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# Pune: Immune response study of Covid shots likely soon

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PUNE: The CSIR-National Chemical Laboratory (NCL) and the Indian Institute of Science Education and Research (IISER) are soon likely to study the immune response to Covid-19 vaccination by measuring the concentration of antibodies in a section of inoculated healthcare workers in Pune. Though at a nascent stage, these institutes have sent a request for funding the Pune project to the programme director, office of the principal scientific adviser, Government of India, the Council of Scientific and Industrial Research (CSIR) and are seeking corporate societal responsibility (CSR) funding from industries, aiming to get over Rs 5 crore for the same.

LS Shashidhara, professor, IISER-Pune, who had earlier led Pune's sero-survey, told TOI, "It is important to study the the immune response to vaccination at the population level given India's huge diversity at the levels of genetics, nutrition and comorbidities. Both diversity in antibodies and quantitative levels of those antibodies should be measured."

The project would aim at tracking the immune response post-vaccination in volunteers, Anu Raghunathan, senior principal scientist, CSIR-National Chemical Laboratory (NCL) told TOI.

Raghunathan said, "Both Covishield and Covaxin are being deployed at the moment. One of the key responses of the adaptive immune system to infection is the production of pathogen-specific antibodies by B cells. We need to track the impact of the vaccine on the immune system after one or two doses of it, including the types and amounts of antibodies produced by the

vaccine.”

Raghunathan added that the project would involve sampling individuals post-vaccination to gauge the long term impact of the vaccine. “We aim at seeking at least 500-1,000 volunteers from multiple groups of individuals covering all ages with and without underlying illnesses. A minimal number of volunteers are targeted to make inferences of the study statistically significant,” he said.

Scientists involved in the process said humoral immune response would be monitored through identification and quantitation of antibodies using enzyme-linked immunosorbent assay (ELISA). “Different antibodies and their subtypes will be identified including immunoglobulin G and A (IgG and IgA),” said Raghunathan.

Shashidhara said there were simple and less expensive methods that could be deployed for largescale studies. “The results will provide valuable inputs for planning future strategies to deal with current and future pandemics or localized epidemics. More importantly, the results will be useful to strategize largescale vaccination, thereby bringing back the normalcy in life. As current young and adolescent children are not vaccinated immediately, these studies will also help plan their vaccination as and when they become adults or to plan vaccination of infants and children.”

Dr Aurnab Ghose, scientist, IISER said, “The project on tracking the immune response post-vaccination follows a call for proposals from K VijayRaghavan, principal scientific adviser to the Centre, to study aspects of the inoculation drive.”