

Supplementary Material

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Table S1. First section of the online survey

Questions	Possible answers
Sex	<ul style="list-style-type: none"> · Male · Female · Other
Age	Free answer
Marital Status	<ul style="list-style-type: none"> · Unmarried/maiden · Married · Separated · Widower · Other
Level of education	<ul style="list-style-type: none"> · Primary school · Secondary school · High school · Bachelor's degree · Master's degree · PhD · Other
What is your profession? (If you have difficulty identifying your sector, consult this site: https://www.atlantedelleprofessioni.it/professioni)	Free answer
Do you usually practice physical activity?	<ul style="list-style-type: none"> · No · Yes, less than once a week · Yes, once or twice a week · Yes, three or more times a week · Other
If you do physical activity, can you tell us what kind of activity?	<ul style="list-style-type: none"> · None · Fitness · Running · Swimming · Walk · Football · Other
Have you ever been affected by COVID-19?	<ul style="list-style-type: none"> · I've never been positive about Covid · I am currently positive for Covid · I had Covid but I am no longer positive (swab result: negative) · Other
Has the doctor ever diagnosed you with major diseases? (If yes, please specify)	Free answer
Were you in an immunocompromised situation during vaccination (e. g. immunosuppressive therapy, immunodeficient disease)?	<ul style="list-style-type: none"> · Yes · Not
Did you experience any side effects from the vaccination?	<ul style="list-style-type: none"> · Yes · Not
Questions	Possible answers

<p>If so, which ones?</p>	<ul style="list-style-type: none"> · No reaction · Tenderness, pain, warmth, itching or bruising where the injection is given · Feeling tired (fatigue) or generally feeling unwell · Chills or a feeling of fever · Headache · Feeling sick (nausea) · Joint pain or muscle pain · Swelling or redness where the injection is given · Fever (> 38 ° C) · Malaise (vomiting or diarrhea) · Drowsiness or feelings of dizziness · Decreased appetite · Enlarged lymph nodes · Excessive sweating, itching or rash · Other
<p>How worried were you about possible adverse reactions?</p>	<p>The answer uses a ten-point Likert scale ranging from 1–10 (from “not at all” to “very much”)</p>
<p>Did you hear about adverse vaccine reactions prior to vaccination?</p>	<ul style="list-style-type: none"> · No · Yes, from the TV · Yes, from social media · Yes, from friends or relatives · Yes, from colleagues · Yes, I had talked to my doctor about it · Other
<p>If you answered “Yes” to any of the above options, did you take any precautions?</p>	<ul style="list-style-type: none"> · Yes · Not
<p>If so, what precautions?</p>	<p>Free answer</p>

Table S2: trait characteristics

MAIA components	Median	Interquartile Range
Noticing	2.25	[1.00 – 3.00]
Not-Distracting	2.33	[1.66 – 3.00]
Not-Worrying	3.00	[2.33 – 3.66]
Attention Regulation	2.42	[1.60 – 3.28]
Emotional Awareness	2.80	[1.00 – 3.60]
Self-Regulation	1.80	[1.00 – 2.60]
Body Listening	2.00	[1.00 – 3.00]
Trusting	3.00	[2.00 – 4.00]
Concern about adverse reaction	4.00	[2.00 – 6.00]

Supplementary File S1

Classification accuracy between L-SB and H-SB groups based on all variables, including SicknessQ, at the baseline

The baseline variables exhibiting optimal efficiency in classifying the participant within the L-SB and H-SB groups have been identified through JRIP rule (Cohen, 1995 [18]) and its cut-offs. JRIP yielded an accuracy of **76.20 %**, as shown in the decision matrix (**Table S3**) and the rules (n. 6) were the following:

- 1) *If SicknessQ Total Score T0 is ≥ 3 , then the subject is classified as H-SB;*
- 2) *If SicknessQ Total Score T0 is ≥ 1 and MAIA Emotional Awareness is ≥ 3.6 , then the subject is classified as H-SB;*
- 3) *If Systemic Symptoms = Positive and Sex = Female and Age ≤ 53 and MAIA Noticing ≥ 1.25 and MAIA Not-Worrying ≥ 3 , then the subject is classified as H-SB;*
- 4) *If Systemic Symptoms = Positive and PSQI Subjective quality of sleep T0 ≥ 1 and Concerns about adverse reactions ≥ 6 and PSQI Sleep Latency T0 ≥ 1 , then the subject is classified as H-SB;*
- 5) *If Fever ($> 38^\circ\text{C}$)= Positive and Local symptoms= Positive and Concerns about adverse reactions ≥ 4 and MAIA Attention Regulation ≤ 2.714286 , then the subject is classified as H-SB;*
- 6) *If the previous five roles are not applicable, then the individual is classified as a L-SB subject.*

The reported set of decision rules results in high accuracy in classifying High-SB (176/227; accuracy=78%) and Low-SB (189/252; accuracy=75%) groups, AUC= 0.710 (d= 0.782) and F1=0.76.

Besides *JRIP*, the classification has been performed also by five other common classifiers: Naïve Bayes, Logistic Regression, Simple Logistic, Support Vector Machine, Random Forest. Their classification accuracy was estimated using k-fold cross validation technique (k=10) yielding performance similar to JRIP (**Table S4**).

In particular, the most accurate classifier in classifying individuals with low SB (209/252) and high SB (174/227) (83% and 77%, respectively) was the Support Vector Machine (SVM) with an overall accuracy of **79.96%**, AUC =0.729 (d=0.862). However, compared to JRIP the other classifiers did not allow identifying variables exhibiting optimal classification efficiency.

Table S3. Confusion matrix referring to the first preliminary round.

	L-SB (Group A) (n=252)	H-SB (Group B) (n=227)	Accuracy for corrected classification
L-SB	189	63	75%
H-SB	51	176	78%

Confusion matrix showing the clearer performing set of decision rules (n=6) with JRIP using 10-fold cross-validation (AUC=0.710, d=0.782; F1=0.76)

Table S4. Common classifiers referring to the first preliminary round.

Classifier	Accuracy (%)	AUC	F1	Correct classification
Naïve Bayes	77.04	0.835 (d=1.378)	0.76	L-SB: 229/252; H-SB: 140/227
Logistic Regression	77.04	0.827 (d=1.333)	0.77	L-SB: 198/252; H-SB: 171/227
Simple Logistic	78.50	0.833 (d=1.366)	0.78	L-SB: 211/252; H-SB: 165/227
Support Vector Machine	79.96	0.729 (d=0.862)	0.80	L-SB: 209/252; H-SB: 174/227
Random Forest	79.54	0.848 (d=1.454)	0.80	L-SB: 209/252; H-SB: 172/227

The correct classification achieved by the different classifiers measured by accuracy, AUC, F1.

Table S5. Confusion matrix referring to the second round

	L-SB (Group A) (n=252)	H-SB Group B) (n=227)	Accuracy for corrected classification
L-SB	171	81	68%
H-SB	50	177	78%

Confusion matrix showing the clearer performing set of decision rules (n=8) with JRIP using 10-fold cross-validation (AUC=0.692, d=0.709; F1=0.726)

Table S6: Common classifiers referring to the second round.

Classifier	Accuracy (%)	AUC	F1	Correct classification
Naïve Bayes	75.16	0.817 (d=1.278)	0.75	L-SB: 222/252; H-SB: 138/227
Logistic Regression	75.99	0.794 (d=1.160)	0.76	L-SB: 197/252; H-SB: 167/227
Simple Logistic	78.08	0.819 (d=1.289)	0.78	L-SB:199/252; H-SB: 175/227
Support Vector Machine	77.04	0.706 (d=0.766)	0.77	L-SB: 195/252; H-SB: 174/227
Random Forest	77.24	0.822 (d=1.305)	0.77	L-SB:197/252; H-SB: 173/227

The correct classification achieved by different classifiers measured by accuracy, AUC, F1

Table S7: Confusion matrix referring to the last round.

	L-SB (Group A) (n=252)	H-SB (Group B) (n=227)	Accuracy for corrected classification
L-SB	181	71	72%
H-SB	47	180	79%

Confusion matrix based on the JRIP set of decision rules, using 10-fold cross-validation. (AUC= 0.694; d=0.717; F1= 0.754)

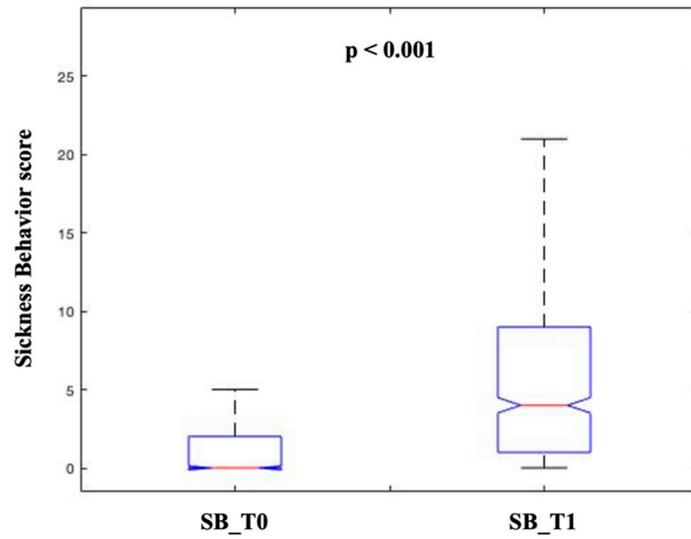


Figure S1. Boxplots show the increase in SB levels before (SB_T0) and after (SB_T1) vaccine inoculation. Boxes represent the first and third quartiles, and horizontal lines within boxes represent median values. Whiskers represent non-outlier high and low values.