

# What is seropositivity and sero positivity survey?

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**In news :** Smokers and vegetarians were found to have lower seropositivity indicating that they may be at a lesser risk of getting infected by coronavirus, according to a pan-India serosurvey conducted by the CSIR

## What is seropositivity?

- Seropositive means having or being a positive serum reaction especially in a test for the presence of an antibody.
- The state of either having or not having detectable antibodies against a specific antigen, as measured by a blood test (serologic test).
- For example, HIV seropositive means that a person has detectable antibodies to HIV; seronegative means that a person does not have detectable HIV antibodies.

## What are sero-surveys?

Sero-surveys use tests that examine the liquid part of blood, or 'serum', not nose, throat and mouth fluid. And these tests detect an immune response to the virus material, not SARS-CoV-2 virus material itself.

## How does the survey work?

- Upon virus infection, the body comes up with many immune responses. One of these is making proteins called antibodies that stick (or 'bind') to the virus – these show up within a few days after infection.
- The infection itself typically disappears after a couple of weeks. But the anti-virus antibodies, especially the IgG kind, stay around in the blood for a fairly long

time, at least for months.

- These antibodies are made whether the infected person was asymptomatic or had any actual illness. And of course, nobody who has not encountered the virus will have these particular antibodies.
- If a person was infected, virus material would be detectable in their nose, throat and mouth fluid for a couple of weeks at most.
- If testing was not done in that time, we would never know if the person had been infected by the virus. But IgG antibodies stay in the blood of such a person for a long time.
- If we test the blood for these antibodies at any point and find them (making the person 'sero-positive'), we can say that this person had indeed been infected in the recent weeks/months.
- Sero-surveys test blood samples of healthy people for anti-SARS-CoV-2 IgG antibodies. Everybody cannot be tested, only a few people chosen at random are tested.
- The results are an estimate of the proportion of people who have been infected in the past. This information gives a wide-angle picture over time of how the virus has spread in the community.

### **What do the current CSIR Sero-surveys tell us?**

- The survey conducted by Council of Scientific and Industrial Research (CSIR) Smokers and vegetarians were found to have lower seropositivity indicating that they may be at a lesser risk of getting infected by coronavirus
- It also found that those with blood group 'O' may be less susceptible to the infection, while people with 'B' and 'AB' blood groups were at a higher risk.
- The study which was piloted by CSIR-Institute of Genomics and Integrative Biology (IGIB), Delhi
- The study found that higher seropositivity was found for

those using public transport and with occupational responsibilities such as security, housekeeping personnel, non-smokers and non-vegetarians,

- This is for the first time that a study has been done in India wherein individuals have been monitored for three months (35 individuals) to six months (346 individuals) for antibodies including those with probable neutralising activity

## **CSIR-IGIB**

- CSIR Institute of Genomics and Integrative Biology is a scientific research institute devoted primarily to biological research.
- It is engaged in research of national importance in the areas of genomics, molecular medicine, bioinformatics and proteomics.
- It is a part of Council of Scientific and Industrial Research, India.
- It was established in 1977 as the Center for Biochemical Technology with a primary focus on biochemical research, but has since shifted its research focus to integrative biology.
- The Functional Genomics Unit was established in 1998 with the focus shifting from chemical to genomics research.
- The institute was renamed “Institute of Genomics and Integrative Biology” in 2002.