

Heterogeneous SARS-CoV-2 humoral response after COVID-19 vaccination and/or infection in the general population.

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Supplementary Information

Supplementary Tables.

Table S1. Characteristics of participants

Covariates	n (%) or median (Q1-Q3)
Source cohorte	
Constances	6082 (44)
E3NE4N	3768 (27)
Nutrinet-Santé	4121 (30)
Age - yrs	58 (45-71)
Age group (years)	
[20-30[	227 (1.6)
[30-40[	1673 (12)
[40-50[	2960 (21)
[50-60[	2455 (18)
[60-70[	2693 (19)
[70-80[	3504 (25)
80+	459 (3.3)
Gender	
Male	4749 (34)
Female	9222 (66)
Living Area	
Rural	2902 (21)
<20,000 inhab.	2171 (16)
20-000-100,000 inhab.	2282 (17)
>100,000 inhab.	6327 (46)
Missing	289
Household size and composition	
Nb adults (inc. participant)	
1	2411 (17)
2	6409 (46)
3+	5150 (37)
Nb children (<18yrs)	
0	10212 (73)
1+	3758 (27)
Missing	1
Socio professional category	
Farmer	28 (0.2)
Craftsmen, traders and business owners	313 (2.3)
Executives and higher intellectual professions	6666 (49)
Intermediate occupations	3972 (29)
Employees	2000 (15)
Workers	246 (1.8)
Never worked	254 (1.9)
Other	145 (1.1)
Missing	347
Smoking status	
Non smoker	6866 (50)
Active smoker	1384 (10)
Ex-smoker	5452 (40)
Missing	269
Alcohol use (in g/dy)	
<5	5642 (43)
[5,10[	2512 (19)
[10,20[	2855 (22)
[20,30[	1208 (9.2)
≥30	901 (6.9)
Missing	853
BMI (kg/m ²)	
<25	8609 (62)
[25; 30[(overweight)	3732 (27)
>=30 (obese)	1241 (8.9)
Missing	389

Table S1. Characteristics of participants (continued)

Covariates	n (%) or median (Q1-Q3)
Chronic diseases	
No	9307 (67)
Yes (at least one)	4552 (33)
Don't know	80 (0.6)
Missing	32
Specific chronic diseases (a participant may suffer from several chronic diseases)	
Asthma, COPD, other respiratory diseases	1781 (13)
Diabetes	736 (5.3)
Hypertension	1500 (11)
Other cardiovascular diseases	439 (3.2)
Cancer	685 (4.9)
Anxiety, depression	354 (2.5)
Other	2676 (19)
Missing	32
Month baseline sampling (2020)	
May	2864 (21)
June	182 (1.3)
July	7662 (55)
August	2462 (18)
September	790 (5.7)
October	11 (0.1)
Month follow-up sampling (2021)	
May	11 (0.1)
June	11711 (84)
July	1836 (13)
August	346 (2.5)
September	49 (0.4)
October	18 (0.1)
Infected during the 1st wave	
No	11,058 (79)
Yes	2913 (21)

Table S2. Factors associated with an anti-spike IgG titer ≥ 264 BAU/mL at the follow-up sample

	Anti-spike IgG ≥ 264 BAU/mL n (%)	P-Value
Follow-up profiles NoVac, NoDiag 1Vac, NoDiag 2or3Vac, NoDiag NoVac, 1Diag NoVac, 2Diag 1or2Vac->Diag Diag->1Vac Diag->2or3Vac	62 (3.2) 1347 (39) 3974 (78) 144 (13) 12 (15) 24 (65) 1198 (75) 628 (93)	<0.0001
Age group (years) [20-30[[30-40[[40-50[[50-60[[60-70[[70-80[80+	104 (46) 626 (37) 1258 (43) 1203 (49) 1494 (55) 2433 (69) 271 (59)	<0.0001
Gender Male Female	2362 (50) 5027 (55)	<0.0001
BMI (kg/m ²) <25 [25; 30[(overweight) >=30 (obese) Missing	4487 (52) 2045 (55) 652 (53) 389	0.0229
Smoking status before lockdown Non smoker Active smoker Ex-smoker Missing	3635 (53) 655 (47) 2969 (55) 269	<0.0001
Alcohol use (in g/dy) <5 [5,10[[10,20[[20,30[≥ 30 Missing	2975 (53) 1312 (52) 1552 (54) 633 (52) 460 (51) 853	0.3670
Chronic diseases Yes No Don't know Missing	2613 (57) 4714 (51) 41 (51) 32	<0.0001
Infected during the 1st wave No Yes	5728 (52) 1661 (57)	<0.0001
Time between baseline and follow-up serology (days) Q1 (233-317(Q2 (317-330(Q3 (330-358(Q4 (358-514(	1651 (49) 1696 (49) 2204 (61) 1838 (53)	<0.0001

Supplementary Figures.

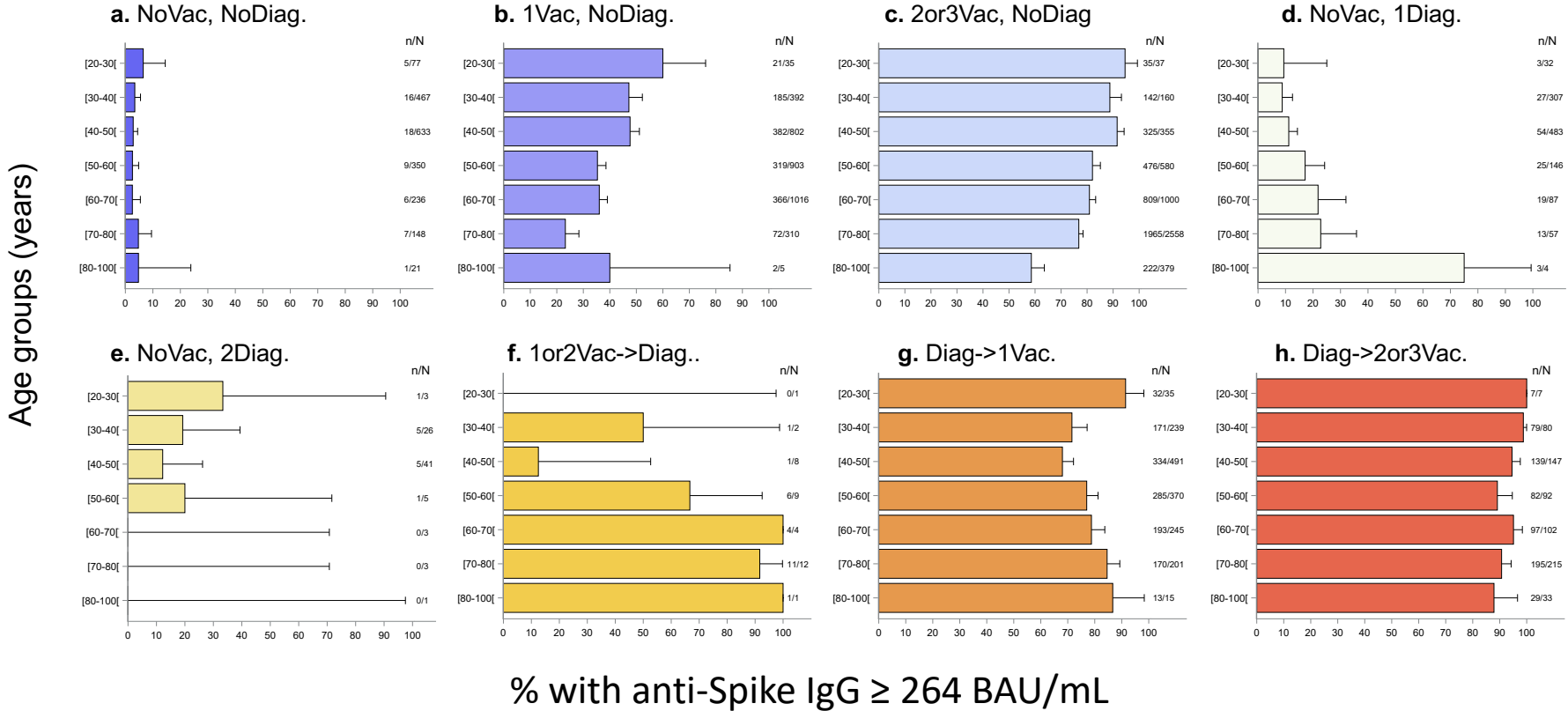


Figure S1. Proportion of participants with anti-spike IgG ≥ 264 BAU/mL according to age groups by follow-up profiles (a. to h.). Error bars represent upper-limit of the 95% Confidence Intervals calculated using an exact method.

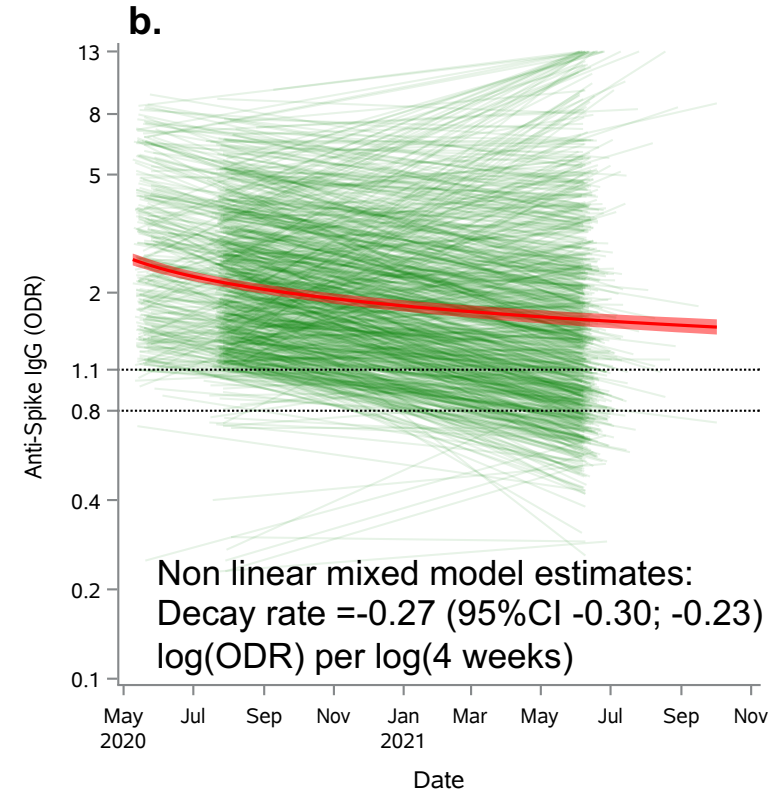
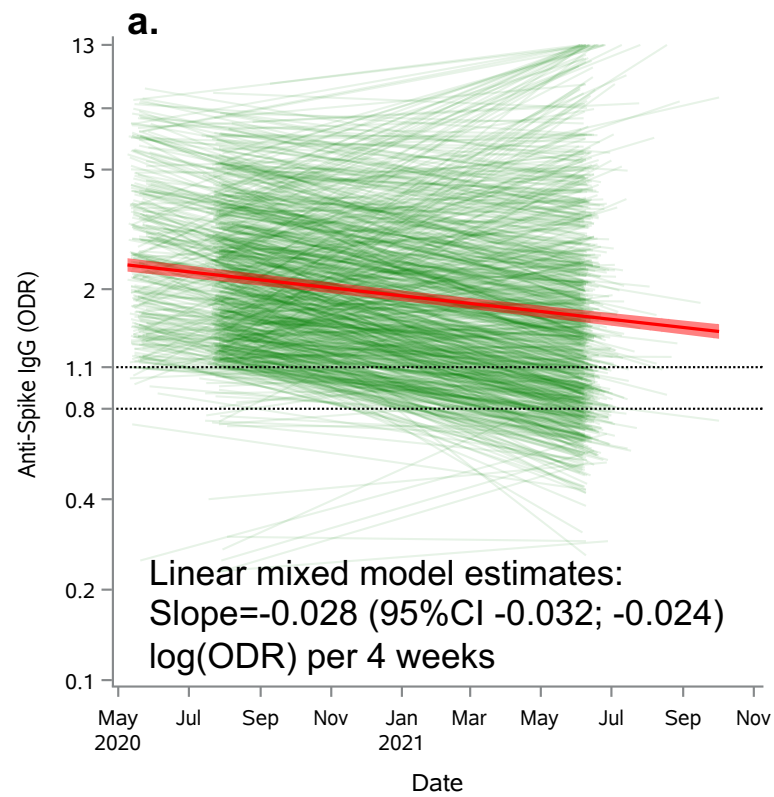


Figure S2. Spaghetti plot of anti-spike IgG (ODR) at baseline and follow-up in 834 participants infected during the first wave of the pandemic who remained unvaccinated at the time of the follow-up serology. **a.** Estimates from a linear mixed model with random by subject intercept. **b.** Estimates from a non-linear mixed power-law model with random by subject coefficients.

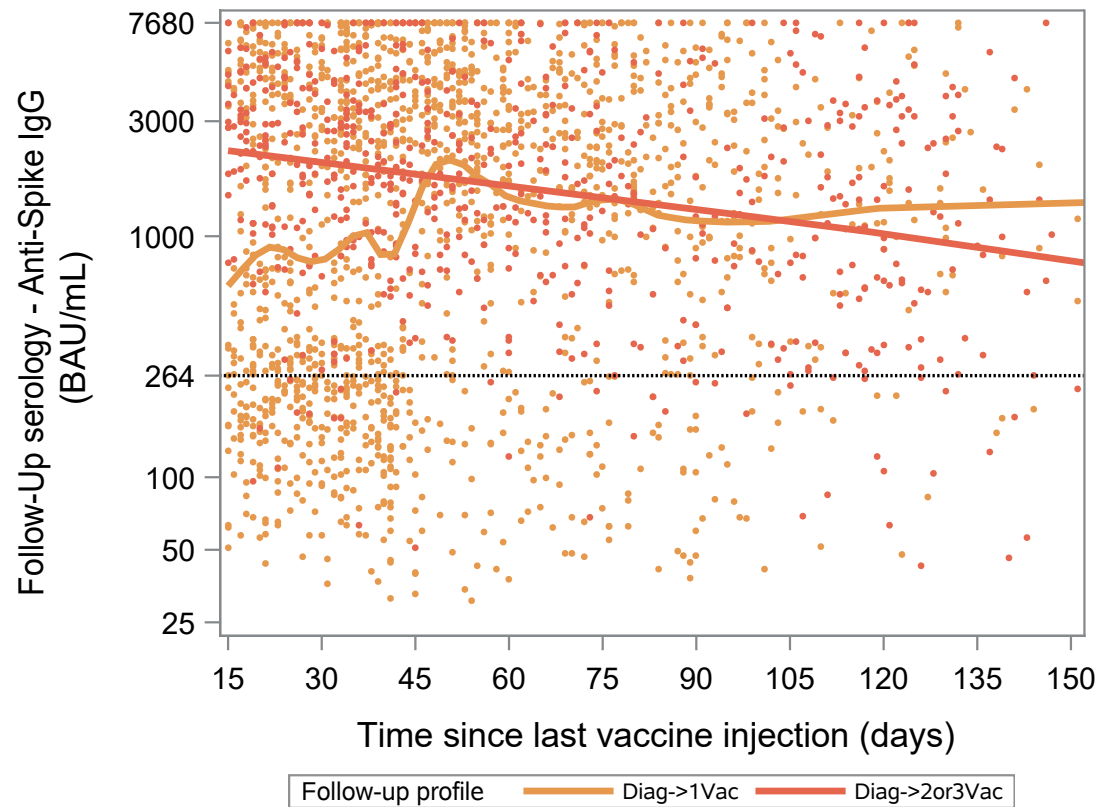


Figure S3. Scatter Plot of anti-spike IgG (BAU/mL) according to time since the first (Diag->1Vac) or second (Diag->2or3Vac) vaccine dose in participants with prior infection or diagnosis, and locally weighted polynomial smoothing (LOESS) trend estimates. The dashed line at 264 BAU/mL was estimated to be associated with 80% vaccine efficacy against symptomatic infection with the Alpha (B.1.1.7) variant⁹. Fourteen samples not shown, 5 participants with 3 vaccine doses not shown.

Supplementary Note S1.

The SAPRIS-SERO study group (full list)

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