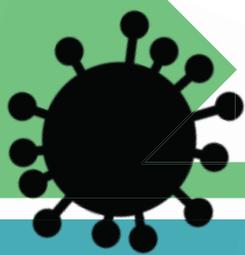


COVID-19 Fact Sheet

Virology and Immunology

Created by Christopher Breen, David Nam, Lucy Kohlenberg, Julian Weiss, and Kishan Patel, Yale School of Medicine

How does SARS-CoV-2 infect our cells?



The SARS-CoV-2 virus is covered in spike proteins

The spikes attach to a receptor called ACE2 on the cell

Once the virus attaches to ACE2, it enters the cell



What increases risk of infection?



Older Age



Heart Conditions



Lung Conditions



Diabetes



Immunosuppressants

Why do some patients have a more severe course than others?

Genetic Factors



Metabolic Factors



Risk of Bleeding



Risk of Clotting



Immune System Variations

What happens after we fight the infection?



Antibodies against SARS-CoV-2 will likely prevent reinfection



Scientists don't yet know how long these antibodies last



We will learn how different immune cells fight SARS-CoV-2

Sources:

1. S. Yin *et al.*, *J Thromb Thrombolysis*, Apr. 2020, doi: [10.1007/s11239-020-02105-8](https://doi.org/10.1007/s11239-020-02105-8).
2. M. Vaduganathan *et al.*, *New England Journal of Medicine*, vol. 0, no. 0, p. null, Mar. 2020, doi: [10.1056/NEJMs2005760](https://doi.org/10.1056/NEJMs2005760).
3. N. Tang *et al.*, *Journal of Thrombosis and Haemostasis*, vol. 18, no. 4, pp. 844–847, 2020, doi: [10.1111/jth.14768](https://doi.org/10.1111/jth.14768).
4. G. S. Schulert *et al.*, *J. Infect. Dis.*, vol. 213, no. 7, pp. 1180–1188, Apr. 2016, doi: [10.1093/infdis/iiv550](https://doi.org/10.1093/infdis/iiv550).
5. E. J. Márquez *et al.*, *Nature Communications*, vol. 11, no. 1, pp. 1–17, Feb. 2020, doi: [10.1038/s41467-020-14396-9](https://doi.org/10.1038/s41467-020-14396-9).
6. W. Liang *et al.*, *The Lancet Oncology*, vol. 21, no. 3, pp. 335–337, Mar. 2020, doi: [10.1016/S1470-2045\(20\)30096-6](https://doi.org/10.1016/S1470-2045(20)30096-6).
7. K. A. Kulcsar *et al.*, *JCI Insight*, vol. 4, no. 20, Oct. 2019, doi: [10.1172/ici.insight.131774](https://doi.org/10.1172/ici.insight.131774).
8. H. Jiang *et al.*, *medRxiv*, p. 2020.03.20.20039495, Mar. 2020, doi: [10.1101/2020.03.20.20039495](https://doi.org/10.1101/2020.03.20.20039495).
9. J. Huang *et al.*, *American Journal of Transplantation*, vol. n/a, no. n/a, doi: [10.1111/ajt.15896](https://doi.org/10.1111/ajt.15896).
10. M. Han *et al.*, *Social Science Research Network, Rochester, NY, SSRN Scholarly Paper* ID 3556670, Mar. 2020. doi: [10.2139/ssrn.3556670](https://doi.org/10.2139/ssrn.3556670).
11. C. Dong *et al.*, *medRxiv*, p. 2020.03.17.20036640, Mar. 2020, doi: [10.1101/2020.03.17.20036640](https://doi.org/10.1101/2020.03.17.20036640).

