Table S1: The distribution in terms of sex (64% females; 36% males) and age of the all the healthcare workers (HW) at IRCCS San Raffaele Hospital.

	age group (y)	n
Females	<48	2473
	48-52	584
	>52	1049
Total		**4106**
Males	<40	1002
	40-60	1015
	>60	272
Total		**2289**
Total HW in OSR		**6395**

Table S2: Serological tests in the population with the natural immunity to SARS-CoV-2. Median values and IQR (Q1 and Q3) are reported, disaggregated by sex (M: male; F: female) and age groups.

Age group	*M*			*F*			Age group
	Q1	Median	Q3	Q1	Median	Q3	
<40 y	7	27	65	8	27	69	*<48 y*
41-60 y	10	38	83	15	42	124	*48-52 y*
>60 y	24	59	105	10	43	130	*>52 y*

Table S3: Serological values at T1 of the reactive subjects to the first vaccine dose. Median values and IQR (Q1 and Q3) are reported. In males, the statistically significant difference is present between <40 y and 40-60y, between 40-60y and >60y, and between <40y and >60y (p<0.0001). In females, among the different groups the following p values are reported: <48y vs >52y, p<0.0001; <48y vs 48-52y, p=0.002; 48-52y vs >52y, p=0.002.

Age group	*M*			*F*			Age group
	Q1	Median	Q3	Q1	Median	Q3	

Age group							Age group
<40 y	27,1	62,9	145	24.4	54.1	129,5	*<48 y*
41-60 y	10,3	29,6	84,9	19	45	90	*48-52 y*
>60 y	4,5	12,1	35,7	9	29	81	*>52 y*

Table S4: Serological values at T2 to evaluate the response to the COVID-19 vaccine.
Median values and IQR (Q1 and Q3) are reported, disaggregated by sex and age groups.

Age group	*M*			*F*			Age group
	Q1	Median	Q3	Q1	Median	Q3	
<40 y	1185,5	1844	2500	1179,2	2054,5	2500	*<48 y*
41-60 y	693,2	1495	2264,5	1053,5	1609	2500	*48-52 y*
>60 y	623,2	1235,5	1850	700	1521	2500	*>52 y*

Table S5: Percentage of respondents based on disaggregated data by sex and age groups.

	age group (y)	%
Respondent females	<48	61
	48-52	15
	>52	24
Respondent males	<40	44%
	40-60	43%
	> 60	13%