

## Additional file 2 - Summary of study diagnostic process characteristics and associations found between smoking and gestational diabetes.

Author, year	Screening characteristics	Diabetes assessment	GDM criteria	Categories of smoking	Crude odds ratio with 95% CI	Adjusted odds ratio with 95% CI	Comments
Terry et al., 2003 [23]	Selective; Random blood glucose ( $\geq 126\text{mg/dl}$ ) in high risk patients (diabetes heredity, previous GDM, overweight, or previous baby $>4.5\text{kg}$ )	2-h 75-g OGTT	WHO (Fasting $\geq 140\text{mg/dl}$ or 2h $\geq 160\text{mg/dl}$ ) and during 1987-1991, a 2h $> 140\text{mg/dl}$ ).	Non smokers Smokers 1-9 cig/day $\geq 10$ cig/day	1.0 0.93 (0.78-1.10)	1.0 1.10 (0.81-1.49) 1.08 (0.71-1.63)	If smokers are less obese, they are less likely to be screened. As such, investigated smokers may have higher rates of obesity than in universal screening samples. Does not take weight change during pregnancy in account.
England et al., 2004 [24]	Universal; 50 g GC according with procedures of individual medical centers (independent of fasting state). Used thresholds: 140mg/dl and 135mg/dl, depending on the medical center.	3-h 100-g OGTT	National Diabetes Data Group (F $\geq 105\text{mg/dl}$ , 1h $\geq 190\text{mg/dl}$ , 2h $\geq 165\text{mg/dl}$ or 3h $\geq 145\text{mg/dl}$ ) or 1h 50g $\geq 200\text{mg/dl}$  Carpenter and Coustan ( $>95$ , 180, 155, 140mg/dL for fasting, 1-hour, 2-hour and 3-hour post OGTT).	Never smoked Quit before pregnancy Quit during pregnancy Smoked 1-9 cig/day 10-19 cig/day $\geq 20$ cig/day	1.0   2.6 (1.5-4.4)	1.0 0.8 (0.3-2.1) 1.4 (0.6-2.9) 1.9 (1.0-3.6) 1.8 (0.8-3.9) 2.9 (1.2-6.9) 2.1 (0.4-10.2)	Lack of standardization of screening procedure. Only nulliparas were included do not allowing investigation of the effect of parity. Does not take weight change during pregnancy in to account.
Cnattingius et al., 2002 [69]	Not stated	Medical records	ICD code – GDM diagnosis using WHO definition (Fasting $\geq 140\text{mg/dl}$ or 2h $\geq 160\text{mg/dl}$ )	Non-daily smoking 1-9 cig/day $\geq 10$ cig/day		1.0 0.9 (0.8-1.0) 0.9 (0.9-1.1)	Did not report screening procedure. Does not take weight change during pregnancy in to account.
Xiong et al., 2001 [60]	Universal; 50-g GC ( $\geq 140\text{mg/dl}$ )	3-h 100-g OGTT	National Diabetes Data Group (F $\geq 105\text{mg/dl}$ , 1h $\geq 190\text{mg/dl}$ , 2h $\geq 165\text{mg/dl}$ or 3h $\geq 145\text{mg/dl}$ )	Not smoking Smoking in pregnancy	1.0 0.81 (0.77-0.92)	1.0 0.96 (0.87-1.05)	Does not take BMI or weight change during pregnancy in to account.
Rodrigues et al., 1999 [66]	Universal; 50-g GC ( $\geq 140\text{mg/dl}$ )	3-h 100-g OGTT	National Diabetes Data Group (F $\geq 105\text{mg/dl}$ , 1h $\geq 190\text{mg/dl}$ , 2h $\geq 165\text{mg/dl}$ or 3h $\geq 145\text{mg/dl}$ )	Not smoking Smoking in pregnancy		1.0 0.77 (0.38-1.51) – Cree 0.96 (0.51-1.73) – Non- native	Does not take BMI or weight change during pregnancy in to account.
Wendland et al., 2007 [59]	Universal; Fasting blood glucose	2-h 75-g OGTT	WHO (Fasting $\geq 140\text{mg/dl}$ or 2h $\geq 160\text{mg/dl}$ )	Never smoked Quit before pregnancy Quit during pregnancy Current smokers	1.0   0.87 (0.65-1.16)	1.0 0.75 (0.53-1.06) 0.53 (0.31-0.90) 0.74 (0.53-1.04)	

## Additional file 2 - continued

Cosson et al., 2006 [65]	Selective + universal.	2-h 75-g OGTT	Fasting glucose > 95mg/dl, 2-hr glucose >140mg/dl, or both.	Not smoking Smoking in pregnancy	1.0 0.65 (0.48-0.90)	No adjustments. No information about exposure assessment.
Berkowitz et al., 1992 [61]	Selective; 50 g GC (Screening was done according with individual obstetrician criteria)	3-h 100-g OGTT	National Diabetes Data Group (F ≥ 105mg/dl, 1h ≥ 190mg/dl, 2h ≥ 165mg/dl or 3h ≥ 145mg/dl).	No smoking Smoking	1.0 0.81 (0.53-1.24) *	Lack of standardization for screening criteria. Women who quit smoking before pregnancy were assigned as smokers. No adjustments.
Bo et al., 2001 [64]	Universal with 50g GC (≥ 140mg/dl)	3-h 100-g OGTT	ADA (F ≥ 95 mg/dl, 1h ≥ 180 mg/dl, 2h ≥ 155mg/dl or 3h ≥ 140mg/dl)	Former smokers Currently smokers	1.0 1.36 (0.79-1.72)	No adjustments. No information about women who quit smoking.
Wolf et al., 2003 [63]	Universal with 50 g GC (> 140mg/dl).	3-h 100-g OGTT	ADA (F > 95 mg/dl, 1h > 180 mg/dl, 2h > 155mg/dl or 3h > 140mg/dl)	Never smoking Current smoking	1.0 0.85 (0.68-1.36)	Exclusion of higher risk women: women with GDM diagnosis early in pregnancy and with gestational hypertension or pre-eclampsia.
Ostlund et al., 2004 [62]	Selective; based on risk factors or a random blood glucose > 126mg/dl	2-h 75-g OGTT	WHO (Fasting ≥ 120 or 2h ≥ 160mg/dl).	Nonsmokers Smokers	1.0 1.01 (0.93-1.10)	No adjustments. No information about exposure assessment.
Joffe et al., 1998 [57]	Universal; 50 g GC (≥140mg/dl)	3-h 100-g OGTT	1h 50g ≥ 200mg/dl or ≥ 2 abnormal values in a 3-h 100-g OGTT (F ≥ 105mg/dl, 1h ≥ 190mg/dl, 2h ≥ 165mg/dl or 3h ≥ 145mg/dl)	Never Current smokers	1.0 2.72 (1.61-4.59)	No adjustments. No information about exposure assessment.

GC= oral glucose challenge; OGTT= oral glucose tolerance test, F = fasting

\* = calculated as Relative Risk