

## Does anyone know about the current status of development of Covid-19 finger prick antibody tests?

Why am I asking this question ?

It is well known that natural antibodies (i.e., sIgM) may nonspecifically protect against a number of microorganisms, including viruses. There is even an increasing appetite for exploring their therapeutic potential for treatment of Covid-19 patients (M. Aziz et al., Therapeutic potential of B-1A cells in Covid-19, Shock-2020). As I've explained in previous contributions and interviews, natural Abs (NABs) that protect against Covid-19 may be outcompeted by Ag-specific (i.e., S-specific) Abs for binding to Covid-19 (this is because the latter always have greater affinity for S). Hence S-specific IgG may put NABs out of business. This is a critical finding; it may explain why we're now seeing an increasing number of youngsters contracting Covid-19 disease. With increasing infectious pressure, the likelihood that an asymptomatic carrier gets re-exposed to a viral variant while possessing (short-lived) Abs significantly augments. As a result from emerging, highly infectious variants, we now even see perfectly healthy children (i.e., without underlying disease) suffering from severe disease (several cases have, for example, been reported in Israel).

Personally, I cannot explain why highly infectious strains would be more virulent as some pretend. The enhanced infectiousness merely relates to a stronger binding affinity of the S protein (of viral variants) to the ACE2 receptor. In my humble opinion, the apparently enhanced virulence is simply caused by the fact that once a highly infectious strain starts circulating, it will soon become dominant and, therefore, be more likely to suppress the innate immune response of previously asymptotically infected youngsters (see explanation above). Of course, when their innate immune response gets suppressed, these youngsters are now at risk of falling prey to Covid-19 disease whereas they were not during the first wave (lower infectious pressure, no highly infectious strains circulating). So, I see no scientific explanation for why the host's polyspecific, innate immunity would not be capable to deal as well with highly infectious as with less infectious variants, provided it does not get suppressed (which, unfortunately, becomes increasingly likely when highly infectious variants start to dominate the scene).

If this is true (and I actually think it is), then a fast and user-friendly serologic assay could be of tremendous help to our youngsters, and basically to anyone who is in good health (no underlying disease or predisposing factors). Although there is no reliable assay yet to measure NABs, one can easily measure S-specific anti-Covid-19 Ab titers that actually suppress/ bypass them.

So, when you're seronegative, you can conclude your innate immunity is not suppressed and you're good to withstand exposure to Covid-19 (including its infectious variants). However, if you're seropositive but you did not develop relevant symptoms, you just isolate for a couple of days and measure your Abs again (remember if you got asymptotically infected, your S-specific Abs will disappear after a week or so). So, a serologic finger prick test would allow people to become aware of their innate immune status with regard to Covid-19 (and CoV in general). ***You're positive, you stay; you're negative, you go.*** Of course, this only becomes interesting if you're not vaccinated. Being vaccinated with one of the current vaccines will cause a long-lived suppression of your innate immunity. You'll, therefore be more susceptible to highly infectious variants, no matter how hard you 'train' your innate immune system.

***So, who's developing this kind of (reliable!) finger-prick assays that people could easily use to indirectly monitor their first line of immune defense against CoVs in general and Covid-19 in particular?***