



Scientific Synthesis in Response to the JAMA Internal Medicine Study

#ApresJ20 Covid Long France

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Document produced by the #ApresJ20 Association

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Presentation of the contested study

Here is a summary of the main points of our scientific argument sent to the authors.

1- Imbalance between the individuals concerned by Covid-19 and the whole cohort

(Graph1 & Graph2)

The study covers 27,000 people, BUT **less than 6% of the cohort (~1,500 people) were somehow affected by Covid-19**, either by a positive serological test or by a reported contamination, limiting the scope of the statistical results of the study.

2- The study's basic hypothesis is biased:

"We hypothesized that the belief in having been infected with SARS-CoV-2 would be associated with persistent symptoms while controlling for actual infection."

⇒ **Our objection: serological tests cannot be used to identify infections,**
because they have too much uncertainty.

2.1- Not taken into account: **large proportion of false positives in the serological tests** *(Graph2)*

The imbalance of the cohort results in **59% false positives among the 1091 positive serologies**, yet considered proven infections.

⇒ **By dilution, the statistical results of the positive serologies have little relation to Covid-19.**

2.2- Not taken into account: **large proportion of negative serologies among Covid-19 patients**

(Graph3)

- **serological tests are not totally reliable** despite the presence of antibodies (87%),
- **25% of patients have no detectable antibodies**, and this rate increases over time as the antibodies disappear.

⇒ **SARS-COV-2 may have actually infected a significant proportion of reported Covid-19 patients who are seronegative**, with the rate of negative serology among reported patients (50%) being close to that expected for proven patients (>34%).

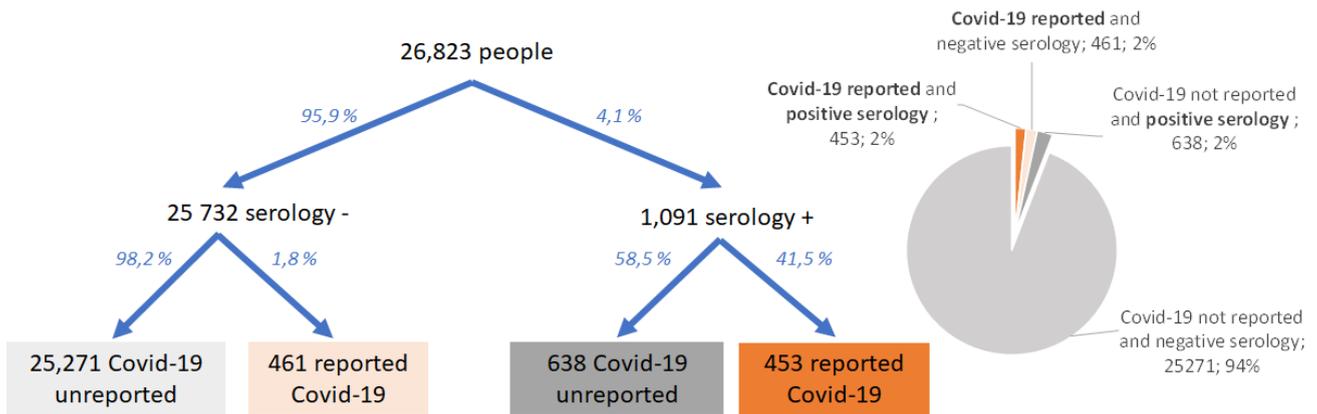
3- The proportion of anosmia (loss of smell), which is very specific to Covid-19, is very high in those who report infection, regardless of serology result.

(25 times higher than the general population)

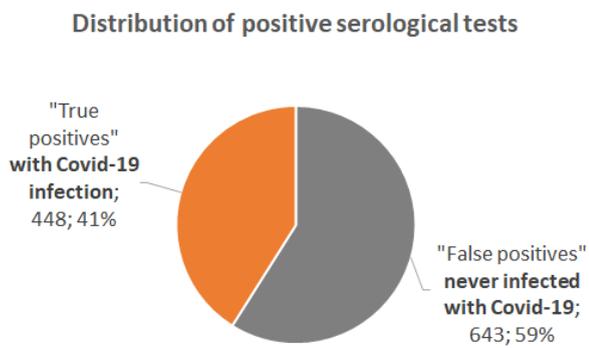
⇒ **This confirms that a large proportion of persons "believing" they were infected were indeed infected with SARS-COV-2.**

⇒ **The statistical relationship between "belief" and 16 prolonged symptoms seems related to Covid-19.**

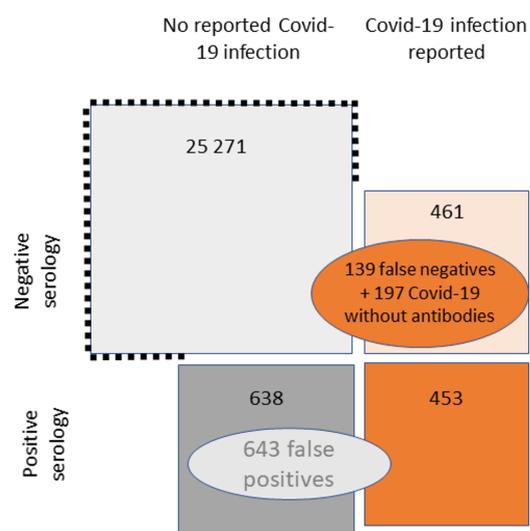
Illustrations



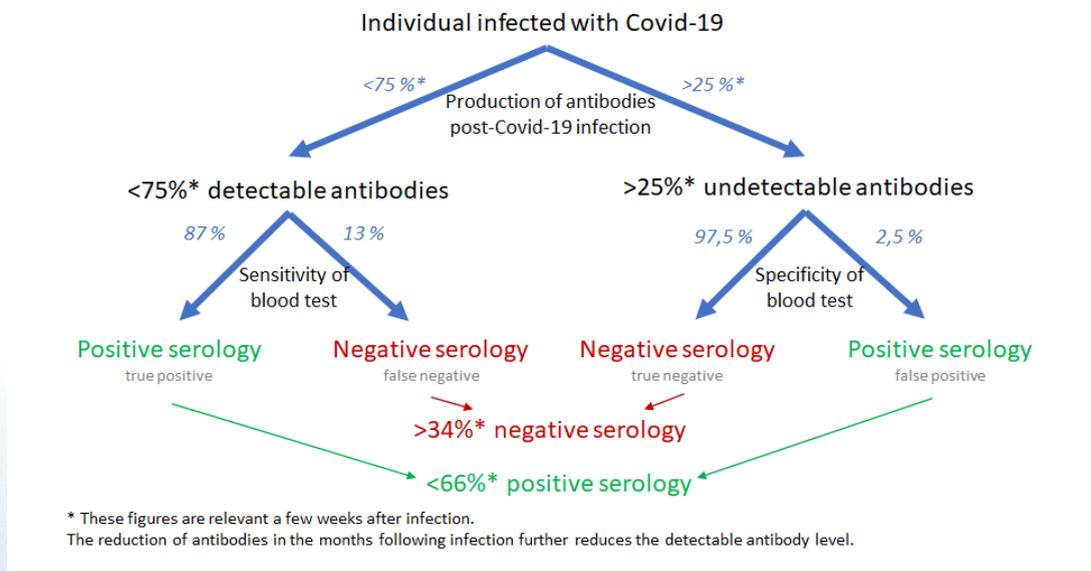
Graph1 - Breakdown of the cohort under investigation



Graph2 - Distribution of true and false positives within the positive serological tests



Graph3 - Distribution of populations by serological status and self-reported Covid-19 infections, taking into account false positives / false negatives and absence of detectable antibodies



Graph4 - Determination of the serological status of a person infected with Covid-19