

Table S2. Significant factors and effect estimates for association with postpartum return to smoking

* = Studies rated as of high quality

Factor category	Factor	Studies which report a significant ($p < 0.05$) association between factors and postpartum return to smoking (All factors associated with increased risk of postpartum return to smoking unless stated otherwise)	Studies which report no association/no association following multivariable analysis (if conducted) between factors and postpartum return to smoking
Sociodemographic	Low socioeconomic status/level of deprivation	(1)* SSC=-0.215	(2)*
	Lower family income	(3)* 2.3 (1.1-4.8)	(4)* (5)* (6)*
	Maternal unemployment	Associated with reduced risk of postpartum return to smoking: (7)* 1.94 (1.60-2.35)	(8)* (9)*
	Employment status during pregnancy: not employed		(9)*
	Partner's unemployment		(9)* (10)
	Occupation		(10)
	Not managing financially	Among subgroup single mothers (2)* 1.88 (1.12-3.15)	
	No private health insurance during pregnancy		(11)* (12) (13)* (14)*
	Living with grandparent		(8)*
	Race/ethnicity	African American race/ethnicity (15)* 2.61 (1.44-4.73) Black ethnicity (11)* 2.0 (1.3-3.0) (16) $p < 0.02$ Black non-Hispanic (14)* aPR=1.25 (1.14-1.38)	(2)* (3)* (12) (13)* (17)* Aboriginal self-identification (4)*

	Education	Being less educated: (3)*<12 years 3.3 (1.4-8.0), 12 years 1.9 (1.0-3.8) (4)* 1.94 (1.09-3.46) (13)* 0.71 (0.55-0.91) (16) p<0.04 (6)* p=0.0005 (14)* aPR=1.09 (1.01-1.17)	(8)* (11)* (15)* (12) (10) (18)* (2)* (9)* (19)* (20) (21)* (22)* (5)* (17)* (14)*
	Marital/relationship status		(3)* (11)* (15)* (4)* (12) (10) (13)* (18)* (9)* (16) (5)* (17)* (23)* (14)*
	Younger maternal age	(8)* HR=2.33 (1.03-5.26) (13)* 1.26 (1.02-1.56) (14)* age <20 years (aPR=1.51 (1.24-1.84)), 20-24 years (aPR=1.39 (1.17-1.65)), or 25-34 years (aPR=1.26 (1.07-1.48)) (6)* p=0.02	(2)* (3)* (4)* (5)* (7)* (9)* (10) (11)* (12) (16) (17)* (18)* (19)* (20) (22)* (24)* (23)*
	Place of birth (North America, outside North America)		(4)*
	Region of residence Urban region of residence (vs rural)	Urban(24)* 2.3 (1.2-4.2)	(4)*
Smoking and substance use related	Increased cigarettes per day prior to pregnancy	(13)* 1.19 (1.02-1.39) (25)* 1.66 (1.14-2.4)	(3)* (9)* (10) (11)* (12) (16) (18)* (20) (23)* (26)*
	Younger age of smoking initiation		(5)* (16) (21)* (26)*
	Higher prenatal nicotine dependence/Fagerstrom score	(27)* 5.0 (1.5-16.2)	((5)* 26)*
	Higher prenatal smoking frequency		(4)*
	High craving for cigarettes	(1)* SSC=0.428	
	Feeling an urge to smoke		(28)*
	Motivation for quitting	Extrinsic motivation for quitting (29)* p=0.02 Change from intrinsic to extrinsic motivation (29)* p=0.013 Quitting only for pregnancy (28)* 4.0 (1.1-16.1) (21)* RR 2.15 (1.51-3.05) (5)* 3.7 (1.51-9.01)	
Stopped smoking prior to pregnancy	(10) p=0.003		

	Smoking any cigarettes during pregnancy	(30)* RR 2.36 (1.21–4.59)	(16)
	Greater length of abstinence/quit smoking earlier in pregnancy	(5)* 0.9 (0.76–0.96)	(2)* (12) (28)* Attempted cessation later in pregnancy(20)
	Number of previous quit attempts/success in previous quit attempts		(16)
	Smoking prior to pregnancy	Daily smoker prior to pregnancy (14)* aPR=1.80 (1.59–2.04)	(15)*
	Increased cigarette price		(13)*
	Alcohol consumption	Drinking > once a month up to 2 x weekly postpartum Subgroup analysis (2)*: married 1.90 (1.05–3.40) cohabiting (2.12 (1.11–4.04) Associated with reduced risk of postpartum return to smoking: Drinking < once a month postpartum; subgroup analysis: single mothers (2)* 0.34 (0.130.89) Not drinking alcohol at the time of becoming pregnant (7)* 0.73 (0.61 0.88)	(3)* (16) Drinking alcohol during pregnancy (7)*
	Previous recreational drug use		(10)
	Awareness of harmful effects of secondhand smoke		(8)*
	Confidence in/desire for postpartum smoking abstinence	Less confident of remaining abstinent in postpartum (30)* RR 2.42 (1.47–3.99) Less confident of not smoking for 6 months associated with relapse at 1 month (21)* RR 1.14 (1.02–1.27)	(12) (23)* Less confident of not smoking for 6 months not associated with relapse at 12 month (21)*
	Baseline belief of benefits of smoking to the woman (SBS)		(23)*

	Low confidence to not smoke in response to traditional smoking triggers		(26)*
	Low confidence to not smoke in response to infant crying	(26)* p<0.01	
	Smoking helps to cope with stressful situations	(28)* 4.7 (1.7 - 14.3)	
	Think about smoking as a response to infant crying	(26)* p<0.05	
	Thought about own health to cope with urges to smoke		(23)*
	Avoided situations where others were smoking		(23)*
	Snacked to resist urges to smoke	Never vs frequently (23)* RR=2.0 (1.1-3.8)	
	Thought about money saved in early postpartum to resist smoking	Never vs frequently (23)* RR=2.0 (1.3-2.7)	
Psychological	Total depression, anxiety and stress	Increase in total depression, anxiety and stress 0-24 weeks postpartum (12) p=0.03	
	Depression/Major depressive syndrome	Major depressive syndrome versus not (31)* 2.29 (1.01-5.74) Experienced depressive symptoms in postpartum (32) 1.77 (1.21-2.59) Anxiety and depression (33) 1.26 (1.11-1.44) Higher Beck Depression Inventory scores (25)* 1.21 (1.06-1.38) Ever struggled with depression (12) p=0.01 Had mood counselling during , pregnancy(12) p=0.02 Increase in depression 0-24 weeks postpartum (12) p=0.01	
	Postpartum depression	(11)* Sometimes 1.3 (1.0-1.7) Always/almost always 1.5 (1.1-2.0)	(4)* (18)*

	Low versus high maternal mood		(18)*
	Perceived stress, positive affect versus negative affect)		(34)*
	Psychological distress		(2)*
	Anxiety	Anxiety syndrome versus not (31)* 3.03 (1.38-7.30) Anxiety and depression (33) OR reported above under depression	
	Stressful/negative life events	> 3 stressful life events prior to pregnancy (11)* 1.6 (1.2-2.2) Experienced 3-5 stressors during pregnancy (14)* aPR=1.12 (1.01-1.24)	(15)* (18)* (33)
	Stage of change and decisional balance	High risk (high temptations to smoke, high perceived pros of smoking and average perceived cons of smoking) (19)* 4.4 (1.24 - 15.3) Risk denial (temptations to smoke close to the mean, higher than average perceived pros of smoking, lower than average perceived cons of smoking) (19)* 3.5 (1.00 - 12.52)	Ambivalent (perceived pros and cons of smoking close to group mean, temptations to smoke close to group mean)(19)* Protected (low temptations to smoke, low perceived pros of smoking, perceived cons of smoking close to the mean)(19)*
	Stages of change	Pre-contemplation (35)* p<0.05 Contemplation (35)* p<0.05 Preparation (35)* p<0.05	
	Delay discounting (measure of impulsivity)	Baseline low delay discounting (36)* 1.82 (95% CIs not reported) - OR per unit change in log of discounting scores.	
	Situational self-confidence		(23)*
	Perceived advantages and disadvantages of non-smoking, self-efficacy not to smoke	Cluster 1 'high risk' (average-value for the pros of non-smoking, raised T-value of the cons of non-smoking, below average T-value of self-efficacy) (22)* 5.77 (2.78-11.97)	

		<p>Cluster 2 'Premature group' – low T-value for pros of non-smoking, average T-values on the cons of non-smoking and average T-value on self-efficacy (22)* 5.01 (2.33–10.77)</p> <p>Cluster 3 'ambivalent group' – average T-values on pros of non-smoking, cons of smoking and self-efficacy(22)* 3.26 (1.54–6.88)</p>	
Relationship and social activity	High proportion of close associates/family who are smokers	<p>Has friends who smoke (30)* RR=1.92 (1.20–3.10) Some/most vs. none/few 3.24 (25)* (1.13-9.27)</p>	(20) (23)* (26)*
	Living with a smoker/other household members smoking	<p>(3)*3.9 (2.6-6.0) (4)*1.48 (1.06-2.07) (24)* 5.6 (3.6-8.8) (21)* RR=1.45 (1.01–2.06) (16) p<0.003 Associated with reduced risk of postpartum return to smoking (27)* 0.2 (0.07–0.8)</p>	(22)*
	Smoking environment at home	<p>(28)* 7.2 (2.2–28.3) (14)* aPR=1.27 (1.14–1.42)</p>	
	Exposure to passive smoking		(30)*
	Partner smoking	<p>Partner was a smoker during pregnancy/postpartum (2)* 1.63 (1.12–2.37) (35)* p<0.05</p> <p>Partner smokes in postpartum (30)* RR 2.60 (1.61–4.20)(7)* 3.37 (2.61–4.35)</p> <p>Partner smoked as much as before pregnancy – association with relapse at 12 months postnatal (21)* RR 1.37 (1.09–1.70)</p>	<p>(5)* (8)* (10) (12) (16) (19)* (23)* (37) Partner smoked as much as before pregnancy – no association with relapse at 1 months postnatal (21)*</p>

		Husband or Partner smoker at 6 months postpartum (9)* p=0.003 (20) p<0.05	
		Partner smoking during pregnancy(7)* 2.11 (1.66-2.68)	
	Woman's mother smoking		(37)
	Woman's father smoking		(37)
	Woman's father in law smoking		(37)
	Woman's mother in law smoking	More likely to relapse if mother in law smokers (37) p<0.05	
	Decreased parenting satisfaction		(7)*
	Lack of confidence in childrearing		(7)*
	Not spending time with child in relaxed mood		(7)*
	Low partner participation in childrearing, partner playing with child		(7)*
	Increased estimate of hours/day infant cries		(26)*
	Increased estimate of amount of infant fussiness		(26)*
	Increased estimate of intensity of fussiness/crying		(26)*
	Increased stress related to childcare		(8)*
	Maltreatment of child		(7)*
	Relationship discord		(33)
	Social support	Not talking about parenting on the internet (7)* 0.67 (0.47-0.94)	Partner to talk to (7)* Grandmother/grandfather to talk to(7)* Neighbour to talk to (7)* Friend to talk to (7)* Doctor to talk to (7)* Public health nurse or midwife to talk to (7)* Nursery school or kindergarten teacher to talk to (7)* Telephone counsellor to talk to (7)* No one to talk to (7)* Lower partner positive support style (21)*

	No one to share feelings with	Subgroup analysis: married mothers (2)* 2.15 (1.00-4.62)	
	Low Perceived helpfulness of spouse/best friend in early postpartum		(23)*
	Low perceived emotional support	(38) p=0.02	
	Low perceived informational support		(38)
	Low perceived baby assistance support		(38)
	Low perceived smoking specific support	Perceived decrease in smoking specific support (38) p=0.003	
Maternal/pregnancy related	Pregnancy intention	Unsure/unhappy about pregnancy (12) p=0.03 Pregnancy unplanned (10) p=0.03 (14)* aPR=1.11 (1.03-1.19)	(13)* (18)* (2)*
	Parity	Multiparous (15)* 1.66 (1.07-2.58) (12) p=0.01 (18)* 2.03 (1.2-3.44) (24)* ≥3 children 3.8 (2.2-6.4) (7)* 2.13 (1.77-2.57) (14)* aPR=1.20 (1.11-1.28) Among subgroups of women (2)* who were: married 1.67 (1.12-2.50) or single 2.19 (1.15-4.17)	(3)* (4)* (5)* (8)* (9)* (10) (13)* (16) (17)* (20) Among subgroup of cohabiting mothers (2)*
	Beginning antenatal care in a late trimester		(2)* (15)* (18)*
	Participation in antenatal course		(9)*
	Advice from health care worker about smoking	Receiving no advice (15)* 1.92 (1.12-3.31) (16) p<0.02	
	Not breastfeeding/not intending to breastfeed	(11)*3.9 (3.1 - 4.9) (4)* Did not breastfeed 5.6 (3.11-10.07), stopped breastfeeding 3.1 (2.11-4.54) (14)* aPR=1.34 (1.24-1.44)	(3)* (9)* (22)* (23)*

		(17)* 2.7 (1.1–6.6) (18)* 0.38 (0.23-0.63) (19)* 0.4 (0.16–1.01) (21)* RR=1.41 (1.06–1.88) (28)* 20.0 (5.8–92.9) (24)* 0.6 (0.4-0.9) Subgroup analysis (2)*: married 1.61 (1.00–2.59) cohabiting 1.67 (1.00–2.78) Breastfeeding duration <6 months(8)* HR=2.74 (1.25-5.99) Early weaning (6)* p=0.02 (16) p<0.005 (20) p < 0.05 (39)* p<0.05	
	Fewer weeks sick during pregnancy	(20) p<0.05	
	Delivery method		(8)*
	Pregnant at 12 months postpartum		(3)*
Weight	Overweight/obese BMI prior to pregnancy	Associated with reduced risk of postpartum return to smoking (11)* 0.8 (0.6–0.9)	
	Increased weight gain during pregnancy	(15)* 1.55 (1.05-2.29)	(3)*
	Belief smoking keeps weight down		(16)
	Smoking-specific weight concerns	(34)* HR=1.21 (1.02-1.24)	
	General weight concerns	(20) p<0.05 Associated with reduced risk of postpartum return to smoking - per unit increase on 0-10 point scale. (25)* 0.76 (0.62-0.93)	(34)*
	Perceived likelihood will return to desired weight by 6 months postpartum		(23)*
Infant related	Birthweight		(3)* (8)* (14)*
	Infant gender		(8)*

	Higher infant age at survey	(11)* 4-5 months 1.8 (1.4-2.3) 6+ months OR 2.3 (1.4-3.8)	(4)* (15)*
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SSC= Standardised structural coefficient, HR=Hazard ratio, aPR=Adjusted prevalence ratio, RR=Risk ratio

Where an effect estimate was not provided a p value is given.

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