ONLINE SUPPLEMENTARY INFORMATION to
Stopping when knowing – use of snus and nicotine during pregnancy in Scandinavia

Methods

Use of all types of tobacco and nicotine products were recorded in terms of what time period in life they used each type of product, and how often the products were used ('less than once a week', '1-2 days a week', '3-5 days a week' and 'daily'). In case snus use or cigarette smoking was stopped before, or in relation to pregnancy, we asked for details of when they stopped in the following categories:

"stopped years ago", "stopped in the time before pregnancy", and "stopped when recognising the pregnancy".

In case of current use in pregnancy, we asked for the average number of cigarettes/snus portions used per day. Women reporting 'stopped when recognised pregnancy', were asked to record at which week of pregnancy they stopped smoking cigarettes or using snus. The use of e-cigarettes and NRTs (nicotine replacement therapies) were specified with regard to timing and frequency: 'never', 'stopped before pregnancy/when recognised pregnancy', 'rarely', 'monthly', 'weekly', 'daily' or 'unknown'.

The 185 women who answered 'no' to ever use of a nicotine-containing product, but 'yes' to ever use of snus, were re-categorised into 'yes' to the question of ever use of any tobacco- or nicotine-containing product. In the same question the category 'do not know' was recoded into 'no'. This was only relevant for two women who did not report any use of any type of tobacco in the questionnaires.

In six cases there were discrepant answers on time for quitting tobacco use in the 18- and 34-week questionnaire, which we interpreted as recall bias or misinterpretation, e.g. when the 34-week answer for quitting was earlier than previously reported in the 18-week questionnaire. For the six women with conflicting responses with regard to pregnancy week when stopping the use of tobacco- or nicotine containing products in the 18- and 34-week

questionnaires, corrections were made upon the assumption that the 18-week questionnaire response overrode the 34-week questionnaire, with details given in the online supplement (**table S2**).

Results

Overall, 35.7% of the 2350 women completing the 18-week questionnaire reported ever use of any type of snus or nicotine-containing products, with similar snus use and smoking rates. The significantly higher prevalence of nicotine use in Norway (37.4%) compared to Sweden (30.1%) (p=0.002), was predominantly related to ever use of snus in Norway (p=0.003).

In total 9.6% reported stopping snus use and 14.4% stopped smoking cigarettes years before pregnancy. In time before pregnancy, not specifically specified, overall 5.9% reported stopping use of snus and 3.3% stopping smoking cigarettes. There was a significantly higher prevalence in Norway (6.6%) compared to Sweden (3.4%) (p=0.005) for snus users stopping in time before pregnancy.

Of the 0.6% who reported current use of snus in pregnancy, nine women were daily users; two women used snus 3-5 times a week, and two less than once a week. Among the daily snus users the following categories were answered; three used 3-4 portions, four 5-6 portions and two more than 11 portions of snus a day.

Relapses after quitting snus or smoking in pregnancy was uncommon, with six (0.03%) relapsing to snus use and one to cigarette smoking between 18 and 34 weeks of pregnancy. Additionally one woman who used snus prior to becoming pregnant started using snus after 18 weeks, while two started cigarette smoking after 18 weeks pregnancy; one of them also used snus during pregnancy. Further details of the relapsing use were not obtained.

Table S1 Background characteristics of the study population by study location.

	The PreventADALL cohort n= 2701				
		Included* (%)			p-value
	Total n (%)	Oslo n (%)	Østfold n (%)	Stockholm n (%)	(By study location)
Responded ≥ 1 Q	**2528 (93.6)**	**1629 (64.4)**	**356 (14.1)**	**543 (21.5)**	
Completed 18 W Q	2350 (87.0)	1489 (63.4)	329 (14.0)	532 (22.6)	
Completed 34 W Q	2365 (87.6)	1535 (64.9)	318 (13.5)	512 (21.7)	
Maternal characteristics entire cohort					
Maternal age					
- year mean (min-max) n=2527	32.1 (20-48)	32.7 (21-48)	30.7 (20-43)	32.6 (20-47)	0.000**
Pre-pregnancy BMI					
- mean (min-max) n=2460	23.2 (13.8-45.7)	22.9 (16.9-44.2)	24.5 (16.1-45.7)	23.0 (13.8-40.9)	0.000**
Weight at inclusion					
- kg mean (min-max) n=2498	70.2 (44.8-132.7)	69.4 (44.8-123.4)	72.8 (46.0-132.7)	71.0 (48.8-124.7)	0.000**
Pre-pregnancy weight					
- kg mean (min-max) n=2471	65.4 (42.5-126.0)	65.0 (42.5-124.0)	68.8 (45.0-126.0)	64.5 (43.0-115.0)	0.000**
Height at inclusion					
- cm mean (min-max) n=2491	168.0 (147.0-187.0)	168.3 (147.0-186.2)	167.6 (148.0-187.0)	167.5 (151.0-185.9)	0.019**
Background characteristics included* n (%)					
In vitro fertilisation					
n=2334					
Yes	187 (8.0)	109 (7.3)	20 (6.2)	58 (11.0)	0.004**
No	2147 (92.0)	1374 (92.7)	304 (93.8)	469 (89.0)	
Education					
n=2341					0.000**
Preliminary school only (9/10 years)	18 (0.8)	3 (0.2)	7 (2.1)	8 (1.5)	
High school only	239 (10.2)	69 (4.7)	75 (23.0)	95 (17.9)	
Higher education <4 years	758 (32.4)	439 (29.6)	151 (46.3)	168 (31.6)	

Higher education ≥4 years	1324 (56.6)	971 (65.5)	92 (28.2)	261 (49.1)	
Other	2 (0.1)	1 (0.1)	1 (0.3)	0	

Previous pregnancies***

n=1292	1292 (55.0)	772 (51.8)	206 (62.6)	314 (59.0)	0.000**

Previous pregnancies***

n=1292					0.004**
1	652 (50.5)	413 (53.5)	102 (49.5)	137 (43.6)	
2	377 (29.2)	226 (29.3)	61 (29.6)	90 (28.7)	
3	143 (11.1)	82 (10.6)	26 (12.6)	35 (11.1)	
4	70 (5.4)	30 (3.9)	12 (5.8)	28 (8.9)	
≥5	50 (3.9)	21 (2.7)	5 (2.4)	24 (7.7)	

Living environment

n=2350					0.000**
City, densely populated	916 (39.0)	752 (50.5)	31 (9.4)	133 (25.0)	
City, less densely populated	882 (37.5)	576 (38.7)	157 (47.7)	149 (28.0)	
Suburb	373 (15.9)	115 (7.7)	22 (6.7)	236 (44.4)	
Village	127 (5.4)	36 (2.4)	84 (25.5)	7 (1.3)	
Countryside, outside village	52 (2.2)	10 (0.7)	35 (10.6)	7 (1.3)	

Country of origin

n=2350					0.31
Norway or Sweden	2085 (88.7)	1315 (88.3)	300 (91.2)	470 (88.3)	
Rest of the world and other Nordic countries	265 (11.3)	174 (11.7)	29 (8.8)	62 (11.7)	

Marital status

n=2350					0.16
Married	968 (41.2)	598 (40.2)	136 (41.3)	234 (44.0)	
Cohabitant	1313 (55.9)	847 (56.9)	182 (55.3)	284 (53.4)	
Single	44 (1.9)	30 (2.0)	4 (1.2)	10 (1.9)	
Divorced/separated	1 (0.04)	0	1 (0.3)	0	

Other	24 (1.0)	14 (0.9)	6 (1.8)	4 (0.8)

Household income in NOK

n=2350 | | | | | 0.000**

<300 000	30 (1.3)	17 (1.1)	6 (1.8)	7 (1.3)
300 000-600 00	307 (13.1)	125 (8.4)	58 (17.6)	124 (23.3)
600 000-1 000 000	959 (40.8)	494 (33.2)	187 (56.8)	278 (52.3)
1 000 000-1 400 000	743 (31.6)	605 (40.6)	59 (17.9)	79 (14.8)
>1 400 000	270 (11.5)	231 (15.5)	11 (3.3)	28 (5.3)
Do not want to answer	41 (1.7)	17 (1.1)	8 (2.4)	16 (3.0)

In utero smoking exposure of the

index women n=2350 | | | | | 0.000**

No	1768 (75.2)	1124 (75.5)	223 (67.8)	421 (79.1)
Yes	339 (14.4)	201 (13.5)	72 (21.9)	66 (12.4)
Unknown	243 (10.3)	164 (11.0)	34 (10.3)	45 (8.5)

Household smoking

n=2350 | | | | | 0.002**

No	2223 (94.6)	1417 (95.2)	298 (90.6)	508 (95.5)
Yes	127 (5.4)	72 (4.8)	31 (9.4)	24 (4.5)

*Completed min. 1 questionnaire, **Significant p-value, ***number of reported pregnancies, excl. current

n= number (indicates the number of available data points for each variable), W = week, Q = questionnaire, min=minimum, max = maximum, BMI = body mass index, NOK = Norwegian krone (Norwegian currency)

Table S2 – Details on corrections for statistical analyses

Woman	Q18W			Q34W		Old value(s)*&**	New values	Comment
	Pregnancy week @Q18W completion	Snus @Q18W	Quit snus by Q18W	Snus @Q18-34W	Quit snus Q18-34W			
1	20	4 (current use)	.	1 (have quit)	1 (<w17)*	1	4 (w21-24)	Can´t have quit in pregnancy w17 as still snus use w20
2	18	4 (current use)	.	0 (no)*	.**	0*, .**	1*, 3**	Give quit close to Q18W
3	19	4 (current use)	.	0 (no)*	.**	0*, .**	1*, 4**	Closest quit week is w21-24
4	23	3 (quit when recognised pregnancy)	3 (quit when recognised pregnancy)	1 (not in PreventADALL)*	3 (w19-20)**	1*, 3**	0*, .**	Quit by w23, retain 1st response, delete error @Q34W
	Q18W			Q34W				
	Pregnancy week @Q18W completion	Cigarette smoke @Q18W	Quit smoke by Q18W	Cigarette smoke @Q18-34W	Quit smoke Q18-34W	Old value(s)*&**	New values	Comment
5	18	4 (current use)	.	1 (have quit)	1 (<w17)*	1*	3 (w19-20)	Quit first possible after w18
6	22	3 (quit when recognised pregnancy)	3 (w5-6)	1 (have quit)*	3 (w19-20)**	1*, 3**	0*, .**	If relapse, not possible in that period since reported quit snus in real time

. = missing value

* = first value changed

** = second value changed

W = week

Figure S1

The prevalence of snus, cigarette smoke or both stratified by country, based upon all 2350 women responding to the 18-week questionnaire. The percentages include use ever in life, stopped before pregnancy and use in pregnancy by 18 weeks. The prevalence of NRTs and e-cigarettes was low and not included in the figure.
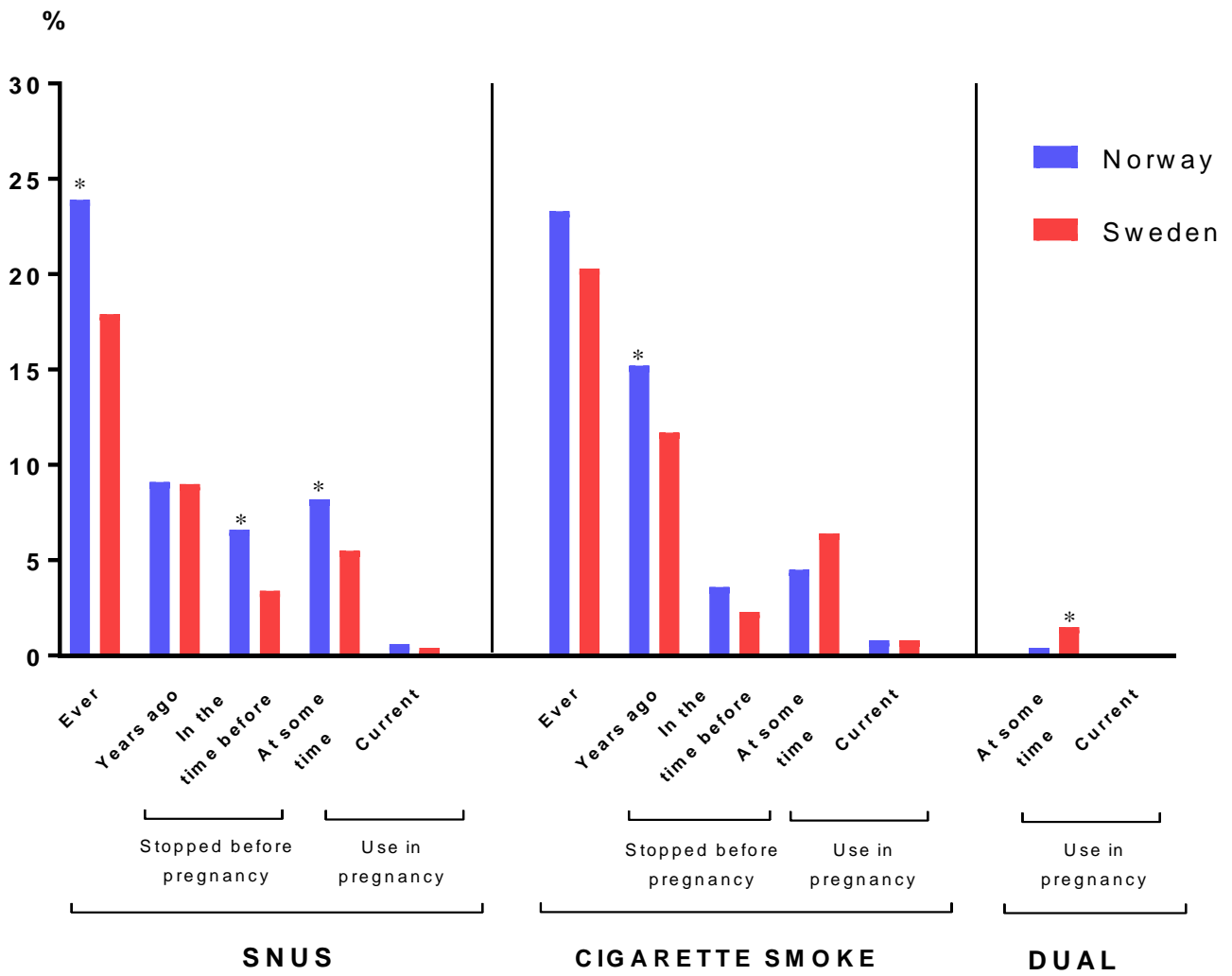
*p-value ≤ 0.05

%

Figure S2

The odds ratio (95% confidence interval) for reporting snus use at some time in pregnancy is given based upon area of living among 2350 women, adjusted for age, marital status, history of smoking, in-utero exposure to cigarette smoking by their mother and country of origin. The reference category was living in a village, and * indicates a p-value<0.05.