

Omicron: Here's why we're going to win the war against the virus

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Several recent studies show that the Omicron variant is less pathogenic and remains vulnerable to our immune defenses, which will allow us to win the battle against this virus.

The dizzying rise in cases of COVID-19 caused by the Omicron variant in Quebec and in several regions of the world shows that the mutations acquired by the virus have radically improved its contagion potential. Most of this increased transmission comes from its evasion of antibodies generated by vaccination or a previous infection, which allows it to infect a very large number of people, even when they are adequately vaccinated.

CELLULAR IMMUNITY INTACT

It should be remembered that it is the unvaccinated people who remain the most at risk of developing serious forms of Covid-19 requiring hospitalization, while the vast majority of double vaccinated are relatively spared.

This protection offered by vaccination is explained by the presence of an excellent cellular immunity (mediated by T lymphocytes) which eliminates the cells infected by the virus: to make a simple analogy, our immunity can be compared to a fortress containing elite troops of soldiers (T lymphocytes) and surrounded by a fence (antibodies). The Omicron variant is able to find a loophole in the protection offered by the wall and avoid neutralization by antibodies, but nevertheless remains unable to defeat the elite soldiers of cellular immunity present inside the fortress. The infection therefore does occur, but remains mild in the majority of cases.

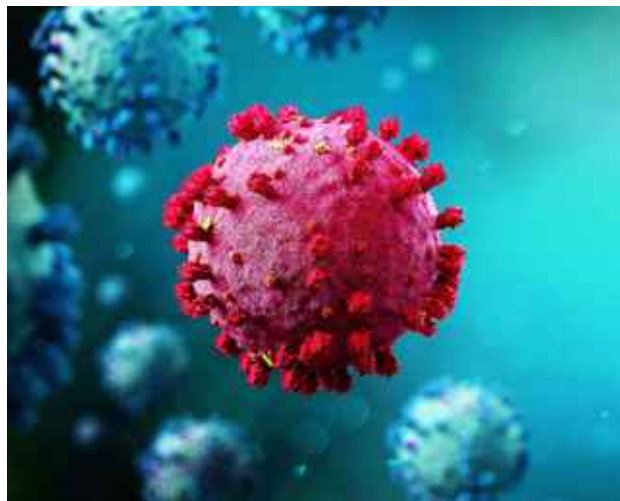
Over the past few weeks, no less than six studies have clearly documented this resilience of cellular immunity to the Omicron variant and there is no doubt that this response constitutes one of the main benefits of vaccination, all the more so that it is not affected by the presence of mutations and can therefore prove to be essential in the event of the appearance of new variants.

In addition, it is possible to dramatically improve immunity by invigorating antibody activity with the help of a booster dose of vaccines. This third dose increases the levels of neutralizing antibodies by 20-40 times, while generating B lymphocyte clones (the antibody producers) specific to the Omicron variant.

According to preliminary data from England and South Africa, this booster dose provides 70% protection against infection and 90% protection for hospitalizations.

A LESS PATHOGENIC VIRUS

In addition to our immune defense, several recent studies indicate that the Omicron variant is less pathogenic than its predecessor (Delta).



In the laboratory (cultured cells), Omicron was found to be about 10 times less able to infect lung cells than Delta, a decrease in infectivity that is also seen in animal models.

For example, infection of mice or hamsters with Omicron is associated with a lower viral load in the respiratory tract, reduced inflammation in the lungs and reduced symptoms of the disease.

Other results also suggest that Omicron has more difficulty escaping the innate immunity interferon response than Delta, which may contribute to lower pathogenicity.

WINNING THE WAR

Maintaining good cellular immunity, combined with a lower virulence of the Omicron variant, therefore makes the virus much less dangerous than before, with a risk of severe complications of approximately 60-70% less than for the Delta variant according to recent studies.

In the short term, this lower virulence of the virus is not yet apparent, at the population level. Indeed, although the proportion of people who develop severe forms of COVID-19 is lower, there are currently such a high number of infected people that hospitalizations are increasing despite everything, a problem made worse by the presence of a significant number of unvaccinated people.

In the medium term, therefore, it seems likely that the combination of our cellular immunity, the third dose of vaccine, and the decreased virulence of Omicron will ensure that we win this war against the virus.