

Effect of booster dose on the prevalence of anti- SARS-CoV-2 antibodies among nursing home residents

BRIEF COMMUNICATION ON RESULTS OF THE SCOPE STUDY

(Sars-COV-2 seroPrEvalence)

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MAIN FINDINGS

- In October 2021, **69% of residents and 80% of staff** in Belgian nursing homes had **anti-SARS-CoV-2 antibodies**. In comparison to August 2021¹, the seroprevalence among staff decreased with 6%, while the seroprevalence among residents remained the same.
- The booster vaccination campaign among nursing home residents positively impacted the anti-SARS-CoV-2 seroprevalence. **96% of nursing home residents that received a booster dose** at least seven days before antibody testing **had anti-SARS-CoV-2 antibodies, while this was 65% among the fully vaccinated residents that did not receive a booster dose**.

1 BACKGROUND

The SCOPE study assesses the prevalence of anti-SARS-CoV-2 antibodies among a representative sample of residents and staff in Belgian NHs (nursing homes). Starting from February 1st 2021, a cohort of 1,640 residents and 1,368 staff in 69 Belgian NHs are tested every two months on the presence of anti-SARS-CoV-2 antibodies.

The previous results of the SCOPE study in August 2021, approximately four months after the end of the vaccination campaign in Belgian NHs, showed a decrease in prevalence of anti-SARS-CoV-2 antibodies among vaccinated residents and staff. Between April and August 2021, the prevalence of anti-SARS-CoV-2 antibodies dropped from 91% (95% CI: 89-93) to 69% (95% CI: 64-73) among fully vaccinated residents and from 99% (95% CI: 98-99) to 90% (95% CI: 87-92) among fully vaccinated staff². Starting on October 6th, 2021, a second vaccination campaign was organized in Belgian NH, in order to administer all eligible and consenting nursing home residents an mRNA vaccine booster dose.

This brief communication reports on the prevalence of anti-SARS-CoV-2 antibodies among vaccinated nursing home residents and staff in October 2021. To document the effect of a booster dose on the prevalence of anti-SARS-CoV-2 antibodies among nursing home residents, seroprevalences are reported by COVID-19 vaccination status.

2 VACCINATION STATUS

During the testing period in October 2021, **27% of the NH residents in the cohort had received a booster dose**. Among those, 12% received their booster dose at least 7 days before antibody testing. Among NH staff, only 1% received a booster dose. All administered booster doses were Pfizer-BioNTech.

Table 1: Vaccination coverage^{1,2,3} among residents and staff in October 2021

	Not vaccinated		At least one dose		Fully vaccinated ¹		+ Booster dose ²	
	Number ³	%	Number ³	%	Number ³	%	Number ³	%
Residents (n³=1399)	19	1	1380	99	994	71	380	27
Staff (n³=1241)	76	6	1165	94	1123	90	17	1

¹ Participants who received all required doses (i.e. 1 dose for Johnson & Johnson vaccine, 2 doses for the others; no booster) at least one day before the antibody testing. ² Participants who received a booster vaccine at least one day before the antibody testing. ³ n, total number participants that completed vaccination data in the questionnaires.

¹ COVID-19 Dashboard: seroprevalence studies. Sciensano. <https://datastudio.google.com/embed/reporting/7e11980c-3350-4ee3-8291-3065cc4e90c2/page/ZwmOB> accessed on 22/12/21

² SARS-CoV-2 seroprevalence among vaccinated nursing home residents and staff in Belgium in August 2021. Sciensano. https://www.sciensano.be/sites/default/files/sars-cov-2_among_nh_residents_brief_communication_20210831_1.pdf accessed on 22/12/21

3 SARS-COV-2 SEROPREVALENCE IN OCTOBER 2021

Between September 27th and October 28th 2021, we assessed the presence of anti-SARS-CoV-2 antibodies among NH residents and staff in Belgium (Table 2).

In October 2021, approximately 6 months after the end of the vaccination campaign in Belgian nursing homes, **65% (95% CI: 59-71) of fully vaccinated residents** and **82% (95% CI: 79-85) of fully vaccinated staff had anti-SARS-CoV-2 antibodies.**

Among the **residents that received a booster dose** at least 7 days before the antibody testing, **96% (95% CI 91-99) had anti-SARS-CoV-2 antibodies.** The prevalence of anti-SARS-CoV-2 antibodies among residents who received a booster dose less than 7 days before antibody testing (68%; 95% CI: 58-77) was similar to the seroprevalence among fully vaccinated residents.

The seroprevalence among unvaccinated residents and staff was 37% (95% CI: 13-68) and 32% (95% CI: 20-48), respectively.

Table 2: Number and adjusted prevalence of anti-SARS-CoV-2 antibodies among residents and staff in Belgian nursing homes according to vaccination status in October 2021

October 2021				
	RESIDENTS		STAFF	
	Number positive/total	Prevalence % (95% CI ¹)	Number positive/total	Prevalence % (95% CI ¹)
Not vaccinated	7/18	37 (13-68)	17/52	32 (20-48)
Partially vaccinated	5/6	85 (35-98)	17/18	95 (69-99)
Fully vaccinated ³	626/952	65 (59-71)	711/866	82 (79-85)
Booster vaccine < 7 days ⁴	137/211	68 (58-77)	3/3	100 (NA-NA)²
Booster vaccine ≥ 7 days ⁵	153/159	96 (91-99)	12/12	100 (NA-NA)²
TOTAL	929/1347	69 (64-74)	788/980	80 (77-84)

¹CI, confidence interval. ²NA, not available ³Participants who were fully vaccinated (no booster dose) at least 7 days before the antibody testing date. ⁴Participants who received their booster dose less than 7 days before the antibody testing date ⁵Participants who received their booster dose at least 7 days before the antibody testing date.

For general methods and study protocol we refer to:

Study Protocol: <https://www.sciensano.be/nl/biblio/sars-cov-2-seroprevalence-among-nursing-home-staff-and-residents-belgium-protocol>

Report visit 1 (February 2021): https://www.sciensano.be/sites/default/files/sars-cov-2_seroprevalence_in_nh_report_june_2021.pdf

Report visit 2 (April 2021): [SARS-CoV-2 seroprevalence among nursing home residents and staff in Belgium - Results visit 2 – April 2021 | sciensano.be](#)

Report visit 3-4 (June-August 2021): https://www.sciensano.be/sites/default/files/sars-cov-2_among_nh_residents_brief_communication_20210831_1.pdf