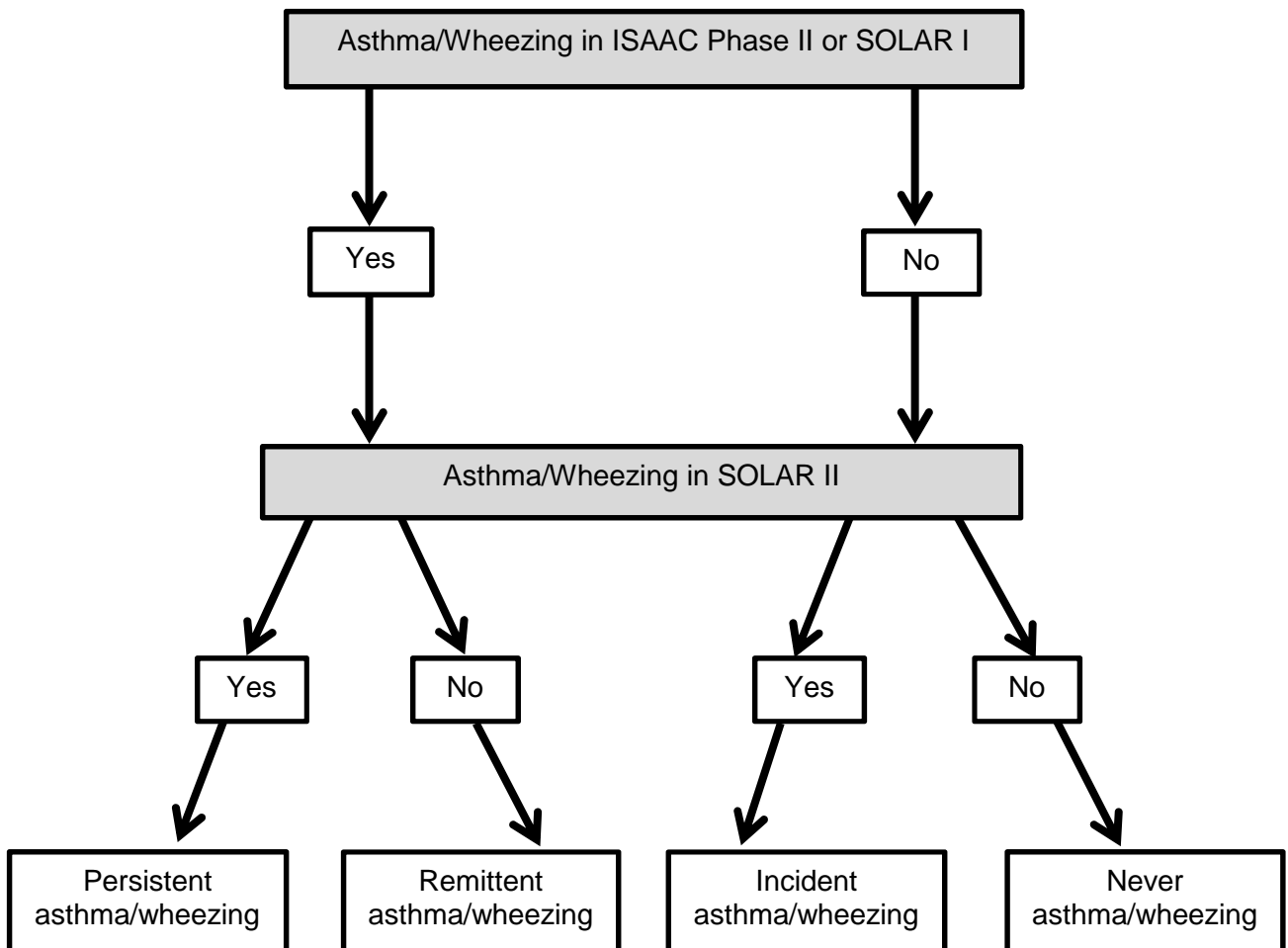


ONLINE SUPPLEMENT

S1: Flowchart depicting the definition of the four mutually exclusive categories (never, incident, persistent, remittent) for the two outcomes asthma and wheezing according to their presence in ISAAC Phase II (N=7498), SOLAR I (N=3785) and SOLAR II (N=2051). The process of follow-up of the participants from ISAAC Phase II to SOLAR II is depicted in detail in figure 1.



S2: Description of the frequency of use of the different sprays and disinfectants in the study sample (N=1695)

		Missing	N	%
Sprays				
	Furniture spray	22		
	never		1561	92.1
	<1 day per week		98	5.8
	1 – 3 days per week		9	0.5
	4-7 days per week		5	0.3
	Glass cleaner	23		
	never		606	35.8
	<1 day per week		878	51.8
	1-3 days per week		126	7.4
	4-7 days per week		62	3.7
	Sprays for carpets or drapes	26		
	never		1521	89.7
	<1 day per week		126	7.4
	1-3 days per week		15	0.9
	4-7 days per week		7	0.4
	Oven cleaner	26		
	never		1423	84.0
	<1 day per week		231	13.6
	1-3 days per week		3	0.2
	4-7 days per week		12	0.7
	Ironing spray	26		
	never		1584	93.5
	<1 day per week		73	4.3
	1-3 days per week		10	0.6
	4-7 days per week		2	0.1
	Room spray	26		
	never		1153	68.0
	<1 day per week		283	16.7
	1-3 days per week		143	8.4
	4-7 days per week		90	5.3
	Cleaning spray	8		
	never		1647	97.2
	<1 day per week		24	1.4
	1-3 days per week		16	0.9
	4-7 days per week		8	0.5
	Personal hygiene spray	0		
	never		1381	81.5
	<1 day per week		23	1.4
	1-3 days per week		46	2.7
	4-7 days per week		245	14.5

Any other spray	27		
never		1654	97.6
<1 day per week		8	0.5
1-3 days per week		6	0.4
4-7 days per week		27	1.6
Disinfectants			
Spray disinfection	59		
never		1400	82.6
<1 day per week		155	9.1
1-3 days per week		47	2.8
4-7 days per week		34	2.0
Hand wash disinfection	67		
never		1498	88.4
<1 day per week		57	3.4
1-3 days per week		39	2.3
4-7 days per week		34	2.0
Disinfection with the machine	79		
never		1588	93.7
<1 day per week		17	1.0
1-3 days per week		5	0.3
4-7 days per week		6	0.4
Cleaning surfaces with a sponge with disinfectant	55		
never		1412	83.3
<1 day per week		150	8.8
1-3 days per week		43	2.5
4-7 days per week		35	2.1
Scrubbing the floor with disinfectant	70		
never		1529	90.2
<1 day per week		74	4.4
1-3 days per week		12	0.7
4-7 days per week		10	0.6
Other disinfection methods	111		
never		1540	90.9
<1 day per week		25	1.5
1-3 days per week		8	0.5
4-7 days per week		11	0.6

S3: Results from the multinomial logistic regression analyses including only current students without high-risk occupational exposure to sensitisers (N=633).

	Incident asthma*		Persistent asthma*		Remittent asthma*	
	OR	95% CI	OR	95% CI	OR	95% CI
Spray use	Reference		Reference		Reference	
No	Reference		Reference		Reference	
Low use	0.36	0.04-3.03	1.60	0.54-4.70	1.22	0.33-4.56
Medium use	0.36	0.06-2.15	0.81	0.27-2.48	0.89	0.27-3.00
High use	1.03	0.10-2.34	1.48	0.31-7.05	4.18	1.13-15.48
	Incident asthma*		Persistent asthma*		Remittent asthma*	
	OR	95% CI	OR	95% CI	OR	95% CI
Disinfectant use	Reference		Reference		Reference	
No	Reference		Reference		Reference	
Yes	0.81	0.09-6.97	0.93	0.30-2.92	0.97	0.28-3.31
	Incident wheezing**		Persistent wheezing**		Remittent wheezing**	
	OR	95% CI	OR	95% CI	OR	95% CI
Spray use	Reference		Reference		Reference	
No	Reference		Reference		Reference	
Low use	2.60	1.01-6.67	1.35	0.61-2.97	1.68	0.81-3.50
Medium use	1.87	0.74-4.69	1.32	0.64-2.75	1.46	0.73-2.94
High use	3.32	1.05-10.43	1.16	0.37-3.66	1.61	0.59-4.42
	Incident wheezing**		Persistent wheezing**		Remittent wheezing**	
	OR	95% CI	OR	95% CI	OR	95% CI
Disinfectant use	Reference		Reference		Reference	
No use	Reference		Reference		Reference	
Low/medium use	2.59	1.05-6.34	0.78	0.26-2.34	1.04	0.40-2.71
High use	1.00	0.34-2.96	1.79	0.19-1.64	0.75	0.30-1.90

OR: odds ratio; 95% CI: 95% confidence interval; all models adjusted for age, sex, socio-economic status, smoking and study centre

*compared to never asthma

** compared to never wheezing