

# Rapid acting, oral vaccines could be coming soon

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A new paper in *Biology Methods and Protocols* indicates that researchers studying SARS-CoV-2 may have developed new methods to administer vaccines orally, which would be both easier to accomplish and more

effective at combating illnesses.

The best way to neutralize viruses is before they can enter inside [human cells](#) but are only on the external surface of epithelial cells that line and produce mucus in the lungs, nose, and mouth. A specific class of antibodies known as Immunoglobulin A operate in mucus and can disable [viruses](#). However, production of specific immunoglobulins/antibodies for a given virus must first be induced by a vaccination. Vaccination that effectively produces Immunoglobulin A antibodies rapidly would better prevent disease.

Since the coronavirus, like influenza, infects bronchial cells, researchers believe it is important to induce the secretion of virus antigen-specific Immunoglobulin A in the mucosa rather than in the blood. Recently, scientists have developed vaccines administered via alternative routes, such as nasally or orally. Such vaccines are more effective in inducing Immunoglobulin A than those administered by conventional subcutaneous methods. Although doctors have used nasal vaccines in clinics, they have found that these vaccines tend to produce side effects, such as headaches and fever, on the central nervous system or lungs.

This study examined a new vaccination against SARS-CoV-2 designed to induce production of Immunoglobulin A orally (under the tongue) in monkeys. The method worked, and animals used for the test produced the necessary antibodies against the disease without discernable side effects. This suggests that, with further research, clinics may soon be able to offer oral vaccines against the coronavirus, which could be more popular and more successful against the disease.

**More information:** Tetsuro Yamamoto et al, SARS-CoV-2 Sublingual Vaccine with RBD Antigen and Poly(I:C) Adjuvant: Preclinical Study in Cynomolgus Macaques, *Biology Methods and Protocols* (2023). [DOI: 10.1093/biomethods/bpad017](https://doi.org/10.1093/biomethods/bpad017)

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