

Supplementary material

## Changes in household use of disinfectants and cleaning products during the first lockdown period in France

**Figure S1a.** SAPRIS questionnaire in the NutriNet-Santé cohort

SAPRIS Q1 – 1. In the last 7 days, on how many days a week did you perform home cleaning?

\_\_ minute(s) \_\_ hour(s)

SAPRIS Q1 – 2. In the last 7 days, have you received any help to do home cleaning from relatives, a household employee or an association?

1. *Yes*
2. *No, I don't need it*
3. *No, I did not need it*
4. *No, but I would need it*

SAPRIS Q1 – 3. Currently in your home, who is in charge of household tasks?

- 1 *Always myself*
- 2 *Most often myself*
- 3 *Both myself and my spouse*
- 4 *Most often my spouse*
- 5 *Always my spouse*
- 6 *Always or most often other family members*

SAPRIS Q1 – 4. Since the lockdown period, how much total time per week do you use cleaning products in liquid form, foam, wipe, spray, etc.?

1. *Never*
2. *Less than 10 minutes per week*
3. *Between 10 to 30 minutes per week*
4. *Between 30 minutes to 1 hour per week*
5. *Between 1 to 2 hours per week*
6. *More than 2 hours per week*

SAPRIS Q1 – 5. Since the lockdown period, do you use some cleaning products more frequently?

1. *Yes*

Which one(s)?

1. *Hand sanitizer*
2. *White vinegar*
3. *Bleach*
4. *Other disinfectants in liquid form, foam, spray or wipe*
5. *Other cleaning products*

2. *No*

**Figure S1b.** SAPRIS questionnaire in the CONSTANCES cohort

SAPRIS Q1 – 1. In the last 7 days, on how many days a week did you perform home cleaning?

1. *0 minutes*
2. *Less than 30 minutes*
3. *Between 30 minutes and less than 1 hour*
4. *Between 1 hour and less than 2 hours*
5. *Between 2 hours and less than 4 hours*
6. *Between 4 hours and less than 6 hours*
7. *6 hours and more*

SAPRIS Q1 – 2. In the last 7 days, have you received any help to do home cleaning from relatives, a household employee or an association?

1. *Yes*
2. *No, I don't need it*
3. *No, but I would need it*

SAPRIS Q1 – 3. Currently in your home, who is in charge of household tasks?

1. *Always myself*
2. *Most often myself*
3. *Both myself and my spouse*
4. *Most often my spouse*
5. *Always my spouse*
6. *Always or most often other family members*
7. *Both myself and other family members*

SAPRIS Q2 – 1. Since the lockdown period, how much total time per week do you use cleaning products in liquid form, foam, wipe, spray, etc.?

1. *Never*
2. *Less than 10 minutes per week*
3. *Between 10 to 30 minutes per week*
4. *Between 30 minutes to 1 hour per week*
5. *Between 1 to 2 hours per week*
6. *More than 2 hours per week*

SAPRIS Q2 – 2. Since the lockdown period, do you use some cleaning products more frequently?

1. *Hand sanitizer*
2. *White vinegar*
3. *Bleach*
4. *Other disinfectants in liquid form, foam, spray or wipe*
5. *Other cleaning products*
6. *None of these products*

**Table S1.** Included and excluded participants characteristics

	Participants of the NutriNet-Santé Study			Participants of the CONSTANCES study				
	Study population n = 31,105	Missing data for SAPRIS questionnaire n = 8,038	p	Study population n = 49,491	Paper questionnaire and no invitation for SAPRIS n = 58,390	p	Participants excluded from the analyses Missing data Q1 and Q2 of the SAPRIS web questionnaire n = 9,677	p
<b>Gender, n (%)</b>								
Men	7,822 (25.2)	1,792 (22.3)	<0.0001	24,288 (49.1)	24,255 (41.5)	<0.0001	4,974 (51.4)	<0.0001
Women	23,283 (74.8)	6,246 (77.7)		25,203 (50.9)	34,135 (58.5)		4,702 (48.6)	
<b>Age (years), mean ± s.d</b>	48.2 ± 13.6	44.6 ± 15.1	<0.0001	47.5 ± 13.1	50.1 ± 13.1	<0.0001	43.8 ± 13.1	0.002
<b>Smoking status, n (%)</b>								
Never smoker	15,718 (50.8)	4,084 (51.4)	<0.0001	24,398 (50.8)	27,209 (48.6)	<0.0001	4,657 (49.6)	<0.0001
Ex-smoker	11,488 (37.2)	2,691 (33.9)		17,279 (35.9)	19,688 (35.2)		3,163 (33.7)	
Current smoker	3,722 (12.0)	1,165 (14.7)		6,391 (13.3)	9,087 (16.2)		1,564 (16.7)	
<b>BMI (Body Mass Index - kg/m<sup>2</sup>), n (%)</b>								
< 25	20,936 (68.1)	5,321 (67.3)	<0.0001	29,436 (61.1)	31,264 (55.1)	<0.0001	5,722 (60.7)	0.045
[25 – 30[	7,200 (23.4)	1,778 (22.5)		14,228 (29.6)	18,006 (31.7)		2,739 (29.0)	
≥ 30	2,627 (8.5)	810 (10.2)		4,501 (9.3)	7,521 (13.2)		967 (10.3)	
<b>Educational level, n (%)</b>								
<high school diploma	6,410 (19.4)	1,516 (20.5)	<0.0001	6,384 (13.0)	17,292 (30.2)	<0.0001	1,415 (14.8)	<0.0001
high school to 1-year post-secondary	5,233 (15.9)	1,305 (17.7)		6,933 (14.2)	9,812 (17.1)		1,502 (15.7)	
2-3 years post-secondary	9,257 (28.0)	2,056 (27.8)		13,675 (27.9)	14,753 (25.7)		2,741(28.7)	
>3 years post-secondary	12,135 (36.7)	2,512 (34.0)		22,009 (44.9)	15,440 (27.0)		3,906 (40.8)	

Comparison of participants included in our study population with those excluded from the analysis by Chi-squared tests for categorial variables and t-tests for continuous variables (age).

**Table S2.** Household cleaning habits in 2018/2019 and since the lockdown period

	Participants of the NutriNet-Santé study, n = 31,105			Participants of the CONSTANCES study, n = 49,491			
	Household exposure questionnaire of 2018	SAPRIS Q1 <sup>1</sup> , during lockdown	p	Household exposure questionnaire of 2019	SAPRIS Q1 <sup>1</sup> , during lockdown	SAPRIS Q2 <sup>2</sup> , after lockdown	p
<b>Household help, %</b>	40.1	5.4	<0.0001	55.6	2.9	-	<0.0001
By the participant		33.8			9.4		
Most often by the participant		26.1			24.1		
Both by the participant and his/her spouse		26.8			39.5		
Most often by the participants' spouse	-	9.9		-	18.9		
By the participants' spouse		1.8			1.8	-	
By other family members		1.6			4.9		
Both by the participant and other family members		-			1.4		
<b>Home cleaning, %</b>							
<1 day/week	37.3	1.0	<0.0001	43.1	0.3		<0.0001
≥1 day/week	62.7	99.0		56.9	99.7		
0 minute/week		1.0			0.3		
<30 minutes/week		1.3			8.5		
30 minutes-1 hour/week		5.8			27.0		
1-2 hours/week	-	30.4		-	40.4	-	
2-4 hours/week		47.8			20.8		
4-6 hours/week		9.5			2.5		
≥6 hours/week		4.2			0.5		
<b>Frequency of use, %</b>							
Unchanged	-	45.3		-	-	16.6	
Increased <sup>3</sup>		54.7				83.4	
Hand sanitizer, %		44.0				78.5	
White vinegar, %		34.6				63.3	
Bleach, %	-	29.7		-	-	54.0	
Disinfectants, %		30.4				60.3	
Other cleaning products, %		32.1				66.0	
<b>Duration of use, %</b>							
<1 day/week	42.2	22.8	<0.0001	8.7		4.2	<0.0001
<10 minutes/week	21.9	13.4		48.5	-	11.2	
10-30 minutes/week	18.1	19.5		27.2		21.5	
> 30 minutes/week	17.8	44.3		15.6		63.1	

<sup>1</sup> Q1 questionnaire was asked from April 1 to May 12, 2020 during the first lockdown period in France (March 17 to May 3, 2020)

<sup>2</sup> Q2 questionnaire was asked from May 5 to June 15, 2020 right after the first lockdown period in France

<sup>3</sup> Increased use: participants who reported an increased use of at least one of the five HDCPs studied (hand sanitizer, white vinegar, bleach, disinfectants, other cleaning products)

Comparison of household cleaning habits in 2018/2019 and since the lockdown period by a McNemar's test for household help and home cleaning and a Bhapkar test for the duration of weekly use of HDCPs.

**Table S3.** Duration of weekly use of HDCPS in 2018/2019 and since the lockdown period according to age for men and women

Participants of the NutriNet-Santé study, n = 31,105							Participants of the CONSTANCES study, n = 49,491					
<45 ans n = 11,468			≥45 ans n = 21,766				<45 ans n = 21,766			≥45 ans n = 19,437		
	In 2018	Lockdown	p	In 2018	Lockdown	p	In 2019	Lockdown	p	In 2019	Lockdown	p
<b>Men</b>												
Duration of use, %												
<1 day/week	47.9	28.4	<0.0001	59.6	27.1	<0.0001	9.1	5.0	<0.0001	13.0	5.7	<0.0001
<10 minutes/week	23.3	18.4		22.2	15.6		51.4	16.2		54.8	14.0	
10-30 minutes/week	17.3	21.2		11.7	21.8		26.4	26.5		22.8	24.7	
> 30 minutes/week	11.5	32.0		6.5	35.5		13.1	52.3		9.4	55.6	
<b>Women</b>												
Duration of use, %												
<1 day/week	31.2	21.3	<0.0001	41.4	21.0	<0.0001	5.6	2.8	<0.0001	6.5	3.2	<0.0001
<10 minutes/week	20.0	13.3		22.9	11.7		40.7	9.2		46.6	6.5	
10-30 minutes/week	21.9	20.0		18.4	18.1		30.3	19.9		29.9	15.8	
> 30 minutes/week	26.9	45.4		17.3	49.2		23.4	68.1		17.0	74.5	

The question about the duration of weekly use of HDCPs was asked at two different time-points in NutriNet-Santé (Q1: April 1-May 12, 2020) and in CONSTANCES (Q2: May 5-June 15, 2020). Comparison of the duration of weekly use of HDCPs in 2018/2019 and during the first lockdown period in France (March 17 to May 3, 2020) by a Bhapkar test.

**Table S4.** Duration of weekly use of HDCPS in 2018/2019 and since the lockdown period according to educational level for men and women

Participants of the NutriNet-Santé study, n = 31,105							Participants of the CONSTANCES study, n = 49,491					
≤high school diploma n = 10,238			>high school diploma n = 18,544				≤high school diploma n = 13,317			>high school diploma n = 35,684		
In 2018	Lockdown	p	In 2018	Lockdown	p	In 2019	Lockdown	p	In 2019	Lockdown	p	
<b>Men</b>												
Duration of use, %												
<1 day/week	58.1	27.4	<0.0001	56.1	27.8	<0.0001	11.8	5.6	<0.0001	11.3	5.4	<0.0001
<10 minutes/week	21.2	14.7		22.9	17.5		51.8	13.1		54.0	15.5	
10-30 minutes/week	12.4	21.3		13.6	21.6		25.3	24.9		23.8	25.6	
> 30 minutes/week	8.3	36.6		7.4	33.1		11.1	56.4		10.9	53.5	
<b>Women</b>												
Duration of use, %												
<1 day/week	37.6	21.0	<0.0001	37.0	21.2	<0.0001	5.9	2.7	<0.0001	6.1	3.1	<0.0001
<10 minutes/week	21.3	11.0		22.0	13.4		42.0	6.4		44.6	8.2	
10-30 minutes/week	19.1	17.1		20.4	20.0		31.1	15.6		29.7	18.4	
> 30 minutes/week	22.0	50.9		20.6	45.4		21.0	75.3		19.6	70.3	

The question about the duration of weekly use of HDCPs was asked at two different time-points in NutriNet-Santé (Q1: April 1-May 12, 2020) and in CONSTANCES (Q2: May 5-June 15, 2020). Comparison of the duration of weekly use of HDCPs in 2018/2019 and during the first lockdown period in France (March 17 to May 3, 2020) by a Bhapkar test.

**Table S5.** Comparison of household cleaning habits in 2018 and 2020 - NutriNet-Santé

Participants of the NutriNet-Santé study n = 28,331	Household exposure questionnaire of 2018	Household exposure questionnaire of 2020 after lockdown period	p
<b>Irritants</b>			
Bleach, %			
<1 day/week	86.3	83.1	<0.0001
1-3 days/week	11.5	13.4	
4-7 days/week	2.2	3.5	
Ammonia, %			
<1 day/week	99.5	99.5	0.09
1-3 days/week	0.4	0.5	
4-7 days/week	0.1	0	
Acids, %			
<1 day/week	75.1	96.3	<0.0001
1-3 days/week	21.3	3.4	
4-7 days/week	3.6	0.3	
Solvents, %			
<1 day/week	95.5	96.7	<0.0001
1-3 days/week	4.2	3.1	
4-7 days/week	0.3	0.2	
<b>Sprays</b>			
Furniture, %			
<1 day/week	90.7	86.0	<0.0001
1-3 days/week	7.1	9.8	
4-7 days/week	2.2	4.2	
Glass, %			
<1 day/week	94.5	93.6	<0.0001
1-3 days/week	4.9	5.8	
4-7 days/week	0.6	0.6	
Bath, %			
<1 day/week	86.9	84.4	<0.0001
1-3 days/week	11.8	13.7	
4-7 days/week	1.3	1.9	
Air freshener, %			
<1 day/week	89.1	90.2	<0.0001
1-3 days/week	7.0	6.1	
4-7 days/week	3.9	3.7	

Comparison of the frequency of weekly use of cleaning products in 2018 and in May-October 2020 by a Bhapkar test.