

# **Symptoms reported by SARS-CoV-2 seropositive and seronegative healthcare and administrative employees in Denmark from May to August 2020**

## **Supplementary material**

Questionnaire Items .....	2
Figure 1: Flowchart.....	5
Table 1: Characteristics of the cohort by sex (n = 11 138).....	6
Table 2: Association between SARS-CoV-2 serological status and reporting symptoms adjusted for sex, age, BMI and current smoking status (n = 10 776) .....	7
Table 3: Association between SARS-CoV-2 serological status and reporting symptoms by sex adjusted for age (n = 11 138) .....	8
Table 4: Association between SARS-CoV-2 serological status and reporting symptoms by sex adjusted for age, BMI and current smoking status (n = 10 776).....	9
Table 5: Association between SARS-CoV-2 serological status and reporting symptoms by chronic disease status adjusted for sex and age (n = 11 138) .....	10

## Questionnaire Items

The following items from the questionnaire were used in the study.

### Rygning/smoking

- Dansk: “Ryger du?”  
Svarmuligheder: “Nej”, “Nej, men jeg har tidligere røget”, “Ja – sommetider”, “Ja – dagligt, mindre end 10 om dagen”, “Ja – dagligt, 10 eller flere om dagen”, “Ønsker ikke at svare.”
- *English: “Are you smoking”?*  
*“Answer options: “No”, “No, but I have smoked before”, “Yes – sometimes”, “Yes - daily, less than 10 a day”, “Yes - daily, 10 or more a day”, “Do not want to answer.”*

### Højde/height

- Dansk: “Hvor høj er du i centimeter (cm)?”
- *English: “How tall are you in centimetres (cm)?”*

### Vægt/weight

- Dansk: “Hvor meget vejer du i kilogram (kg)?”
- *English: “How much do you weigh in kilograms (kg)?”*

### Symptomer/symptoms

- Dansk: “Har du haft nogle af følgende symptomer siden 1. marts? Sæt gerne flere kryds”.  
Svarmuligheder: “Feber”, “Ondt i halsen”, “Hoste”, “Åndenød”, “Hovedpine”, “Muskel- eller ledsmerter”, “Træt eller udmattet”, “Manglende smags/lugtesans”.

- *English: “Have you had any of the following symptoms since March 1? More than one symptom is allowed”.*

*Answer options: “Fever”, “Sore throat”, “Cough”, “Dyspnoea”, “Headache”, “Muscle or joint ache”, “Fatigue”, “Loss of sense of taste and smell”.*

### **Symptomvarighed/symptom duration**

- Dansk: “Hvornår begyndte symptomerne?”
- *English: “When did the symptoms begin?”*

- Dansk: “Har du stadig symptomer?”

Svarmuligheder: “Ja”, “Nej”.

- *English: “Do you still have symptoms?”*

*Answer options: “Yes”, “No”.*

- Dansk: “Hvornår holdt symptomerne op?”

- *English: “When did the symptoms stop?”*

### **Komorbiditet/comorbidity**

- Dansk: “Lider du af (eller får medicin i behandlingen af) følgende kroniske sygdomme? (Vælg gerne flere udsagn)”.

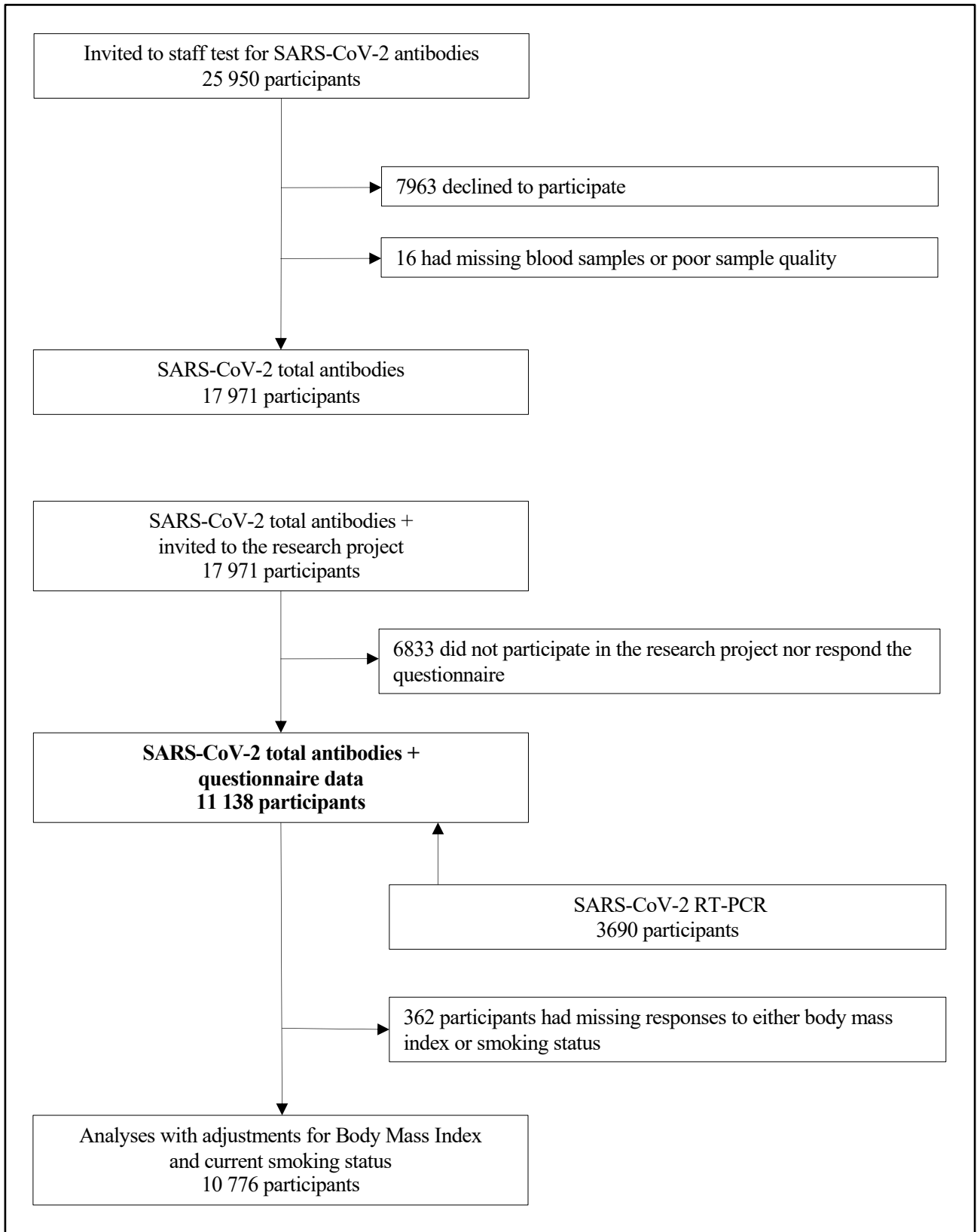
Svarmuligheder: “Nej”, “Astma”, “Sukkersyge”, “Kroniske lungesygdomme udover astma (fx KOL, emfysem og andre tilstande der påvirker din vejrtrækning)”, “Hjertesygdomme”, “Nyresygdomme”, “Svækket immunforsvar som følge af medicinsk behandling eller

kroniske tilstande, såsom hel eller delvis fjernelse af milten, organtransplantation, hiv/aids, kræft, svær gigt, etc.”, “Højt blodtryk (hypertension)”.

- *English: “Do you suffer from (or receive medication in the treatment of) the following chronic diseases? More than one condition is allowed”.*

*Answer options: “No”, “Asthma”, “Diabetes”, “Chronic lung diseases in addition to asthma (e.g., COPD, emphysema and other respiratory tract conditions)”, “Heart disease”, “Kidney disease”, “Weakened immune system due to medical treatment or chronic conditions such as complete or partial removal of the spleen, organ transplantation, HIV/AIDS, cancer, severe arthritis, etc.”, “High blood pressure (hypertension)”.*

**Figure 1: Flowchart**



**Table 1: Characteristics of the cohort by sex (n = 11 138)**

	<b>Women</b>	<b>Men</b>	<b>P-value</b>
<b>Participants</b>	9795 (88%)	1343 (12%)	
Seropositive	406 (4%)	41 (3%)	0.056
Seronegative	9389 (96%)	1302 (97%)	
<b>Age, years</b>	46 (37; 55)	45 (36; 57)	0.1033
18–39	3219 (33%)	475 (35%)	< 0.001
40–59	5400 (55%)	621 (46%)	
≥60	1176 (12%)	247 (18%)	
<b>Smoking status</b>			
Non-current smoker	8743 (89%)	1192 (89%)	0.673
Current smoker	850 (9%)	121 (9%)	
Missing	202 (2%)	30 (2%)	
<b>BMI, kg/m<sup>2</sup></b>	24 (22; 28)	25 (23; 28)	0.7846
BMI < 30	8138 (83%)	1143 (85%)	0.024
BMI ≥ 30 (obese)	1443 (15%)	165 (12%)	
Missing	224 (2%)	35 (3%)	
<b>RT-PCR</b>			
SARS-CoV-2 RNA - positive	216 (2%)	23 (2%)	0.549
SARS-CoV-2 RNA - negative	3076 (32%)	375 (28%)	
<b>Comorbidity</b>			
No	8139 (83%)	1048 (78%)	< 0.001
Yes	1656 (17%)	295 (22%)	

Data are presented as numbers with percentages.

Age and BMI are further presented as medians with interquartile ranges (IQR).

To compare groups, t-tests were used for normally distributed data and Mann-Whitney U tests were used for non-normally distributed data. Chi-squared tests were used to compare categorical values.

**Table 2: Association between SARS-CoV-2 serological status and reporting symptoms adjusted for sex, age, BMI and current smoking status (n = 10 776)**

<b>Symptoms</b>	<b>Number <sup>a</sup></b>	<b>OR (95% CI) <sup>b</sup></b>
<b>Loss of sense of taste and smell</b>		
Seronegative (reference)	285	1
Seropositive	221	37.2 (29.7–46.5)
<b>Fever</b>		
Seronegative (reference)	1153	1
Seropositive	234	9.4 (7.7–11.4)
<b>Dyspnoea</b>		
Seronegative (reference)	587	1
Seropositive	132	7.2 (5.7–9.0)
<b>Muscle or joint ache</b>		
Seronegative (reference)	1676	1
Seropositive	239	6.4 (5.3–7.8)
<b>Fatigue</b>		
Seronegative (reference)	2538	1
Seropositive	282	5.7 (4.7–7.0)
<b>Cough</b>		
Seronegative (reference)	2297	1
Seropositive	223	3.7 (3.0–4.5)
<b>Headache</b>		
Seronegative (reference)	3973	1
Seropositive	294	3.3 (2.7–4.1)
<b>Sore throat</b>		
Seronegative (reference)	3078	1
Seropositive	208	2.1 (1.7–2.6)

Multivariable logistic regression exploring the association between SARS-CoV-2 serological status and reporting symptoms adjusted for sex, age (categorical: 18–39, 40–59, ≥60), BMI (categorical: non-obese defined as a BMI below 30 kg/m<sup>2</sup>, obesity defined as a BMI exceeding or equal to 30 kg/m<sup>2</sup>) and current smoking status (categorical: non-current smoker, current smoker) (Confounder model 2).

This analysis included 10 776 participants as 362 participants had missing responses to either BMI or smoking status.

<sup>a</sup>Number of participants reporting the specific symptom.

<sup>b</sup>Odds ratios with 95% CIs.

**Table 3: Association between SARS-CoV-2 serological status and reporting symptoms by sex adjusted for age (n = 11 138)**

Symptoms	Women		Men	
	Number <sup>a</sup>	OR (95% CI) <sup>b</sup>	Number <sup>a</sup>	OR (95% CI) <sup>b</sup>
<b>Loss of sense of taste and smell</b>				
Seronegative (reference)	262	1	31	1
Seropositive	208	36.5 (29.0–45.9)	17	27.1 (13.1–56.0)
<b>Fever</b>				
Seronegative (reference)	1057	1	122	1
Seropositive	217	9.0 (7.3–11.1)	22	10.8 (5.7–20.6)
<b>Dyspnoea</b>				
Seronegative (reference)	539	1	66	1
Seropositive	120	6.9 (5.5–8.6)	13	8.8 (4.3–18.0)
<b>Muscle or joint ache</b>				
Seronegative (reference)	1530	1	187	1
Seropositive	218	5.9 (4.9–7.3)	25	9.5 (5.0–18.2)
<b>Fatigue</b>				
Seronegative (reference)	2330	1	268	1
Seropositive	262	5.5 (4.5–6.8)	25	5.4 (2.8–10.4)
<b>Cough</b>				
Seronegative (reference)	2073	1	278	1
Seropositive	210	3.8 (3.1–4.6)	18	2.8 (1.5–5.3)
<b>Headache</b>				
Seronegative (reference)	3730	1	330	1
Seropositive	276	3.2 (2.6–4.0)	24	3.9 (2.1–7.4)
<b>Sore throat</b>				
Seronegative (reference)	2864	1	289	1
Seropositive	194	2.1 (1.7–2.5)	18	2.5 (1.3–4.7)

Multivariable logistic regression exploring the association between SARS-CoV-2 serological status and reporting symptoms by sex adjusted for age (categorical: 18–39, 40–59, ≥60) (Confounder model 1).

<sup>a</sup> Number of participants reporting the specific symptom.

<sup>b</sup> Odds ratios with 95% CIs.



**Table 4: Association between SARS-CoV-2 serological status and reporting symptoms by sex adjusted for age, BMI and current smoking status (n = 10 776)**

Symptoms	Women		Men	
	Number <sup>a</sup>	OR (95% CI) <sup>b</sup>	Number <sup>a</sup>	OR (95% CI) <sup>b</sup>
<b>Loss of sense of taste and smell</b>				
Seronegative (reference)	254	1	31	1
Seropositive	204	38.3 (30.2–48.4)	17	27.5 (13.1–57.7)
<b>Fever</b>				
Seronegative (reference)	1033	1	120	1
Seropositive	212	9.2 (7.4–11.3)	22	11.4 (5.9–22.1)
<b>Dyspnoea</b>				
Seronegative (reference)	521	1	66	1
Seropositive	119	7.0 (5.6–8.9)	13	10.0 (4.8–20.9)
<b>Muscle or joint ache</b>				
Seronegative (reference)	1493	1	183	1
Seropositive	214	6.1 (5.0–7.5)	25	10.7 (5.5–20.8)
<b>Fatigue</b>				
Seronegative (reference)	134	1	15	1
Seropositive	257	5.7 (4.6–7.1)	25	5.8 (3.0–11.3)
<b>Cough</b>				
Seronegative (reference)	2022	1	275	1
Seropositive	205	3.8 (3.1–4.6)	18	3.0 (1.6–5.7)
<b>Headache</b>				
Seronegative (reference)	3646	1	327	1
Seropositive	270	3.3 (2.6–4.1)	24	4.1 (2.1–7.8)
<b>Sore throat</b>				
Seronegative (reference)	2794	1	284	1
Seropositive	190	2.1 (1.7–2.6)	18	2.5 (1.3–4.8)

Multivariable logistic regression exploring the association between SARS-CoV-2 serological status and reporting symptoms by sex adjusted for age (categorical: 18–39, 40–59, ≥60), BMI (categorical: non-obese defined as a BMI below 30 kg/m<sup>2</sup>, obesity defined as a BMI exceeding or equal to 30 kg/m<sup>2</sup>) and current smoking status (categorical: non-current smoker, current smoker) (Confounder model 2). This analysis included 10 776 participants as 362 participants had missing responses to either BMI or smoking status.

<sup>a</sup> Number of participants reporting the specific symptom.

<sup>b</sup> Odds ratios with 95% CIs.

**Table 5: Association between SARS-CoV-2 serological status and reporting symptoms by chronic disease status adjusted for sex and age (n = 11 138)**

Symptoms	Comorbidity			
	No chronic disease		Chronic disease	
	Number <sup>a</sup>	OR (95% CI) <sup>b</sup>	Number <sup>a</sup>	OR (95% CI) <sup>b</sup>
<b>Loss of sense of taste and smell</b>				
Seronegative (reference)	239	1	54	1
Seropositive	193	35.4 (27.9–44.9)	32	37.4 (21.1–66.1)
<b>Fever</b>				
Seronegative (reference)	944	1	235	1
Seropositive	208	9.6 (7.8–11.9)	31	7.3 (4.3–12.3)
<b>Dyspnoea</b>				
Seronegative (reference)	420	1	185	1
Seropositive	113	8.2 (6.5–10.4)	20	4.5 (2.6–7.8)
<b>Muscle or joint ache</b>				
Seronegative (reference)	1348	1	369	1
Seropositive	204	6.2 (5.0–7.6)	39	7.3 (4.3–12.4)
<b>Fatigue</b>				
Seronegative (reference)	2098	1	500	1
Seropositive	250	5.8 (4.7–7.2)	37	4.3 (2.5–7.4)
<b>Cough</b>				
Seronegative (reference)	1838	1	513	1
Seropositive	196	3.9 (3.1–4.8)	32	2.9 (1.8–4.9)
<b>Headache</b>				
Seronegative (reference)	3345	1	715	1
Seropositive	257	3.2 (2.6–3.9)	43	4.0 (2.3–7.0)
<b>Sore throat</b>				
Seronegative (reference)	2582	1	571	1
Seropositive	184	2.1 (1.7–2.6)	28	1.9 (1.2–3.3)

Multivariable logistic regression exploring the association between SARS-CoV-2 serological status and reporting symptoms by chronic disease status adjusted for sex and age (categorical: 18–39, 40–59, ≥60) (Confounder model 1).

<sup>a</sup> Number of participants reporting the specific symptom.

<sup>b</sup> Odds ratios with 95% CIs.