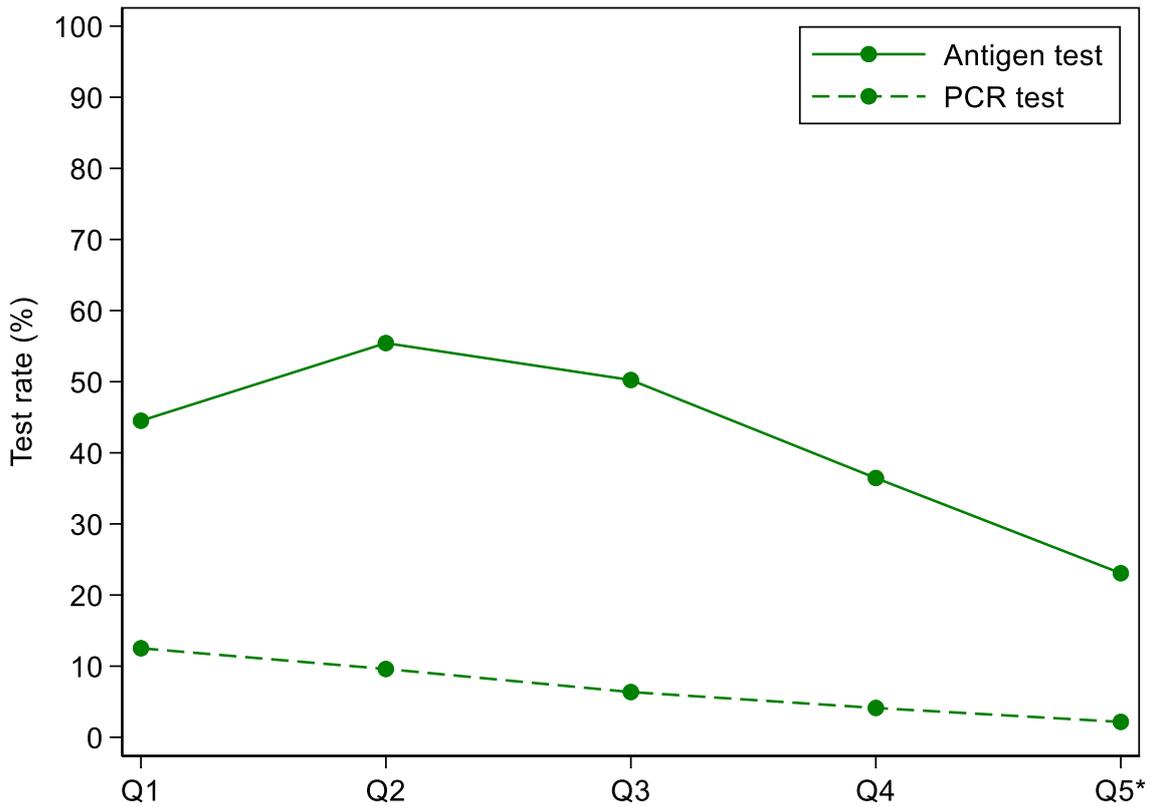
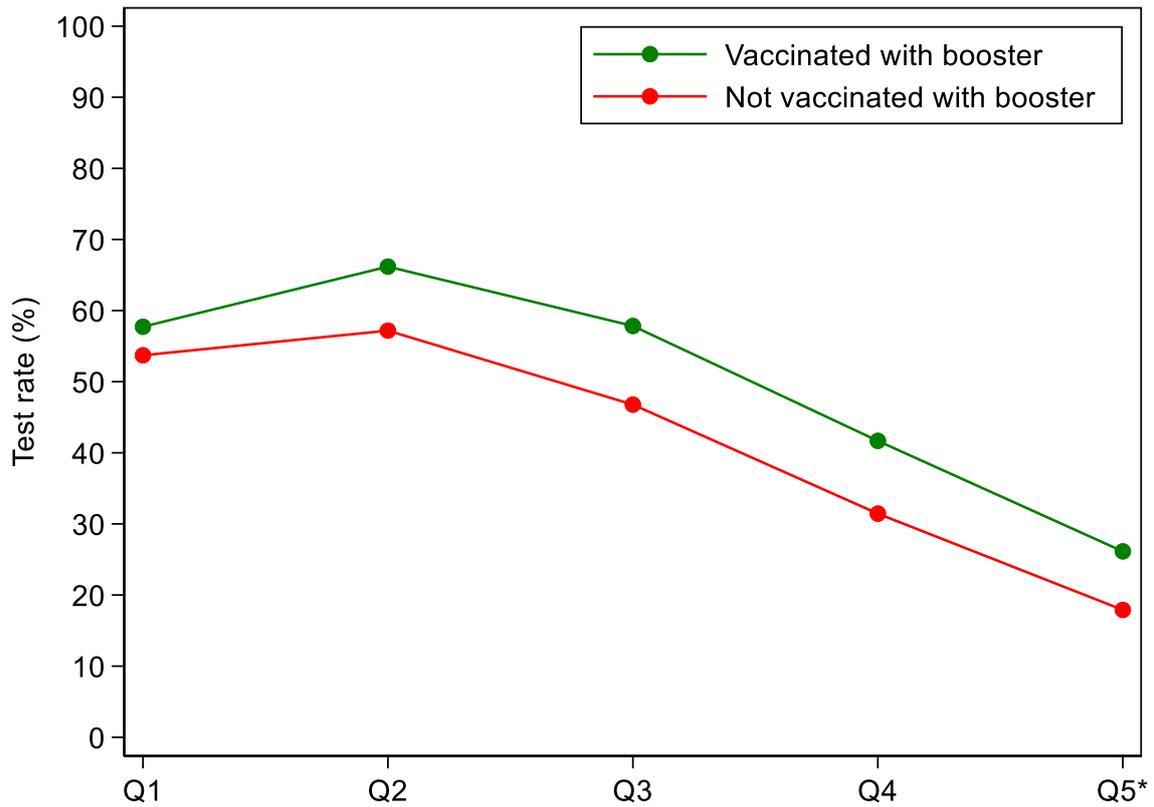


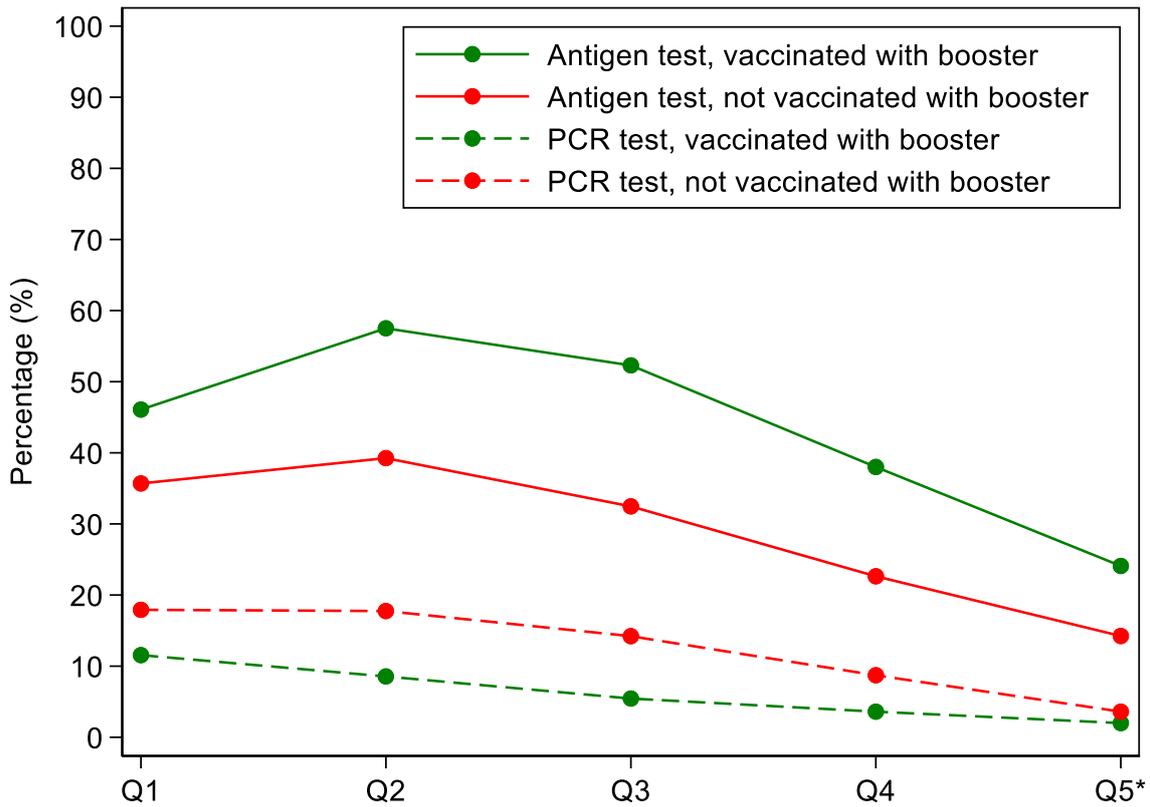
Supplementary figure 1: Test frequency among the 85 801 participants in the study sample. Test frequency was calculated for each questionnaire (Q1–Q5) and defined as number of participants reporting on the questionnaire that they had been tested for SARS-CoV-2 during the last 14 days divided by the number of participants who responded to the questionnaire. * Test frequency for Q5 was based on MoBa-participants only, since Q5 was not distributed to participants from the Senior cohort.



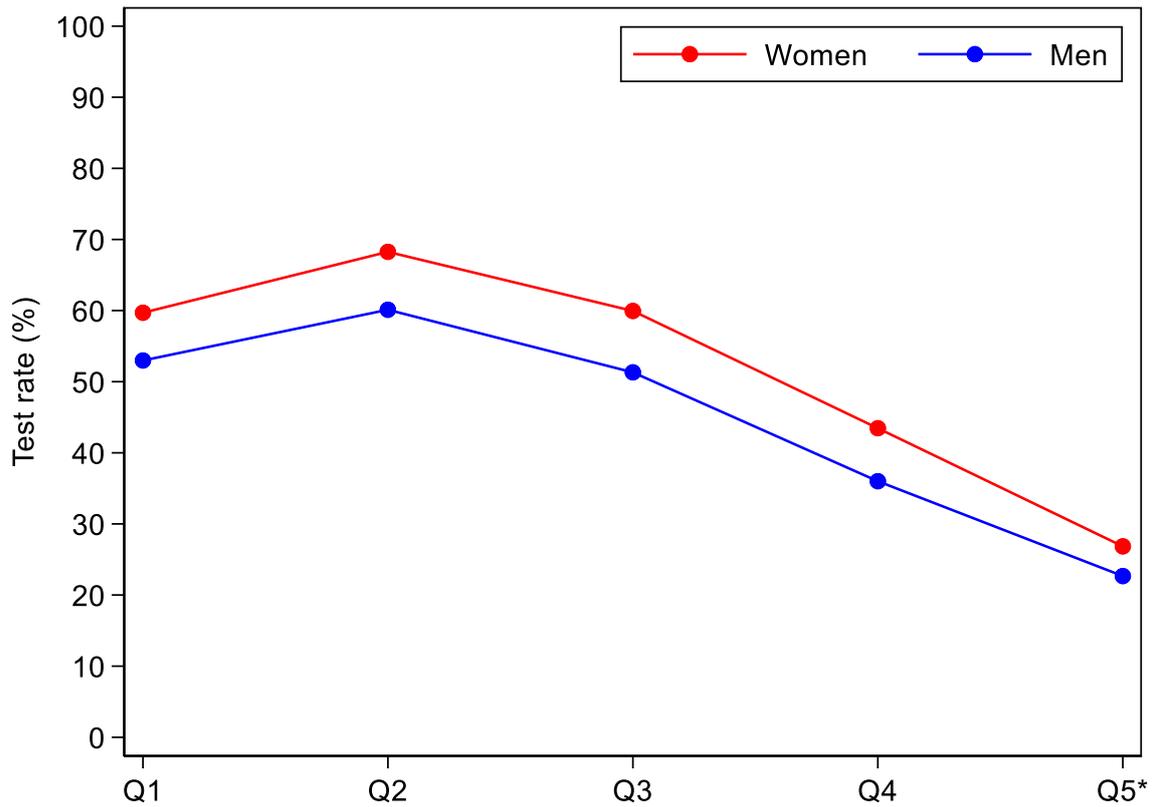
Supplementary figure 2: Test frequency with antigen test or with PCR test among the 85 801 participants in the study sample. Test frequency with antigen test includes participants who during the last 14 days had been tested with antigen test only. Test frequency with PCR test includes participants who during the last 14 days had been tested with PCR test only or both PCR test and antigen test. Most participants with a PCR test during the last 14 days had also been tested with an antigen test during the last 14 days (> 80% on all questionnaires). * Test frequencies for Q5 was based on MoBa-participants only, since Q5 was not distributed to participants from the Senior cohort.



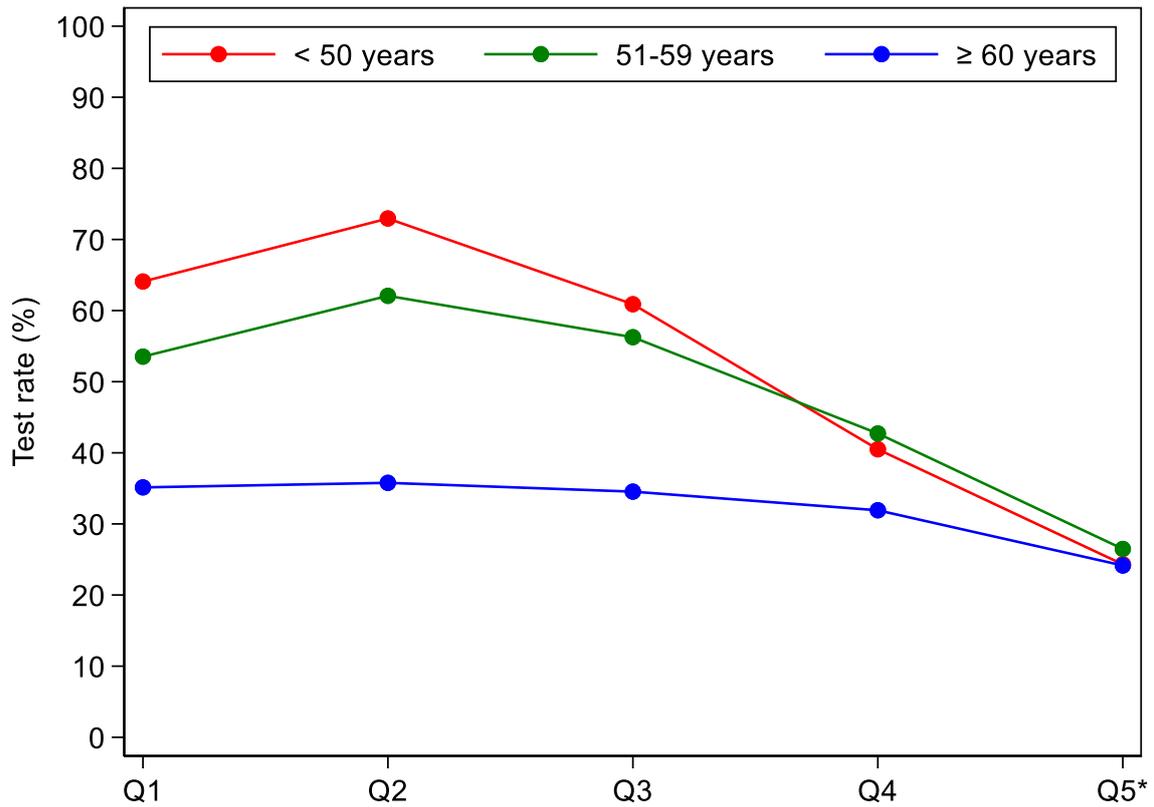
Supplementary figure 3: Test frequency among the 85 801 participants in the study sample by vaccination status. Test frequency was calculated for each questionnaire (Q1–Q5) and defined as number of participants reporting on the questionnaire that they had been tested for SARS-CoV-2 during the last 14 days divided by the number of participants who responded to the questionnaire. Vaccination status was assessed at fill-in date of each questionnaire. * Test frequency for Q5 was based on MoBa-participants only, since Q5 was not distributed to participants from the Senior cohort.



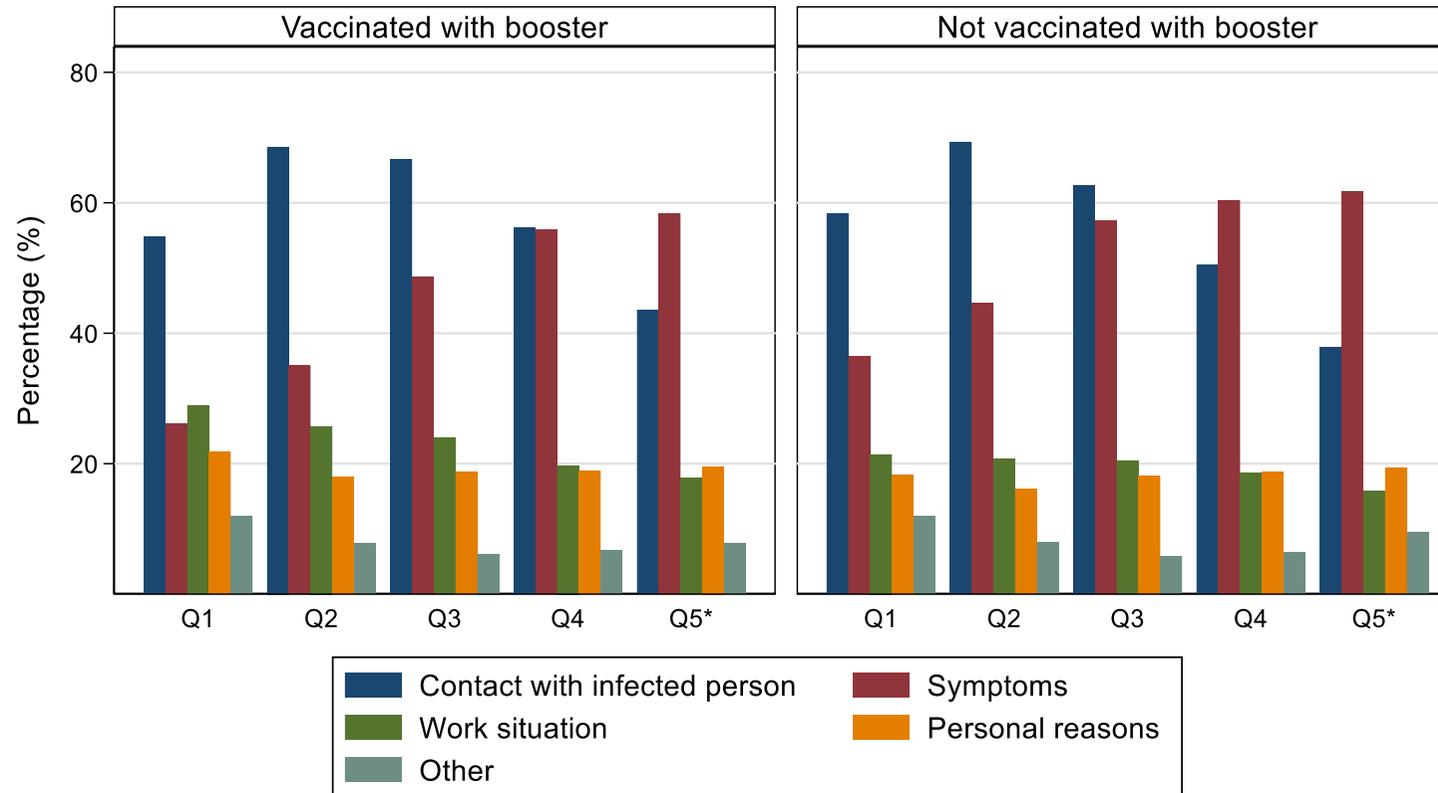
Supplementary figure 4: Test frequency with antigen test or with PCR test among the 85 801 participants in the study sample by vaccination status. Test frequency with antigen test includes participants who during the last 14 days had been tested with antigen test only. Test frequency with PCR test includes participants who during the last 14 days had been tested with PCR test only or both PCR test and antigen test. Most participants with a PCR test during the last 14 days had also been tested with an antigen test during the last 14 days (> 80% on all questionnaires). Vaccination status was assessed at fill-in date of each questionnaire. * Test frequency for Q5 was based on MoBa-participants only, since Q5 was not distributed to participants from the Senior cohort.



Supplementary figure 5: Test frequency among the 85 801 participants in the study sample by sex. Test frequency was calculated for each questionnaire (Q1–Q5) and defined as number of participants reporting that they had been tested for SARS-CoV-2 during the last 14 days divided by the number of participants who responded to the questionnaire. * Test frequency for Q5 was based on MoBa-participants only, since Q5 was not distributed to participants from the Senior cohort.



Supplementary figure 6: Test frequency among the 85 801 participants in the study sample by age. Test frequency was calculated for each questionnaire (Q1–Q5) and defined as number of participants reporting that they had been tested for SARS-CoV-2 during the last 14 days divided by the number of participants who responded to the questionnaire. * Test frequency for Q5 was based on MoBa-participants only, since Q5 was not distributed to participants from the Senior cohort.



Supplementary figure 7: Most common reasons for getting a SARS-CoV-2 test by vaccination status. On each questionnaire Q1–Q5, the denominator was the number of participants reporting on the questionnaire that they had been tested for SARS-CoV-2 during the last 14 days. Vaccination status was assessed at fill-in date of each questionnaire. The Other-category includes “been abroad”, “health conditions”, “recommended by health care worker”, “participation in research project”, “contact tracing”, and “other reasons”. Participants could select multiple answers. * Percentages for Q5 was based on MoBa-participants only, since Q5 was not distributed to participants from the Senior cohort.

Supplementary table 1: Effectiveness of booster vaccination with mRNA vaccine against SARS-CoV-2 infection and COVID-19 caused by the Omicron variant among participants in the Norwegian Mother, Father and Child Cohort Study and the Senior Cohort with no previous infection, N = 81 873

Interval (days from vaccination)	Person time, days	SARS-CoV-2 infection		Mild COVID-19		Moderate COVID-19		Severe COVID-19	
		Cases, n ¹	rVE ² (95% CI)	Cases, n	rVE ² (95% CI)	Cases, n	rVE ² (95% CI)	Cases, n	rVE ² (95% CI)
Two doses³									
> 130	271 134	4566	Ref	1426	Ref	2722	Ref	303	Ref
Booster vaccination⁴									
0 – 6	113 508	858	33.6 (28.4, 38.3)	408	3.0 (-8.5, 13.3)	394	46.3 (40.2, 51.8)	28	61.8 (43.4, 74.3)
7 – 30	857 521	8487	42.2 (40.1, 44.3)	4166	9.4 (3.7, 14.8)	3812	56.5 (54.2, 58.6)	179	81.0 (77.0, 84.3)
31 – 60	1 157 250	16 294	37.9 (35.7, 40.0)	7489	9.3 (3.8, 14.5)	7900	49.7 (47.3, 51.9)	408	76.5 (72.5, 79.9)
61 – 90	668 281	8842	33.8 (31.2, 36.3)	3857	10.0 (3.9, 15.7)	4498	43.2 (40.1, 46.0)	263	69.5 (63.4, 74.5)
91 – 120	167 924	1811	26.7 (22.2, 31.0)	850	-2.3 (-12.3, 6.9)	858	39.0 (33.7, 43.9)	61	63.2 (50.3, 72.8) ⁵
> 120	13 236	165	15.2 (0.7, 27.5)	80	-20.3 (-51.4, 4.3)	77	29.2 (11.0, 43.6)	– ⁵	– ⁵

¹ Includes asymptomatic SARS-CoV-2 infections and SARS-CoV-2 infection not possible to classify according to severity. Thus, the number of cases exceeds the sum of mild, moderate, and severe COVID-19 cases.

² rVE = 100% · (1 – HR). HR was estimated using a stratified Cox model with county as strata and calendar time as the underlying time scale. The model was adjusted for previous SARS-CoV-2 infection, age, and sex.

³ The reference category consisted of person time more than 130 days after the second vaccine dose up until booster vaccination.

⁴ Booster vaccination was defined as a third vaccine dose received at least 130 days after the second dose.

⁵ For severe COVID-19, the upper category was receipt of booster vaccination more than 90 days previously.

Supplementary table 2: Effectiveness of booster vaccination with mRNA vaccine against SARS-CoV-2 and COVID-19 caused by the Omicron variant among participants in The Norwegian Mother, Father and Child Cohort Study and the Senior Cohort, by booster vaccine

Interval (days from vaccination)	Person time, days	SARS-CoV-2 infection		Mild COVID-19		Moderate or severe COVID-19	
		Cases, n ¹	rVE ² (95% CI)	Cases, n	rVE ² (95% CI)	Cases, n	rVE ² (95% CI)
Two doses³							
> 130	419 536	4895	Ref	1607	Ref	3165	Ref
Booster vaccination, Comirnaty⁴							
0 – 6	65 239	482	33.9 (27.3, 39.9)	227	5.2 (-8.7, 17.3)	239	48.5 (41.2, 54.9)
7 – 30	479 943	4645	42.6 (40.2, 44.9)	2231	10.8 (4.8, 16.4)	2234	58.6 (56.3, 60.9)
31 – 60	720 558	9816	36.5 (34.1, 38.7)	4497	7.1 (1.4, 12.4)	5015	51.5 (49.1, 53.7)
61 – 90	456 748	6380	32.4 (29.6, 35.1)	2749	8.1 (1.9, 13.9)	3466	44.9 (41.9, 47.6)
> 90	149 752	1656	25.0 (20.3, 29.5)	767	-3.4 (-13.5, 5.9)	847	39.9 (34.8, 44.7)
Booster vaccination, Spikevax⁴							
0 – 6	50 046	382	30.2 (22.4, 37.2)	185	0.6 (-15.6, 14.5)	185	45.4 (36.6, 53.1)
7 – 30	384 624	3861	39.7 (37.0, 42.3)	1946	3.2 (-3.6, 9.5)	1764	58.2 (55.6, 60.6)
31 – 60	447 618	6508	38.1 (35.6, 40.5)	3009	9.2 (3.2, 14.7)	3305	52.7 (50.2, 55.1)
61 – 90	220 316	2497	34.4 (30.8, 37.8)	1126	9.9 (2.2, 17.0)	1310	46.6 (42.7, 50.2)
> 90	35 557	39	23.3 (14.0, 31.6)	175	-11.7 (-31.3, 4.9)	157	41.8 (31.4, 50.7)

¹ Includes asymptomatic SARS-CoV-2 infections and SARS-CoV-2 infection not possible to classify according to severity. Thus, the number of cases exceeds the sum of mild, moderate, and severe COVID-19 cases.

² rVE = 100% · (1 – HR). HR was estimated using a stratified Cox model with county as strata and calendar time as the underlying time scale. The model was adjusted for prior SARS-CoV-2 infection, age and sex.

³ The reference category consisted of person time more than 130 days after the second vaccine dose up until booster vaccination.

⁴ Booster vaccination was defined as a third vaccine dose received at least 130 days after the second dose.

Supplementary Table 3: Effectiveness of booster vaccination with mRNA vaccine against SARS-CoV-2 infection and COVID-19 caused by the Omicron variant among participants in The Norwegian Mother, Father and Child Cohort Study and the Senior Cohort who returned all questionnaires, N = 48 379

Interval (days from vaccination)	Person time, days	SARS-CoV-2 infection		Mild COVID-19		Moderate COVID-19		Severe COVID-19	
		Cases, n ¹	rVE ² (95% CI)	Cases, n	rVE ² (95% CI)	Cases, n	rVE ² (95% CI)	Cases, n	rVE ² (95% CI)
Two doses³									
> 130	266 398	2450	Ref	839	Ref	1411	Ref	137	Ref
Booster vaccination⁴									
0 – 6	78 425	436	34.4 (27.2, 40.9)	210	6.9 (-8.8, 20.3)	199	46.5 (37.8, 54.1)	12	62.4 (31.4, 79.4)
7 – 30	590 528	4726	39.2 (36.0, 42.2)	2394	4.2 (-4.2, 11.9)	2041	55.9 (52.6, 58.9)	98	78.6 (72.0, 83.6)
31 – 60	814 515	9790	33.8 (30.6, 36.8)	4598	3.8 (-4.2, 11.2)	4667	47.2 (43.8, 50.5)	220	76.0 (69.9, 80.8)
61 – 90	485 054	5511	29.3 (25.5, 32.9)	2462	5.5 (-3.1, 13.5)	2764	39.6 (35.2, 43.8)	143	68.5 (59.3, 75.6)
91 – 120	128 413	1187	22.6 (16.3, 28.4)	576	-4.6 (-18.1, 7.3)	548	35.3 (27.9, 42.0)	35	60.5 (40.2, 73.9) ⁵
> 120	10 390	110	9.5 (-9.9, 25.5)	54	-21.9 (-61.6, 8.1)	53	19.5 (-6.3, 39.0)	– ⁵	– ⁵

¹ Includes asymptomatic SARS-CoV-2 infections and SARS-CoV-2 infection not possible to classify according to severity. Thus, the number of cases exceeds the sum of mild, moderate, and severe COVID-19 cases.

² rVE = 100% · (1 – HR). HR was estimated using a stratified Cox model with county as strata and calendar time as the underlying time scale. The model was adjusted for previous SARS-CoV-2 infection, age, and sex.

³ The reference category consisted of person time more than 130 days after the second vaccine dose up until booster vaccination.

⁴ Booster vaccination was defined as a third vaccine dose received at least 130 days after the second dose.

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