

# BCG vaccine is safe and does not lead to an increased risk of COVID-19 symptoms

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The BCG vaccine, a vaccine originally made against tuberculosis, has a general stimulating effect on the immune system and is therefore effective against multiple infectious diseases—possibly also against COVID-19. This study compared groups of volunteers who have received a BCG vaccine (or not) in the past five years (before the corona

pandemic), showing that the vaccine is safe and possibly influences COVID-19 symptoms.

The results of this research have now been published in *Cell Reports Medicine*.

The Bacille Calmette-Guérin or BCG vaccine is the most widely received vaccine in the world. Originally intended to treat tuberculosis, it later became apparent that it provides a long-lasting, general boost to the innate [immune system](#). The vaccine was therefore also effective against other conditions. At Radboud university [medical center](#), Professor of Experimental Internal Medicine Mihai Netea and his team conduct research into these effects, referred to as 'trained immunity.'

The 300BCG study is a result of his work, in which a group of healthy volunteers received the BCG vaccine and could thus be compared to a group of healthy volunteers who did not. Most volunteers received the vaccine between April 2017 and June 2018. The purpose of that study was to determine the difference in the [immune response](#), but now that the corona pandemic is present, the same subjects were questioned to see if there is an effect of the vaccine on the symptoms attributable to infection with the SARS-CoV-2 virus.

## **It's safe, perhaps a positive effect**

What the comparison between the groups shows is that those who received the vaccine did not have more symptoms, did not get sick more often or become more seriously ill, during the first wave of the COVID-19 pandemic in the Netherlands. The data show also a cautiously positive picture, with a lower number of sick people in the period March-May 2020 among the BCG-vaccinated group, and also lower incidence of extreme fatigue among the vaccinated individuals.

The researchers underline that this was to be expected given the well-known effects of the BCG vaccine on healthy volunteers. However, the study also has limitations that prevent conclusions from being drawn regarding the benefit of the BCG [vaccine](#) against the novel coronavirus: "It is very important to confirm that someone who has been vaccinated with BCG does not experience any increased symptoms during the COVID-19 pandemic. Although we see less sickness in the people who have had the BCG vaccination, only the ongoing prospective BCG vaccination studies can determine whether this vaccination can help against COVID-19", says professor Mihai Netea of Radboudumc.

Various clinical randomized trials are already underway to answer this question, including several in the Netherlands.

**More information:** Simone J.C.F.M. Moorlag et al, Safety and COVID-19 symptoms in individuals recently vaccinated with BCG: a retrospective cohort study, *Cell Reports Medicine* (2020). [DOI: 10.1016/j.xcrm.2020.100073](#)

Provided by Radboud University

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