

Investigation of Covid-19 cases and use of serological tests

Press release from the French National Academy of Medicine

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The release from the containment opens a critical period during which the relaxation of the rules on the movements of persons may facilitate the transmission of the virus and may lead to new outbreaks of Covid-19. Despite its severity, the epidemic leaves a level of herd immunity against SARS-CoV-2 insufficient for the French population to be protected against the risk of a rebound, especially in the least affected regions.

The implementation of a system for case investigation and tracing contacts should allow early detection and containment of any emerging outbreak. This strategy aimed at controlling the circulation of the virus places the general practitioner at the heart of the system [1]. In addition to the virus direct detection by RT-PCR, serological tests will be available for indirect diagnosis of CoV-2-SARS infection.

Several types of serological tests have been developed, which detect IgG and IgM antibodies from a sample of venous blood for ELISA tests, or capillary blood for rapid diagnostic orientation tests (RDTs) [2]. After evaluation by the National Reference Center (CNR) for respiratory infection viruses, several tests were selected on their analytical performance (sensitivity and specificity greater than 95%), adapted to the automated systems used in medical analysis laboratories. In the current state of knowledge, if a negative serology informs the subject that he is receptive and that he must particularly protect himself from the risk of infection, a positive serology does not allow to certify that he is protected against reinfection. Antibody detection is in favour of recent infection with SARS-CoV-2, especially if the patient has presented symptoms suggestive of Covid-19 in the previous months, allowing to expect the development of protective immunity.

As part of the national strategy to investigate Covid-19 cases, the National Academy of Medicine recommends:

- that only the tests recommended by the CNR and included in the list proposed by the Ministry of Solidarity and Health be used, and reimbursed if prescribed;
- that serological tests be systematically combined with PCR tests for the identification of foci of infection and the detection of people contact;
- that persons with a positive PCR test, regardless of the serological result, be placed in isolation, followed and tested weekly until the PCR test is negative;
- that persons with a negative serology and a negative PCR test results are placed in isolation for two weeks, and that the release from isolation is conditioned by a control of the negativity of the PCR test;
- that persons with a positive serology and a negative PCR test, at least one week after having presented clinical signs consistent with SARS-CoV-2 infection, be considered to be immune and not be placed in isolation.

1. Press Release of the National Academy of Medicine: "The general practitioner facing Covid-19", May 11, 2020.

2. Press Release of the National Academy of Medicine: "Covid-19 tests: collective and individual applications", April 10, 2020.