COVID-19 and Tobacco Use

What Is COVID-19?

Understading the Virus

This video was made by the World Health Organization. The WHO logo appears top left. For the entire video, a person's hand draws images on a whiteboard. The images correspond to the content and spoken dialogue. When images appear onscreen that are not reflected in the dialogue, a description will be added to this transcript. When content is written on the whiteboard that is not reflected in the dialogue, that content will be added to this transcript.

Narrator: In December 2019, there was a cluster of pneumonia cases in the city of Wuhan in China. Some of the early cases had reported visiting or working in a seafood and live animal market in Wuhan. Investigations found that the disease was caused by a newly discovered coronavirus. The disease was subsequently named COVID-19. COVID-19 spread within China and to the rest of the world. On 30 January 2020, the World Health Organization declared the outbreak a public health emergency of international concern.

In this video, we'll take a quick look at what is currently known about COVID-19. Keep in mind that this is a new disease and what's known is rapidly evolving and changing and might change in the future. So what is a coronavirus?

Coronaviruses are a large group of viruses. They consist of a core of genetic material surrounded by a lipid envelope with protein spikes; this gives it the appearance of a crown. Crown in Latin is called corona, and that's how these viruses get their name. There are different types of corona viruses that cause illness in animals and humans. In humans, coronaviruses can cause respiratory infections ranging from the common cold to more severe diseases. These include the severe acute respiratory syndrome coronavirus, first identified in China in 2003 (SARS-COV); the Middle East

respiratory syndrome coronavirus (MERS-COV) that was first identified in Saudi Arabia in 2012; and SARS-COV2, the name of the coronavirus that causes the COVID-19 that was first reported in December 2019 in China.

So, where did this new virus come from? It's known that coronaviruses circulate in a range of animals. Sometimes these viruses can make the jump from animals to humans. This is called a spillover and could be due to a range of factors, such as mutations in the virus, or increased contact between humans and animals. For example, MERS-COV is known to be transmitted from camels, and SARS-COV from civet cats. The animal reservoir of the new coronavirus is not known yet.

How does the disease spread? The diseases can spread from person to person through droplets when an infected person releases those droplets through coughing, talking, or sneezing, for example, when close to another person. It can also spread when infected droplets land on objects and when another person touches them and then touches their eyes, nose, or mouth.

What are the symptoms? The incubation period—which is the time taken from exposure to the virus and development of symptoms—is on average 5 to 6 days, but can range from 1 to 14 days. There can be a range of symptoms, from very mild to severe. Some people may not develop symptoms. Common symptoms include fever, fatigue, and respiratory symptoms such as cough, sore throat, and shortness of breath. Some people reported loss of their sense of taste or smell and some may develop a skin rash. In more severe cases, there could be pneumonia, organ failure, and sometimes death. About 80% of cases recover from the disease without needing special treatment, but there are some people who are at risk of serious illness. They include older people, or people with underlying medical problems such as chronic respiratory disease, obesity, diabetes, high blood pressure, heart disease, or cancer.

How can we tell whether someone is infected? The infection is commonly diagnosed by a test called reverse transcriptase polymerase chain reaction, generally known as PCR. This test identifies the virus based on its genetic fingerprint. There is also a blood test (serology) that can check for antibodies against the virus, which may

show that someone was infected in the past.

How is it treated? The treatment for COVID-19 is mainly supportive care; medicines against the virus are currently under investigation.

How do we prevent against transmission of the virus? There are a number of effective ways to prevent against the spread of the disease. These include covering your mouth and nose when coughing or sneezing with a flexed elbow or tissue and throwing the tissue in a closed bin immediately after use, wash hands regularly with soap and water or an alcohol-based hand rub, maintaining at least one-meter distance from each people, and the appropriate use of masks and personal protective equipment—especially in health settings. It's important to stay home if you're feeling unwell and to call a hotline or your medical professional. But if you have a fever, cough, or difficulty breathing seek medical care early and share your travel history or contact with someone unwell with your healthcare provider. In some areas, governments have implemented specific physical and social distancing measures to prevent the spread of the outbreak. It's important to follow their advice. Vaccines to prevent COVID-19 are currently under development and scientists around the world are working hard to make this happen.

That's a quick look at this emerging infectious disease. We're still learning about this virus every day and what's known may change, so please, check the website below (www.WHO.org) for the most up-to-date information.

Quiz

On rare occasions, we see coronaviruses jump from what species into the human population?

- a. ecological
- b. animal
- c. biometric
- d. economic

Select the **Answer** button to check your response.

(For keyboard users, with cursor in front of Answer, select backspace to reveal answer.)

Answer

What Is the Impact of Smoking on COVID-19?

As the COVID-19 pandemic has permeated every aspect of our lives, many people have questions about the interaction between smoking and COVID-19. There has also been some disinformation about a potential protective effect of this interaction.

From the standpoint of having adequate data on long-term COVID-19 outcomes, we are still early in the pandemic. As the pandemic progresses and additional data become available, some conclusions about the impact of tobacco use on COVID-19 may evolve.

However, based on an overall assessment of current evidence, the impact of smoking status on COVID-19 outcomes provides one more compelling reason to urge anyone you know to stop using tobacco.

Learning Objectives

- Describe the current evidence regarding smoking as a potential risk factor for COVID-19.
- Identify the context for suggestions that smoking could have a protective effect.

Smokers Have a Higher Risk of Adverse COVID-19 Outcomes

Adverse Outcomes

Tobacco use is well known to exacerbate a number of factors, including chronic respiratory and cardiovascular disease, hypertension and diabetes, which are predictive of worse COVID-19 outcomes.

The risks of infection, disease severity and mortality from influenza are known to be greater among smokers than never smokers and former smokers.

Increased Risks

Based on current evidence, being a current or former smoker increases the risk of severe illness from COVID-19. A systematic review of five studies conducted in China early in 2020 concluded that smokers are 1.4 times more likely to have severe symptoms of COVID-19 and approximately twice as likely to be admitted to the ICU, need mechanical ventilation or to die compared to non-smokers.

A later meta-analysis of 19 peer-reviewed studies showed that smoking depresses pulmonary immune function, and is a risk factor for contracting other infectious diseases and more serious COVID-19 outcomes among people who become infected.

A separate study found that teens and young adults who vape have 5–7 times greater odds of being infected with the virus that causes COVID-19.

Smoking or Vaping and COVID-19

This video was made by the CTCP Benefits of Quitting organization. As music plays text onscreen reads: How your risk of COVID-19 increases: smoking or vaping cannabis or tobacco.

Onscreen image shows various vaping and e-cigarette devices. This image fades. Then an image of a human figure showing the head and lungs appears, the human figure smokes a cigarette.

Text reads:

Damages lungs

Harms the immune system (body is less able to fight diseases)

Text reads: When exposed to COVID-19, infection is more severe.

Four COVID-19 virus particles move toward the human figure. The particles are shown inside the lungs of the human figure. An infection meter appears onscreen with the marker all the way at the top. Images fade. Then the image of various vaping and e-cigarette devices is shown with a diagonal line across it.

Text reads: We can help you quit. When you quit smoking or vaping, your lungs and your immune system get healthier. When exposed to COVID-19, infection is less severe.

The human figure appears again. The figure is not smoking. Four COVID-19 particles appear and move toward the human figure, but now only one particle makes its way inside the lungs. The infection meter appears onscreen with the marker all the way at the bottom. The images disappear.

Text reads: For more help quitting call or text California Smokers' Helpline 1-800-NO-BUTTS, 1-844-8-NO-VAPE. Text QUIT SMOKING or QUIT VAPING to 66819.

For more information visit: tobaccopreventiontoolkit.standford.edu

Two images of toolkits appear. Text reads on one: Tobacco Prevention Toolkit; text reds on the other: Cannabis Awareness & Prevention Toolkit

Created in partnership with Tobacco Education Clearinghouse of California (TECC).

Quiz

Which factors are predictive of worse COVID-19 outcomes for a patient?

a. influenza
b. indecisiveness
c. chronic respiratory disease
d. chronic pathological liar
e. chronic disease
f. chronic foot pain
g. hypertension
h. hyperextension
i. diabetes
j. diagnosis

Select the **Answer** button to check your response.

(For keyboard users, with cursor in front of Answer, select backspace to reveal answer.)

Answer

a. influenza, c. chronic respiratory disease, e. chronic cardiovascular disease, g. hypertension, i. diabetes

Other Considerations: Potential Sources of Risk

Secondhand Smoke

There are no studies yet on the impact of secondhand smoke (SHS) exposure on COVID-19 outcomes, however, a substantial body of evidence links SHS with worse outcomes from other respiratory infections.

Pulmonary Symptoms

Nonsmokers exposed to SHS have more pulmonary symptoms and measurable decreases in lung function.

Cardiovascular Disease

Nonsmokers exposed to SHS have an increased rate of cardiovascular disease and chronic lung disease.

Influenza outcomes among children living among smokers are significantly worse. It is a reasonable assumption that exposure to SHS adversely affects COVID-19 outcomes.

Communal Smoking

In addition, communal smoking activity such as sharing a hookah or a vape, likely increases the risk of infection, as participants are typically unmasked, actively inhaling/exhaling, touching the face, and exposed to others' respiratory secretions such as saliva.

The Effect of Smoking at the Molecular Level

SARS-CoV-2

Smoking causes a dose-dependent increase in the expression of the angiotensin converting enzyme-2 (ACE-2), the protein that SARS-CoV-2 (the virus that causes

COVID-19) uses to enter human cells, potentially enhancing the risk of lung epithelial cell injury following exposure to SARS-CoV-2.

Quitting smoking causes a decrease in ACE-2. The particular mechanism of action is currently unclear, but this is an area where considerable research is ongoing to clarify the complex relationship between smoking and the coronavirus infection.

Does Nicotine Have a Protective Effect?

Early Observation

Early observation (NOT clinical studies) has spurred some suggestion that nicotine may have a protective effect on getting infected. This is based, in part, on the reported smoking prevalence among hospitalized COVID-19 patients being observed to be lower than national prevalence rates in a number of countries.

However, this phenomenon has not been confirmed by well-controlled studies, and is more likely due to under-reporting of smoking status in the early period of the COVID-19 pandemic than a cause and effect relationship.

Furthermore, even if this were true, any protective effect would be more than counteracted by the negative effects of smoking on known comorbidities that increase risk for coronavirus infection.

Quiz: Matching

Complete each statement regarding COVID-19 and tobacco use. Match each numbered opening statement with its correct lettered conclusion.

1. A substantial body of evidence of secondhand smoke suggests that
2. Sharing a hookah or a vape likely increases the risk that
3. Early observation (NOT clinical studies) has spurred some suggestion that

a. ... nicotine may have a protective effect.
b. ... coronavirus infection will happen.
c. ... worse outcomes result from other respiratory infections.

Select the **Answer** button to check your response.

(For keyboard users, with cursor in front of Answer, select backspace to reveal answer.)

Answer

The Tobacco Industry During COVID-19

The tobacco industry is always alert for opportunities to sell their deadly products, even at the expense of public health.

As the pandemic spread around the world, tobacco companies exploited pandemic themes online and in social media to support product promotions, such as face masks with tobacco product branding, and false health claims ("a bidi stick a day keeps the pulmonologist away").

Corporate Social Responsibility: Timeline

The tobacco industry has also sought to promote its image and gain respectability and credibility by donating cash, personal protective equipment (PPE) and medical equipment such as ventilators, to governments and through government officials.

Only a few events are depicted in the following timeline.

- March 20, 2020, Altria announces initial $1 million commitment to support coronavirus relief efforts in United States.
- March 27, 2020, India Tobacco Company (I.T.C.) sets up COVID-19 contingency fund for vulnerable sections of society in India.
- March 31, 2020, International Tobacco Company (Nigeria) donates 10,000 bottles of hand sanitizers and 7,400 face masks.
- May 02, 2020, British American Tobacco (BAT) provides public and private hospitals with protective equipment in Mexico.
- September 16, 2020, Tobacco Giant Philip Morris International (PMI) donates 50 ventilators to intensive care units in Greece; while in Germany,

PMI's production sites were used as logistics centers to distribute personal protective equipment.

- October 23, 2020, Medicago (where Philip Morris (PMIBV) has 1/3 shareholdings) announces Medicago to supply up to 76 million doses of its plant-derived COVID-19 vaccine candidate.

This partial list of tobacco industry corporate social responsibility events concerning COVID-19 was taken from a compilation by The Global Center for Good Governance in Tobacco Control (GGTC), Thammasat University in Thailand.

A Unique Opportunity

Others have argued that, rather than allowing the tobacco industry to capitalize on COVID-19, the pandemic may offer a unique opportunity to eliminate the tobacco industry, pointing out that the ongoing death toll from tobacco far exceeds even the most pessimistic prediction of COVID-19 fatalities.

The case for phasing out cigarette sales becomes even more urgent in the face of evidence that tobacco use exacerbates severe COVID-19 outcomes. If governments acted to protect the public from tobacco with a fraction of the effort (and financial investment) they have exerted to control this coronavirus, many millions of lives could be saved, and underlying demand on health services significantly reduced.

Scenario: COVID-19 and Tobacco Use

Smoking and COVID-19

Carlos has smoked for 10 years. This last year he has tried to quit several times, but hasn't been able to and isn't sure now if he should. He heard smoking might help fight COVID-19.

Carlos is in luck! His friend Isabel is a doctor. She has heard about the trouble he's had quitting smoking, and she thinks she can help.

Between patients, she decides to call Carlos and to talk to him about his situation. She doesn't think he realizes just how bad COVID-19 is for people who smoke.

Isabel: Hi, Carlos, it's Isabel. Hope you're well. I just needed a break from all the patients we have right now. It's really overwhelming.

Carlos: Hi, Isabel. Are you okay? You sound worried.

Isabel: I am worried. It's all the patients with COVID-19. They just keep coming and it never stops. And you know what's one of the first things I ask them? I ask if they are a smoker. If they are, I know we're going to have to watch their case closely since smoking can cause even more complications.

Carlos: Wait. I don't understand. I thought I heard that smoking helped fight against COVID-19?

Isabel: What you heard is wrong and is likely due to under-reporting of smoking status in the early period of the pandemic. Smoking increases the risk of severe illness from COVID-19 in many ways.

Breathing

Tobacco use is well known to depress pulmonary immune function and exacerbate chronic respiratory disease and the risks of influenza.

Heart Health

Studies have shown that smoking causes and exacerbates cardiovascular disease.

Difference Maker

A meta-analysis of studies in China in 2020 found that smokers are twice as likely to be admitted to the ICU, need mechanical ventilation, or to die compared to non-smokers.

Carlos: But what about vaping? I've heard that vaping is safer than smoking and might even help you quit smoking.

Isabel: You'd think that vaping is safe, but that just isn't the case. Just because there isn't any smoke doesn't mean you still aren't inhaling something dangerous.

Unknowns

There are many unknowns about vapes, including what chemicals they contain and how they affect physical health over the short- and long-term.

Nicotine

Both vapes and regular cigarettes contain nicotine, which can be very addictive.

Carlos: I had no idea that vaping could be dangerous. Or that smoking could make catching COVID-19 even worse. But I'm still not sure what I can do to quit. It's just so hard.

Isabel: Carlos, there are many available resources to help you quit smoking. Nicotine patches, nasal spray, gum, inhalers and lozenges all deliver nicotine to reduce cravings. Bupropion and varenicline are medications that can help people quit smoking. Individual counseling is an important technique for quitting. It aims at helping you understand your own triggers and realizing what works for you to deal with them.

So what do you think? COVID-19 is going to be with us for a while, but you can quit smoking today, and be healthier if you do have to fight this terrible virus.

Carlos: There's a quitline on my cigarette pack. I've never thought about it before, but now I know it's a first step. I can call them today. I don't have to do this alone. Thanks, Isabel!

Isabel: Great, Carlos, give them a call. You're not alone in this fight against tobacco. There are many people waiting to help. And today is the perfect day to start your new life without smoking or vaping!

Great job! You've completed the scenario.

Summary

COVID-19 Provides One More Compelling Reason to Stop Using Tobacco

Based on the available evidence, tobacco use is clearly a risk factor for poor COVID-19 outcomes.

Many of us may feel that this pandemic is largely out of our control. But the excess risk from tobacco use is something you CAN control! By stopping smoking, you and other members of your household will enjoy improved general health and well-being, along with a reduced risk of adverse COVID-19 outcomes.

Learn More About Tobacco Control

Global Tobacco Control: Learning from the Experts is an online course taken by thousands of people interested in learning about the health issues caused by tobacco use, the economic impact of tobacco products, how to counteract the influence of the tobacco industry, tobacco control interventions, and many other in-depth facets of combating the global tobacco epidemic. Select the link to access the course.

[Global Tobacco Control: Learning from the Experts](#)

Learn More About Quitting Smoking

Learning from the Experts: A Course for Healthcare Professionals is free and open to anyone interested in learning more about the role healthcare professionals play in tobacco control, and how to help people quit tobacco. Select the link to access the course.

[Learning from the Experts: A Course for Healthcare Professionals](#)

Want to Learn More?

The following resources are available for additional background:

An article concerning [cigarette smoke exposure and the SARS-CoV-2 receptors](#).

A scientific brief from the World Health Organization regarding [smoking and COVID-19](#).

An article from the University of California San Francisco Center for Tobacco Control Research and Education concerning the [corona virus and quitting smoking and vaping](#).

Course Complete.