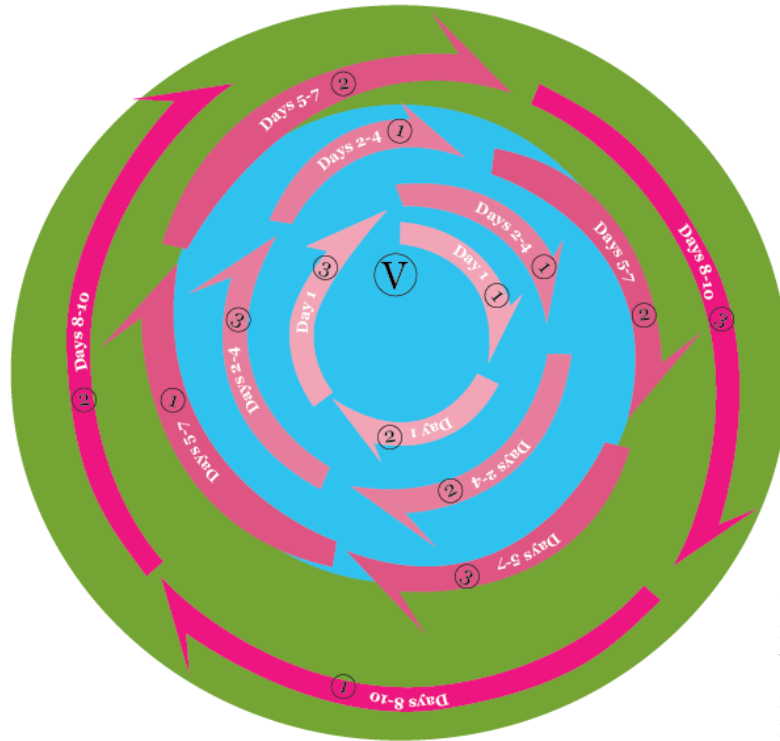
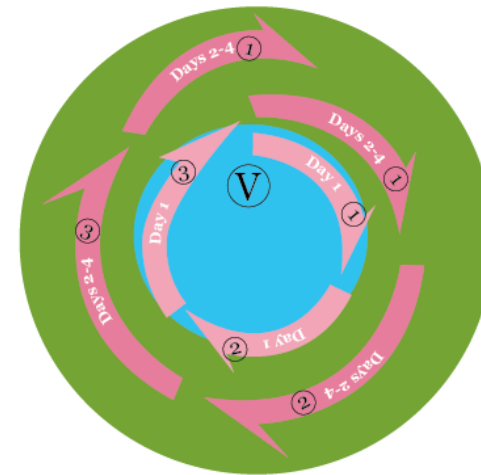


## No Vaccination



- Ⓟ SARS-CoV-2
- Non-specific immune response (called innate immunity)
- COVID-19-specific immune response (called adaptive immunity)

## Vaccination



1. SARS-CoV-2 (the virus that causes COVID-19) binds to a receptor on lung cells, cells of the digestive tract, and cells that line the circulatory system, among others.
2. Once inside of a cell, the virus takes over the cellular machinery to produce more SARS-CoV-2 viruses.
3. New virus particles are released, and they start the process again.

Vaccination limits the number of times this **cycle (steps 1-3)** occurs before the immune system gains control. The speed is marked by a more rapid shift from **innate** to **adaptive** immune responses due to COVID-19-specific memory cells created during the response to vaccination.