification rate, cut point 1</b>		1730367.915						
	<b>Model 1</b>	3		(51)				
	<b>Constant</b>	8.9312	<b>S.E.</b>	1.1762	<b>P</b>	0.0000 +++	<b>LSMean</b>	8.9312
			<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>			<b>P</b>
	<b>Model 2</b>	1048581.287		(49)	681786.6282		0.0000 ***	
	<b>Constant</b>	6.5530	<b>S.E.</b>	1.0437	<b>P</b>	0.0000 +++	<b>LSMean</b>	6.5530
			<b>Study type</b>				<b>95%CI</b>	4.4556
General pop.	35	Aliased					8.6505	
Pregnancy	2	2.8710	4.4455	0.5214			0.7402	18.1080
Diseased or CC	15	14.7378	2.6116	0.0000 +++			21.2908	16.4800
								26.1017

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M8: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Non-smokers

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Overall percentage, cut point 1, unweighted

**Misclassification rate, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	47854.6766	(184)				
		16.6102	1.1857	0.0000 ***	16.6102	14.2709	18.9495

Overall percentage, cut point 2, unweighted

**Misclassification rate, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	15689.3731	(59)				
		14.4270	2.1052	0.0000 ***	14.4270	10.2144	18.6395

Overall percentage, cut point 1

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-rep Current smokers (plus Misclass non-smokers), cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	11703606.41	(184)				
		68					
		11.5865	0.8048	0.0000 ***	11.5865	9.9986	13.1743

Overall percentage, cut point 2

**Misclassification rate, cut point 2**

**WEIGHTED on Number of self-rep Current smokers (plus Misclass non-smokers), cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	2181144.740	(59)				
		0					
		7.9200	1.3666	0.0000 ***	7.9200	5.1855	10.6546

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M8: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Non-smokers

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Overall misclassification rate (percentage) for the Palmier study, cut point 2 = 10.0969

By Body fluid tested

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclassified non-smokers), cut point 1**

	Deviance		(DF)	Drop Dev	P		
Model 2	11525955.94	86	(183)	182426.0295	0.2377		
	Estimate		S.E.	P	LSMean	95%CI	95%Clu
Constant	14.9356		2.2222	0.0000 +++	14.9356	10.5511	19.3200
Body fluid tested							
Urine	44	Aliased			14.9356	10.5511	19.3200
Saliva	46	-4.4914	2.6638	0.0935 (-)	10.4442	7.5459	13.3425
Blood	96	-3.4999	2.4606	0.1566	11.4357	9.3510	13.5203

By cotinine assay method used

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclassified non-smokers), cut point 1**

	Deviance		(DF)	Drop Dev	P		
Model 2	11319029.91	68	(182)	389377.7102	0.1035		
	Estimate		S.E.	P	LSMean	95%CI	95%Clu
Constant	9.2789		1.2597	0.0000 +++	9.2789	6.7935	11.7644
Cotinine assay method							
Chromatography	58	Aliased			9.2789	6.7935	11.7644
Spectrometry	51	4.2838	1.8843	0.0242 +	13.5627	10.7976	16.3278
Immunoassay	65	2.8817	2.0604	0.1636	12.1606	8.9434	15.3778
Other	12	5.8239	4.1460	0.1618	15.1029	7.3090	22.8968

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M8: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Non-smokers

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By Study type

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		11671891.43	(183)	33225.5237	0.7710		
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		11.2337	0.9361	0.0000 +++	11.2337	9.3868	13.0807
	<b>Study type</b>						
General pop.	121	Aliased			11.2337	9.3868	13.0807
Pregnancy	32	1.4037	2.3364	0.5487	12.6374	8.4138	16.8609
Diseased or CC	33	1.2120	2.4951	0.6277	12.4457	7.8824	17.0090

By Age group

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		11283401.58	(181)	420204.8346	0.0844 (*)		
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		13.2728	1.6088	0.0000 +++	13.2728	10.0982	16.4474
	<b>Age group</b>						
Young	71	Aliased			13.2728	10.0982	16.4474
Not young	18	-3.2443	2.8237	0.2521	10.0285	5.4497	14.6073
All ages	68	-1.0521	1.9444	0.5891	12.2207	10.0660	14.3755
NS	28	-7.1152	2.9428	0.0166 -	6.1576	1.2954	11.0199

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M8: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Non-smokers

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By Awareness of validation by cotinine

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P	
	Constant		Estimate	S.E.	P	LSMean	95%CI
Aware of checking by cotinine?			16.3559	4.1805	0.0001 ***	16.3559	8.1073
Yes	12	Aliased				16.3559	24.6045
No	28	-9.0917	4.5582	0.0476 -		7.2642	3.6793
NS	145	-3.9287	4.2764	0.3595		12.4272	10.6501
							14.2043

By Time of publication

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P	
	Constant		Estimate	S.E.	P	LSMean	95%CI
Time of publication			6.5926	2.2764	0.0042 ++	6.5926	2.1009
In 1995 review	23	Aliased				6.5926	11.0842
Before 2003	69	2.7335	2.5695	0.2888		9.3260	6.9744
2003 onwards	93	8.3046	2.5452	0.0013 ++		14.8972	12.6511
							17.1432

By Quality of study

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		11461387.44	(183)	242218.9699	0.0507 (*)		
		69					
<b>Constant</b>		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		15.7149	2.2461	0.0000 +++	15.7149	11.2833	20.1464
<b>Study quality</b>							
Good	22	Aliased			15.7149	11.2833	20.1464
Not good	163	-4.7258	2.4031	0.0507 (-)	10.9890	9.3032	12.6748

By Pregnancy (women only)

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		5741374.755	(72)	7184.6530	0.7649		
		9					
<b>Constant</b>		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		13.6945	2.3415	0.0000 +++	13.6945	9.0267	18.3622
<b>Pregnancy</b>							
Not pregnant	41	Aliased			13.6945	9.0267	18.3622
Pregnant	33	-1.0030	3.3414	0.7649	12.6915	7.9395	17.4434

By Tobacco products considered

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-rep Current smokers (plus Misclass  
non-smokers), cut point 1**

	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>			
		11332716.10 14	(184)	414068.1975	0.0368 *			
	<b>Constant</b>	<b>Estimate</b> 14.0760	<b>S.E.</b> 1.1945	<b>P</b> 0.0000 +++	<b>LSMean</b> 14.0760	<b>95%CI</b> 11.7193	<b>95%Clu</b> 16.4327	
	<b>Tobacco products considered</b>							
Cigarettes	75	Aliased			14.0760	11.7193	16.4327	
Any smoking	99	-4.0298	1.5573	0.0104 -	10.0463	8.0750	12.0176	
Any tobacco	13	-1.7472	3.9356	0.6576	12.3288	4.9303	19.7274	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M8: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Non-smokers

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By Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

		Deviance	(DF)	Drop Dev	P		
Model 2		11691712.04 90	(186)	85167.6866	0.5092		
Constant		Estimate	S.E.	P	LSMean	95%CI	95%Clu
		12.8947	1.4298	0.0000 +++	12.8947	10.0740	15.7154
	CARD3: RSex						
F	75	Aliased			12.8947	10.0740	15.7154
M	36	-2.3628	2.1526	0.2738	10.5318	7.3573	13.7064
M+F	78	-1.6493	1.8323	0.3692	11.2454	8.9848	13.5059

By Location

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

		Deviance	(DF)	Drop Dev	P		
Model 2		11476647.40 37	(181)	226959.0131	0.3138		
Constant		Estimate	S.E.	P	LSMean	95%CI	95%Clu
		11.5938	1.3142	0.0000 +++	11.5938	9.0007	14.1869
	Location						
Canada/USA	75	Aliased			11.5938	9.0007	14.1869
Europe	77	-0.8282	1.7263	0.6320	10.7656	8.5567	12.9745
Asia	15	4.9221	3.1317	0.1178	16.5159	10.9068	22.1249
Other	18	0.8400	4.7464	0.8597	12.4338	3.4342	21.4333

By Location x Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-rep Current smokers (plus Misclass  
non-smokers), cut point 1**

Model 2	Deviance	(DF)	Drop Dev	P			
	9760073.457 5	(173)	1943532.959 3	0.0007 ***			
Constant	Estimate 10.2504	S.E. 1.9663	P 0.0000 +++	LSMean 10.2504	95%CI 6.3692	95%Clu 14.1315	
<b>Location x Sex</b>							
Canada/USA, F	31	Aliased		10.2504	6.3692	14.1315	
Canada/USA, M	13	7.3963	3.3651	0.0293 +	17.6466	12.2565	23.0368
Canada/USA, M+F	31	-0.4555	2.7824	0.8701	9.7948	5.9091	13.6805
Europe, F	31	2.6096	2.9578	0.3789	12.8600	8.4986	17.2214
Europe, M	15	-4.9731	3.0272	0.1022	5.2773	0.7342	9.8204
Europe, M+F	31	1.7214	2.4194	0.4777	11.9718	9.1894	14.7541
Asia, F	6	25.1878	5.8803	0.0000 +++	35.4382	24.4997	46.3767
Asia, M	3	-0.6130	4.6205	0.8946	9.6374	1.3844	17.8905
Asia, M+F	6	1.7511	4.9131	0.7220	12.0014	3.1144	20.8885
Other, F	5	14.3843	11.0293	0.1939	24.6347	3.2134	46.0559
Other, M	3	-1.7798	11.6881	0.8791	8.4706	-14.2709	31.2121
Other, M+F	10	0.2433	5.4935	0.9647	10.4936	0.3689	20.6184

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45

Rate M8: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Non-smokers  
Results included in all analyses, cut point 1

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>Age</b>	<b>Gp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
Yeh_YEH2011	M+F	LC-MS/MS method	Urine	2	1	NS	Yes	3	2		3	1	0.0000	0.0000	35.7773	
Anderson_ANDERS2009A	F		Blood	3	2	Young	NS	3	2	2	2	2	0.0000	0.0000	37.0000	
Windham_WINDHA1999A	F		Urine	2	1	Young	NS	2	2	1	1	1	0.0000	0.0000	63.0000	
Glasgow III_GLASGO1993	M+F		Saliva	2	1	NS	No	2	2		2	1	0.0982	1.0000	1018.0000	
Glasgow I_GLASGO1993	M+F		Saliva	1	3	NS	No	2	2		2	1	0.5204	13.0000	2498.0000	
Noland_NOLAND1988	M+F		Saliva	3	1	Young	Yes	2	2		3	1	0.6250	1.0000	160.0000	
BUPA_WALD1984	M		Urine	3	1	NS	NS	1	2		2	2	0.9507	2.0000	210.3800	
Valladolid-Lopez_VALLAD2015	M+F		Urine	1	1	Young	NS	3	2		1	4	1.1278	3.0000	266.0000	
Glasgow II_GLASGO1993	M+F		Saliva	1	3	NS	No	2	2		1	1	1.3986	14.0000	1001.0000	
MONICA Germany_HELLER1998-young	M	25-44	Blood	3	1	Young	NS	2	2		2	2	1.7738	8.0000	451.0000	
Benowitz III_BENOWI2012A	M+F		Blood	2	1	3	NS	3	Good		3	1	1.8072	3.0000	166.0000	
Fidler_FIDLER2006	M+F	yr 11	Saliva	1	1	Young	NS	3	2		1	2	2.1776	13.0000	597.0000	
Tsutsumi_TSUTSU2002A-M	M		Urine	1	1	2	NS	2	2		1	Asia	2.2541	11.0000	488.0000	
BRHS baseline_JEFFER2009	M	1978-1980	Blood	2	1	2	No	3	2		2	2	2.3098	58.0000	2511.0000	
Cummings_WELLS1998C	M		Urine	1	1	3	NS	1	2		2	1	2.5210	3.0000	119.0000	
Cummings_WELLS1998C	F		Urine	1	1	3	NS	1	2	1	2	1	2.5641	3.0000	117.0000	
Muranaka_MURANA1988	M+F		Urine	1	3	NS	NS	2	2		1	Asia	2.6144	4.0000	153.0000	
Lifestyle and Appetite_LEE1986B	M		Saliva	1	1	3	No	2	2		3	2	2.6314	10.0000	380.0273	
MONICA Scotland_CHEN2002D	F	Surveys 1 and 2	Blood	1	1	3	NS	2	2	1	1	2	2.7197	13.0000	478.0000	
McNeill_MCNEIL1987	F		Saliva	1	1	Young	Yes	2	2	1	1	2	2.8090	5.0000	178.0000	
MONICA Scotland_CHEN2002D	M	Surveys 1 and 2	Blood	1	1	3	NS	2	2		1	2	3.0556	11.0000	360.0000	
MONICA Scotland_CHEN2002D	F	Surveys 3 and 4	Blood	1	1	3	NS	2	2	1	1	2	3.1496	24.0000	762.0000	
CHDS_ENGLIS1994	F		Blood	3	2	Young	NS	2	2	2	2	1	3.3735	42.0000	1245.0000	
Haddow II_HADDOW1988A	F		Blood	3	2	Young	No	2	2	2	2	1	3.4158	167.0000	4889.0000	
Goniewicz_GONIEW2011	M+F		Urine	2	1	NS	NS	3	2		2	4	3.5897	14.0000	390.0000	
SHHS_TUNSTA1991	M	1984-1986	Blood	1	1	2	NS	1	2		2	2	3.6264	73.0000	2013.0000	
Lifestyle and Appetite_LEE1986B	F		Saliva	1	1	3	No	2	2	1	3	2	3.7570	10.0000	266.1727	
Peacock_PEACOC1998	F	booking visit	Blood	1	2	Young	NS	2	2	2	1	2	4.0302	16.0000	397.0000	
Osaka factory_YAMAMO2005	M+F		Saliva	3	1	3	NS	3	2		2	Asia	4.0404	4.0000	99.0000	
S-Germany-II_HELLER1993	F	second random sample in 1989/90	Blood	3	1	3	NS	1	2	1	2	2	4.2506	19.0000	447.0000	
Tabara_TABARA2013	M+F		Urine	2	1	NS	NS	3	2		2	Asia	4.2994	54.0000	1256.0000	
MONICA Scotland_CHEN2002D	M	Surveys 3 and 4	Blood	1	1	3	NS	2	2		1	2	4.3551	26.0000	597.0000	
Jarvis II_JARVIS1991	M+F		Saliva	1	1	Young	NS	2	2		1	2	4.3750	14.0000	320.0000	
Akiyama_AKIYAM1994	M		Urine	2	1	3	NS	2	2		2	Asia	4.4944	4.0000	89.0000	
Laatikainen I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	4.5802	12.0000	262.0000	
SHHS_TUNSTA1991	F	1984-1986	Blood	1	1	2	NS	1	2	1	2	2	4.6768	68.0000	1454.0000	
Slattery II_SLATTE1989A	F		Blood	3	3	3	NS	1	2	1	1	1	4.6784	8.0000	171.0000	
Parker_PARKER2002	M+F	GC method	Urine	1	1	NS	NS	2	2		1	1	4.6875	6.0000	128.0000	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45

Rate M8: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Non-smokers  
Results included in all analyses, cut point 1

Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1		
NHANES_LINDSA2014-adult	M+F	1999-2000, age 20+	Blood	2	1	3	NS	3	Good	2	1	4.7862	47.0000	982.0000			
MONICA Germany_HELLER1998-young	F	25-44	Blood	3	1	Young	NS	2	2	1	2	4.8611	14.0000	288.0000			
Seccareccia_SECCAR2003	M+F		Blood	3	1	3	No	3	2		1	2	4.8685	50.0000	1027.0000		
HALS2_BATTY2014	M+F		Saliva	1	1	3	NS	3	2		2	2	5.1709	59.0000	1141.0000		
Spencer I_SPENCE1998	F		Blood	3	2	Young	NS	2	2	2	2	2	5.1724	6.0000	116.0000		
Semple_SEMPLE2007	M+F		Saliva	1	1	3	NS	3	2		2	2	5.2023	9.0000	173.0000		
S-Germany-I_HELLER1993	M	first random sample in 1984/85	Blood	3	1	3	NS	1	2		2	2	5.2934	46.0000	869.0000		
van Vunakis_VANVUN1989	M+F		Saliva	3	1	NS	NS	1	2		1	1	5.6452	7.0000	124.0000		
Smith USA_SMITH2014B	F		Saliva	2	2	Young	NS	3	2	2	2	1	5.6911	7.0000	123.0000		
Wewers II_WEWERS2009	F		Saliva	2	1	3	NS	3	2	1	3	1	5.8608	16.0000	273.0000		
S-Germany-I_HELLER1993	F	first random sample in 1984/85	Blood	3	1	3	NS	1	2	1	2	2	6.0465	26.0000	430.0000		
Emmons_EMMONS1996	M+F		Saliva	3	1	NS	NS	2	2		2	1	6.1404	21.0000	342.0000		
Ulvik I_ULVIK2010	M+F		Blood	2	3	2	NS	3	2		2	2	6.2363	114.0000	1828.0000		
TEC_PEARCE2014	F	Non-indigenous	Urine	Other	1	Young	NS	3	2	1	2	4	6.2500	1.0000	16.0000		
Klebanoff_KLEBAN1998	F		Blood	3	2	Young	NS	3	2	2	1	1	6.3415	13.0000	205.0000		
Luepker_LUEPK1989	M+F	home IV	Saliva	1	1	Young	NS	1	2		1	1	6.4155	6.6902	104.2820		
Seersholm_SEERSH1999	M+F		Blood	1	1	3	NS	2	2		2	2	6.5089	22.0000	338.0000		
S-Germany-II_HELLER1993	M	second random sample in 1989/90	Blood	3	1	3	NS	1	2		2	2	6.6667	46.0000	690.0000		
Waggoner_WAGGON2010	F		Urine	3	3	3	NS	3	2	1	1	1	6.6667	8.0000	120.0000		
HSE_OPSCS1995A	F	1993	Blood	1	1	3	NS	1	2	1	2	2	7.1904	54.0000	751.0000		
Haddow I_HADDOW1986	F		Blood	3	1	NS	NS	1	2	1	1	1	7.2464	5.0000	69.0000		
Bauld_BAULD2012	F		Urine	1	2	Young	NS	3	2	2	2	2	7.2727	20.0000	275.0000		
Messeri_MESSER2007A	M+F		Saliva	Other	1	Young	NS	3	2		1	1	7.3086	63.0000	862.0000		
Phillipou_PHILLI1994C	M+F		Urine	3	3	NS	No	2	2		2	4	7.3171	3.0000	41.0000		
HSE_OPSCS1995A	M	1993	Blood	1	1	3	NS	1	2		2	2	7.3304	67.0000	914.0000		
Assaf_ASSAF2002-F	F		Blood	1	1	3	NS	2	2	1	1	1	7.5581	13.0000	172.0000		
Dickinson_DICKIN1988	M+F		Saliva	1	1	3	NS	1	2		2	4	7.6923	10.0000	130.0000		
HSE_OPSCS1996A	M+F	1994	Blood	1	1	3	NS	2	2		2	2	7.8352	232.0000	2961.0000		
Naraghchi_NARAGH2011	F		Blood	3	3	NS	NS	3	2	1	2	2	7.8431	4.0000	51.0000		
CHMS_WONG2012	M+F		Urine	2	1	3	NS	3	Good	1	1	1	7.8613	68.0000	865.0000		
Levine_LEVINE2013	M+F		Urine	2	1	3	Yes	3	2		2	4	8.0808	8.0000	99.0000		
Olivieri_OLIVIE2002	M+F		Blood	3	1	NS	NS	2	2		2	2	8.1481	11.0000	135.0000		
Kaufman_KAUFMA2002A	F		Blood	2	2	Young	NS	2	2	2	2	1	8.2474	16.0000	194.0000		
MONICA Germany_HELLER1998-older	F	45-64	Blood	3	1	2	NS	2	2	1	2	2	8.4507	12.0000	142.0000		
Wagenknecht_WAGENK1992	M+F		Blood	3	1	Young	NS	1	Good		1	1	8.6105	145.0000	1684.0000		
Hegaard_HEGAAR2007	F		Saliva	1	2	Young	NS	3	2	2	2	2	8.6526	8.0000	92.4581		
Owen_OWEN2001	F		Saliva	1	2	Young	NS	2	2	2	1	2	9.0909	17.0000	187.0000		
MONICA Germany_HELLER1998-older	M	45-64	Blood	3	1	2	NS	2	2		2	2	9.0909	38.0000	418.0000		

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45

Rate M8: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Non-smokers  
Results included in all analyses, cut point 1

Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
Barlow_BARLOW1987	F		Urine	3	2	Young	NS	2	2	2	1	2	9.2199	13.0000	141.0000
Brunet_BRUNET2011	M+F		Blood	3	3	3	NS	3	2		1	4	9.4340	25.0000	265.0000
NHANES_CARABA2004	F	1988-1994, age 12-17	Blood	2	1	Young	NS	3	Good	1	1	1	9.4828	11.0000	116.0000
Hoseini_HOSEIN2016	M+F		Urine	3	1	NS	NS	3	2		2	4	9.5238	8.0000	84.0000
Audrain-McGovern_AUDRAI2011	M+F	12-wk follow-up	Saliva	3	1	Young	Yes	3	2		1	1	9.5808	32.0000	334.0000
Martinez-Sanchez_MARTIN2009C	M+F		Saliva	2	1	3	NS	3	2		2	2	9.8701	38.0000	385.0000
NHANES_LINDSA2014-young	M+F	1999-2000, age12-19	Blood	2	1	Young	NS	3	Good		2	1	9.9631	27.0000	271.0000
NHANES_CARABA2004	M	1988-1994, age 12-17	Blood	2	1	Young	NS	3	Good		1	1	10.0000	12.0000	120.0000
Kim_KIM2014J	M+F		Saliva	2	1	3	NS	3	Good		2	1	10.0840	12.0000	119.0000
NHANES_FISHER2008	M	1988-1994, age 18+	Blood	2	1	3	NS	3	2		1	1	10.1559	202.0000	1989.0000
Etter_ETTER2000A	M+F		Saliva	1	1	Young	NS	2	2		1	2	10.2031	4.0000	39.2039
NHANES_FISHER2008	F	1988-1994, age 18+	Blood	2	1	3	NS	3	2	1	1	1	10.3553	204.0000	1970.0000
Pell ACS_PELL2008A	M+F	ACS	Blood	1	3	NS	No	3	2		2	2	10.3634	77.0000	743.0000
Marshall_MARSHA2011A	M		Blood	3	3	3	NS	3	2		1	1	10.5860	34.0000	321.1795
Stick_STICK1996	F		Blood	3	2	Young	NS	2	2	2	1	4	10.9375	7.0000	64.0000
NHANES_CARABA2016-adult	F	2001-2012, NH white, 26+yr	Blood	2	1	3	NS	3	Good	1	1	1	11.0956	159.0000	1433.0000
Coultas_WELLS1998C	F		Saliva	Other	1	3	NS	1	2	1	1	1	11.1111	23.0000	207.0000
KNHANES_KANG2015-M	M	2008-2009	Urine	2	1	3	NS	3	2		1	Asia	11.1698	296.0000	2650.0000
Townsend_TOWNSE1991A	M+F	All ages	Saliva	Other	1	Young	Yes	2	2		1	2	11.7647	10.0000	85.0000
Wewers I_WEWERS1995	M		Saliva	1	1	NS	No	2	2		1	1	11.8132	43.0000	364.0000
Shaffer_SHAFFE2000	M+F		Blood	Other	1	3	Yes	2	2		3	1	11.8685	195.0000	1643.0000
SHS LU2014A	M+F		Saliva	1	1	3	NS	3	2		2	2	12.1866	384.0000	3151.0000
HSE_JARVIS2008-any-smoking	M+F	1996-2004, Any smoking at nurse visit	Saliva	1	1	3	NS	2	2		2	2	12.3411	1388.0000	11247.0000
Lee Anna_LEE2013TE	M+F		Urine	2	3	3	NS	3	2		1	Asia	12.5000	10.0000	80.0000
Ellard II_ELLARD1996	F		Urine	1	2	Young	NS	2	2	2	2	2	12.5565	139.0000	1107.0000
Xie I_XIE2009	M+F		Blood	1	3	3	NS	3	2		1	Asia	12.7451	39.0000	306.0000
Coultas_WELLS1998C	M		Saliva	Other	1	3	NS	1	2		1	1	12.8788	17.0000	132.0000
INMA_AURREK2014	F	2004-08	Urine	3	2	Young	NS	3	2	2	2	2	12.9167	62.0000	480.0000
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2		2	2	12.9447	131.0000	1012.0000
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	12.9644	34.7064	267.7064
Molina_MOLINA2010	F		Saliva	3	1	Young	NS	3	2	1	2	2	12.9771	17.0000	131.0000
Pojer_POJER1984	M+F		Blood	1	1	NS	NS	2	2		1	4	12.9799	13.0000	100.1550
Perez-Stable_PEREZS1992	M+F		Blood	1	1	3	NS	1	2		1	1	13.0525	12.0000	91.9366
BRHS follow-up_JEFFER2010A	M+F	1998-2000, men and 1999-2001, women	Blood	2	1	2	No	3	2		2	2	13.0584	76.0000	582.0000
Pell HEPS_PELL2008A	M+F	HEPS	Saliva	1	1	3	NS	3	2		2	2	13.4454	48.0000	357.0000
West III_WEST2007	M+F		Saliva	1	1	3	NS	3	2		2	2	13.6095	23.0000	169.0000
Naraghi_NARAGH2011	M		Blood	3	3	NS	NS	3	2		2	2	13.6364	3.0000	22.0000
de Chazeron_DECHAZ2008	F		Blood	2	2	Young	NS	3	2	2	2	2	14.0684	37.0000	263.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M8: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Non-smokers  
 Results included in all analyses, cut point 1

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Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
Pierce_PIERCE1987	M+F		Saliva	1	1	3	No	1	2		2	4	14.3204	59.0000	412.0000
NHANES_CARABA2016-young-adult	F	2001-2012, NH white, 18-25yrs	Blood	2	1	Young	NS	3	Good	1	1	1	14.3820	64.0000	445.0000
ABC_PEARCE2014	M	Indigenous	Urine	Other	1	Young	NS	3	2		2	4	14.4737	22.0000	152.0000
NHANES_CARABA2016-young	F	2001-2012, NH white, 12-17yrs	Blood	2	1	Young	NS	3	Good	1	1	1	14.9425	39.0000	261.0000
Tsutsumi_TSUTSU2002A-F	F		Urine	1	1	2	NS	2	2	1	1	Asia	15.7895	9.0000	57.0000
Wallner-Liebmann_WALLNE2013	M+F		Blood	3	3	NS	NS	3	2		2	2	15.8301	123.0000	777.0000
Fritz_FRITZ2010A	M+F		Urine	2	1	NS	NS	3	2		2	2	16.0839	23.0000	143.0000
Sasaki_SASAKI2011	F		Blood	3	2	Young	NS	3	2		2	2	16.1836	134.0000	828.0000
Cooley_COOLEY2007	F		Urine	1	3	2	NS	3	2	1	2	1	16.6667	4.0000	24.0000
Mullen_MULLEN1991	F		Urine	3	2	Young	No	2	2	2	2	1	16.7785	25.0000	149.0000
Dell'Orco_DELLOR1995	M		Urine	3	1	Young	NS	2	2		2	2	17.1053	13.0000	76.0000
NHANES_CARABA2016-adult	M	2001-2012, NH white, 26+yrs	Blood	2	1	3	NS	3	Good		1	1	17.3767	310.0000	1784.0000
George_GEORGE2006	F	early pregnancy	Blood	1	2	Young	No	3	Good	2	2	2	17.8082	13.0000	73.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1	2	2	17.9487	133.0000	741.0000
TEC_PEARCE2014	M	Non-indigenous	Urine	Other	1	Young	NS	3	2		2	4	18.1818	2.0000	11.0000
Shipton_SHIPTO2009	F	N adjusted	Blood	3	2	Young	No	3	2	2	2	2	18.4645	190.0000	1029.0000
Muramoto_MURAMO2007	M+F		Urine	3	1	Young	NS	3	Good		1	1	18.6957	43.0000	230.0000
Jarvis_I_JARVIS1987A	M+F		Blood	1	3	NS	NS	1	2		2	2	18.9189	21.0000	111.0000
Fendrich_FENDRI2005	M+F		Saliva	Other	1	Young	No	3	2		3	1	19.3133	45.0000	233.0000
Salzer_SALZER2013	M+F		Blood	3	3	Young	No	3	2		3	2	19.8925	37.0000	186.0000
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	20.6061	34.0000	165.0000
ABC_PEARCE2014	F	Indigenous	Urine	Other	1	Young	NS	3	2	1	2	4	20.8092	36.0000	173.0000
Griffin_GRIFFI2014	M+F		Blood	3	3	2	NS	3	2		2	2	21.0526	12.0000	57.0000
NHANES_CARABA2016-young-adult	M	2001-2012, NH white, 18-25yrs	Blood	2	1	Young	NS	3	Good		1	1	21.6867	126.0000	581.0000
Lindqvist_LINDQV2002	F		Blood	1	2	Young	No	2	2	2	1	2	21.9298	25.0000	114.0000
Ulvik II_ULVIK2010	M+F		Blood	2	3	2	NS	3	2		2	2	22.1538	216.0000	975.0000
Kharrazi_KHARRA1999	F		Blood	2	2	Young	NS	2	2	2	1	1	22.3022	31.0000	139.0000
Tikkanen_TIKKAN2010	F		Blood	3	2	Young	NS	3	2	2	2	2	22.3077	29.0000	130.0000
NHANES_CARABA2016-adult	M	2001-2012, NH black, 26+yrs	Blood	2	1	3	NS	3	Good		1	1	22.4518	326.0000	1452.0000
Stanton_STANTO1996	M+F		Saliva	3	1	Young	Yes	2	2		2	4	22.9692	82.0000	357.0000
NHANES_CARABA2016-adult	F	2001-2012, NH black, 26+yrs	Blood	2	1	3	NS	3	Good	1	1	1	23.2510	226.0000	972.0000
Ceppa_CEPPA2000	M+F		Urine	1	3	NS	NS	2	2		2	2	23.4568	19.0000	81.0000
Holiday_HOLIDA1995	M+F	Non-smokers v Smokers	Blood	3	3	3	NS	2	2		3	1	23.6620	84.0000	355.0000
Wilmink_WILMIN1999	M		Blood	3	3	2	NS	2	2		2	2	23.8095	30.0000	126.0000
Lee So Ryong_LEE2014N	M+F		Urine	2	1	3	NS	3	2		1	Asia	25.0844	223.0000	889.0000
Ford_FORD1997	F		Blood	3	2	Young	NS	2	2	2	2	4	26.0870	30.0000	115.0000
Arnold_ARNOLD2001	F	White women	Urine	3	2	Young	Yes	2	2	2	2	1	26.3514	39.0000	148.0000
Lee II_LEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	26.4151	28.0000	106.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45

Rate M8: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Non-smokers  
 Results included in all analyses, cut point 1

Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1	
Arnold_ARNOLD2001	F	African American women	Urine	3	2	Young	Yes	2	2	2	2	1	27.2727	12.0000	44.0000	
Stookey_STOOKE1987	M+F		Saliva	1	1	NS	NS	2	2		2	1	27.6139	19.1947	69.5111	
NHANES_CARABA2016-young	M	2001-2012, NH white, 12-17yrs	Blood	2	1	Young	NS	3	Good		1	1	30.5785	74.0000	242.0000	
DC-HOPE_ELMOHA2009	F	Non, current smokers	Saliva	2	2	Young	NS	3		2	1	1	31.8919	59.0000	185.0000	
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3		2	1	1	32.9268	27.0000	82.0000	
Dell'Orco_DELLOR1995	F		Urine	3	1	Young	NS	2		1	2	2	33.3333	17.0000	51.0000	
Mathews_MATHEW1999A	F		Blood	3	2	Young	NS	2		2	1	2	34.2466	125.0000	365.0000	
Kandel_KANDEL2006	M+F		Saliva	3	1	Young	Yes	3		2		3	1	34.5992	82.0000	237.0000
Badger_BADGER2009	M+F		Blood	3	3	2	NS	3		2		2	2	35.0000	42.0000	120.0000
NHANES_CARABA2016-young-adult	F	2001-2012, NH black, 18-25yrs	Blood	2	1	Young	NS	3	Good	1	1	1	35.7143	65.0000	182.0000	
Khuri_KHURI2001	M+F		Blood	Other	3	2	NS	2		2		2	1	36.3333	109.0000	300.0000
Jenkins_JENKIN1999	M		Saliva	3	1	3	NS	3		2		2	1	39.1304	27.0000	69.0000
NHANES_CARABA2016-young-adult	M	2001-2012, NH black, 18-25yrs	Blood	2	1	Young	NS	3	Good		1	1	39.2226	111.0000	283.0000	
Laatikainen_I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2		2	1	2	4	39.6396	44.0000	111.0000
Akiyama_AKIYAM1994	F		Urine	2	1	3	NS	2		2	1	2	Asia	40.7407	11.0000	27.0000
Spencer II_SPENCE2013	F		Blood	3	2	Young	No	3		2	2	2	2	40.7507	96.0000	235.5789
Jenkins_JENKIN1999	F		Saliva	3	1	3	NS	3		2	1	2	1	42.3913	39.0000	92.0000
Bernert_BERNER2000	M+F		Blood	2	1	3	NS	2		2		3	1	43.3333	39.0000	90.0000
NHANES_CARABA2016-young	F	2001-2012, NH black, 12-17yrs	Blood	2	1	Young	NS	3	Good	1	1	1	44.4444	20.0000	45.0000	
NHANES_CARABA2016-young	M	2001-2012, NH black, 12-17yrs	Blood	2	1	Young	NS	3	Good		1	1	45.8716	50.0000	109.0000	
Windsor_WINDSO2000	F	Phase 1	Saliva	Other	2	Young	NS	2		2	2	1	45.9302	79.0000	172.0000	
Morales_MORALE2013	M+F		Blood	3	3	NS	No	3		2		1	1	46.4286	26.0000	56.0000
Smith UK_SMITH1998C	M+F		Urine	1	3	3	NS	2		2		2	2	46.6071	18.0000	38.6207
Nguyen_NGUYEN2007	M+F		Blood	1	3	3	No	3		2		2	2	48.9362	23.0000	47.0000
Dolcini_DOLCIN2003	M+F	Adolescents	Saliva	3	1	Young	Yes	3		2		1	1	53.6232	111.0000	207.0000
KNHANES_KANG2015-F	F	2008-2009	Urine	2	1	3	NS	3		2	1	1	Asia	56.1783	441.0000	785.0000
Zielinska-Danch_ZIELIN2007	M+F		Urine	1	1	3	NS	3		2		1	2	57.7947	152.0000	263.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3		2		2	1	62.0000	155.0000	250.0000
Feldman_FELDMA1991	M+F		Blood	3	1	Young	NS	2		2		1	1	63.1579	12.0000	19.0000
Wewers I_WEWEVERS1995	F		Saliva	1	1	NS	No	2		2	1	1	1	64.6465	64.0000	99.0000
Twardella II_TWARDE2004	M+F		Blood	3	3	2	No	3		2		1	2	71.3333	107.0000	150.0000
Parna_PARNA2005	F		Blood	3	2	Young	NS	3		2	2	2	2	79.8834	274.0000	343.0000
Jhun_JHUN2010	F		Urine	1	2	Young	No	3		2	2	1	Asia	82.3529	28.0000	34.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M8: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Non-smokers  
 Additional results included in analysis by Sex, cut point 1

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
HSE_BOERA2001	F	1999, by sex	Saliva	1	1	3	NS	2	2	1	3	2	6.8966	109.3600	1585.7200
HSE_BOERA2001	M	1999, by sex	Saliva	1	1	3	NS	2	2	3	2		11.1111	201.6800	1815.1200
HSE_WARDLE2003-non-curr	F	2002, by sex	Saliva	1	1	Young	NS	3	2	1	1	2	14.9786	105.0000	701.0000
HSE_WARDLE2003-non-curr	M	2002, by sex	Saliva	1	1	Young	NS	3	2	1	2		18.6869	111.0000	594.0000
Additional results included in analysis by Body fluid tested, cut point 1															
<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
Hellemons_HELLEM2015	M+F	plasma	Blood	3	3	NS	No	3	2	2	2	2	17.0886	27.0000	158.0000
Additional results included in analysis by Assay method, cut point 1															
<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
Yeh_YEH2011-strip	M+F	Test strip method	Urine	1	1	NS	Yes	3	2	3	1		0.0000	0.0000	35.7773
Additional results included in analysis by Study Type, cut point 1															
<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
HSE_SHAHAB2006A-with-COPD	M+F	2001, with COPD	Saliva	1	3	2	NS	3	2	1	2		9.6927	41.0000	423.0000
Additional results included in analysis by Pregnancy, cut point 1															
<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
NHANES_DIETZ2011-pregnant	F	1999-2006, pregnant	Blood	2	2	Young	NS	3	Good	2	1	1	19.2982	22.0000	114.0000
Additional results included in analysis by Smoking product considered, cut point 1															
<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
Holiday_HOLIDA1995	M+F	Non-users v Tobacco users	Blood	3	3	3	NS	2	2	3	1		5.0704	18.0000	355.0000
HSE_JARVIS2008-cig-smoking	M+F	1996-2004, Cigarette smoking at nurse visit	Saliva	1	1	3	NS	2	2	1	2		13.2722	1418.0000	10684.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45

Rate M8: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Non-smokers  
Results included in overall analyses, cut point 2

Id	RSex		Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC2	N_Cut2	Weight2
TEC_PEARCE2014	F	Non-indigenous		Urine	Other	1	Young	NS	3	2	1	2	4	0.0000	0.0000	15.0000
TEC_PEARCE2014	M	Non-indigenous		Urine	Other	1	Young	NS	3	2		2	4	0.0000	0.0000	9.0000
BUPA_WALD1984	M			Urine	3	1	NS	NS	1	2		2	2	0.0000	0.0000	208.3800
Cummings_WELLS1998C	M			Urine	1	1	3	NS	1	2		2	1	0.8547	1.0000	117.0000
Copenhagen_SUADIC1997	M	1985-86, with or without CVD		Blood	3	3	2	NS	2	2		3	2	1.4791	28.0000	1893.0000
SHHS_TUNSTA1991	M	1984-1986		Blood	1	1	2	NS	1	2		2	2	1.5228	30.0000	1970.0000
Haddow_I_HADDOW1986	F			Blood	3	1	NS	NS	1	2	1	1	1	1.5385	1.0000	65.0000
Lifestyle and Appetite_LEE1986B	M			Saliva	1	1	3	No	2	2		3	2	1.5956	6.0000	376.0273
Smith USA_SMITH2014B	F			Saliva	2	2	Young	NS	3	2	2	2	1	1.6949	2.0000	118.0000
Cummings_WELLS1998C	F			Urine	1	1	3	NS	1	2	1	2	1	1.7241	2.0000	116.0000
S-Germany-I_HELLER1993	M	first random sample in 1984/85		Blood	3	1	3	NS	1	2		2	2	1.7900	15.0000	838.0000
Peacock_PEACOC1998	F	booking visit		Blood	1	2	Young	NS	2	2	2	1	2	1.8041	7.0000	388.0000
Lifestyle and Appetite_LEE1986B	F			Saliva	1	1	3	No	2	2	1	3	2	1.9144	5.0000	261.1727
Baltar_BALTAR2011	M+F			Blood	2	3	NS	No	3	2		2	4	1.9438	9.0000	463.0000
S-Germany-II_HELLER1993	F	second random sample in 1989/90		Blood	3	1	3	NS	1	2	1	2	2	2.0595	9.0000	437.0000
SHHS_TUNSTA1991	F	1984-1986		Blood	1	1	2	NS	1	2	1	2	2	2.1186	30.0000	1416.0000
Pojer_POJER1984	M+F			Blood	1	1	NS	NS	2	2		1	4	2.2433	2.0000	89.1550
Laatikainen_I_LAATIK1999	M	Pitkäranta		Blood	2	1	3	NS	2	2		2	4	2.3438	6.0000	256.0000
S-Germany-I_HELLER1993	F	first random sample in 1984/85		Blood	3	1	3	NS	1	2	1	2	2	2.6506	11.0000	415.0000
S-Germany-II_HELLER1993	M	second random sample in 1989/90		Blood	3	1	3	NS	1	2		2	2	2.7190	18.0000	662.0000
Wagenknecht_WAGENK1992	M+F			Blood	3	1	Young	NS	1	Good		1	1	3.1466	50.0000	1589.0000
Perez-Stable_PEREZS1992	M+F			Blood	1	1	3	NS	1	2		1	1	3.6172	3.0000	82.9366
Parker_PARKER2002	M+F	GC method		Urine	1	1	NS	NS	2	2		1	1	3.9370	5.0000	127.0000
Pierce_PIERCE1987	M+F			Saliva	1	1	3	No	1	2		2	4	4.0761	15.0000	368.0000
FINRISK_VARTIA2002	M			Blood	2	1	3	NS	2	2		2	2	5.5734	52.0000	933.0000
Coultas_WELLS1998C	F			Saliva	Other	1	3	NS	1	2	1	1	1	6.5990	13.0000	197.0000
FINRISK_VARTIA2002	F			Blood	2	1	3	NS	2	2	1	2	2	7.7390	51.0000	659.0000
Coultas_WELLS1998C	M			Saliva	Other	1	3	NS	1	2		1	1	8.7302	11.0000	126.0000
Assaf_ASSAF2002-M	M			Blood	1	1	3	NS	2	2	1	1	1	9.3168	15.0000	161.0000
Ogden_OGDEN1997	F			Saliva	3	1	3	No	2	2	1	1	1	9.7661	25.2178	258.2178
Lindqvist_LINDQV2002	F			Blood	1	2	Young	No	2	2	2	1	2	10.1010	10.0000	99.0000
Bardy_BARDY1993	F			Blood	2	2	Young	No	2	2	2	2	2	10.1523	20.0000	197.0000
Hellemons_HELLEM2015	M+F	urine		Blood	3	3	NS	No	3	2		2	2	10.8844	16.0000	147.0000
ABC_PEARCE2014	M	Indigenous		Urine	Other	1	Young	NS	3	2		2	4	12.1622	18.0000	148.0000
Ford_FORD1997	F			Blood	3	2	Young	NS	2	2	2	2	4	14.1414	14.0000	99.0000
ABC_PEARCE2014	F	Indigenous		Urine	Other	1	Young	NS	3	2	1	2	4	15.4321	25.0000	162.0000
Sato_SATO2003A	M+F			Blood	1	3	NS	NS	3	2		1	Asia	15.6627	13.0000	83.0000
Zielinska-Danch_ZIELIN2007	M+F			Urine	1	1	3	NS	3	2		1	2	15.9091	21.0000	132.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**

Rate M8: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Non-smokers  
 Results included in overall analyses, cut point 2

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC2</b>	<b>N_Cut2</b>	<b>Weight2</b>
Quinn_QUINN1996	M+F		Blood	3	1	Young	NS	2	2		2	1	16.0000	12.0000	75.0000
DC-HOPE_ELMOHA2009	F	Non, current smokers	Saliva	2	2	Young	NS	3	2	2	1	1	16.0000	24.0000	150.0000
Gilligan_GILLIG2010	F		Urine	3	2	Young	Yes	3	2	2	2	4	16.0584	22.0000	137.0000
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	16.6667	11.0000	66.0000
Vasankari_VASANK2011	M+F		Blood	3	1	2	NS	3	2		2	2	18.5185	35.0000	189.0000
MFHS_KORPIL2004	M+F		Blood	3	1	2	No	3	2		2	2	19.3848	397.0000	2048.0000
Niedbala_NIEDBA2002	M+F		Urine	3	1	NS	NS	2	Good		3	1	20.0000	4.0000	20.0000
Lee II_LEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	22.7723	23.0000	101.0000
Bernert_BERNER2000	M+F		Blood	2	1	3	NS	2	2		3	1	23.8806	16.0000	67.0000
Markovic_MARKOV2000	F		Urine	2	2	Young	NS	2	2	2	1	1	24.3137	62.0000	255.0000
MacFarlane_MACFAR2001	M+F		Urine	1	3	Young	NS	2	2		2	2	24.3902	20.0000	82.0000
Burstyn_BURSTY2009	F		Blood	3	2	Young	No	3	2	2	2	1	26.8058	14.5350	54.2233
Jenkins_JENKIN1999	M		Saliva	3	1	3	NS	3	2		2	1	28.8136	17.0000	59.0000
Jenkins_JENKIN1999	F		Saliva	3	1	3	NS	3	2	1	2	1	29.3333	22.0000	75.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	29.6296	40.0000	135.0000
Laatikainen I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2	1	2	4	31.6327	31.0000	98.0000
Smith UK_SMITH1998C	M+F		Urine	1	3	3	NS	2	2		2	2	32.6577	10.0000	30.6207
Lee Chung Yul_LEE2009TC	M		Urine	1	1	NS	No	3	2		2	Asia	34.7826	16.0000	46.0000
Agewall_AGEWAL2002	M		Urine	3	3	2	NS	2	2		2	2	36.5079	46.0000	126.0000
Gill_GILL1996	M+F		Urine	1	3	NS	NS	2	2		1	4	46.8354	37.0000	79.0000
Parna_PARNA2005	F		Blood	3	2	Young	NS	3	2	2	2	2	65.3266	130.0000	199.0000
Lee Chung Yul_LEE2009TC	F		Urine	1	1	NS	No	3	2	1	2	Asia	86.3636	19.0000	22.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M8: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Non-smokers  
 Multivariate analysis  
 Variables selected according to significance (no variables forced in)

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**WEIGHTED on Number of self-report Current smokers (plus Misclass non-smokers), cut point 1**

		<b>Deviance</b>	<b>(DF)</b>					
<b>Misclassification rate, cut point 1</b>								
	<b>Model 1</b>	11703606.41		(184)				
		68						
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>	
		11.5865	0.8048	0.0000 ***	11.5865	9.9986	13.1743	
	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>		<b>P</b>		
		10710865.93	(182)	992740.4772		0.0003 ***		
		96						
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>	
		6.5926	2.2764	0.0042 ++	6.5926	2.1009	11.0842	
<b>Time of publication</b>								
In 1995 review	23	Aliased			6.5926	2.1009	11.0842	
Before 2003	69	2.7335	2.5695	0.2888	9.3260	6.9744	11.6776	
2003 onwards	93	8.3046	2.5452	0.0013 ++	14.8972	12.6511	17.1432	
	<b>Model 3</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>		<b>P</b>		
		9274214.045	(171)	1436651.894		0.0083 **		
		2		4				
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>	
		6.5545	3.1579	0.0394 +	6.5545	0.3209	12.7881	
<b>Time of publication</b>								
In 1995 review	23	Aliased			7.9360	3.1574	12.7147	
Before 2003	69	1.7923	2.7081	0.5090	9.7284	7.3853	12.0714	
2003 onwards	93	6.2582	2.7702	0.0251 +	14.1942	11.9175	16.4709	

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M8: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Non-smokers  
 Multivariate analysis  
 Variables selected according to significance (no variables forced in)

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**WEIGHTED on Number of self-rep Current smokers (plus Misclass non-smokers), cut point 1**

<b>Location x Sex</b>		<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
Canada/USA, F	31	Aliased			10.2049	6.3744	14.0355
Canada/USA, M	13	5.2565	3.3971	0.1236	15.4614	9.9742	20.9486
Canada/USA, M+F	31	0.1824	2.7421	0.9470	10.3874	6.5563	14.2185
Europe, F	31	3.7776	2.9625	0.2040	13.9826	9.6162	18.3489
Europe, M	15	-3.3414	3.1476	0.2899	6.8636	2.0980	11.6291
Europe, M+F	31	1.5814	2.3739	0.5062	11.7864	8.9928	14.5799
Asia, F	6	23.1909	5.8195	0.0001 +++	33.3958	22.5782	44.2134
Asia, M	3	-2.3767	4.5733	0.6039	7.8282	-0.3519	16.0082
Asia, M+F	6	-0.5657	4.8889	0.9080	9.6392	0.7850	18.4934
Other, F	5	14.5257	10.8150	0.1810	24.7306	3.7138	45.7475
Other, M	3	-1.5890	11.4610	0.8899	8.6159	-13.6955	30.9273
Other, M+F	10	0.3005	5.4225	0.9559	10.5054	0.5453	20.4654

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M9: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Never-smokers

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Overall percentage, cut point 1, unweighted

**Misclassification rate, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	8584.8073	(65)				
		6.6862	1.4146	0.0000 ***	6.6862	3.8610	9.5114

Overall percentage, cut point 2, unweighted

**Misclassification rate, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	990.4820	(20)				
		4.4305	1.5357	0.0092 ++	4.4305	1.2271	7.6338

Overall percentage, cut point 1

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-rep Current smokers (plus Misclass non-smokers), cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	1939401.131	(65)				
		8					
		4.6379	0.9534	0.0000 ***	4.6379	2.7338	6.5420

Overall percentage, cut point 2

**Misclassification rate, cut point 2**

**WEIGHTED on Number of self-rep Current smokers (plus Misclass non-smokers), cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	211175.6753	(20)				
		4.0159	1.1205	0.0019 ++	4.0159	1.6786	6.3532

By Body fluid tested

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclassified non-smokers), cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P	
	Constant		Estimate	S.E.	P	LSMean	95%CI
<b>Body fluid tested</b>			8.4178	2.6468	0.0023 ++	8.4178	3.1304 13.7053
Urine	11	Aliased				8.4178	3.1304 13.7053
Saliva	14	0.6608	3.7803	0.8618	9.0786	3.6866 14.4707	
Blood	42	-5.0390	2.8460	0.0814 (-)	3.3789	1.2890 5.4688	

By cotinine assay method used

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclassified non-smokers), cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P	
	Constant		Estimate	S.E.	P	LSMean	95%CI
<b>Cotinine assay method</b>			4.2416	1.6117	0.0107 +	4.2416	1.0198 7.4633
Chromatography	25	Aliased				4.2416	1.0198 7.4633
Spectrometry	13	1.8682	2.3827	0.4360	6.1098	2.6018 9.6177	
Immunoassay	23	-0.6258	2.4815	0.8017	3.6158	-0.1561 7.3876	
Other	5	-0.1013	3.9481	0.9796	4.1403	-3.0643 11.3448	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M9: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Never-smokers

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By Study type

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		1914308.565	(63)	25092.5665	0.6635		
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		4.7671	1.0873	0.0000 ++	4.7671	2.5943	6.9398
Study type							
General pop.	47	Aliased			4.7671	2.5943	6.9398
Pregnancy	2	3.3744	5.1157	0.5119	8.1414	-1.8479	18.1308
Diseased or CC	17	-1.4134	2.5157	0.5762	3.3537	-1.1798	7.8871

By Age group

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		1906665.321	(62)	32735.8100	0.7858		
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		6.8523	2.4500	0.0069 ++	6.8523	1.9548	11.7498
Age group							
Young	9	Aliased			6.8523	1.9548	11.7498
Not young	13	-2.4130	3.2348	0.4585	4.4393	0.2170	8.6615
All ages	32	-2.5287	2.7944	0.3690	4.3236	1.6373	7.0099
NS	12	-3.4382	3.7605	0.3641	3.4140	-2.2887	9.1168

By Awareness of validation by cotinine

### Misclassification rate, cut point 1

**WEIGHTED on Number of self-report Current smokers (plus Misclassified non-smokers), cut point 1**

	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
<b>Model 2</b>	1892680.286 2	(63)	46720.8456	0.4639		
	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
<b>Constant</b>	4.1667	4.1696	0.3215	4.1667	-4.1656	12.4990
<b>Aware of checking by cotinine?</b>						
Yes	2	Aliased		4.1667	-4.1656	12.4990
No	11	4.1863	5.2133	0.4250	8.3530	2.0994
NS	53	0.0936	4.2962	0.9827	4.2603	2.1914
						6.3292

By Time of publication

### Misclassification rate, cut point 1

**WEIGHTED** on Number of self-report Current smokers (plus Misclassified non-smokers), cut point 1

	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>
<b>Model 2</b>	1914441.322 2	(63)	24959.8096	0.6650
	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>
<b>Constant</b>	2.9863	2.1088	0.1617	2.9863
<b>95%CI</b>	-1.2278	7.2004		
<b>Time of publication</b>				
In 1995 review	15	Aliased		2.9863
Before 2003	30	1.8728	2.5664	4.8591
2003 onwards	21	2.3425	2.6506	5.3288
				-1.2278
				7.2004
				1.9363
				7.7819
				2.1199
				8.5377

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M9: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Never-smokers

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By Quality of study

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		1939168.091	(64)	233.0402	0.9304		
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		4.2755	4.2418	0.3173	4.2755	-4.1984	12.7494
	<b>Study quality</b>						
	Good	1	Aliased		4.2755	-4.1984	12.7494
	Not good	65	0.3819	4.3550	0.9304	4.6575	2.6869
							6.6281

By Pregnancy (women only)

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		1479870.210	(20)	1103.0251	0.9040		
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		9.1806	3.4040	0.0139 +	9.1806	2.0799	16.2813
	<b>Pregnancy</b>						
	Not pregnant	20	Aliased		9.1806	2.0799	16.2813
	Pregnant	2	-1.0391	8.5110	0.9040	8.1414	-8.1304
							24.4133

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M9: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Never-smokers

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By Tobacco products considered

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-rep Current smokers (plus Misclass  
non-smokers), cut point 1**

	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
		1805361.477	(63)	134039.6544	0.1048		
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
<b>Tobacco products considered</b>							
Cigarettes	25	Aliased			7.4062	4.2266	10.5859
Any smoking	40	-4.3048	1.9936	0.0346 -	3.1015	0.7011	5.5018
Any tobacco	1	-3.2675	4.4692	0.4674	4.1388	-4.2069	12.4845

### By Sex

### Misclassification rate, cut point 1

## **WEIGHTED on Number of self-report Current smokers (plus Misclassified non-smokers), cut point 1**

	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
<b>Model 2</b>	1746619.702 7	(63)	192781.4291	0.0370 *		
<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>		
	9.0144	1.9097	0.0000 ***	9.0144		
				5.1981		
				12.8307		
<b>CARD3: RSex</b>						
F	22	Aliased		9.0144	5.1981	12.8307
M	18	-6.1929	2.6128	0.0209 -	2.8214	-0.7420
M+F	26	-5.4328	2.3080	0.0217 -	3.5816	0.9915
					6.1717	

### By Location

### Misclassification rate, cut point 1

**WEIGHTED** on Number of self-report Current smokers (plus Misclassified non-smokers), cut point 1

	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
<b>Model 2</b>	1784162.239 6	(62)	155238.8922	0.1568		
<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%CI</b>
	6.2002	1.9314	0.0021 ++	6.2002	2.3394	10.0609
<b>Location</b>						
Canada/USA	18	Aliased		6.2002	2.3394	10.0609
Europe	37	-3.0330	2.2580	0.1841	3.1672	0.8288
Asia	8	2.7445	3.4026	0.4230	8.9446	3.3449
Other	3	5.8771	8.5580	0.4948	12.0773	-4.5885
						28.7431

By Location x Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-rep Current smokers (plus Misclass  
non-smokers), cut point 1**

Model 2	Deviance	(DF)	Drop Dev	P			
	760672.0745	(54)	1178729.057 3	0.0000 ***	95%CI	95%Clu	
Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu	
<b>Location x Sex</b>							
Canada/USA, F	5	Aliased		11.4013	3.2952	19.5074	
Canada/USA, M	3	-6.0355	6.2652	0.3397	5.3659	-4.2293	14.9610
Canada/USA, M+F	10	-5.8374	4.3134	0.1816	5.5639	2.5511	8.5768
Europe, F	12	-6.7900	4.3235	0.1221	4.6113	1.5411	7.6815
Europe, M	11	-8.8902	4.3214	0.0445 -	2.5112	-0.5473	5.5696
Europe, M+F	14	-8.7586	4.2330	0.0433 -	2.6427	0.1300	5.1554
Asia, F	4	31.8463	6.2445	0.0000 +++	43.2476	33.7066	52.7886
Asia, M	3	-8.4947	4.9215	0.0901 (-)	2.9067	-2.7192	8.5325
Asia, M+F	1	-10.8440	5.2500	0.0437 -	0.5573	-6.1569	7.2715
Other, F	1	25.5356	11.9688	0.0374 +	36.9369	14.3515	59.5224
Other, M	1	-7.9662	8.3733	0.3457	3.4351	-11.2656	18.1359
Other, M+F	1	-11.4013	18.9716	0.5504	0.0000	-37.1620	37.1620

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M9: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Never-smokers  
 Results included in all analyses, cut point 1

Id	RSex		Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
MONICA Germany_HELLER1998-young	M	25-44		Blood	3	1	Young	NS	2	2		2	2	0.0000	0.0000	451.0000	
Naraghi_NARAGH2011	M			Blood	3	3	NS	NS	3	2		2	2	0.0000	0.0000	22.0000	
Naraghi_NARAGH2011	F			Blood	3	3	NS	NS	3	2	1	2	2	0.0000	0.0000	51.0000	
Stookey_STOOKE1987	M+F			Saliva	1	1	NS	NS	2	2		2	1	0.0000	0.0000	69.5111	
Morales_MORALE2013	M+F			Blood	3	3	NS	No	3	2		1	1	0.0000	0.0000	56.0000	
Phillipou_PHILLI1994C	M+F			Urine	3	3	NS	No	2	2		2	4	0.0000	0.0000	41.0000	
Nguyen_NGUYEN2007	M+F			Blood	1	3	3	No	3	2		2	2	0.0000	0.0000	47.0000	
S-Germany-I_HELLER1993	M	first random sample in 1984/85		Blood	3	1	3	NS	1	2		2	2	0.3452	3.0000	869.0000	
Tsutsumi_TSUTSU2002A-M	M			Urine	1	1	2	NS	2	2		1	Asia	0.4098	2.0000	488.0000	
MONICA Scotland_CHEN2002D	M	Surveys 3 and 4		Blood	1	1	3	NS	2	2		1	2	0.5025	3.0000	597.0000	
MONICA Scotland_CHEN2002D	F	Surveys 3 and 4		Blood	1	1	3	NS	2	2	1	1	2	0.5249	4.0000	762.0000	
Tabara_TABARA2013	M+F			Urine	2	1	NS	NS	3	2		2	Asia	0.5573	7.0000	1256.0000	
MONICA Scotland_CHEN2002D	F	Surveys 1 and 2		Blood	1	1	3	NS	2	2	1	1	2	0.6276	3.0000	478.0000	
MONICA Germany_HELLER1998-older	M	45-64		Blood	3	1	2	NS	2	2		2	2	0.7177	3.0000	418.0000	
Ulvik II_ULVIK2010	M+F			Blood	2	3	2	NS	3	2		2	2	0.8205	8.0000	975.0000	
Pell ACS_PELL2008A	M+F	ACS		Blood	1	3	NS	No	3	2		2	2	1.0767	8.0000	743.0000	
MONICA Scotland_CHEN2002D	M	Surveys 1 and 2		Blood	1	1	3	NS	2	2		1	2	1.1111	4.0000	360.0000	
S-Germany-II_HELLER1993	M	second random sample in 1989/90		Blood	3	1	3	NS	1	2		2	2	1.1594	8.0000	690.0000	
S-Germany-II_HELLER1993	F	second random sample in 1989/90		Blood	3	1	3	NS	1	2	1	2	2	1.3423	6.0000	447.0000	
MONICA Germany_HELLER1998-young	F	25-44		Blood	3	1	Young	NS	2	2	1	2	2	1.3889	4.0000	288.0000	
Owen_OWEN2001	F			Saliva	1	2	Young	NS	2	2	2	1	2	1.6043	3.0000	187.0000	
S-Germany-I_HELLER1993	F	first random sample in 1984/85		Blood	3	1	3	NS	1	2	1	2	2	1.6279	7.0000	430.0000	
Khuri_KHURI2001	M+F			Blood	Other	3	2	NS	2	2		2	1	1.6667	5.0000	300.0000	
Cummings_WELLS1998C	M			Urine	1	1	3	NS	1	2		2	1	1.6807	2.0000	119.0000	
Cummings_WELLS1998C	F			Urine	1	1	3	NS	1	2	1	2	1	1.7094	2.0000	117.0000	
HSE_OPACS1996A	M+F	1994		Blood	1	1	3	NS	2	2		2	2	2.0263	60.0000	2961.0000	
Wallner-Liebmann_WALLNE2013	M+F			Blood	3	3	NS	NS	3	2		2	2	2.0592	16.0000	777.0000	
MONICA Germany_HELLER1998-older	F	45-64		Blood	3	1	2	NS	2	2	1	2	2	2.1127	3.0000	142.0000	
FINRISK_VARTIA2002	M			Blood	2	1	3	NS	2	2		2	2	2.1739	22.0000	1012.0000	
Akiyama_AKIYAM1994	M			Urine	2	1	3	NS	2	2		2	Asia	2.2472	2.0000	89.0000	
Slattery II_SLATTE1989A	F			Blood	3	3	3	NS	1	2	1	1	1	2.3392	4.0000	171.0000	
Wilmink_WILMIN1999	M			Blood	3	3	2	NS	2	2		2	2	2.3810	3.0000	126.0000	
HSE_OPACS1995A	M	1993		Blood	1	1	3	NS	1	2		2	2	2.7352	25.0000	914.0000	
HSE_OPACS1995A	F	1993		Blood	1	1	3	NS	1	2	1	2	2	2.7963	21.0000	751.0000	
Ulvik I_ULVIK2010	M+F			Blood	2	3	2	NS	3	2		2	2	2.8993	53.0000	1828.0000	
HSE_WEST2007	M+F	2003		Saliva	1	1	3	NS	3	2		2	2	3.2895	15.0000	456.0000	
Laatikainen I_LAATIK1999	M	Pitkäranta		Blood	2	1	3	NS	2	2		2	4	3.4351	9.0000	262.0000	
Olivieri_OLIVIE2002	M+F			Blood	3	1	NS	NS	2	2		2	2	3.7037	5.0000	135.0000	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45

Rate M9: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Never-smokers  
Results included in all analyses, cut point 1

Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
Pell HEPS_PELL2008A	M+F	HEPS	Saliva	1	1	3	NS	3	2		2	2	3.9216	14.0000	357.0000
KNHANES_JUNGCH2012	M	2008	Urine	2	1	3	NS	2	2		1	Asia	3.9604	48.0000	1212.0000
Shaffer_SHAFFE2000	M+F		Blood	Other	1	3	Yes	2	2		3	1	4.1388	68.0000	1643.0000
Wagenknecht_WAGENK1992	M+F		Blood	3	1	Young	NS	1	Good		1	1	4.2755	72.0000	1684.0000
Townsend_TOWNSE1991A	M+F	All ages	Saliva	Other	1	Young	Yes	2	2		1	2	4.7059	4.0000	85.0000
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	4.8780	4.0000	82.0000
Perez-Stable_PEREZS1992	M+F		Blood	1	1	3	NS	1	2		1	1	5.4385	5.0000	91.9366
Coultas_WELLS1998C	F		Saliva	Other	1	3	NS	1	2		1	1	5.7971	12.0000	207.0000
Luepker_LUEPK1989	M+F	home IV	Saliva	1	1	Young	NS	1	2		1	1	5.8127	6.0616	104.2820
Wewers I_WEWERS1995	M		Saliva	1	1	NS	No	2	2		1	1	6.0440	22.0000	364.0000
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	6.0606	10.0000	165.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2		1	2	6.0729	45.0000	741.0000
NHANES_AGARWA2009	M+F	1999-2004	Blood	2	1	2	NS	3	2		1	1	6.6939	131.0000	1957.0000
Coultas_WELLS1998C	M		Saliva	Other	1	3	NS	1	2		1	1	6.8182	9.0000	132.0000
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2		1	1	7.1891	19.2458	267.7064
West III_WEST2007	M+F		Saliva	1	1	3	NS	3	2		2	2	7.6923	13.0000	169.0000
Shipton_SHIPTO2009	F	N adjusted	Blood	3	2	Young	No	3	2		2	2	9.3294	96.0000	1029.0000
Badger_BADGER2009	M+F		Blood	3	3	2	NS	3	2		2	2	10.8333	13.0000	120.0000
Twardella II_TWARDE2004	M+F		Blood	3	3	2	No	3	2		1	2	12.0000	18.0000	150.0000
HSE_WARDLE2003-never-ex	F	2002, by sex	Saliva	1	1	Young	NS	3	2		1	1	12.1255	85.0000	701.0000
Tsutsumi_TSUTSU2002A-F	F		Urine	1	1	2	NS	2	2		1	1	12.2807	7.0000	57.0000
HSE_WARDLE2003-never-ex	M	2002, by sex	Saliva	1	1	Young	NS	3	2		1	2	13.6364	81.0000	594.0000
Lee II_LEE1995B	F		Urine	3	1	3	No	1	2		1	2	20.7547	22.0000	106.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	22.4000	56.0000	250.0000
Akiyama_AKIYAM1994	F		Urine	2	1	3	NS	2	2		1	2	33.3333	9.0000	27.0000
Laatikainen I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2		1	2	36.9369	41.0000	111.0000
KNHANES_JUNGCH2012	F	2008	Urine	2	1	3	NS	2	2		1	1	53.4722	231.0000	432.0000
Wewers I_WEWERS1995	F		Saliva	1	1	NS	No	2	2		1	1	61.6162	61.0000	99.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M9: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Never-smokers  
 Additional results included in analysis by Body fluid tested, cut point 1

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>	
Hellemons_HELLEM2015	M+F	plasma	Blood		3	3	NS	No	3	2		2	2	4.4304	7.0000	158.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M9: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Never-smokers  
 Results included in overall analyses, cut point 2

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC2</b>	<b>N_Cut2</b>	<b>Weight2</b>
S-Germany-I_HELLER1993	M	first random sample in 1984/85	Blood	3	1	3	NS	1	2		2	2	0.0000	0.0000	838.0000
Sato_SATO2003A	M+F		Blood	1	3	NS	NS	3	2		1	Asia	0.0000	0.0000	83.0000
Baltar_BALTAR2011	M+F		Blood	2	3	NS	No	3	2		2	4	0.4320	2.0000	463.0000
S-Germany-II_HELLER1993	F	second random sample in 1989/90	Blood	3	1	3	NS	1	2	1	2	2	0.4577	2.0000	437.0000
S-Germany-I_HELLER1993	F	first random sample in 1984/85	Blood	3	1	3	NS	1	2	1	2	2	0.4819	2.0000	415.0000
S-Germany-II_HELLER1993	M	second random sample in 1989/90	Blood	3	1	3	NS	1	2		2	2	0.6042	4.0000	662.0000
Cummings_WELLS1998C	M		Urine	1	1	3	NS	1	2		2	1	0.8547	1.0000	117.0000
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2		2	2	0.8574	8.0000	933.0000
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	1.5152	1.0000	66.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1	2	2	1.5175	10.0000	659.0000
Cummings_WELLS1998C	F		Urine	1	1	3	NS	1	2	1	2	1	1.7241	2.0000	116.0000
Laatikainen_I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	1.9531	5.0000	256.0000
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	2.0408	3.0000	147.0000
Coultas_WELLS1998C	M		Saliva	Other	1	3	NS	1	2		1	1	2.3810	3.0000	126.0000
Coultas_WELLS1998C	F		Saliva	Other	1	3	NS	1	2	1	1	1	2.5381	5.0000	197.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	4.4444	6.0000	135.0000
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	5.3238	13.7470	258.2178
MFHS_KORPIL2004	M+F		Blood	3	1	2	No	3	2		2	2	9.7168	199.0000	2048.0000
Markovic_MARKOV2000	F		Urine	2	2	Young	NS	2	2	2	1	1	9.8039	25.0000	255.0000
Lee_II_LEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	17.8218	18.0000	101.0000
Laatikainen_I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2	1	2	4	28.5714	28.0000	98.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M9: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Never-smokers  
 Multivariate analysis  
 Variables selected according to significance (no variables forced in)

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**WEIGHTED on Number of self-report Current smokers (plus Misclass non-smokers), cut point 1**

		<b>Deviance</b>	<b>(DF)</b>					
<b>Misclassification rate, cut point 1</b>								
	<b>Model 1</b>	1939401.131		(65)				
			8					
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>	
		4.6379	0.9534	0.0000 ***	4.6379	2.7338	6.5420	
	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>		<b>P</b>		
		760672.0745	(54)	1178729.057	3	0.0000 ***		
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>	
		11.4013	4.0432	0.0067 ++	11.4013	3.2952	19.5074	
	<b>Location x Sex</b>							
Canada/USA, F	5	Aliased			11.4013	3.2952	19.5074	
Canada/USA, M	3	-6.0355	6.2652	0.3397	5.3659	-4.2293	14.9610	
Canada/USA, M+F	10	-5.8374	4.3134	0.1816	5.5639	2.5511	8.5768	
Europe, F	12	-6.7900	4.3235	0.1221	4.6113	1.5411	7.6815	
Europe, M	11	-8.8902	4.3214	0.0445 -	2.5112	-0.5473	5.5696	
Europe, M+F	14	-8.7586	4.2330	0.0433 -	2.6427	0.1300	5.1554	
Asia, F	4	31.8463	6.2445	0.0000 ***	43.2476	33.7066	52.7886	
Asia, M	3	-8.4947	4.9215	0.0901 (-)	2.9067	-2.7192	8.5325	
Asia, M+F	1	-10.8440	5.2500	0.0437 -	0.5573	-6.1569	7.2715	
Other, F	1	25.5356	11.9688	0.0374 +	36.9369	14.3515	59.5224	
Other, M	1	-7.9662	8.3733	0.3457	3.4351	-11.2656	18.1359	
Other, M+F	1	-11.4013	18.9716	0.5504	0.0000	-37.1620	37.1620	
	<b>Model 3</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>		<b>P</b>		
		632975.6058	(52)	127696.4687		0.0084 **		
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>	
		10.4645	3.8307	0.0086 ++	10.4645	2.7776	18.1515	

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M9: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Never-smokers  
 Multivariate analysis  
 Variables selected according to significance (no variables forced in)

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**WEIGHTED on Number of self-report Current smokers (plus Misclass non-smokers), cut point 1**

		Estimate	S.E.	P	LSMean	95%CI	95%Clu
<b>Location x Sex</b>							
Canada/USA, F	5	Aliased			13.6125	5.9346	21.2905
Canada/USA, M	3	-6.4015	5.8312	0.2773	7.2110	-1.7899	16.2118
Canada/USA, M+F	10	-7.9095	4.0607	0.0568 (-)	5.7030	2.8787	8.5274
Europe, F	12	-8.6181	4.0626	0.0387 -	4.9944	2.1271	7.8617
Europe, M	11	-9.6535	4.0273	0.0202 -	3.9590	0.9731	6.9449
Europe, M+F	14	-12.5482	4.1134	0.0036 --	1.0643	-1.4711	3.5997
Asia, F	4	30.9569	5.8473	0.0000 +++	44.5694	35.6134	53.5255
Asia, M	3	-9.7591	4.6829	0.0421 -	3.8534	-1.5985	9.3052
Asia, M+F	1	-16.0216	5.1365	0.0030 --	-2.4091	-8.9530	4.1348
Other, F	1	24.2711	11.1709	0.0344 +	37.8837	16.8147	58.9526
Other, M	1	-9.2307	7.8477	0.2449	4.3818	-9.3806	18.1443
Other, M+F	1	-12.6658	17.6640	0.4766	0.9467	-33.6627	35.5561
<b>Time of publication</b>							
In 1995 review	15	Aliased			1.4899	-1.4364	4.4162
Before 2003	30	2.2012	1.7402	0.2115	3.6911	1.7372	5.6451
2003 onwards	21	6.1144	1.9742	0.0031 ++	7.6043	5.3040	9.9046

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M10: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Ex-smokers

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Overall percentage, cut point 1, unweighted

**Misclassification rate, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	8238.4333	(65)				
		9.7126	1.3858	0.0000 ***	9.7126	6.9450	12.4802

Overall percentage, cut point 2, unweighted

**Misclassification rate, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	845.3888	(20)				
		6.3048	1.4187	0.0002 ***	6.3048	3.3453	9.2642

Overall percentage, cut point 1

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-rep Current smokers (plus Misclass  
non-smokers), cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	1686672.922 6	(65)				
		7.7240	0.8891	0.0000 ***	7.7240	5.9483	9.4997

Overall percentage, cut point 2

**Misclassification rate, cut point 2**

**WEIGHTED on Number of self-rep Current smokers (plus Misclass  
non-smokers), cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	178433.6784	(20)				
		5.6892	1.0300	0.0000 ***	5.6892	3.5407	7.8376

By Body fluid tested

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclassified non-smokers), cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P		
	Constant		Estimate	S.E.	P	LSMean	95%CI L	95%CI U
<b>Body fluid tested</b>								
Urine	11	Aliased				4.7921	-0.2717	9.8559
Saliva	14	0.7526	3.6203	0.8360	0.0632 (+)	5.5447	0.3808	10.7087
Blood	42	3.7482	2.7256	0.1739		8.5403	6.5388	10.5418

By cotinine assay method used

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclassified non-smokers), cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P		
	Constant		Estimate	S.E.	P	LSMean	95%CI L	95%CI U
<b>Cotinine assay method</b>								
Chromatography	25	Aliased				5.7095	2.7635	8.6556
Spectrometry	13	3.4852	2.1788	0.1148	0.0003 +++	9.1947	5.9869	12.4025
Immunoassay	23	2.2280	2.2692	0.3300		7.9375	4.4884	11.3866
Other	5	5.1058	3.6103	0.1623		10.8154	4.2273	17.4035

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M10: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Ex-smokers

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By Study type

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		1286126.450	(63)	400546.4719	0.0002 ***		
<b>Constant</b>		5.9770	0.8912	0.0000 ++	5.9770	4.1960	7.7579
<b>Study type</b>							
General pop.	47	Aliased			5.9770	4.1960	7.7579
Pregnancy	2	2.9046	4.1932	0.4910	8.8816	0.6937	17.0695
Diseased or CC	17	9.1145	2.0620	0.0000 ++	15.0915	11.3755	18.8074

By Age group

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		1330172.006	(62)	356500.9157	0.0020 **		
<b>Constant</b>		4.9895	2.0464	0.0176 +	4.9895	0.8989	9.0802
<b>Age group</b>							
Young	9	Aliased			4.9895	0.8989	9.0802
Not young	13	8.8071	2.7019	0.0018 ++	13.7966	10.2700	17.3232
All ages	32	0.8621	2.3340	0.7131	5.8517	3.6079	8.0954
NS	12	3.8021	3.1410	0.2307	8.7917	4.0284	13.5549

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M10: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Ex-smokers

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By Awareness of validation by cotinine

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P	
	Constant		Estimate	S.E.	P	LSMean	95%CI L
Aware of checking by cotinine?			7.6968	3.8702	0.0511 (+)	7.6968	-0.0373
Yes	2	Aliased				7.6968	15.4308
No	11	4.0860	4.8390	0.4016	11.7828	5.9782	17.5874
NS	53	-0.4153	3.9878	0.9174	7.2814	5.3611	9.2018

By Time of publication

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2		Deviance	(DF)	Drop Dev	P	
	Constant		Estimate	S.E.	P	LSMean	95%CI L
Time of publication			4.3849	1.8634	0.0217 +	4.3849	0.6612
In 1995 review	15	Aliased				4.3849	8.1086
Before 2003	30	2.4693	2.2677	0.2803	6.8542	4.2716	9.4368
2003 onwards	21	6.3236	2.3421	0.0089 ++	10.7085	7.8731	13.5440

By Quality of study

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		1666284.615 7	(64)	20388.3068	0.3795		
<b>Constant</b>		<b>Estimate</b> 4.3349	<b>S.E.</b> 3.9320	<b>P</b> 0.2744	<b>LSMean</b> 4.3349	<b>95%CI</b> -3.5202	<b>95%Clu</b> 12.1900
<b>Study quality</b>							
Good	1	Aliased			4.3349	-3.5202	12.1900
Not good	65	3.5724	4.0369	0.3795	7.9073	6.0806	9.7340

By Pregnancy (women only)

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		54467.1007	(20)	18764.3887	0.0162 *		
<b>Constant</b>		<b>Estimate</b> 4.5956	<b>S.E.</b> 0.6531	<b>P</b> 0.0000 +++	<b>LSMean</b> 4.5956	<b>95%CI</b> 3.2333	<b>95%Clu</b> 5.9578
<b>Pregnancy</b>							
Not pregnant	20	Aliased			4.5956	3.2333	5.9578
Pregnant	2	4.2860	1.6328	0.0162 +	8.8816	5.7599	12.0033

By Tobacco products considered

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-rep Current smokers (plus Misclass  
non-smokers), cut point 1**

	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
		1677762.808	(63)	8910.1141	0.8463		
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
<b>Tobacco products considered</b>							
Cigarettes	25	Aliased			7.0156	3.9504	10.0808
Any smoking	40	1.1117	1.9219	0.5650	8.1273	5.8133	10.4412
Any tobacco	1	0.7142	4.3083	0.8689	7.7298	-0.3156	15.7751

By Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

		Deviance	(DF)	Drop Dev	P		
Model 2		1532762.691 7	(63)	153910.2309	0.0491 *		
Constant		Estimate	S.E.	P	LSMean	95%CI	95%Clu
		5.2812	1.7890	0.0044 ++	5.2812	1.7062	8.8562
	CARD3: RSex						
F	22	Aliased			5.2812	1.7062	8.8562
M	18	0.5108	2.4476	0.8354	5.7919	2.4538	9.1301
M+F	26	4.5888	2.1621	0.0377 +	9.8700	7.4436	12.2964

By Location

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-report Current smokers (plus Misclass  
non-smokers), cut point 1**

		Deviance	(DF)	Drop Dev	P		
Model 2		1590287.950 7	(62)	96384.9719	0.2985		
Constant		Estimate	S.E.	P	LSMean	95%CI	95%Clu
		10.3609	1.8234	0.0000 +++	10.3609	6.7159	14.0059
	Location						
Canada/USA	18	Aliased			10.3609	6.7159	14.0059
Europe	37	-3.0231	2.1318	0.1612	7.3378	5.1301	9.5456
Asia	8	-5.3432	3.2124	0.1013	5.0177	-0.2691	10.3045
Other	3	-8.1870	8.0797	0.3149	2.1739	-13.5604	17.9082

By Location x Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of self-rep Current smokers (plus Misclass  
non-smokers), cut point 1**

Model 2	Deviance		(DF) (54)	Drop Dev	P	LSMean	95%CI -7.1978	95%Clu 15.1960
	1451349.009	2						
<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>		<b>P</b>		<b>LSMean</b>	<b>95%CI -7.1978</b>	<b>95%Clu 15.1960</b>
<b>Location x Sex</b>								
Canada/USA, F	5	Aliased				3.9991	-7.1978	15.1960
Canada/USA, M	3	0.8789	8.6540	0.9195	0.4770	4.8780	-8.3757	18.1318
Canada/USA, M+F	10	7.7812	5.9581	0.1971		11.7803	7.6187	15.9419
Europe, F	12	1.5611	5.9720	0.7948		5.5602	1.3194	9.8010
Europe, M	11	2.0310	5.9691	0.7350		6.0301	1.8054	10.2547
Europe, M+F	14	5.4121	5.8470	0.3588		9.4112	5.9404	12.8820
Asia, F	4	0.8240	8.6256	0.9242		4.8232	-8.3558	18.0022
Asia, M	3	1.9819	6.7981	0.7718		5.9810	-1.7899	13.7519
Asia, M+F	1	-0.2571	7.2518	0.9719		3.7420	-5.5323	13.0164
Other, F	1	-1.2964	16.5325	0.9378		2.7027	-28.4945	33.8999
Other, M	1	-2.8541	11.5661	0.8060		1.1450	-19.1611	21.4512
Other, M+F	1	3.3180	26.2054	0.8997		7.3171	-44.0146	58.6488

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45

Rate M10: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Ex-smokers  
Results included in all analyses, cut point 1

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>Age</b>	<b>Gp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
Luepker_LUEPKE1989	M+F	home IV	Saliva	1	1	Young	NS	1	2		1	1	0.6028	0.6286	104.2820	
Cummings_WELLS1998C	M		Urine	1	1	3	NS	1	2		2	1	0.8403	1.0000	119.0000	
Cummings_WELLS1998C	F		Urine	1	1	3	NS	1	2	1	2	1	0.8547	1.0000	117.0000	
Laatikainen_I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	1.1450	3.0000	262.0000	
MONICA Germany_HELLER1998-young	M	25-44	Blood	3	1	Young	NS	2	2		2	2	1.7738	8.0000	451.0000	
Tsutsumi_TSUTSU2002A-M	M		Urine	1	1	2	NS	2	2		1	Asia	1.8443	9.0000	488.0000	
MONICA Scotland_CHEN2002D	M	Surveys 1 and 2	Blood	1	1	3	NS	2	2		1	2	1.9444	7.0000	360.0000	
MONICA Scotland_CHEN2002D	F	Surveys 1 and 2	Blood	1	1	3	NS	2	2	1	1	2	2.0921	10.0000	478.0000	
Akiyama_AKIYAM1994	M		Urine	2	1	3	NS	2	2		2	Asia	2.2472	2.0000	89.0000	
Slattery II_SLATTE1989A	F		Blood	3	3	3	NS	1	2	1	1	1	2.3392	4.0000	171.0000	
MONICA Scotland_CHEN2002D	F	Surveys 3 and 4	Blood	1	1	3	NS	2	2	1	1	2	2.6247	20.0000	762.0000	
Laatikainen_I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2	1	2	4	2.7027	3.0000	111.0000	
HSE_WARDLE2003-never-ex	F	2002, by sex	Saliva	1	1	Young	NS	3	2	1	1	2	2.8531	20.0000	701.0000	
S-Germany-II_HELLER1993	F	second random sample in 1989/90	Blood	3	1	3	NS	1	2	1	2	2	2.9083	13.0000	447.0000	
Wewers_I_WEWERS1995	F		Saliva	1	1	NS	No	2	2	1	1	1	3.0303	3.0000	99.0000	
Ulvik_I_ULVIK2010	M+F		Blood	2	3	2	NS	3	2		2	2	3.3370	61.0000	1828.0000	
MONICA Germany_HELLER1998-young	F	25-44	Blood	3	1	Young	NS	2	2	1	2	2	3.4722	10.0000	288.0000	
Tsutsumi_TSUTSU2002A-F	F		Urine	1	1	2	NS	2	2	1	1	Asia	3.5088	2.0000	57.0000	
Tabara_TABARA2013	M+F		Urine	2	1	NS	NS	3	2		2	Asia	3.7420	47.0000	1256.0000	
MONICA Scotland_CHEN2002D	M	Surveys 3 and 4	Blood	1	1	3	NS	2	2		1	2	3.8526	23.0000	597.0000	
HSE_WEST2007	M+F	2003	Saliva	1	1	3	NS	3	2		2	2	3.9474	18.0000	456.0000	
Wagenknecht_WAGENK1992	M+F		Blood	3	1	Young	NS	1	Good		1	1	4.3349	73.0000	1684.0000	
HSE_OPACS1995A	F	1993	Blood	1	1	3	NS	1	2	1	2	2	4.3941	33.0000	751.0000	
S-Germany-I_HELLER1993	F	first random sample in 1984/85	Blood	3	1	3	NS	1	2	1	2	2	4.4186	19.0000	430.0000	
Olivieri_OLIVIE2002	M+F		Blood	3	1	NS	NS	2	2		2	2	4.4444	6.0000	135.0000	
HSE_OPACS1995A	M	1993	Blood	1	1	3	NS	1	2		2	2	4.5952	42.0000	914.0000	
KNHANES_JUNGCH2012	F	2008	Urine	2	1	3	NS	2	2	1	1	Asia	4.6296	20.0000	432.0000	
S-Germany-I_HELLER1993	M	first random sample in 1984/85	Blood	3	1	3	NS	1	2		2	2	4.9482	43.0000	869.0000	
HSE_WARDLE2003-never-ex	M	2002, by sex	Saliva	1	1	Young	NS	3	2	1	2		5.0505	30.0000	594.0000	
Coultas_WELLS1998C	F		Saliva	Other	1	3	NS	1	2	1	1	1	5.3140	11.0000	207.0000	
S-Germany-II_HELLER1993	M	second random sample in 1989/90	Blood	3	1	3	NS	1	2		2	2	5.5072	38.0000	690.0000	
Lee II_LEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	5.6604	6.0000	106.0000	
Wewers_I_WEWERS1995	M		Saliva	1	1	NS	No	2	2		1	1	5.7692	21.0000	364.0000	
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	5.7752	15.4606	267.7064	
HSE_OPACS1996A	M+F	1994	Blood	1	1	3	NS	2	2		2	2	5.8088	172.0000	2961.0000	
West III_WEST2007	M+F		Saliva	1	1	3	NS	3	2		2	2	5.9172	10.0000	169.0000	
Coultas_WELLS1998C	M		Saliva	Other	1	3	NS	1	2		1	1	6.0606	8.0000	132.0000	
MONICA Germany_HELLER1998-older	F	45-64	Blood	3	1	2	NS	2	2	1	2	2	6.3380	9.0000	142.0000	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M10: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Ex-smokers  
 Results included in all analyses, cut point 1

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Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1	
Townsend_TOWNSE1991A	M+F	All ages	Saliva	Other	1	Young	Yes	2	2			1	2	7.0588	6.0000	85.0000
Phillipou_PHILLI1994C	M+F		Urine	3	3	NS	No	2	2			2	4	7.3171	3.0000	41.0000
Akiyama_AKIYAM1994	F		Urine	2	1	3	NS	2	2			2	Asia	7.4074	2.0000	27.0000
Owen_OWEN2001	F		Saliva	1	2	Young	NS	2	2			2	1	7.4866	14.0000	187.0000
Perez-Stable_PEREZS1992	M+F		Blood	1	1	3	NS	1	2			1	1	7.6139	7.0000	91.9366
Shaffer_SHAFFE2000	M+F		Blood	1	3	NS	Yes	2	2			3	1	7.7298	127.0000	1643.0000
Naraghi_NARAGH2011	F		Blood	3	3	NS	NS	3	2			1	2	7.8431	4.0000	51.0000
KNHANES_JUNGCH2012	M	2008	Urine	2	1	3	NS	2	2			1	Asia	7.9208	96.0000	1212.0000
MONICA Germany_HELLER1998-older	M	45-64	Blood	3	1	2	NS	2	2			2	2	8.3732	35.0000	418.0000
Shipton_SHIPTO2009	F	N adjusted	Blood	3	2	Young	No	3	2			2	2	9.1351	94.0000	1029.0000
Pell ACS_PELL2008A	M+F	ACS	Blood	1	3	NS	No	3	2			2	2	9.2867	69.0000	743.0000
Pell HEPS_PELL2008A	M+F	HEPS	Saliva	1	1	3	NS	3	2			2	2	9.5238	34.0000	357.0000
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2			2	2	10.7708	109.0000	1012.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2			1	2	11.8758	88.0000	741.0000
NHANES_AGARWA2009	M+F	1999-2004	Blood	2	1	2	NS	3	2			1	1	13.0812	256.0000	1957.0000
Naraghi_NARAGH2011	M		Blood	3	3	NS	NS	3	2			2	2	13.6364	3.0000	22.0000
Wallner-Liebmann_WALLNE2013	M+F		Blood	3	3	NS	NS	3	2			2	2	13.7709	107.0000	777.0000
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2			2	2	14.5455	24.0000	165.0000
Ulvik II_ULVIK2010	M+F		Blood	2	3	2	NS	3	2			2	2	21.3333	208.0000	975.0000
Wilmink_WILMIN1999	M		Blood	3	3	2	NS	2	2			2	2	21.4286	27.0000	126.0000
Nguyen_NGUYEN2007	M+F		Blood	1	3	3	No	3	2			2	2	23.4043	11.0000	47.0000
Badger_BADGER2009	M+F		Blood	3	3	2	NS	3	2			2	2	24.1667	29.0000	120.0000
Stookey_STOOKE1987	M+F		Saliva	1	1	NS	NS	2	2			2	1	27.6139	19.1947	69.5111
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2			1	1	28.0488	23.0000	82.0000
Khuri_KHURI2001	M+F		Blood	Other	3	2	NS	2	2			2	1	34.6667	104.0000	300.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2			2	1	39.6000	99.0000	250.0000
Morales_MORALE2013	M+F		Blood	3	3	NS	No	3	2			1	1	46.4286	26.0000	56.0000
Twardella II_TWARDE2004	M+F		Blood	3	3	2	No	3	2			1	2	59.3333	89.0000	150.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M10: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Ex-smokers  
 Additional results included in analysis by Body fluid tested, cut point 1

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>	
Hellemons_HELLEM2015	M+F	plasma	Blood		3	3	NS	No	3	2		2	2	12.6582	20.0000	158.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M10: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Ex-smokers  
 Results included in overall analyses, cut point 2

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC2</b>	<b>N_Cut2</b>	<b>Weight2</b>
Cummings_WELLS1998C	M		Urine	1	1	3	NS	1	2		2	1	0.0000	0.0000	117.0000
Cummings_WELLS1998C	F		Urine	1	1	3	NS	1	2	1	2	1	0.0000	0.0000	116.0000
Laatikainen_I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	0.3906	1.0000	256.0000
Baltar_BALTAR2011	M+F		Blood	2	3	NS	No	3	2		2	4	1.5119	7.0000	463.0000
S-Germany-II_HELLER1993	F	second random sample in 1989/90	Blood	3	1	3	NS	1	2	1	2	2	1.6018	7.0000	437.0000
S-Germany-I_HELLER1993	M	first random sample in 1984/85	Blood	3	1	3	NS	1	2		2	2	1.7900	15.0000	838.0000
S-Germany-II_HELLER1993	M	second random sample in 1989/90	Blood	3	1	3	NS	1	2		2	2	2.1148	14.0000	662.0000
S-Germany-I_HELLER1993	F	first random sample in 1984/85	Blood	3	1	3	NS	1	2	1	2	2	2.1687	9.0000	415.0000
Laatikainen_I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2	1	2	4	3.0612	3.0000	98.0000
Coultas_WELLS1998C	F		Saliva	Other	1	3	NS	1	2	1	1	1	4.0609	8.0000	197.0000
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	4.4423	11.4708	258.2178
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2		2	2	4.7160	44.0000	933.0000
Lee_II_LLEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	4.9505	5.0000	101.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1	2	2	6.2215	41.0000	659.0000
Coultas_WELLS1998C	M		Saliva	Other	1	3	NS	1	2		1	1	6.3492	8.0000	126.0000
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	8.8435	13.0000	147.0000
MFHS_KORPIL2004	M+F		Blood	3	1	2	No	3	2		2	2	9.6680	198.0000	2048.0000
Markovic_MARKOV2000	F		Urine	2	2	Young	NS	2	2	2	1	1	14.5098	37.0000	255.0000
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	15.1515	10.0000	66.0000
Sato_SATO2003A	M+F		Blood	1	3	NS	NS	3	2		1	Asia	15.6627	13.0000	83.0000
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	25.1852	34.0000	135.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M10: Percentage of self-reported Current smokers (plus Misclassified non-smokers) who report being Ex-smokers  
 Multivariate analysis  
 Variables selected according to significance (no variables forced in)

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**WEIGHTED on Number of self-report Current smokers (plus Misclass non-smokers), cut point 1**

		<b>Deviance</b>	<b>(DF)</b>					
<b>Misclassification rate, cut point 1</b>			<b>Model 1</b>	1686672.922	(65)			
			<b>Constant</b>	7.7240	0.8891	0.0000 ***	7.7240	5.9483
			<b>Model 2</b>	1286126.450	(63)	400546.4719	0.0002 ***	
			<b>Constant</b>	5.9770	0.8912	0.0000 ***	5.9770	4.1960
<b>Study type</b>			General pop.	47	Aliased		5.9770	4.1960
			Pregnancy	2	2.9046	4.1932 0.4910	8.8816	0.6937
			Diseased or CC	17	9.1145	2.0620 0.0000 ***	15.0915	11.3755
								18.8074

Overall percentage, cut point 1, unweighted

**Misclassification rate, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	3627.2905	(136)				
		4.7000	0.4412	0.0000 ***	4.7000	3.8274	5.5726

Overall percentage, cut point 2, unweighted

**Misclassification rate, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	2662.9004	(42)				
		8.5685	1.2143	0.0000 ***	8.5685	6.1180	11.0190

Overall percentage, cut point 1

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True non-smokers, cut point 1**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	3727988.751	(136)				
		5					
		3.6486	0.4075	0.0000 ***	3.6486	2.8427	4.4545

Overall percentage, cut point 2

**Misclassification rate, cut point 2**

**WEIGHTED on Number of True non-smokers, cut point 2**

	<b>Model 1</b>	<b>Deviance</b>	<b>(DF)</b>				
	<b>Constant</b>	578854.3168	(42)				
		7.6717	0.7570	0.0000 ***	7.6717	6.1441	9.1993

Overall misclassification rate (percentage) for the Palmier study, cut point 2 = 8.8426

By Body fluid tested

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True non-smokers, cut point 1**

		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
	<b>Model 2</b>	3564001.632 5	(135)	169202.9166	0.0437 *		
	<b>Constant</b>	<b>Estimate</b> 2.1861	<b>S.E.</b> 0.9139	<b>P</b> 0.0181 +	<b>LSMean</b> 2.1861	<b>95%CI</b> 0.3785	<b>95%Clu</b> 3.9937
	<b>Body fluid tested</b>						
	Urine	34	Aliased		2.1861	0.3785	3.9937
	Saliva	30	0.7537	1.1676	0.5197	2.9398	1.5025
	Blood	74	2.4172	1.0723	0.0258 +	4.6033	3.4941
							5.7126

By cotinine assay method used

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True non-smokers, cut point 1**

		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
	<b>Model 2</b>	3611459.003 6	(134)	116609.2508	0.2333		
	<b>Constant</b>	<b>Estimate</b> 2.6039	<b>S.E.</b> 0.6647	<b>P</b> 0.0001 +++	<b>LSMean</b> 2.6039	<b>95%CI</b> 1.2892	<b>95%Clu</b> 3.9186
	<b>Cotinine assay method</b>						
	Chromatography	44	Aliased		2.6039	1.2892	3.9186
	Spectrometry	41	1.3961	0.9408	0.1402	4.0001	2.6832
	Immunoassay	45	1.9381	1.0927	0.0784 (+)	4.5421	2.8266
	Other	8	2.4027	2.0029	0.2324	5.0066	1.2696
							8.7436

By Study type

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True non-smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		2962418.003	(134)	765570.7485	0.0000 ***		
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		2.8714	0.4240	0.0000 +++	2.8714	2.0328	3.7099
Study type							
General pop.	86	Aliased			2.8714	2.0328	3.7099
Pregnancy	27	0.6044	0.9918	0.5433	3.4757	1.7023	5.2492
Diseased or CC	24	7.6580	1.3022	0.0000 +++	10.5293	8.0941	12.9646

By Age group

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True non-smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P		
		3027224.218	(133)	700764.5331	0.0000 ***		
	Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu
		4.6908	0.6577	0.0000 +++	4.6908	3.3899	5.9917
Age group							
Young	58	Aliased			4.6908	3.3899	5.9917
Not young	11	5.6695	1.6130	0.0006 +++	10.3603	7.4469	13.2737
All ages	45	-2.4396	0.8329	0.0040 --	2.2512	1.2403	3.2622
NS	23	-1.2790	1.4029	0.3636	3.4118	0.9607	5.8630

By Awareness of validation by cotinine

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True non-smokers, cut point 1**

		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
	<b>Model 2</b>	3698276.062	(134)	29712.6889	0.5850		
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		4.6545	2.1422	0.0316 +	4.6545	0.4173	8.8916
	<b>Aware of checking by cotinine?</b>						
Yes	8	Aliased			4.6545	0.4173	8.8916
No	20	0.1907	2.5614	0.9408	4.8452	2.0679	7.6224
NS	109	-1.1631	2.1862	0.5956	3.4914	2.6287	4.3541

By Time of publication

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True non-smokers, cut point 1**

		<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
	<b>Model 2</b>	3661573.786	(134)	66414.9646	0.2999		
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		3.2220	2.1018	0.1276	3.2220	-0.9351	7.3792
	<b>Time of publication</b>						
In 1995 review	11	Aliased			3.2220	-0.9351	7.3792
Before 2003	52	-0.3152	2.1978	0.8862	2.9068	1.6359	4.1777
2003 onwards	74	0.9846	2.1708	0.6509	4.2066	3.1328	5.2805

By Quality of study

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True non-smokers, cut point 1**

	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
		3720864.130	(135)	7124.6211	0.6120		
		3					
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		3.2433	0.8958	0.0004 ***	3.2433	1.4716	5.0149
	<b>Study quality</b>						
	Good	20	Aliased		3.2433	1.4716	5.0149
	Not good	117	0.5118	1.0066	0.6120	3.7551	2.8469
							4.6632

By Pregnancy (women only)

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True non-smokers, cut point 1**

	<b>Model 2</b>	<b>Deviance</b>	<b>(DF)</b>	<b>Drop Dev</b>	<b>P</b>		
		421073.6149	(56)	8182.3311	0.3014		
	<b>Constant</b>	<b>Estimate</b>	<b>S.E.</b>	<b>P</b>	<b>LSMean</b>	<b>95%CI</b>	<b>95%Clu</b>
		2.6346	0.5164	0.0000 ***	2.6346	1.6000	3.6692
	<b>Pregnancy</b>						
	Not pregnant	30	Aliased		2.6346	1.6000	3.6692
	Pregnant	28	0.7606	0.7291	0.3014	3.3952	2.3642
							4.4262

By Tobacco products considered

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True non-smokers, cut point 1**

Model 2	Deviance		(DF) (135)	Drop Dev 57956.2297	P 0.3578			
		7				Estimate	S.E.	P
Constant		2.8848	0.5630	0.0000 +++	2.8848	2.8848	1.7712	3.9984
<b>Tobacco products considered</b>								
Cigarettes	61	Aliased				2.8848	1.7712	3.9984
Any smoking	69	0.7534	0.7745	0.3324		3.6382	2.5863	4.6901
Any tobacco	8	3.0312	2.5161	0.2304		5.9159	1.0659	10.7660

By Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True non-smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P	LSMean	95%CI	95%Clu
		3715590.991	(136)	25967.5627	0.6228			
	<b>Constant</b>	3.1307	0.6933	0.0000 +++		3.1307	1.7596	4.5018
	<b>CARD3: RSex</b>							
	F	58	Aliased			3.1307	1.7596	4.5018
	M	23	0.7038	1.3472	0.6022	3.8345	1.5502	6.1189
	M+F	58	0.8537	0.8857	0.3368	3.9844	2.8944	5.0744

By Location

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True non-smokers, cut point 1**

	Model 2	Deviance	(DF)	Drop Dev	P	LSMean	95%CI	95%Clu
		3529902.151	(133)	198086.6002	0.0633 (*)			
	<b>Constant</b>	3.9300	0.6853	0.0000 +++		3.9300	2.5746	5.2855
	<b>Location</b>							
	Canada/USA	49	Aliased			3.9300	2.5746	5.2855
	Europe	56	-0.2382	0.8968	0.7910	3.6919	2.5475	4.8362
	Asia	14	-2.0839	1.2523	0.0985 (-)	1.8462	-0.2271	3.9195
	Other	18	4.4696	2.3833	0.0629 (+)	8.3996	3.8845	12.9147

By Location x Sex

**Misclassification rate, cut point 1**

**WEIGHTED on Number of True non-smokers, cut point 1**

Model 2	Deviance	(DF)	Drop Dev	P			
	3435608.476	(125)	292380.2749	0.4798			
	5						
Constant	Estimate	S.E.	P	LSMean	95%CI	95%Clu	
	4.4017	1.1116	0.0001 ***	4.4017	2.2016	6.6017	
<b>Location x Sex</b>							
Canada/USA, F	20	Aliased		4.4017	2.2016	6.6017	
Canada/USA, M	8	-0.5115	1.9415	0.7926	3.8901	0.7397	7.0405
Canada/USA, M+F	21	-0.9009	1.5520	0.5627	3.5008	1.3571	5.6445
Europe, F	26	-1.7737	1.6030	0.2707	2.6280	0.3419	4.9140
Europe, M	8	0.4418	2.6494	0.8678	4.8434	0.0836	9.6033
Europe, M+F	22	-0.4049	1.3210	0.7597	3.9967	2.5840	5.4094
Asia, F	6	-3.2036	1.8897	0.0925 (-)	1.1981	-1.8266	4.2227
Asia, M	3	-2.2038	2.9642	0.4586	2.1978	-3.2409	7.6365
Asia, M+F	5	-1.8299	2.0922	0.3834	2.5717	-0.9363	6.0798
Other, F	5	-0.9598	5.1772	0.8532	3.4419	-6.5659	13.4497
Other, M	3	-0.1960	11.3873	0.9863	4.2056	-18.2247	26.6359
Other, M+F	10	5.6346	2.9085	0.0550 (+)	10.0362	4.7167	15.3557

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M11: Percentage of True non-smokers who report being Current smokers  
 Results included in all analyses, cut point 1

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>Age</b>	<b>Gp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC1</b>	<b>N_Cut1</b>	<b>Weight1</b>
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	0.0000	0.0000	498.0000	
Morales_MORALE2013	M+F		Blood	3	3	NS	No	3	2		1	1	0.0000	0.0000	177.0000	
Zielinska-Danch_ZIELIN2007	M+F		Urine	1	1	3	NS	3	2		1	2	0.0000	0.0000	64.0000	
Windham_WINDHA1999A	F		Urine	2	1	Young	NS	2	2	1	1	1	0.0000	0.0000	347.0000	
Akiyama_AKIYAM1994	F		Urine	2	1	3	NS	2	2	1	2	Asia	0.0000	0.0000	109.0000	
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	0.1739	1.0000	575.0000	
Jhun_JHUN2010	F		Urine	1	2	Young	No	3	2	2	1	Asia	0.1951	2.0000	1025.0000	
KNHANES_KANG2015-F	F	2008-2009	Urine	2	1	3	NS	3	2	1	1	Asia	0.2027	11.0000	5427.0000	
Tsutsumi_TSUTSU2002A-F	F		Urine	1	1	2	NS	2	2	1	1	Asia	0.2037	1.0000	491.0000	
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	0.2278	1.0000	439.0000	
Hegaard_HEGAAR2007	F		Saliva	1	2	Young	NS	3	2	2	2	2	0.3706	0.9410	253.9410	
Fritz_FRITZ2010A	M+F		Urine	2	1	NS	NS	3	2		2	2	0.3759	1.0000	266.0000	
Stookey_STOOKE1987	M+F		Saliva	1	1	NS	NS	2	2		2	1	0.4511	0.4659	103.2712	
Smith UK_SMITH1998C	M+F		Urine	1	3	3	NS	2	2		2	2	0.4541	0.5475	120.5475	
Naraghi_NARAGH2011	F		Blood	3	3	NS	NS	3	2	1	2	2	0.5682	1.0000	176.0000	
HSE_OPSCS1996A	M+F	1994	Blood	1	1	3	NS	2	2		2	2	0.6511	46.0000	7065.0000	
Barlow_BARLOW1987	F		Urine	3	2	Young	NS	2	2	2	1	2	0.8043	3.0000	373.0000	
Laatikainen I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	0.8772	1.0000	114.0000	
Bauld_BAULD2012	F		Urine	1	2	Young	NS	3	2	2	2	2	0.8958	11.0000	1228.0000	
George_GEORGE2006	F	early pregnancy	Blood	1	2	Young	No	3	Good	2	2	2	0.9736	7.0000	719.0000	
INMA_AURREK2013	F	2004-08	Urine	3	2	Young	NS	3	2	2	2	2	1.0152	18.0000	1773.0000	
Ellard II_ELLARD1996	F		Urine	1	2	Young	NS	2	2	2	2	2	1.0251	20.0000	1951.0000	
Khuri_KHURI2001	M+F		Blood	Other	3	2	NS	2	2		2	1	1.0638	7.0000	658.0000	
Pojer_POJER1984	M+F		Blood	1	1	NS	NS	2	2		1	4	1.0975	1.8643	169.8643	
van Vunakis_VANVUN1989	M+F		Saliva	3	1	NS	NS	1	2		1	1	1.1050	2.0000	181.0000	
Stick_STICK1996	F		Blood	3	2	Young	NS	2	2	2	1	4	1.1364	2.0000	176.0000	
Phillipou_PHILLI1994C	M+F		Urine	3	3	NS	No	2	2		2	4	1.2346	2.0000	162.0000	
SHS_LU2014A	M+F		Saliva	1	1	3	NS	3	2		2	2	1.2636	94.0000	7439.0000	
Wewers I_WEWERS1995	F		Saliva	1	1	NS	No	2	2	1	1	1	1.3258	7.0000	528.0000	
MONICA Germany_HELLER1998-older	F	45-64	Blood	3	1	2	NS	2	2	1	2	2	1.3480	11.0000	816.0000	
Tabara_TABARA2013	M+F		Urine	2	1	NS	NS	3	2		2	Asia	1.3512	100.0000	7401.0000	
Parna_PARNA2005	F		Blood	3	2	Young	NS	3	2	2	2	2	1.4925	15.0000	1005.0000	
NHANES_CARABA2016-young	F	2001-2012, NH black, 12-17yrs	Blood	2	1	Young	NS	3	Good	1	1	1	1.5834	13.0000	821.0000	
MONICA Scotland_CHEN2002D	M	Surveys 1 and 2	Blood	1	1	3	NS	2	2		1	2	1.5873	7.0000	441.0000	
Nguyen_NGUYEN2007	M+F		Blood	1	3	3	No	3	2		2	2	1.5873	3.0000	189.0000	
Dolcini_DOLCIN2003	M+F	Adolescents	Saliva	3	1	Young	Yes	3	2		1	1	1.6451	28.0000	1702.0000	
CHMS_WONG2012	M+F		Urine	2	1	3	NS	3	Good	1	1	1	1.6979	58.0000	3416.0000	
KNHANES_KANG2015-M	M	2008-2009	Urine	2	1	3	NS	3	2		1	Asia	1.7417	48.0000	2756.0000	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M11: Percentage of True non-smokers who report being Current smokers  
 Results included in all analyses, cut point 1

Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1	
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2			2	2	1.8038	32.0000	1774.0000
Ford_FORD1997	F		Blood	3	2	Young	NS	2	2	2	2	4	1.8605	8.0000	430.0000	
Osaka factory_YAMAMO2005	M+F		Saliva	3	1	3	NS	3	2			2	Asia	1.8750	3.0000	160.0000
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2	1	2	2	1.8797	45.0000	2394.0000	
Anderson_ANDERS2009A	F		Blood	3	2	Young	NS	3	2	2	2	2	1.8868	4.0000	212.0000	
NHANES_CARABA2016-adult	F	2001-2012, NH white, 26+yr	Blood	2	1	3	NS	3	Good	1	1	1	1.9078	96.0000	5032.0000	
MONICA Scotland_CHEN2002D	M	Surveys 3 and 4	Blood	1	1	3	NS	2	2		1	2	1.9254	16.0000	831.0000	
NHANES_CARABA2016-adult	M	2001-2012, NH white, 26+yr	Blood	2	1	3	NS	3	Good		1	1	2.0653	93.0000	4503.0000	
Hoseini_HOSEIN2016	M+F		Urine	3	1	NS	NS	3	2		2	4	2.1277	3.0000	141.0000	
Haddow I_HADDOW1986	F		Blood	3	1	NS	NS	1	2	1	1	1	2.1552	5.0000	232.0000	
HSE_JARVIS2008-any-smoking	M+F	1996-2004, Any smoking at nurse visit	Saliva	1	1	3	NS	2	2		2	2	2.1584	582.0000	26964.0000	
Owen_OWEN2001	F		Saliva	1	2	Young	NS	2	2	2	1	2	2.2444	9.0000	401.0000	
Shaffer_SHAFFE2000	M+F		Blood	Other	1	3	Yes	2	2		3	1	2.2956	48.0000	2091.0000	
Wagenknecht_WAGENK1992	M+F		Blood	3	1	Young	NS	1	Good		1	1	2.3091	78.0000	3378.0000	
Naraghi_NARAGH2011	M		Blood	3	3	NS	NS	3	2		2	2	2.3256	1.0000	43.0000	
Lifestyle and Appetite_LEE1986B	F		Saliva	1	1	3	No	2	2	1	3	2	2.3271	10.6739	458.6739	
Muranaka_MURANA1988	M+F		Urine	1	3	NS	NS	2	2		1	Asia	2.3529	2.0000	85.0000	
MONICA Scotland_CHEN2002D	F	Surveys 3 and 4	Blood	1	1	3	NS	2	2	1	1	2	2.3739	24.0000	1011.0000	
Twardella II_TWARDE2004	M+F		Blood	3	3	2	No	3	2		1	2	2.3895	20.0000	837.0000	
MONICA Scotland_CHEN2002D	F	Surveys 1 and 2	Blood	1	1	3	NS	2	2	1	1	2	2.6749	13.0000	486.0000	
Lee II_LEE1995B	F		Urine	3	1	3	No	1	2	1	2	Asia	2.6846	8.0000	298.0000	
Stanton_STANTO1996	M+F		Saliva	3	1	Young	Yes	2	2		2	4	2.6871	14.0000	521.0000	
Sasaki_SASAKI2011	F		Blood	3	2	Young	NS	3	2	2	2	Asia	2.6929	119.0000	4419.0000	
NHANES_CARABA2016-adult	F	2001-2012, NH black, 26+yr	Blood	2	1	3	NS	3	Good	1	1	1	2.7110	71.0000	2619.0000	
Shipton_SHIPTO2009	F	N adjusted	Blood	3	2	Young	No	3	2	2	2	2	2.7614	61.0000	2209.0000	
NHANES_CARABA2004	M	1988-1994, age 12-17	Blood	2	1	Young	NS	3	Good		1	1	2.8024	19.0000	678.0000	
Tikkanen_TIKKAN2010	F		Blood	3	2	Young	NS	3	2	2	2	2	2.8103	12.0000	427.0000	
Kharrazi_KHARRA1999	F		Blood	2	2	Young	NS	2	2	2	1	1	2.8133	22.0000	782.0000	
Mathews_MATHEW1999A	F		Blood	3	2	Young	NS	2	2	2	1	2	2.8340	14.0000	494.0000	
Laatikainen I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2	1	2	4	2.8653	10.0000	349.0000	
Martinez-Sanchez_MARTIN2009C	M+F		Saliva	2	1	3	NS	3	2		2	2	2.8822	23.0000	798.0000	
DC-HOPE_ELMOMHA2009	F	Non, current smokers	Saliva	2	2	Young	NS	3	2	2	1	1	2.9358	16.0000	545.0000	
Lindqvist_LINDQV2002	F		Blood	1	2	Young	No	2	2	2	1	2	3.0457	12.0000	394.0000	
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2	1	1	1	3.0750	21.0754	685.3690	
West III_WEST2007	M+F		Saliva	1	1	3	NS	3	2		2	2	3.0973	7.0000	226.0000	
NHANES_CARABA2016-young-adult	F	2001-2012, NH black, 18-25yrs	Blood	2	1	Young	NS	3	Good	1	1	1	3.1311	16.0000	511.0000	
NHANES_LINDSA2014-adult	M+F	1999-2000, age 20+	Blood	2	1	3	NS	3	Good		2	1	3.1536	86.0000	2727.0000	
TEC_PEARCE2014	M	Non-indigenous	Urine	Other	1	Young	NS	3	2		2	4	3.3333	2.0000	60.0000	

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M11: Percentage of True non-smokers who report being Current smokers  
 Results included in all analyses, cut point 1

Id	RSex	Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1	
Tsutsumi_TSUTSU2002A-M	M		Urine	1	1	2	NS	2	2			1	Asia	3.5971	30.0000	834.0000
Slattery II_SLATTE1989A	F		Blood	3	3	3	NS	1	2	1	1	1		3.6364	14.0000	385.0000
CHDS_ENGLIS1994	F		Blood	3	2	Young	NS	2	2	2	2	1		3.6731	80.0000	2178.0000
NHANES_CARABA2016-young	M	2001-2012, NH black, 12-17yrs	Blood	2	1	Young	NS	3	Good			1	1	3.7383	28.0000	749.0000
Yeh_YEH2011	M+F	LC-MS/MS method	Urine	2	1	NS	Yes	3	2		3	1		3.7684	3.9159	103.9159
Jarvis I_JARVIS1987A	M+F		Blood	1	3	NS	NS	1	2		2	2		3.8462	4.0000	104.0000
Akiyama_AKIYAM1994	M		Urine	2	1	3	NS	2	2			2	Asia	4.0000	2.0000	50.0000
Badger_BADGER2009	M+F		Blood	3	3	2	NS	3	2		2	2		4.0541	12.0000	296.0000
Spencer I_SPENCE1998	F		Blood	3	2	Young	NS	2	2	2	2	2		4.4386	17.0000	383.0000
Ulvik II_ULVIK2010	M+F		Blood	2	3	2	NS	3	2		2	2		4.4485	98.0000	2203.0000
NHANES_LINDSA2014-young	M+F	1999-2000, age12-19	Blood	2	1	Young	NS	3	Good		2	1		4.4929	66.0000	1469.0000
Olivieri OLIVIE2002	M+F		Blood	3	1	NS	NS	2	2		2	2		4.5082	11.0000	244.0000
Luepker_LUEPK1989	M+F	home IV	Saliva	1	1	Young	NS	1	2		1	1		4.5161	10.1835	225.4933
NHANES_CARABA2004	F	1988-1994, age 12-17	Blood	2	1	Young	NS	3	Good	1	1	1		4.5728	38.0000	831.0000
Etter_ETTER2000A	M+F		Saliva	1	1	Young	NS	2	2		1	2		4.7119	4.5987	97.5987
Molina_MOLINA2010	F		Saliva	3	1	Young	NS	3	2	1	2	2		4.7468	15.0000	316.0000
Ceppa_CEPPA2000	M+F		Urine	1	3	NS	NS	2	2		2	2		4.8257	18.0000	373.0000
de Chazeron_DECHAZ2008	F		Blood	2	2	Young	NS	3	2	2	2	2		4.8593	38.0000	782.0000
Lee Anna_LEE2013TE	M+F		Urine	2	3	3	NS	3	2		1	Asia		4.9628	20.0000	403.0000
Wewers I_WEWERS1995	M		Saliva	1	1	NS	No	2	2		1	1		4.9887	22.0000	441.0000
NHANES_CARABA2016-adult	M	2001-2012, NH black, 26+yrs	Blood	2	1	3	NS	3	Good		1	1		5.1011	106.0000	2078.0000
Perez-Stable_PEREZS1992	M+F		Blood	1	1	3	NS	1	2		1	1		5.1676	9.6450	186.6450
NHANES_CARABA2016-young-adult	M	2001-2012, NH black, 18-25yrs	Blood	2	1	Young	NS	3	Good		1	1		5.2897	21.0000	397.0000
Goniewicz_GONIEW2011	M+F		Urine	2	1	NS	NS	3	2		2	4		5.3640	14.0000	261.0000
Waggoner_WAGGON2010	F		Urine	3	3	3	NS	3	2	1	1	1		5.4878	9.0000	164.0000
Pierce_PIERCE1987	M+F		Saliva	1	1	3	No	1	2		2	4		5.5369	33.0000	596.0000
BUPA_WALD1984	M		Urine	3	1	NS	NS	1	2		2	2		5.7954	13.4728	232.4728
NHANES_CARABA2016-young	M	2001-2012, NH white, 12-17yrs	Blood	2	1	Young	NS	3	Good	1	1			5.8340	78.0000	1337.0000
Dickinson_DICKIN1988	M+F		Saliva	1	1	3	NS	1	2		2	4		5.9946	22.0000	367.0000
Assaf_ASSAF2002-F	F		Blood	1	1	3	NS	2	2	1	1	1		6.0606	18.0000	297.0000
MONICA Germany_HELLER1998-young	F	25-44	Blood	3	1	Young	NS	2	2	1	2	2		6.2780	42.0000	669.0000
Messeri_MESSER2007A	M+F		Saliva	Other	1	Young	NS	3	2		1	1		6.3970	272.0000	4252.0000
Peacock_PEACOC1998	F	booking visit	Blood	1	2	Young	NS	2	2	2	1	2		6.5431	60.0000	917.0000
Kim_KIM2014J	M+F		Saliva	2	1	3	NS	3	Good		2	1		6.5934	12.0000	182.0000
Spencer II_SPENCE2013	F		Blood	3	2	Young	No	3	2	2	2	2		6.6906	24.8096	370.8096
Kandel_KANDEL2006	M+F		Saliva	3	1	Young	Yes	3	2		3	1		7.1934	61.0000	848.0000
NHANES_CARABA2016-young-adult	F	2001-2012, NH white, 18-25yrs	Blood	2	1	Young	NS	3	Good	1	1	1		7.4733	63.0000	843.0000
TEC_PEARCE2014	F	Non-indigenous	Urine	Other	1	Young	NS	3	2	1	2	4		7.7922	6.0000	77.0000

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M11: Percentage of True non-smokers who report being Current smokers  
 Results included in all analyses, cut point 1

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Id	RSex		Select	Fluid	Assay	Type	AgeGp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
NHANES_CARABA2016-young	F	2001-2012, NH white, 12-17yrs		Blood	2	1	Young	NS	3	Good	1	1	1	7.8966	110.0000	1393.0000
Fendrich_FENDRI2005	M+F			Saliva	Other	1	Young	No	3	2		3	1	7.9027	26.0000	329.0000
NHANES_CARABA2016-young-adult	M	2001-2012, NH white, 18-25yrs		Blood	2	1	Young	NS	3	Good	1	1	1	8.2707	55.0000	665.0000
MONICA Germany_HELLER1998-older	M	45-64		Blood	3	1	2	NS	2	2		2	2	8.2734	46.0000	556.0000
Parker_PARKER2002	M+F	GC method		Urine	1	1	NS	NS	2	2		1	1	8.5714	12.0000	140.0000
Smith USA_SMITH2014B	F			Saliva	2	2	Young	NS	3	2	2	2	1	8.6643	24.0000	277.0000
Klebanoff_KLEBAN1998	F			Blood	3	2	Young	NS	3	2	2	1	1	9.3284	25.0000	268.0000
Haddow II_HADDOW1988A	F			Blood	3	2	Young	No	2	2	2	2	1	9.4437	331.0000	3505.0000
Wallner-Liebmann_WALLNE2013	M+F			Blood	3	3	NS	NS	3	2		2	2	9.9326	280.0000	2819.0000
Semple_SEMPLE2007	M+F			Saliva	1	1	3	NS	3	2		2	2	10.6383	15.0000	141.0000
Seersholtz_SEERSH1999	M+F			Blood	1	1	3	NS	2	2		2	2	10.9929	31.0000	282.0000
Lifestyle and Appetite_LEE1986B	M			Saliva	1	1	3	No	2	2		3	2	11.1565	42.6955	382.6955
McNeill_MCNEIL1987	F			Saliva	1	1	Young	Yes	2	2	1	1	2	13.8381	53.0000	383.0000
Xie I_XIE2009	M+F			Blood	1	3	3	NS	3	2		1	Asia	14.2857	100.0000	700.0000
MONICA Germany_HELLER1998-young	M	25-44		Blood	3	1	Young	NS	2	2		2	2	14.6341	72.0000	492.0000
ABC_PEARCE2014	M	Indigenous		Urine	Other	1	Young	NS	3	2		2	4	15.0000	6.0000	40.0000
Salzer_SALZER2013	M+F			Blood	3	3	Young	No	3	2		3	2	17.3913	44.0000	253.0000
Valladolid-Lopez_VALLAD2015	M+F			Urine	1	1	Young	NS	3	2		1	4	18.3017	222.0000	1213.0000
Levine_LEVINE2013	M+F			Urine	2	1	3	Yes	3	2		2	4	18.5393	33.0000	178.0000
Brunet_BRUNET2011	M+F			Blood	3	3	3	NS	3	2		1	4	18.8776	37.0000	196.0000
Noland_NOLAND1988	M+F			Saliva	3	1	Young	Yes	2	2		3	1	20.8556	39.0000	187.0000
ABC_PEARCE2014	F	Indigenous		Urine	Other	1	Young	NS	3	2	1	2	4	25.5814	11.0000	43.0000
Ulvik I_ULVIK2010	M+F			Blood	2	3	2	NS	3	2		2	2	31.5616	861.0000	2728.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M11: Percentage of True non-smokers who report being Current smokers  
 Additional results included in analysis by Sex, cut point 1

Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
			Saliva	1	1	Young	NS	3	2		1	1	2	4.3053	44.0000	1022.0000
HSE_WARDLE2003-non-curr	M	2002, by sex														
HSE_WARDLE2003-non-curr	F	2002, by sex	Saliva	1	1	Young	NS	3	2		1	1	2	7.0435	81.0000	1150.0000
Additional results included in analysis by Body fluid tested, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
			Blood	3	3	NS	No	3	2		2	2	2	0.2242	1.0000	446.0000
Additional results included in analysis by Assay method, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
			Urine	1	1	NS	Yes	3	2		3	1	1	2.7691	2.8479	102.8479
Additional results included in analysis by Pregnancy, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
			Blood	2	2	Young	NS	3	Good	2	1	1	1	0.9009	8.0000	888.0000
Additional results included in analysis by Smoking product considered, cut point 1																
Id	RSex	Select	Fluid	Assay	Type	Age	Gp	Aware?	Publ	Quality	Pregn	Prod	Locn	RateC1	N_Cut1	Weight1
			Saliva	1	1	3	NS	2	2		1	2	2	1.4864	398.0000	26776.0000
HSE_JARVIS2008-cig-smoking																

Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45  
 Rate M11: Percentage of True non-smokers who report being Current smokers  
 Results included in overall analyses, cut point 2

<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC2</b>	<b>N_Cut2</b>	<b>Weight2</b>	
Zielinska-Danch_ZIELIN2007	M+F		Urine	1	1	3	NS	3	2		1	2	0.0000	0.0000	195.0000	
Martinez_MARTIN2004	M+F		Blood	1	3	2	NS	3	2		2	1	0.4335	3.0000	692.0000	
Hellemons_HELLEM2015	M+F	urine	Blood	3	3	NS	No	3	2		2	2	0.8696	4.0000	460.0000	
Niedbala_NIEDBA2002	M+F		Urine	3	1	NS	NS	2	Good		3	1	1.9964	1.1000	55.1000	
Agewall_AGEWAL2002	M		Urine	3	3	2	NS	2	2		2	2	2.2989	6.0000	261.0000	
Smith UK_SMITH1998C	M+F		Urine	1	3	3	NS	2	2		2	2	2.3663	3.1022	131.1022	
Parna_PARNA2005	F		Blood	3	2	Young	NS	3	2		2	2	2.9110	34.0000	1168.0000	
Lee Chung Yul_LEE2009TC	F		Urine	1	1	NS	No	3	2		1	2	Asia	3.0000	3.0000	100.0000
TEC_PEARCE2014	M	Non-indigenous	Urine	Other	1	Young	NS	3	2		2	4	3.2258	2.0000	62.0000	
Haddow I_HADDOW1986	F		Blood	3	1	NS	NS	1	2		1	1	3.3473	8.0000	239.0000	
FINRISK_VARTIA2002	F		Blood	2	1	3	NS	2	2		1	2	3.5317	89.0000	2520.0000	
Laatikainen I_LAATIK1999	F	Pitkäranta	Blood	2	1	3	NS	2	2		1	2	3.5616	13.0000	365.0000	
Lee Chung Yul_LEE2009TC	M		Urine	1	1	NS	No	3	2		2	Asia	3.9216	6.0000	153.0000	
Sato_SATO2003A	M+F		Blood	1	3	NS	NS	3	2		1	Asia	4.2471	11.0000	259.0000	
Lifestyle and Appetite_LEE1986B	F		Saliva	1	1	3	No	2	2		1	3	4.5004	21.3477	474.3477	
FINRISK_VARTIA2002	M		Blood	2	1	3	NS	2	2		2	2	4.9582	95.0000	1916.0000	
Coultas_WELLS1998C	M		Saliva	Other	1	3	NS	1	2		1	1	4.9822	14.0000	281.0000	
EHLS_NONDAH2004	M+F		Blood	2	3	2	NS	3	2		1	1	5.1661	28.0000	542.0000	
Pojer_POJER1984	M+F		Blood	1	1	NS	NS	2	2		1	4	5.1844	9.7875	188.7875	
Ogden_OGDEN1997	F		Saliva	3	1	3	No	2	2		1	1	5.4235	38.6382	712.4204	
Ford_FORD1997	F		Blood	3	2	Young	NS	2	2		2	2	6.2099	29.0000	467.0000	
Lee II_LEE1995B	F		Urine	3	1	3	No	1	2		1	2	Asia	6.6456	21.0000	316.0000
Laatikainen I_LAATIK1999	M	Pitkäranta	Blood	2	1	3	NS	2	2		2	4	7.0313	9.0000	128.0000	
Burstyn_BURSTY2009	F		Blood	3	2	Young	No	3	2		2	2	7.1655	20.8761	291.3411	
Markovic_MARKOV2000	F		Urine	2	2	Young	NS	2	2		2	1	7.6125	44.0000	578.0000	
DC-HOPE_ELMOHA2009	F	Non, current smokers	Saliva	2	2	Young	NS	3	2		2	1	7.8431	48.0000	612.0000	
Assaf_ASSAF2002-M	M		Blood	1	1	3	NS	2	2		1	1	8.0214	15.0000	187.0000	
Gill_GILL1996	M+F		Urine	1	3	NS	NS	2	2		1	4	8.8608	14.0000	158.0000	
Gilligan_GILLIG2010	F		Urine	3	2	Young	Yes	3	2		2	2	9.0909	7.0000	77.0000	
Bardy_BARDY1993	F		Blood	2	2	Young	No	2	2		2	2	9.1964	103.0000	1120.0000	
Wagenknecht_WAGENK1992	M+F		Blood	3	1	Young	NS	1	Good		1	1	9.4184	353.0000	3748.0000	
Coultas_WELLS1998C	F		Saliva	Other	1	3	NS	1	2		1	1	9.7610	49.0000	502.0000	
Pierce_PIERCE1987	M+F		Saliva	1	1	3	No	1	2		2	4	9.8068	66.0000	673.0000	
Lindqvist_LINDQV2002	F		Blood	1	2	Young	No	2	2		2	1	12.3620	56.0000	453.0000	
Copenhagen_SUADIC1997	M	1985-86, with or without CVD	Blood	3	3	2	NS	2	2		3	2	13.1778	209.0000	1586.0000	
Parker_PARKER2002	M+F	GC method	Urine	1	1	NS	NS	2	2		1	1	13.4228	20.0000	149.0000	
TEC_PEARCE2014	F	Non-indigenous	Urine	Other	1	Young	NS	3	2		1	2	14.2857	12.0000	84.0000	
Peacock_PEACOC1998	F	booking visit	Blood	1	2	Young	NS	2	2		2	1	14.3422	145.0000	1011.0000	

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M11: Percentage of True non-smokers who report being Current smokers  
 Results included in overall analyses, cut point 2

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<b>Id</b>	<b>RSex</b>	<b>Select</b>	<b>Fluid</b>	<b>Assay</b>	<b>Type</b>	<b>AgeGp</b>	<b>Aware?</b>	<b>Publ</b>	<b>Quality</b>	<b>Pregn</b>	<b>Prod</b>	<b>Locn</b>	<b>RateC2</b>	<b>N_Cut2</b>	<b>Weight2</b>
BUPA_WALD1984	M		Urine	3	1	NS	NS	1	2		2	2	15.4612	40.4185	261.4185
Lifestyle and Appetite_LEE1986B	M		Saliva	1	1	3	No	2	2		3	2	15.6952	64.0432	408.0432
Smith USA_SMITH2014B	F		Saliva	2	2	Young	NS	3	2	2	2	1	24.3402	83.0000	341.0000
ABC_PEARCE2014	M	Indigenous	Urine	Other	1	Young	NS	3	2		2	4	33.3333	19.0000	57.0000
ABC_PEARCE2014	F	Indigenous	Urine	Other	1	Young	NS	3	2	1	2	4	39.4366	28.0000	71.0000

**Meta-analysis of Misclassification of smoking habit, 19-OCT-18 15:10:45**  
 Rate M11: Percentage of True non-smokers who report being Current smokers  
 Multivariate analysis  
 Variables selected according to significance (no variables forced in)

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**WEIGHTED on Number of True non-smokers, cut point 1**

	Deviance		(DF)						
	Model 1	3727988.751 5	(136)	Constant	Estimate 3.6486	S.E. 0.4075	P 0.0000 +++	LSMean 3.6486	95%CI 2.8427
	<b>Model 2</b>		<b>Deviance 2962418.003 0</b>	<b>(DF) (134)</b>	<b>Drop Dev 765570.7485</b>		<b>P 0.0000 ***</b>		
	Constant	2.8714	0.4240	0.0000 +++	LSMean 2.8714	95%CI 2.0328	95%Clu 3.7099		
	<b>Study type</b>								
General pop.	86	Aliased			2.8714	2.0328	3.7099		
Pregnancy	27	0.6044	0.9918	0.5433	3.4757	1.7023	5.2492		
Diseased or CC	24	7.6580	1.3022	0.0000 +++	10.5293	8.0941	12.9646		
	<b>Model 3</b>		<b>Deviance 2586156.794 8</b>	<b>(DF) (131)</b>	<b>Drop Dev 376261.2081</b>		<b>P 0.0005 ***</b>		
	Constant	5.9509	0.8865	0.0000 +++	LSMean 5.9509	95%CI 4.1970	95%Clu 7.7047		
	<b>Study type</b>								
General pop.	86	Aliased			3.4499	2.6040	4.2957		
Pregnancy	27	-2.4751	1.2263	0.0456 -	0.9747	-1.1752	3.1246		
Diseased or CC	24	6.9162	1.6286	0.0000 +++	10.3661	7.3285	13.4037		
	<b>Age group</b>								
Young	58	Aliased			6.1496	4.6396	7.6596		
Not young	11	-0.7290	2.0228	0.7191	5.4206	1.9633	8.8779		
All ages	45	-3.8709	1.0064	0.0002 ---	2.2787	1.2327	3.3247		
NS	23	-4.5818	1.5276	0.0032 --	1.5677	-0.8434	3.9789		



**TITLE** Misclassification of smoking habits. An updated review of the literature

**Authors** J.S. Hamling<sup>1</sup>, K.J. Coombs<sup>2</sup>, P.N. Lee<sup>2</sup>

**Supplementary File 4**

**Summary of meta-analyses by level of each factor**

TABLE S1 Misclassification rates by body fluid

Rate		Urine		Saliva		Blood		Het p
		N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	
M1	% of self-reported non-smokers whose cotinine implies current smoking	50	4.5 (3.0 to 5.9)	60	4.8 (3.6 to 6.0)	102	5.1 (4.3 to 6.0)	0.740
M2	% of self-reported never-smokers whose cotinine implies current smoking	16	2.6 (1.4 to 3.8)	22	3.4 (2.0 to 4.9)	49	3.0 (2.4 to 3.7)	0.664
M3	% of self-reported ex-smokers whose cotinine implies current smoking	18	12.1 (8.0 to 16.2)	25	15.6 (10.9 to 20.3)	46	9.8 (7.9 to 11.8)	0.071
M4	% of self-reported current smokers whose cotinine implies non-smoking	36	7.0 (2.2 to 11.8)	33	7.8 (4.4 to 11.3)	74	11.5 (8.9 to 14.2)	0.125
M5	% of true current smokers who report being non-smokers	33	14.98 (9.5 to 20.5)	30	13.7 (9.8 to 17.7)	74	14.8 (11.9 to 17.7)	0.897
M6	% of true current smokers who report being never smokers	9	9.3 (2.9 to 15.6)	10	10.9 (3.8 to 18.1)	34	4.2 (1.4 to 7.0)	0.113
M7	% of true current smokers who report being ex-smokers	9	5.3 (-0.8 to 11.4)	10	5.4 (-1.4 to 12.3)	34	10.2 (7.5 to 12.9)	0.189
M8	% of self-reported current smokers (plus misclassified non-smokers) who report being non-smokers	44	14.9 (10.6 to 19.3)	46	10.4 (7.5 to 13.3)	96	11.4 (9.4 to 13.5)	0.238
M9	% of self-reported current smokers (plus misclassified non-smokers) who report being never-smokers	11	8.4 (3.1 to 13.7)	14	9.1 (3.7 to 14.5)	42	3.4 (1.3 to 5.5)	0.052
M10	% of self-reported current smokers (plus misclassified non-smokers) who report being ex-smokers	11	4.8 (-0.3 to 9.9)	14	5.5 (0.4 to 10.7)	42	8.5 (6.5 to 10.5)	0.265
M11	% of true non-smokers who report being current smokers	34	2.2 (0.4 to 4.0)	30	2.9 (1.5 to 4.4)	74	4.6 (3.5 to 5.7)	0.044

TABLE S2 Misclassification rates by assay method

Rate		Chromatography		Spectrometry		Immunoassay		Other		Het p
		N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	
M1	% of self-reported non-smokers whose cotinine implies current smoking	62	4.6 (3.5 to 5.7)	56	4.8 (3.7 to 5.9)	80	5.4 (4.1 to 6.7)	12	6.6 (3.3 to 9.9)	0.582
M2	% of self-reported never-smokers whose cotinine implies current smoking	35	2.6 (1.6 to 3.6)	19	3.6 (2.8 to 4.4)	27	2.1 (0.9 to 3.3)	5	3.9 (0.8 to 6.9)	0.160
M3	% of self-reported ex-smokers whose cotinine implies current smoking	29	8.8 (5.8 to 11.8)	15	10.1 (7.4 to 12.8)	32	11.5 (8.4 to 14.7)	12	19.0 (13.6 to 24.5)	0.014
M4	% of self-reported current smokers whose cotinine implies non-smoking	45	6.5 (3.4 to 9.6)	41	13.1 (9.6 to 16.6)	49	9.9 (6.3 to 13.5)	8	13.0 (4.1 to 21.8)	0.040
M5	% of true current smokers who report being non-smokers	44	12.2 (8.9 to 15.6)	41	17.7 (13.9 to 21.5)	44	14.0 (9.7 to 18.3)	8	15.7 (6.0 to 25.5)	0.208
M6	% of true current smokers who report being never smokers	19	5.1 (0.7 to 9.4)	13	7.0 (2.7 to 11.3)	18	5.3 (-0.2 to 10.8)	2	3.9 (-5.4 to 13.1)	0.891
M7	% of true current smokers who report being ex-smokers	19	5.8 (1.9 to 9.8)	13	10.5 (6.6 to 14.4)	18	10.0 (5.1 to 15.1)	2	12.2 (3.8 to 20.7)	0.284
M8	% of self-reported current smokers (plus misclassified non-smokers) who report being non-smokers	58	9.3 (6.8 to 11.8)	51	13.6 (10.8 to 16.3)	65	12.2 (8.9 to 15.4)	12	15.1 (7.3 to 22.9)	0.104
M9	% of self-reported current smokers (plus misclassified non-smokers) who report being never-smokers	25	4.2 (1.0 to 7.5)	13	6.1 (2.6 to 9.6)	23	3.6 (-0.2 to 7.4)	5	4.1 (-3.1 to 11.3)	0.783
M10	% of self-reported current smokers (plus misclassified non-smokers) who report being ex-smokers	25	5.7 (2.8 to 8.7)	13	9.2 (6.0 to 12.4)	23	7.9 (4.5 to 11.4)	5	10.8 (4.2 to 17.4)	0.317

Rate	Chromatography		Spectrometry		Immunoassay		Other		Het p
	N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	
M11 % of true non-smokers who report being current smokers	44	2.6 (1.3 to 3.9)	41	4.0 (2.7 to 5.3)	45	4.5 (2.8 to 6.3)	8	5.0 (1.3 to 8.7)	0.233

TABLE S3 Misclassification rates by study type

Rate		General population		Pregnancy		Diseased or Case control		Het p
		N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	
M1	% of self-reported non-smokers whose cotinine implies current smoking	138	4.5 (3.8 to 5.2)	38	5.6 (3.9 to 7.2)	34	8.3 (6.1 to 10.6)	0.006
M2	% of self-reported never-smokers whose cotinine implies current smoking	66	2.9 (2.3 to 3.5)	2	4.5 (1.2 to 7.8)	18	3.4 (1.3 to 5.4)	0.617
M3	% of self-reported ex-smokers whose cotinine implies current smoking	53	8.7 (6.9 to 10.6)	13	22.7 (17.8 to 27.5)	22	12.0 (9.2 to 14.8)	<0.001
M4	% of self-reported current smokers whose cotinine implies non-smoking	88	8.0 (5.9 to 10.2)	28	8.5 (4.4 to 12.6)	26	21.9 (16.5 to 27.3)	<0.001
M5	% of true current smokers who report being non-smokers	86	13.9 (11.4 to 16.3)	26	12.9 (8.1 to 17.8)	24	24.3 (16.7 to 31.9)	0.032
M6	% of true current smokers who report being never smokers	35	5.7 (2.8 to 8.5)	2	8.6 (-3.1 to 20.4)	15	5.0 (-1.5 to 11.5)	0.862
M7	% of true current smokers who report being ex-smokers	35	6.6 (4.5 to 8.7)	2	9.4 (0.7 to 18.1)	15	21.3 (16.5 to 26.1)	<0.001
M8	% of self-reported current smokers (plus misclassified non-smokers) who report being non-smokers	121	11.2 (9.4 to 13.1)	32	12.6 (8.4 to 16.9)	33	12.4 (7.9 to 17.0)	0.771
M9	% of self-reported current smokers (plus misclassified non-smokers) who report being never-smokers	47	4.8 (2.6 to 6.9)	2	8.1 (-1.8 to 18.1)	17	3.4 (-1.2 to 7.9)	0.664
M10	% of self-reported current smokers (plus misclassified non-smokers) who report being ex-smokers	47	6.0 (4.2 to 7.8)	2	8.9 (0.7 to 17.1)	17	15.1 (11.4 to 18.8)	<0.001
M11	% of true non-smokers who report being current smokers	86	2.9 (2.0 to 3.7)	27	3.5 (1.7 to 5.2)	24	10.5 (8.1 to 13.0)	<0.001

TABLE S4 Misclassification rates by age group

Rate		Young		Not young		All ages		Not stated		Het p
		N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	
M1	% of self-reported non-smokers whose cotinine implies current smoking	78	5.3 (4.1 to 6.6)	21	4.4 (2.6 to 6.3)	81	5.1 (4.2 to 5.9)	29	3.6 (1.3 to 6.0)	0.596
M2	% of self-reported never-smokers whose cotinine implies current smoking	9	4.2 (2.6 to 5.9)	17	2.8 (1.5 to 4.0)	41	3.3 (2.6 to 4.0)	20	1.3 (0.1 to 2.6)	0.021
M3	% of self-reported ex-smokers whose cotinine implies current smoking	20	18.8 (14.6 to 23.0)	16	11.6 (8.7 to 14.6)	38	9.4 (7.0 to 11.7)	14	7.1 (3.3 to 11.0)	<0.001
M4	% of self-reported current smokers whose cotinine implies non-smoking	59	13.2 (9.9 to 16.4)	12	20.4 (14.3 to 26.6)	46	5.8 (3.3 to 8.3)	25	11.0 (4.3 to 17.6)	<0.001
M5	% of true current smokers who report being non-smokers	57	15.0 (11.1 to 18.9)	11	22.6 (13.7 to 31.4)	45	13.7 (10.9 to 16.5)	23	12.2 (3.8 to 20.5)	0.271
M6	% of true current smokers who report being never smokers	8	7.5 (1.6 to 13.4)	12	5.4 (0.0 to 10.7)	21	5.4 (1.7 to 9.1)	11	4.6 (-3.2 to 12.5)	0.922
M7	% of true current smokers who report being ex-smokers	8	5.4 (0.6 to 10.2)	12	16.4 (12.1 to 20.8)	21	6.5 (3.4 to 9.5)	11	10.1 (3.7 to 16.5)	0.002
M8	% of self-reported current smokers (plus misclassified non-smokers) who report being non-smokers	71	13.3 (10.1 to 16.4)	18	10.0 (5.4 to 14.6)	68	12.2 (10.1 to 14.4)	28	6.2 (1.3 to 11.0)	0.084
M9	% of self-reported current smokers (plus misclassified non-smokers) who report being never-smokers	9	6.9 (2.0 to 11.7)	13	4.4 (0.2 to 8.7)	32	4.3 (1.6 to 7.0)	12	3.4 (-2.3 to 9.1)	0.786
M10	% of self-reported current smokers (plus misclassified non-smokers) who report being ex-smokers	9	5.0 (0.9 to 9.1)	13	13.8 (10.3 to 17.3)	32	5.9 (3.6 to 8.1)	12	8.8 (4.0 to 13.6)	0.002

Rate	Young		Not young		All ages		Not stated		Het p
	N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	
M11 % of true non-smokers who report being current smokers	58	4.7 (3.4 to 6.0)	11	10.4 (7.4 to 13.3)	45	2.3 (1.2 to 3.3)	23	3.4 (1.0 to 5.9)	<0.001

TABLE S5 Misclassification rates by awareness that self-report would be validated by cotinine

Rate		Yes		No		Not specified		Het p
		N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	
M1	% of self-reported non-smokers whose cotinine implies current smoking	12	8.1 (4.4 to 11.8)	37	4.7 (2.9 to 6.4)	160	4.9 (4.2 to 5.6)	0.236
M2	% of self-reported never-smokers whose cotinine implies current smoking	2	3.9 (0.3 to 7.4)	11	5.2 (3.0 to 7.4)	73	2.8 (2.3 to 3.4)	0.103
M3	% of self-reported ex-smokers whose cotinine implies current smoking	9	20.2 (13.7 to 26.7)	13	13.5 (8.2 to 18.8)	66	10.0 (8.2 to 11.7)	0.009
M4	% of self-reported current smokers whose cotinine implies non-smoking	11	10.2 (2.0 to 18.4)	22	7.3 (2.2 to 12.3)	109	10.1 (7.9 to 12.3)	0.587
M5	% of true current smokers who report being non-smokers	8	18.4 (7.8 to 28.9)	20	12.3 (6.4 to 18.2)	108	14.7 (12.3 to 17.0)	0.584
M6	% of true current smokers who report being never smokers	1	4.3 (-5.5 to 14.1)	10	11.4 (3.0 to 19.8)	41	5.2 (2.5 to 7.9)	0.361
M7	% of true current smokers who report being ex-smokers	1	8.0 (-1.4 to 17.3)	10	13.4 (5.4 to 21.4)	41	8.5 (5.9 to 11.1)	0.497
M8	% of self-reported current smokers (plus misclassified non-smokers) who report being non-smokers	12	16.4 (8.1 to 24.6)	28	7.3 (3.7 to 10.8)	145	12.4 (10.7 to 14.2)	0.022
M9	% of self-reported current smokers (plus misclassified non-smokers) who report being never-smokers	2	4.2 (-4.2 to 12.5)	11	8.4 (2.1 to 14.6)	53	4.3 (2.2 to 6.3)	0.464
M10	% of self-reported current smokers (plus misclassified non-smokers) who report being ex-smokers	2	7.7 (0.0 to 15.4)	11	11.8 (6.0 to 17.6)	53	7.3 (5.4 to 9.2)	0.345
M11	% of true non-smokers who report being current smokers	8	4.7 (0.4 to 8.9)	20	4.8 (2.1 to 7.6)	109	3.5 (2.6 to 4.4)	0.585

TABLE S6 Misclassification rates by time of publication

Rate		Studies considered in the 1995 review		Studies reported before 2003		Studies reported later		Het p
		N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	
M1	% of self-reported non-smokers whose cotinine implies current smoking	28	3.6 (1.5 to 5.6)	81	5.1 (3.9 to 6.2)	100	5.1 (4.3 to 6.0)	0.367
M2	% of self-reported never-smokers whose cotinine implies current smoking	17	2.1 (0.6 to 3.5)	33	3.3 (2.3 to 4.3)	36	3.1 (2.4 to 3.8)	0.370
M3	% of self-reported ex-smokers whose cotinine implies current smoking	15	6.9 (2.4 to 11.3)	39	10.6 (7.9 to 13.3)	34	12.3 (9.9 to 14.7)	0.099
M4	% of self-reported current smokers whose cotinine implies non-smoking	11	6.8 (-1.7 to 15.4)	55	6.0 (3.5 to 8.6)	76	14.5 (11.7 to 17.3)	<0.001
M5	% of true current smokers who report being non-smokers	11	10.1 (0.9 to 19.3)	52	10.4 (7.6 to 13.2)	73	19.8 (16.8 to 22.8)	<0.001
M6	% of true current smokers who report being never smokers	5	5.4 (-3.5 to 14.2)	28	5.1 (1.7 to 8.5)	19	6.7 (2.5 to 10.9)	0.832
M7	% of true current smokers who report being ex-smokers	5	4.4 (-3.3 to 12.2)	28	7.0 (4.0 to 10.0)	19	12.8 (9.1 to 16.5)	0.031
M8	% of self-reported current smokers (plus misclassified non-smokers) who report being non-smokers	23	6.6 (2.1 to 11.1)	69	9.3 (7.0 to 11.7)	93	14.9 (12.7 to 17.1)	<0.001
M9	% of self-reported current smokers (plus misclassified non-smokers) who report being never-smokers	15	3.0 (-1.2 to 7.2)	30	4.9 (1.9 to 7.8)	21	5.3 (2.1 to 8.5)	0.665
M10	% of self-reported current smokers (plus misclassified non-smokers) who report being ex-smokers	15	4.4 (0.7 to 8.1)	30	6.9 (4.3 to 9.4)	21	10.7 (7.9 to 13.5)	0.022
M11	% of true non-smokers who report being current smokers	11	3.2 (-0.9 to 7.4)	52	2.9 (1.6 to 4.2)	74	4.2 (3.1 to 5.3)	0.300

TABLE S7 Misclassification rates by study quality

Rate		Good		Not good		Het p
		N	Rate (95% CI)	N	Rate (95% CI)	
M1	% of self-reported non-smokers whose cotinine implies current smoking	23	5.7 (4.0 to 7.3)	186	4.8 (4.1 to 5.5)	0.338
M2	% of self-reported never-smokers whose cotinine implies current smoking	9	1.6 (-0.1 to 3.3)	77	3.2 (2.6 to 3.7)	0.086
M3	% of self-reported ex-smokers whose cotinine implies current smoking	4	11.8 (3.5 to 20.2)	84	10.9 (9.1 to 12.6)	0.822
M4	% of self-reported current smokers whose cotinine implies non-smoking	21	9.8 (5.2 to 14.3)	121	9.6 (7.5 to 11.8)	0.960
M5	% of true current smokers who report being non-smokers	20	17.5 (12.3 to 22.6)	116	13.9 (11.5 to 16.2)	0.214
M6	% of true current smokers who report being never smokers	1	4.5 (-5.4 to 14.3)	51	5.8 (3.2 to 8.4)	0.798
M7	% of true current smokers who report being ex-smokers	1	4.5 (-4.7 to 13.8)	51	9.2 (6.8 to 11.7)	0.329
M8	% of self-reported current smokers (plus misclassified non-smokers) who report being non-smokers	22	15.7 (11.3 to 20.1)	163	11.0 (9.3 to 12.7)	0.051
M9	% of self-reported current smokers (plus misclassified non-smokers) who report being never-smokers	1	4.3 (-4.2 to 12.7)	65	4.7 (2.7 to 6.6)	0.930
M10	% of self-reported current smokers (plus misclassified non-smokers) who report being ex-smokers	1	4.3 (-3.5 to 12.2)	65	7.9 (6.1 to 9.7)	0.380
M11	% of true non-smokers who report being current smokers	20	3.2 (1.5 to 5.0)	117	3.8 (2.8 to 4.7)	0.612

TABLE S8 Misclassification rates in women by pregnancy

Rate		Not pregnant		Pregnant		Het p
		N	Rate (95% CI)	N	Rate (95% CI)	
M1	% of self-reported non-smokers whose cotinine implies current smoking	43	4.2 (3.0 to 5.5)	39	5.5 (4.0 to 6.9)	0.210
M2	% of self-reported never-smokers whose cotinine implies current smoking	29	3.1 (1.9 to 4.3)	2	4.5 (0.6 to 8.4)	0.499
M3	% of self-reported ex-smokers whose cotinine implies current smoking	20	7.9 (3.4 to 12.3)	13	22.7 (17.5 to 27.8)	<0.001
M4	% of self-reported current smokers whose cotinine implies non-smoking	30	10.3 (7.3 to 13.4)	29	8.5 (6.2 to 10.8)	0.349
M5	% of true current smokers who report being non-smokers	30	19.0 (12.1 to 25.9)	27	13.0 (7.3 to 18.7)	0.184
M6	% of true current smokers who report being never smokers	15	13.0 (2.9 to 23.0)	2	8.6 (-10.5 to 27.8)	0.676
M7	% of true current smokers who report being ex-smokers	15	5.2 (3.2 to 7.2)	2	9.4 (5.6 to 13.2)	0.053
M8	% of self-reported current smokers (plus misclassified non-smokers) who report being non-smokers	41	13.7 (9.0 to 18.4)	33	12.7 (7.9 to 17.4)	0.765
M9	% of self-reported current smokers (plus misclassified non-smokers) who report being never-smokers	20	9.2 (2.1 to 16.3)	2	8.1 (-8.1 to 24.4)	0.904
M10	% of self-reported current smokers (plus misclassified non-smokers) who report being ex-smokers	20	4.6 (3.2 to 6.0)	2	8.9 (5.8 to 12.0)	0.016
M11	% of true non-smokers who report being current smokers	30	2.6 (1.6 to 3.7)	28	3.4 (2.4 to 4.4)	0.301

TABLE S9 Misclassification rates by tobacco products considered

Rate		Cigarettes		Any smoking		Any tobacco		Het p
		N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	
M1	True current smokers as % of reported non-smokers	77	5.3 (4.4 to 6.2)	119	4.6 (3.8 to 5.4)	15	7.7 (4.1 to 11.3)	0.157
M2	True current smokers as % of reported never smokers	30	4.3 (3.5 to 5.2)	53	2.1 (1.5 to 2.8)	3	3.2 (0.6 to 5.8)	<0.001
M3	True current smokers as % of reported ex-smokers	36	12.5 (9.4 to 15.5)	49	9.8 (7.8 to 11.9)	3	18.5 (9.5 to 27.5)	0.091
M4	True non-smokers as % of reported current smokers	63	8.9 (6.0 to 11.8)	71	9.1 (6.6 to 11.6)	9	8.6 (-0.1 to 17.4)	0.993
M5	Reported non-smokers as % of true current smokers	61	16.5 (13.4 to 19.5)	68	12.8 (10.1 to 15.5)	8	13.3 (3.3 to 23.3)	0.208
M6	Reported never smokers as % of true current smokers	22	7.8 (4.0 to 11.6)	29	4.1 (0.6 to 7.6)	1	4.3 (-5.5 to 14.1)	0.352
M7	Reported ex-smokers as % of true current smokers	22	7.4 (3.7 to 11.0)	29	10.3 (7.0 to 13.7)	1	8.0 (-1.4 to 17.3)	0.482
M8	Reported non-smokers as % of reported current smokers (plus misclassified non-smokers)	75	14.1 (11.7 to 16.4)	99	10.0 (8.1 to 12.0)	13	12.3 (4.9 to 19.7)	0.037
M9	Reported never smokers as % of reported current smokers (plus misclassified non-smokers)	25	7.4 (4.2 to 10.6)	40	3.1 (0.7 to 5.5)	1	4.1 (-4.2 to 12.5)	0.105
M10	Reported ex-smokers as % of reported current smokers (plus misclassified non-smokers)	25	7.0 (4.0 to 10.1)	40	8.1 (5.8 to 10.4)	1	7.7 (-0.3 to 15.8)	0.846
M11	Reported current smokers as % of true non-smokers	61	2.9 (1.8 to 4.0)	69	3.6 (2.6 to 4.7)	8	5.9 (1.1 to 10.8)	0.358

TABLE S10 Misclassification rates by sex

Rate		Females		Males		Combined		Het p
		N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	
M1	% of self-reported non-smokers whose cotinine implies current smoking	83	4.8 (3.7 to 5.8)	36	6.5 (4.9 to 8.0)	94	4.7 (3.8 to 5.5)	0.122
M2	% of self-reported never-smokers whose cotinine implies current smoking	31	3.2 (2.2 to 4.2)	23	3.2 (1.6 to 4.8)	32	2.8 (2.1 to 3.6)	0.808
M3	% of self-reported ex-smokers whose cotinine implies current smoking	33	14.3 (10.7 to 17.8)	19	8.2 (4.5 to 11.9)	36	10.7 (8.5 to 12.8)	0.065
M4	% of self-reported current smokers whose cotinine implies non-smoking	59	9.3 (5.9 to 12.7)	24	7.2 (2.6 to 11.8)	61	10.8 (8.1 to 13.4)	0.407
M5	% of true current smokers who report being non-smokers	57	15.4 (11.7 to 19.2)	23	14.7 (9.7 to 19.6)	58	14.0 (11.0 to 17.0)	0.838
M6	% of true current smokers who report being never smokers	17	12.0 (6.9 to 17.1)	12	3.5 (-1.4 to 8.5)	23	4.1 (1.0 to 7.3)	0.024
M7	% of true current smokers who report being ex-smokers	17	6.1 (1.2 to 11.1)	12	6.2 (1.4 to 11.0)	23	11.1 (8.0 to 14.2)	0.110
M8	% of self-reported current smokers (plus misclassified non-smokers) who report being non-smokers	75	12.9 (10.1 to 15.7)	36	10.5 (7.4 to 13.7)	78	11.2 (9.0 to 13.5)	0.509
M9	% of self-reported current smokers (plus misclassified non-smokers) who report being never-smokers	22	9.0 (5.2 to 12.8)	18	2.8 (-0.7 to 6.4)	26	3.6 (1.0 to 6.2)	0.037
M10	% of self-reported current smokers (plus misclassified non-smokers) who report being ex-smokers	22	5.3 (1.7 to 8.9)	18	5.8 (2.5 to 9.1)	26	9.9 (7.4 to 12.3)	0.049
M11	% of true non-smokers who report being current smokers	58	3.1 (1.8 to 4.5)	23	3.8 (1.6 to 6.1)	58	4.0 (2.9 to 5.1)	0.623

TABLE S11 Misclassification rates by location

Rate	Canada/USA		Europe		Asia		Other		Het p
	N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	
M1 % of self-reported non-smokers whose cotinine implies current smoking	81	5.4 (4.3 to 6.5)	90	4.7 (3.8 to 5.6)	17	4.7 (2.9 to 6.5)	21	6.2 (2.6 to 9.8)	0.681
M2 % of self-reported never-smokers whose cotinine implies current smoking	26	3.6 (2.8 to 4.5)	48	2.2 (1.4 to 3.0)	9	3.2 (1.8 to 4.6)	3	9.0 (2.6 to 15.3)	0.026
M3 % of self-reported ex-smokers whose cotinine implies current smoking	31	15.2 (12.3 to 18.2)	43	9.5 (7.4 to 11.6)	9	5.9 (1.1 to 10.7)	5	17.8 (7.0 to 28.6)	0.002
M4 % of self-reported current smokers whose cotinine implies non-smoking	53	9.7 (6.5 to 12.9)	56	9.5 (6.7 to 12.3)	15	7.6 (1.2 to 13.9)	18	16.0 (6.5 to 25.5)	0.534
M5 % of true current smokers who report being non-smokers	49	14.5 (10.9 to 18.1)	55	14.1 (11.1 to 17.2)	14	16.5 (9.7 to 23.2)	18	14.5 (3.8 to 25.1)	0.940
M6 % of true current smokers who report being never smokers	14	6.6 (1.9 to 11.3)	27	4.1 (0.8 to 7.5)	8	9.4 (2.7 to 16.0)	3	12.5 (-7.1 to 32.1)	0.438
M7 % of true current smokers who report being ex-smokers	14	11.3 (6.9 to 15.8)	27	8.9 (5.7 to 12.0)	8	5.3 (-1.0 to 11.5)	3	2.2 (-16.2 to 20.7)	0.385
M8 % of self-reported current smokers (plus misclassified non-smokers) who report being non-smokers	75	11.6 (9.0 to 14.2)	77	10.8 (8.6 to 13.0)	15	16.5 (10.9 to 22.1)	18	12.4 (3.4 to 21.4)	0.314
M9 % of self-reported current smokers (plus misclassified non-smokers) who report being never-smokers	18	6.2 (2.3 to 10.1)	37	3.2 (0.8 to 5.5)	8	8.9 (3.3 to 14.5)	3	12.1 (-4.6 to 28.7)	0.157
M10 % of self-reported current smokers (plus misclassified non-smokers) who report being ex-smokers	18	10.4 (6.7 to 14.0)	37	7.3 (5.1 to 9.5)	8	5.0 (-0.3 to 10.3)	3	2.2 (-13.6 to 17.9)	0.299

Rate	Canada/USA		Europe		Asia		Other		Het p
	N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	N	Rate (95% CI)	
M11 % of true non-smokers who report being current smokers	49	3.9 (2.6 to 5.3)	56	3.7 (2.5 to 4.8)	14	1.8 (-0.2 to 3.9)	18	8.4 (3.9 to 13.0)	0.063

TABLE S12 Misclassification rates by the interaction of location and sex

Rate		Canada/USA				Europe							
		Females		Males		Both sexes		Females					
		N	Rate	N	Rate	N	Rate	N	Rate				
M1	% of self-reported non-smokers whose cotinine implies current smoking	33	4.34	13	7.59	35	5.30	35	4.80	15	4.23	40	4.69
M2	% of self-reported never-smokers whose cotinine implies current smoking	7	3.62	3	5.27	16	3.60	18	2.04	16	2.67	14	2.19
M3	% of self-reported ex-smokers whose cotinine implies current smoking	11	18.10	3	7.34	17	14.94	15	11.73	11	8.22	17	9.14
M4	% of self-reported current smokers whose cotinine implies non-smoking	21	9.86	8	10.87	24	9.00	26	7.60	8	7.15	22	10.55
M5	% of true current smokers who report being non-smokers	20	10.13	8	23.31	21	15.15	25	16.71	8	7.11	22	14.25
M6	% of true current smokers who report being never smokers	3	17.00	1	6.43	10	5.76	9	5.94	7	3.49	11	3.28
M7	% of true current smokers who report being ex-smokers	3	4.53	1	6.14	10	12.20	9	6.57	7	6.64	11	11.43
M8	% of self-reported current smokers (plus misclassified non-smokers) who report being non-smokers	31	10.25	13	17.65	31	9.79	31	12.86	15	5.28	31	11.97

Rate		Canada/USA						Europe					
		Females		Males		Both sexes		Females		Males		Both sexes	
		N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
M9	% of self-reported current smokers (plus misclassified non-smokers) who report being never-smokers	5	11.40	3	5.37	10	5.56	12	4.61	11	2.51	14	2.64
M10	% of self-reported current smokers (plus misclassified non-smokers) who report being ex-smokers	5	4.00	3	4.88	10	11.78	12	5.56	11	6.03	14	9.41
M11	% of true non-smokers who report being current smokers	20	4.40	8	3.89	21	3.50	26	2.63	8	4.84	22	4.00

TABLE S12 Misclassification rates by the interaction of sex and location (continued)

Rate		Asia						Other						Het p
		Females		Males		Both sexes		Females		Males		Both sexes		
N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	Het p
M1	% of self-reported non-smokers whose cotinine implies current smoking	7	5.80	3	8.03	7	2.60	6	5.70	3	14.94	12	6.00	0.367
M2	% of self-reported never-smokers whose cotinine implies current smoking	5	6.09	3	5.16	1	0.13	1	11.14	1	12.86	1	0.00	0.001
M3	% of self-reported ex-smokers whose cotinine implies current smoking	4	17.34	4	8.49	1	2.66	3	19.86	1	5.45	1	6.98	0.032
M4	% of self-reported current smokers whose cotinine implies non-smoking	6	11.89	4	2.75	5	12.62	5	10.25	3	2.31	10	19.90	0.767
M5	% of true current smokers who report being non-smokers	6	38.38	3	9.88	5	6.65	5	26.70	3	8.65	10	12.77	0.003

Rate		Asia						Other						Het p	
		Females		Males		Both sexes		Females		Males		Both sexes			
		N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate		
M6	% of true current smokers who report being never smokers	4	44.32	3	2.99	1	0.61	1	40.59	1	3.45	1	0.00	<0.001	
M7	% of true current smokers who report being ex-smokers	4	4.94	3	6.15	1	4.07	1	2.97	1	1.15	1	7.69	0.859	
M8	% of self-reported current smokers (plus misclassified non-smokers) who report being non-smokers	6	35.44	3	9.64	6	12.00	5	24.63	3	8.47	10	10.49	0.001	
M9	% of self-reported current smokers (plus misclassified non-smokers) who report being never-smokers	4	43.25	3	2.91	1	0.56	1	36.94	1	3.44	1	0.00	<0.001	
M10	% of self-reported current smokers (plus misclassified non-smokers) who report being ex-smokers	4	4.82	3	5.98	1	3.74	1	2.70	1	1.15	1	7.32	0.643	
M11	% of true non-smokers who report being current smokers	6	1.20	3	2.20	5	2.57	5	3.44	3	4.21	10	10.04	0.480	