

## Do not give up on herd immunity

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Despite the progress made in vaccination against Covid-19 in France, the fourth epidemic wave linked to the dominant propagation of the Delta variant was characterised by very high incidence rates in July-August, with severe forms, hospitalisations and deaths occurring mainly in the unvaccinated part of the population.

While this observation should encourage the extension of vaccination coverage, the increasing frequency of contaminations observed in partially or totally vaccinated persons has caught the attention, particularly in countries with the highest vaccination coverage rates (Malta, Iceland, Denmark, Israel). Although these contaminations are very rarely the cause of severe forms, they have raised doubts about the effectiveness of vaccines against the Delta variant [1] and about the persistence of neutralising antibodies in the elderly [2].

The analysis of these data led several eminent scientists to consider that herd immunity had become an illusory goal because it could never be achieved by vaccination. Such pessimistic statements, widely disseminated during the month of August, were not challenged, aggravating the reluctance to be vaccinated among the undecided and allowing the anti-vaccination movements to renew their outdated arguments.

The first-generation vaccines used since December 2020 have been licensed for their clear efficacy in preventing symptomatic and severe forms of Covid-19. Their effect on the prevention of asymptomatic carriage and transmission, which was not evaluated in the preliminary development studies, has subsequently been shown to vary between vaccines and SARS-CoV-2 variants. Infections, usually asymptomatic or mild, have been reported among fully vaccinated healthcare workers [3]. Can such findings call into question the goal of a global vaccine coverage able to end the Covid-19 pandemic?

This pandemic will end, sooner or later, when herd immunity, either post-infectious or post-vaccination, manages to control it. The difference between the two strategies will be measured in years of health crisis and hundreds of thousands of deaths [4].

It is now known that vaccination will not be able to eradicate SARS-CoV-2. Dominant variants will continue to circulate in an endemic or epidemic mode, even in well-vaccinated populations, but with low morbidity and mortality rates. The predictable evolution of the pandemic towards a routine, seasonally re-emerging infection profile can be accelerated by herd immunity achieved through universal vaccination.

In view of the need to rapidly complete vaccination coverage to achieve herd immunity, the French National Academy of Medicine recommends:

- to remain confident in the effectiveness of vaccination against severe forms of Covid-19, which has been well demonstrated during this fourth epidemic wave;
- to maintain the wearing of masks and barrier measures for all vaccinated people;
- to replace the health pass with a vaccination pass as soon as possible;
- to evaluate, as soon as second generation vaccines are authorised, the advantage of administering them as boosters to better prevent the transmission.

1. Planas D *et al.* Reduced sensitivity of SARS-CoV-2 variant Delta to antibody neutralization. *Nature* 2021, 596 : 276–280.

2. Bates TA *et al.* Age-Dependent Neutralization of SARS-CoV-2 and P.1 Variant by Vaccine Immune Serum Samples. *JAMA* 2021 : e2111656.

3. Bergwerk M *et al.* Covid-19 breakthrough infections in vaccinated health care workers. *N Engl J Med* 2021 Jul 28.

4. Sofonea MT *et al.* Quantifying the real-life impacts of vaccination on critical COVID-19. (*pre-print*).