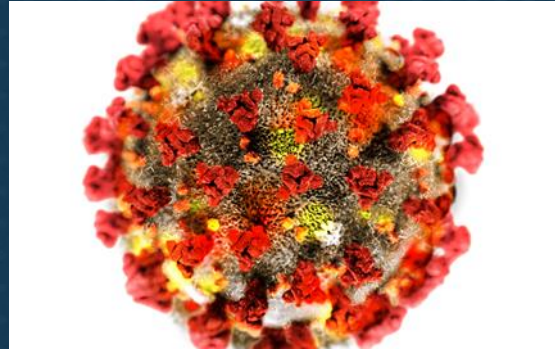


TOBACCO PRODUCT USE & COVID-19

An Overview of the Science

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Centers for Disease Control and Prevention

National Center for Chronic Disease Prevention and Health Promotion

Office on Smoking and Health



The Health Consequences
of Smoking—50 Years of Progress

A Report of the Surgeon General



U.S. Department of Health and Human Services

SMOKING AND IMMUNOSUPPRESSION

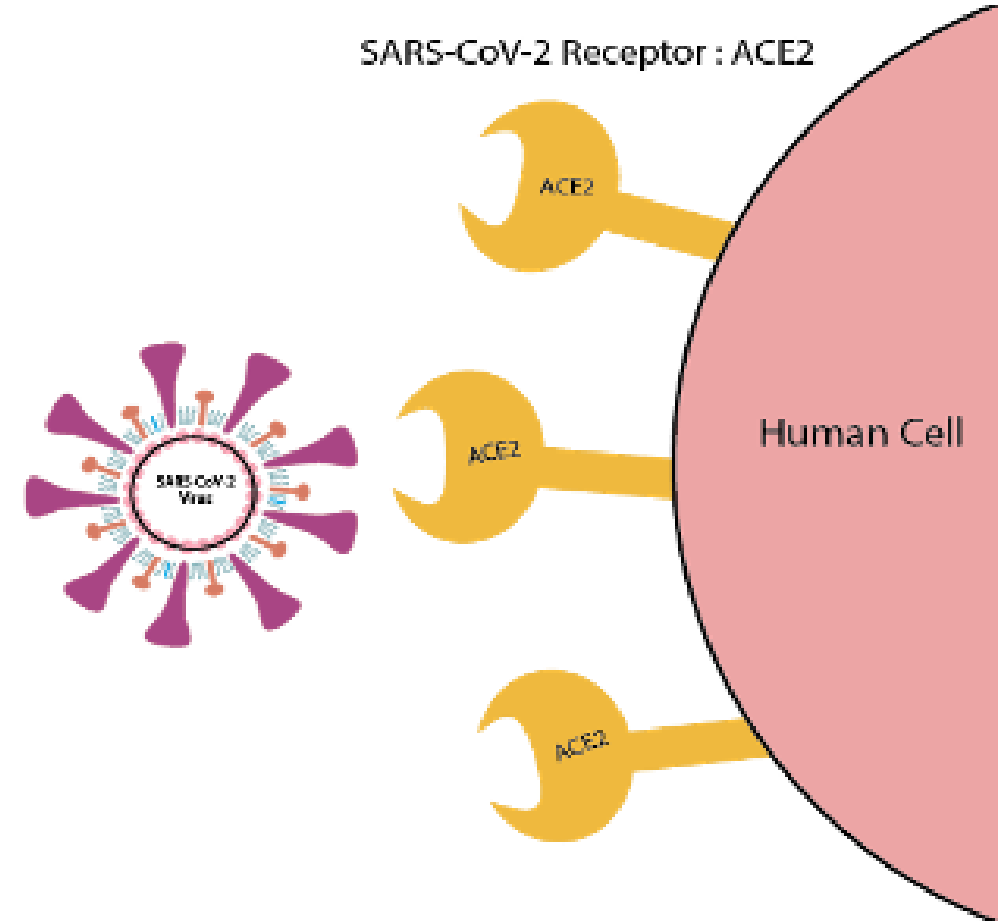
The evidence is sufficient to infer that:

Cigarette smoking compromises the immune system and that altered immunity is associated with increased risk for pulmonary infections.



HOW SARS-CoV-2 (the virus that causes COVID-19) WORKS

- SARS-CoV-2 infects humans by attaching to the ACE2 receptor in cells.
- Cigarette smokers have higher ACE2 gene expression and greater ACE2 receptor concentrations in their lungs than nonsmokers.
- ACE2 gene upregulation and increased ACE2 protein expression on lung surfaces could increase susceptibility to infection, viral replication, and more severe COVID-19 illness.



SMOKING AND OTHER NOVEL CORONAVIRUSES (SARS AND MERS)

- There is inadequate evidence to conclude that cigarette smoking changes **SARS-CoV-1** (virus that causes SARS) infection risk.
- Research suggests that cigarette smoking increases **MERS-CoV** (virus that causes Middle East Respiratory Syndrome) infection risk.

SARS-CoV-1 is about 80% similar to SARS-CoV-2



MERS-CoV is about 50% similar to SARS-CoV-2

SMOKING AND RISK OF SARS-COV-2 INFECTION

The available scientific evidence is inadequate to infer an association between cigarette smoking and risk of testing positive for or becoming symptomatic with SARS-CoV-2 infection.

- Some studies have reported that smoking protects against infection.
- However, these studies have substantial limitations, and most have not been peer-reviewed at this time.
- One study found smoking increased the likelihood of a positive test result for SARS-CoV-2 infection.



GROUPS AT HIGHER RISK FOR SEVERE ILLNESS

Older Adults

Adults with the following
medical conditions

- Cancer
- Chronic kidney disease
- COPD (chronic obstructive pulmonary disease)
- Heart conditions, such as heart failure, coronary artery disease, or cardiomyopathies
- Immunocompromised state (weakened immune system) from solid organ transplant
- Obesity (body mass index [BMI] of 30 to <40)
- Severe Obesity (BMI of 40 or higher)
- Pregnancy
- Sickle cell disease
- **Smoking**
- Type 2 diabetes

E-CIGARETTE, OR VAPING, PRODUCTS

The available scientific evidence is presently inadequate to infer an association between e-cigarette use and SARS-CoV-2 infection or severity of COVID-19.

1st Generation



2nd Generation



3rd Generation



4th Generation

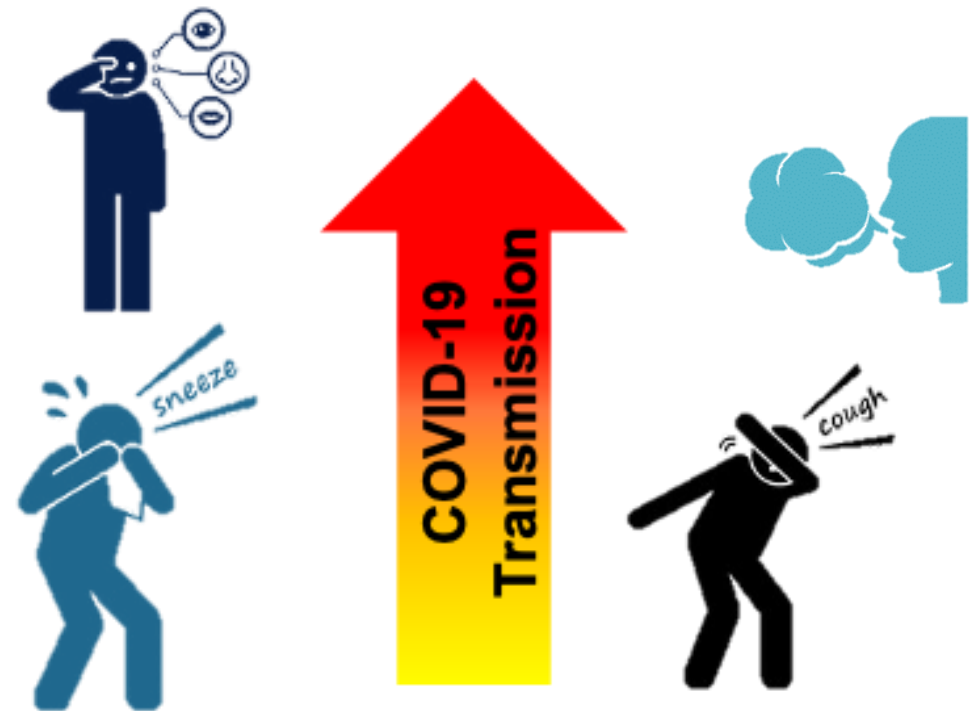


SECONDHAND SMOKE / AEROSOL AND COVID-19

The available scientific evidence is presently inadequate to infer an association between secondhand smoke exposure or secondhand aerosol exposure and SARS-CoV-2 infection or severity of COVID-19.

However, we know:

- COVID-19 is a respiratory disease.
- Transmission risk increases when people engage in behaviors that increase the likelihood of transferring respiratory droplets.
- Transmission risk increases when people engage in activities that increase the likelihood of touching their faces or mouths.



TOBACCO & COVID-19: PUBLIC HEALTH IMPLICATIONS

■ Public health messaging can:

- Communicate that cigarette smoking may increase the severity of illness among COVID-19 patients.
- Ensure studies that suggest smoking protects against SARS-CoV-2 infection are not misinterpreted as a reason to use tobacco or nicotine products.

■ Regardless of any association with COVID-19:

- The adverse health effects of smoking are well-documented and irrefutable. Now is a better time than ever to quit.
- Smoking harms nearly every organ of the body, and quitting smoking is beneficial at any age.
- Clean air – free of both secondhand smoke and aerosol – remains the standard to protect health.



KEY TAKEAWAYS



1

Smoking harms nearly every organ of the human body and has been shown to compromise the immune system.

2

Available scientific evidence indicates that cigarette smoking increases disease severity among patients with COVID-19.

3

Available scientific evidence is uncertain whether cigarette smoking is associated with risk of SARS-CoV-2 infection.

4

Available scientific evidence is uncertain whether e-cigarette use is associated with risk of SARS-CoV-2 infection or severity of COVID-19.

5

We know what works. But it is critical that tobacco control research, policy, and practice is modernized to keep pace with the changing tobacco product landscape and urgent public health threats such as COVID-19.

Brian A. King, PhD, MPH
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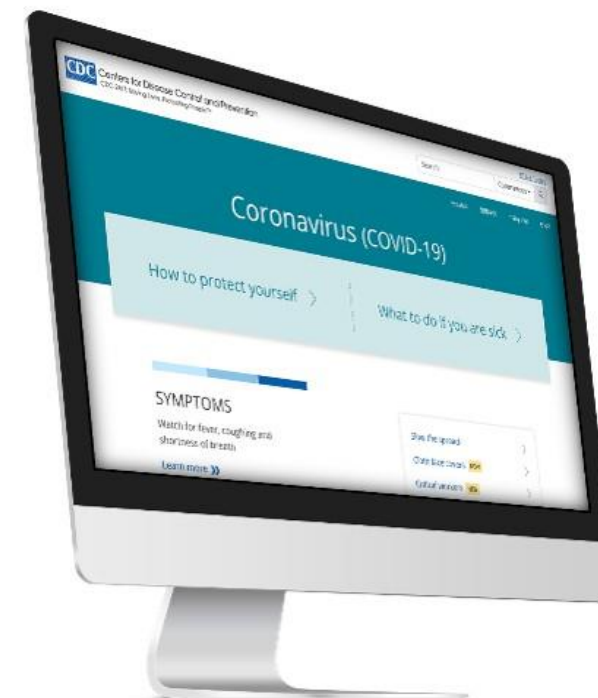
HOW TO QUIT SMOKING

www.cdc.gov/quit



FEDERAL RESOURCES

<https://www.coronavirus.gov/>



CDC RESOURCES

<https://www.cdc.gov/COVID19>