

PREVALENCE AND INCIDENCE OF ANTIBODIES AGAINST SARS-COV-2 IN CHILDREN AND SCHOOL STAFF MEASURED BETWEEN DECEMBER 2020 AND JUNE 2021: AN OBSERVATIONAL SERO-PREVALENCE PROSPECTIVE COHORT STUDY

Main findings of the second testing period – brief summary

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1. PREVALENCE OF ANTI-SARS-COV-2 ANTIBODIES

The second testing period of the study took place from March 1st to 26th, 2021. Saliva samples were collected from 1,909 subjects: 1,206 pupils (670 primary and 536 secondary) and 703 staff (377 in primary and 326 in secondary schools), but 55 (43 pupils, 12 staff) of these could not be tested due to insufficient sample volume. The 1,163 adequate saliva samples from pupils and 691 samples from school staff were tested in the Sciensano (Public Health Belgium) laboratories for the presence of anti-SARS-CoV-2 antibodies using an in house semi-quantitative anti-RBD IgG (Receptor Binding Domain) ELISA.

In March 2021 17.1% of the primary and 18.0% of the secondary school children in Belgium had anti-SARS-CoV-2 antibodies. The prevalence of anti-SARS-CoV-2 antibodies in school staff was 22.5% in primary and 14.9% in secondary schools (see Table and Figure below).

Number and adjusted prevalence of anti-SARS-CoV-2 antibodies (IgG) among primary (age 7-9) and secondary (age 13-14) school children and school staff, Belgium and three regions, 1-26 March 2021

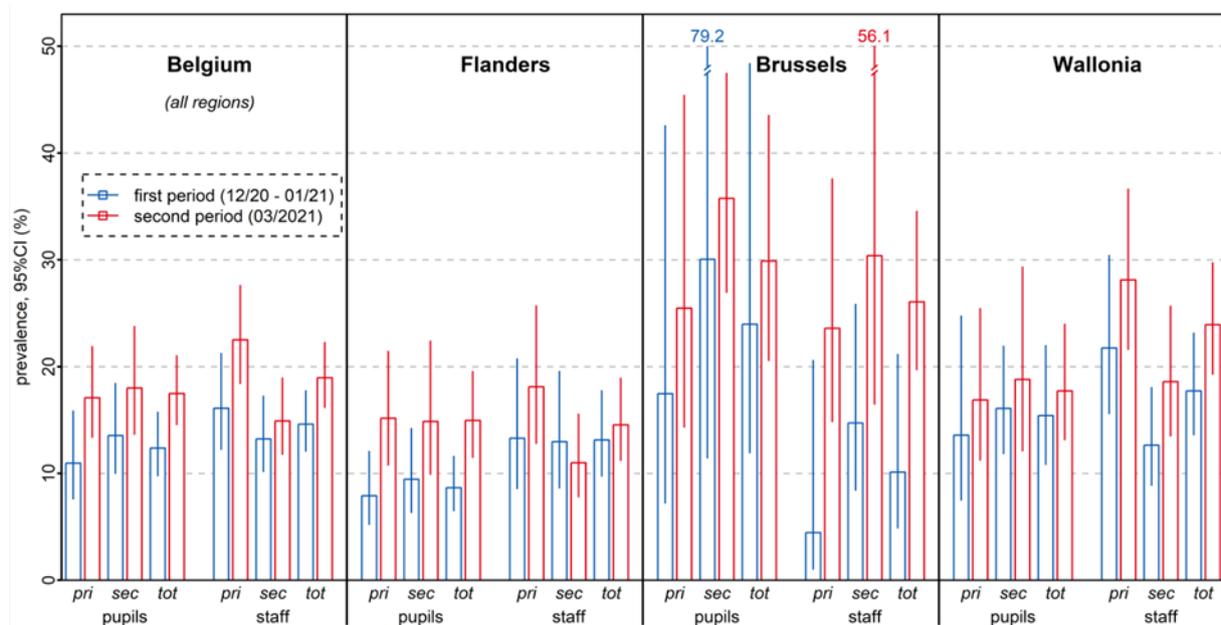
	Pupils		Staff	
	number positive/total	Prevalence % (95% CI)	number positive/total	Prevalence % (95% CI)
BELGIUM				
Primary school	110/648	17.1 (13.3 – 21.9)	83/369	22.5 (18.4 – 27.6)
Secondary school	88/515	18.0 (13.6 – 23.8)	48/322	14.9 (11.7 – 19.0)
TOTAL	198/1163	17.5 (14.5 – 21.1)	131/691	19.0 (16.1 – 22.3)
REGIONS				
BRUSSELS				
Primary school	22/87	25.5 (14.3 – 45.4)	11/47	23.6 (14.8 – 37.6)
Secondary school	13/34	35.7 (26.9 – 47.5)	8/28	30.4 (16.4 – 56.1)
TOTAL	35/121	29.9 (20.5 – 43.6)	19/75	26.1 (9.7 – 34.6)
FLANDERS				
Primary school	51/339	15.2 (10.7 – 21.5)	34/187	18.1 (12.8 – 25.7)
Secondary school	43/312	14.9 (9.9 – 22.4)	21/191	11.0 (7.8 – 15.6)
TOTAL	94/651	15.0 (11.4 – 19.6)	55/378	14.5 (11.2 – 19.0)
WALLONIA				
Primary school	37/222	16.9 (11.2 – 25.5)	38/135	28.1 (21.6 – 36.7)
Secondary school	32/169	18.8 (12.1 – 29.4)	19/103	18.6 (13.5 – 25.7)
TOTAL	69/391	17.7 (13.1 – 24.0)	57/238	23.9 (19.2 – 29.8)

CI, confidence interval (adjusted for clustering of subjects); N, number.

Similar to the first testing period, regional differences in the sero-prevalence reflect those observed in the general population (e.g. the number of confirmed cases). Data for the Capital Region of Brussels are relatively sparse which resulted in imprecise estimates and prevents further inference or conclusions specific for this region.

Compared with the first testing period from December 2020 – January 2021 the total sero-prevalence increased with 4.0 percentage points (95% CI (confidence interval) 2.2-5.8; RR (relative risk) 1.29, 95% CI 1.15-1.45). The largest increase was observed in pupils (RD (risk difference) 5.3%, 95% CI 2.5-8.1) and in staff (RD 5.2%, 95% CI 0.5-10.0) of primary schools. The increase was smaller in pupils from secondary schools (RD 3.5%, 95% CI 0.3-6.7), and not statistically significant in secondary school staff (RD 1.3%, 95%CI -2.6-5.3).

In the first testing period, no statistically significant differences were observed between primary and secondary schools, or between pupils and staff. However, in the second testing period staff members in primary schools tested more frequently positive compared to staff members from secondary schools (RD 7.6%, 95% CI 1.8-13.4); RR 1.5, 95% CI 1.1-2.1), and compared to pupils from primary schools (RD 5.3%, 95% CI 0.3-10.3); RR 1.3 ,95%CI 1.0-1.7). Differences in the seroprevalence in pupils and staff from secondary schools (RD -2.9%, 95% CI -8.2-2.2) and between pupils from primary and secondary schools (RD 0.9%, 95% CI -5.7-7.4) was not statistically significant.



Prevalence and 95% confidence interval (whiskers) of anti-SARS-CoV-2 antibodies (IgG) among primary (age 7-9) and secondary (age 13-14) school children and school staff, Belgium and three regions, first (3 Dec 2020-28 Jan 2021) and second (1-26 Mar 2021) testing period (pri, primary schools; sec, secondary schools; tot, total)

2. FINDINGS ON VACCINATION, PCR POSITIVITY AND HOSPITALISATION

Findings on vaccination, PCR positivity for COVID-19 and hospitalisation were collected with an online questionnaire which was completed by 86% of participants during the 2nd testing period.

At the time of questioning (March 2021), ten staff members (1.5%) had received a first SARS-CoV-2 vaccination dose. In total, 4.3% (95% CI 2.8%-5.5%) of the pupils and 10.9% (95% CI 8.1%-13.8%) of the staff reported a confirmed infection with SARS-CoV-2 since the start of the pandemic. This is an increase of 1.9% (95% CI 0.9%-3.0%) and 1.3% (95% CI 0.3%-2.4%) in pupils and staff respectively since the first testing period in December-January.

None of the participants was admitted to the hospital because of COVID-19 since the pandemic start.

For the general methods and study protocol we refer to:

Report first testing point: <https://www.sciensano.be/en/biblio/prevalence-and-incidence-antibodies-against-sars-cov-2-children-and-school-staff-measured-between>, and

Study protocol: <https://www.sciensano.be/en/biblio/prevalence-and-incidence-antibodies-against-sars-cov-2-children-and-school-staff-measured-one-year>.