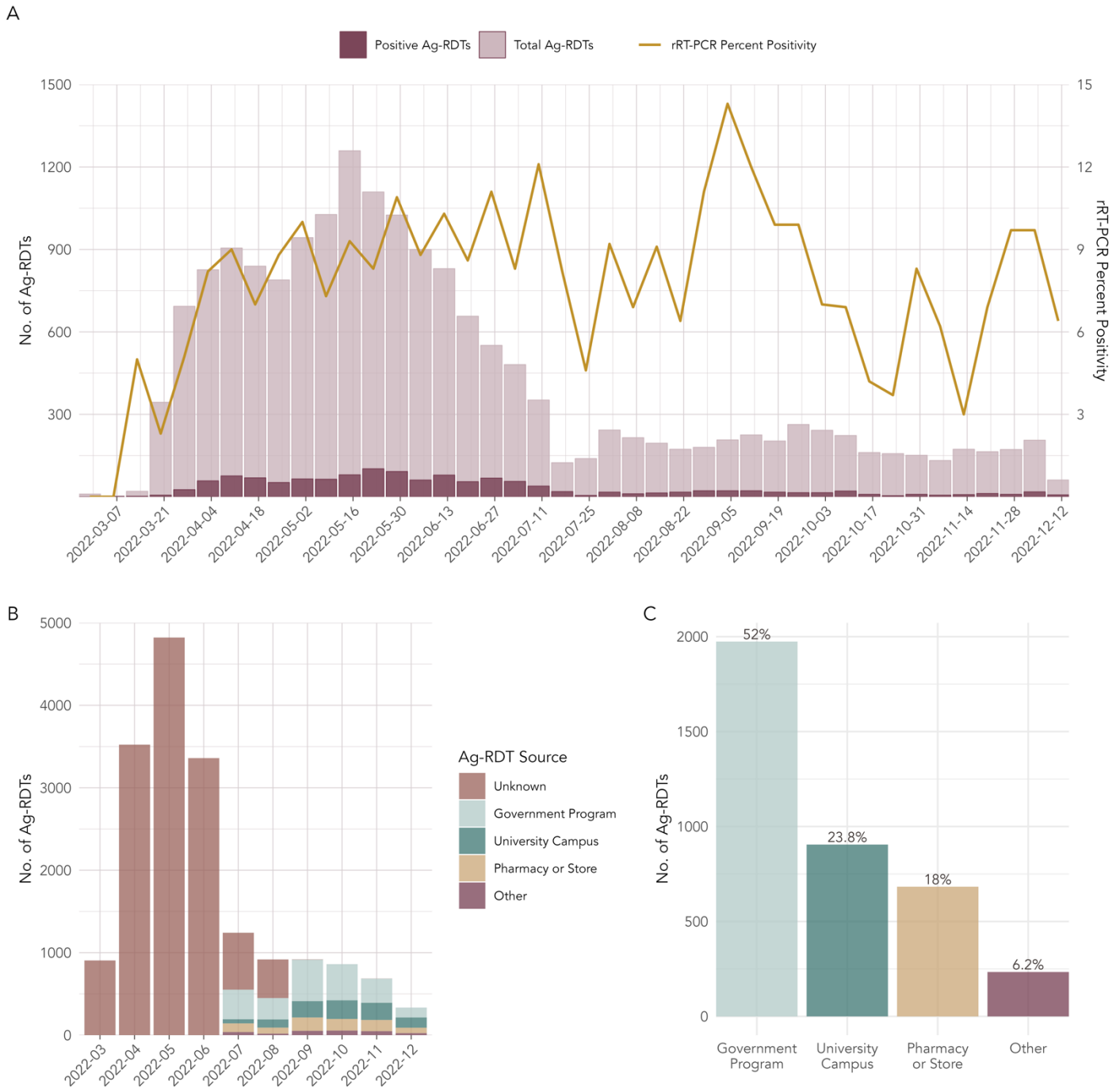


Supplemental Material

Supplemental Figure 1. SARS-CoV-2 real-time reverse transcription polymerase chain reaction (rRT-PCR) percent positivity (a), total versus positive antigen-detection rapid diagnostic test (Ag-RDT) results (a), and Ag-RDT source (b-c), N = 12,674 rRT-PCR and 17,572 Ag-RDT results from 5,575 individuals.



Supplemental Table 1. Reported symptoms for SARS-CoV-2 real-time reverse transcription polymerase chain reaction (rRT-PCR) and antigen-detection rapid diagnostic test (Ag-RDT).

Symptom	No. (%) of rRT-PCR tests, N=12,674	No. (%) rRT-PCR-positive of tests with symptom presence	No. (%) of Ag-RDT tests, N=17,572	No. (%) Ag-RDT-positive of tests with symptom presence
Feeling feverish	923 (7.3)	282 (30.6)	1481 (8.4)	321 (21.7)
Headache	2039 (16.1)	390 (19.1)	3155 (18.0)	489 (15.5)
New or worsening cough	1901 (15.0)	524 (27.6)	3041 (17.3)	627 (20.6)
Chills or shivering	604 (4.8)	208 (34.4)	1018 (5.8)	246 (24.2)
Sweats	422 (3.3)	137 (32.5)	715 (4.1)	176 (24.6)
Sore throat or itchy/scratchy throat	3371 (26.6)	632 (18.7)	5283 (30.1)	775 (14.7)
Nausea or vomiting	367 (2.9)	74 (20.2)	572 (3.3)	99 (17.3)
Runny or stuffy nose	2725 (21.5)	484 (17.8)	4230 (24.1)	598 (14.1)
Feeling more tired than usual	1942 (15.3)	354 (18.2)	3119 (17.7)	458 (14.7)
Muscle or body aches	1058 (8.3)	278 (26.3)	1765 (10.0)	350 (19.8)
Increased trouble with breathing	244 (1.9)	63 (25.8)	386 (2.2)	83 (21.5)
Diarrhea	320 (2.5)	51 (15.9)	543 (3.1)	68 (12.5)
Rash	32 (0.3)	4 (12.5)	60 (0.3)	14 (23.3)
Ear pain or ear discharge	225 (1.8)	53 (23.6)	347 (2.0)	56 (16.1)
Eye pain	126 (1.0)	32 (25.4)	213 (1.2)	40 (18.8)
Loss of smell or taste	62 (0.5)	26 (41.9)	113 (0.6)	38 (33.6)

Supplemental Table 2. Sensitivities indicating the probability of at least one positive result out of all SARS-CoV-2 antigen-detection rapid diagnostic test (Ag-RDTs) performed between days -1 to +1 and days -1 to +7 of a positive real-time reverse transcription polymerase chain reaction (rRT-PCR) adjusted for intraparticipant correlation.

	At Least One Ag-RDT Positive Result (Day -1 to +1), N = 667 testing instances from 614 individuals		At Least One Ag-RDT Positive Result (Day -1 to +7), N = 789 testing instances from 720 individuals	
	No. of Ag-RDT True Positive	Sensitivity, % (95% CI)	No. of Ag-RDT True Positive	Sensitivity, % (95% CI)
Overall	417	62.5 (58.8 – 66.1)	521	66.0 (62.3 – 69.3)
Symptom status at the time of rRT-PCR [†]		*		***
Symptomatic	388	64.0 (60.3 – 67.6)	484	68.7 (65.1 – 72.0)
Asymptomatic	29	47.5 (35.4 – 60.0)	37	44.0 (33.8 – 54.8)
Symptom status of illness episode [‡]		*		***
Symptomatic	391	64.0 (60.2 – 67.7)	489	68.8 (65.3 – 72.1)
Asymptomatic	26	46.4 (33.9 – 59.4)	32	41.0 (30.7 – 52.2)
Days from symptom onset to first test [§]	N = 544	***	N = 629	*
1 to 7 days before symptom onset	10	43.5 (25.2 – 63.7)	14	58.3 (38.3 – 75.9)
Same day as symptom onset	115	55.6 (48.7 – 62.2)	138	63.9 (57.3 – 70.0)
1 to 3 days after symptom onset	176	70.7 (64.7 – 76.0)	227	74.9 (69.8 – 79.5)
4 to 7 days after symptom onset	49	75.4 (62.5 – 84.3)	61	70.9 (60.5 – 79.5)
COVID-like illness [¶]		***		***
Yes	324	66.4 (62.1 – 70.5)	402	70.8 (66.9 – 74.4)
No	93	52.0 (44.6 – 59.2)	119	53.8 (47.2 – 60.3)
COVID-19 Vaccination status		(p = 0.96)		(p = 0.77)
Fully vaccinated and boosted	318	62.2 (58.0 – 66.3)	401	66.5 (62.6 – 70.2)
Fully vaccinated	67	63.2 (53.5 – 72.0)	85	65.9 (57.2 – 73.7)
Unvaccinated or unknown	32	64.0 (49.9 – 76.0)	35	61.4 (48.1 – 73.2)
Orf1b Ct		***		***
≤ 20	55	87.3 (76.6 – 93.5)	64	87.7 (78.0 – 93.5)
20.01 to 25	150	80.2 (73.9 – 85.3)	184	82.1 (76.6 – 86.6)
25.01 to 30	110	65.9 (58.4 – 72.7)	135	68.9 (62.1 – 75.0)
30.01 to 35	69	46.6 (38.7 – 54.7)	92	51.1 (43.8 – 58.4)
> 35	32	32.3 (23.9 – 42.1)	45	40.2 (31.5 – 49.5)

* *p*-value < 0.05

** *p*-value < 0.01

*** *p*-value < 0.001

[†] Symptomatic if reported symptoms at least once with onset in the 7 days prior to or on rRT-PCR test date.

[‡] Symptomatic if reported symptoms at least once with onset between the 7 days prior to and 7 days following rRT-PCR test date.

[§] First test date of each rRT-PCR-to-Ag-RDT match.

[¶] COVID-like illness indicated if participant reported acute onset of (1) at least one symptom of cough, loss of taste or smell, difficulty breathing or chest pain or (2) at least two symptoms of fever, chills, muscle or body aches, headache, sore throat, nausea or vomiting, diarrhea, fatigue, or runny nose within +/- 3 days of rRT-PCR.

Supplemental Table 3. Concordance by days from SARS-CoV-2 antigen-detection rapid diagnostic test (Ag-RDT) to real-time reverse transcription polymerase chain reaction (rRT-PCR) testing, overall and stratified by rRT-PCR test result.

Ag-RDT Date from rRT-PCR	Overall (N = 17,572)		rRT-PCR-Positive (N = 1,739)		rRT-PCR-Negative (N=15,833)	
	Ag-RDTs (N)	Concordance, (%)	Ag-RDTs (N)	Concordance (%)	Ag-RDTs (N)	Concordance (%)
7 days before	451	94.0	31	67.7	420	96.0
6 days before	555	93.7	35	45.7	520	96.9
5 days before	716	93.9	51	49.0	665	97.3
4 days before	1,033	94.4	79	43.0	954	98.6
3 days before	1,491	94.2	109	37.6	1382	98.6
2 days before	2,151	94.0	176	36.9	1975	99.0
1 day before	3,262	92.2	358	37.7	2904	98.9
Same day	3,391	88.5	405	59.3	2986	92.4
1 day after	1,113	93.0	100	73.0	1013	95.0
2 days after	821	88.3	50	64.0	771	89.9
3 days after	690	90.3	60	70.0	630	92.2
4 days after	542	89.3	65	70.8	477	91.8
5 days after	493	87.2	77	72.7	416	89.9
6 days after	430	88.4	73	68.5	357	92.4
7 days after	433	83.1	70	62.9	363	97.1

Supplemental Table 4. Concordance by days from SARS-CoV-2 antigen-detection rapid diagnostic test (Ag-RDT) to real-time reverse transcription polymerase chain reaction (rRT-PCR) testing, stratified by symptom status and rRT-PCR test result.

Ag-RDT Date from rRT-PCR	Symptomatic, N=8,977				Asymptomatic, N=8,595			
	rRT-PCR-Positive (N=1,571)		rRT-PCR-Negative (N=7,406)		rRT-PCR-Positive (N=168)		rRT-PCR-Negative (N=8,427)	
	Ag-RDTs (N)	Concordance (%)	Ag-RDTs (N)	Concordance (%)	Ag-RDTs (N)	Concordance (%)	Ag-RDTs (N)	Concordance (%)
7 days before	25	68.0	163	94.5	6	66.7	257	96.9
6 days before	32	46.9	207	95.2	3	33.3	313	98.1
5 days before	40	47.5	282	96.8	11	54.5	383	97.7
4 days before	67	43.3	391	97.2	12	41.7	563	99.6
3 days before	96	36.5	594	97.3	13	46.2	788	99.6
2 days before	163	36.8	917	99.0	13	38.5	1058	99.1
1 day before	333	38.1	1499	98.5	25	32.0	1405	99.4
Same day	371	59.8	1469	93.9	34	52.9	1517	91.0
1 day after	87	79.3	535	91.4	13	30.8	478	99.0
2 days after	40	72.5	404	81.7	10	30.0	367	98.9
3 days after	50	80.0	275	84.4	10	20.0	355	98.3
4 days after	60	76.7	205	83.9	5	0	272	97.8
5 days after	73	76.7	170	80.0	4	0	246	96.7
6 days after	68	70.6	142	83.1	5	40.0	215	98.6
7 days after	66	63.6	153	75.2	4	50.0	210	95.7

Supplemental Table 5. Sociodemographic characteristics of study participants compared to excluded individuals who did not report a SARS-CoV-2 antigen-detection rapid diagnostic test (Ag-RDT) result within 7 days of real-time reverse transcription polymerase chain reaction (rRT-PCR).

	No. (%) of individuals, N = 15,015	No. (%) of participants, N = 5,575
Age, years (Median [Min, Max])	22.0 [15.0, 83.0]	29.0 [18.0, 82.1]
Age, years (Mean [Std])	28.8 [13.5]	33.9 [15.0]
Age group		
≤ 17 years	26 (0.2)	0
18 – 24 years	8996 (59.9)	2222 (39.9)
25 – 49 years	4213 (28.1)	2279 (40.9)
≥ 50 years	1780 (11.9)	1074 (19.3)
Sex assigned at birth		
Male	5423 (36.1)	1830 (32.8)
Female	9494 (63.2)	3708 (66.5)
Other or prefer not to say	95 (0.6)	37 (0.7)
Race		
American Indian or Alaskan Native	49 (0.3)	16 (0.3)
Asian	5137 (34.2)	1419 (25.5)
Black or African American	329 (2.2)	89 (1.6)
Native Hawaiian or Pacific Islander	35 (0.2)	12 (0.2)
White	7434 (49.5)	3359 (60.3)
Other	454 (3.0)	142 (2.6)
Multiple	1179 (7.9)	418 (7.5)
Missing or prefer not to say	398 (2.7)	120 (2.2)
Hispanic/Latinx ethnicity	1076 (7.2)	358 (6.4)
University affiliation		
Student	10729 (71.5)	3026 (54.3)
Greek sorority or fraternity member	679 (6.3)	108 (3.6)
Staff	2993 (20.0)	1746 (31.3)
Faculty	1180 (7.9)	752 (13.5)
Other	113 (0.8)	51 (0.9)
Housing		
Off-campus house or apartment	6857 (45.7)	2934 (52.6)
On-campus housing	2675 (17.8)	848 (15.2)
Sorority or fraternity housing	112 (0.7)	11 (0.2)
Other	5371 (35.8)	1782 (32.0)
Household size		
Lives alone	1359 (9.1)	598 (10.7)
2 people	3688 (24.6)	1486 (26.7)
3 – 5 people	3677 (24.5)	1350 (24.2)
≥ 6 people	985 (6.6)	211 (3.8)
Missing	5306 (35.3)	1930 (34.6)
On-campus frequency		
Do not come to campus	1638 (10.9)	796 (14.3)
≤ 1 day/week	2139 (14.2)	982 (17.6)
≥ 2 days/week	11237 (74.8)	3796 (68.1)
Missing	1 (0.01)	1 (0.02)
Mask use		
Always	3857 (25.7)	1547 (27.8)
Sometimes	2589 (17.2)	1091 (19.5)
Never	181 (1.2)	44 (0.8)
Mixed*	3801 (25.3)	2619 (47.0)
Missing	4587 (30.5)	274 (4.9)
Social distancing		
Always	1950 (13.0)	835 (15.0)
Sometimes	4127 (27.5)	2136 (38.3)
Never	608 (4.0)	248 (4.5)
Mixed*	2750 (18.3)	1976 (35.4)
Missing	5580 (37.2)	380 (6.8)

* Multiple responses of always, sometimes, and never reported during the study