


# New research shows e-cigarette vape increases harmful lung bacteria

 [qub.ac.uk/News/Allnews/Newresearchshowse-cigarettevapeincreasesharmfullungbacteria.html](http://qub.ac.uk/News/Allnews/Newresearchshowse-cigarettevapeincreasesharmfullungbacteria.html)

17 December  
2018

The results of the three-year study, published today in Respiratory Research, show that this increase in lung inflammation is due to bacteria made more virulent by exposure to e-cigarette vapour.

Dr Deirdre Gilpin, researcher and lecturer from the School of Pharmacy at Queen's University and lead author of the research explains: "There is currently a knowledge gap about whether vaping is harmful, or less harmful than smoking tobacco.

"Bacteria have long been associated with the development of lung diseases such as bronchitis and pneumonia where smoking plays a role. Our study is the first of its kind which aimed to compare the effect of cigarette smoke and e-cigarette vapour on key lung bacteria."

Vaping has been suggested as a safer alternative to smoking but there is limited evidence to support this and there are major concerns around its safety.

As rates of tobacco smoking have decreased the number of people vaping has increased. Vapers are not always ex-smokers, and there has been an increase of vaping among young people who have never smoked before. According to the World Health Organization, there has been a small but steady decrease in the estimated number of smokers globally, to just over one billion. Whereas the number of vapers has been increasing rapidly - from about seven million in 2011 to 41 million in 2018.

The study compared the effect of exposure to cigarette smoke extract and e-cigarette vapour on levels of inflammation and the virulence of bacteria commonly associated with lung disease.

The research team found that exposure to both cigarette smoke extract and e-cigarette vapour caused an increase in the potential of bacteria to cause harm in the lungs, in a way which could lead to diseases such as COPD and asthma.

The researchers also found that changes in bacteria exposed to e-cigarette vapour were similar, and in some cases exceeded those observed following bacterial exposure to cigarette smoke, suggesting that there is little difference between cigarette smoke and e-cigarette vapour.

Dr Gilpin added: "This study shows us that vaping may carry the same risk as cigarette smoke in increasing the susceptibility to bacterial infection."

Professor Jose Bengoechea, Director of the Wellcome-Wolfson Institute for Experimental Medicine and co-author of the study said: "This is a study with phenomenal public health implications. Worryingly, e-cigarette vapour as well as cigarette smoke increase the harmful potential of already dangerous infections, in addition to the well-known detrimental effect on lung function. At the very least this work should open a frank debate on vaping safety."

# Vaping and Smoking May Worsen Coronavirus Symptoms

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**EW** [ecowatch.com/vaping-smoking-coronavirus-symptoms-2645608587.html](https://ecowatch.com/vaping-smoking-coronavirus-symptoms-2645608587.html)

April 1,  
2020

Preliminary data from the Centers for Disease Control showed a larger number of young people coming down with COVID-19 than first expected, with patients under the age of 45 comprising more than a third of all cases, and one in five of those patients requiring hospitalization. That also tends to be the group most likely to use e-cigarettes.

While there is not yet a clear answer as to why so many young people are experiencing severe symptoms, some experts say vaping could be making things worse, according to [ABC News](#).

If you vape, "you're going to make lungs more vulnerable to severe infection," said Dr. Panagis Galiatsatos, an American Lung Association spokesman who is also director of the tobacco treatment clinic at Johns Hopkins Hospital, to [WebMD](#).

According to information released by [MassGeneral](#) in Boston, smoking and vaping weaken the body's immune system by damaging parts of the immune system that keep illnesses at bay and by strengthening an enzyme that allows viruses to attach and replicate in the immune system.

"If a person who smokes catches COVID-19, they are more than twice as likely to develop a severe case of COVID-19 than those with no smoking history," according to [MassGeneral](#). "This means if a person smokes and catches COVID-19, they are more likely to be admitted to the Intensive Care Unit, placed on a ventilator or die from the illness. Menthol and other flavorings in tobacco products (including e-cigarettes) can also make lung infections, such as COVID-19, worse."

Dr. David Beuther, chief medical information officer at National Jewish Health in Denver, echoed that sentiment to [Scripps International](#).

"I'd be more worried about you more than normal, but I think anybody that vapes, that inhales anything toxic into their lungs, is putting their lungs at risk, because it probably alters the immune system," said Dr. Beuther. "It probably causes some irritation. It probably reduces your own lung's ability to defend itself against this virus."

While we are advised to stay six feet away from each other, Beuther said somebody vaping may blow a cloud beyond the recommended distance and possibly spread the virus, as [Scripps](#) reported.

Doctor J. Taylor Hays, an internist with Mayo Clinic in Rochester, told a Wisconsin-based [ABC News affiliate](#) that coronavirus particles get stuck in the mucus in bronchial tubes, which can trap the virus. Then virus particles are exhaled in a puff of smoke that can

infect others nearby.


However, Dr. Hays said that quitting smoking and vaping can have an immediate impact in reducing the severity of COVID-19 symptoms.

"There is an immediate benefit in stopping smoking. It's not something that you won't notice for the next few weeks. It will happen right away. Less coughing, less shortness of breath, less mucus production. And probably those all mean lower risk of complications of a viral infection like COVID," Hays said, as [WQOW](#) in Eau Claire reported.

While there is not a long enough history of vaping and COVID-19 exposure to say for sure if it increases susceptibility to the virus, medical professionals know that vaping can lead to serious lung and respiratory problems so it is logical that the habit could exacerbate symptoms, according to [ABC News](#).

"We know that e-cigarettes include chemicals such as propylene glycol, glycerol, and flavorings, and that these chemicals have the ability to go deep into your lungs and cause damage," said Dr. Alok Patel, a Columbia University pediatrician, to [ABC News](#). "When people become critically ill from COVID-19, this also involves the deep pockets of their lungs. It's really scary to think about what could be happening in those that have both of these going on together."

# Smokers are 14 TIMES more likely to develop coronavirus, health bosses warn

 [thesun.co.uk/news/11337633/smokers-14-times-more-likely-develop-coronavirus](https://thesun.co.uk/news/11337633/smokers-14-times-more-likely-develop-coronavirus)

Gemma Mullin

6 April  
2020

## **SMOKERS are 14 times more likely to develop coronavirus, health bosses have warned.**

Public Health England (PHE) say that puffing cigarettes can also put family members at higher risk of Covid-19 too.

Smokers are 14 times more likely to develop coronavirus, experts sayCredit: Reuters

Professor John Newton, PHE's director of health, said that in light of the "unprecedented" pandemic sweeping the globe, "there has never been a more important time to stop smoking, not only for your own health but to protect those around you".

Smoking can cause damage to the lungs and airways - and Covid-19 attacks the respiratory system, health officials say.

They also point to a "small but highly impactful" survey from China which finds that smokers with Covid-19 are 14 times more likely to develop severe disease.

The study looked at the factors which led to the progression of Covid-19 pneumonia in patients at three hospitals in Wuhan, China - where the first cases of coronavirus were detected late last year.

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To receive The Sun's Coronavirus newsletter in your inbox every tea time, [sign up here](#).

To follow us on Facebook, simply 'Like' our [Coronavirus page](#).

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A "history of smoking" was among the factors which were identified by the study which took place between December 30 last year and January 15.

Age, maximum body temperature on admission and respiratory failure were among other notable factors, according to the study, which was published in the Chinese Medical Journal.

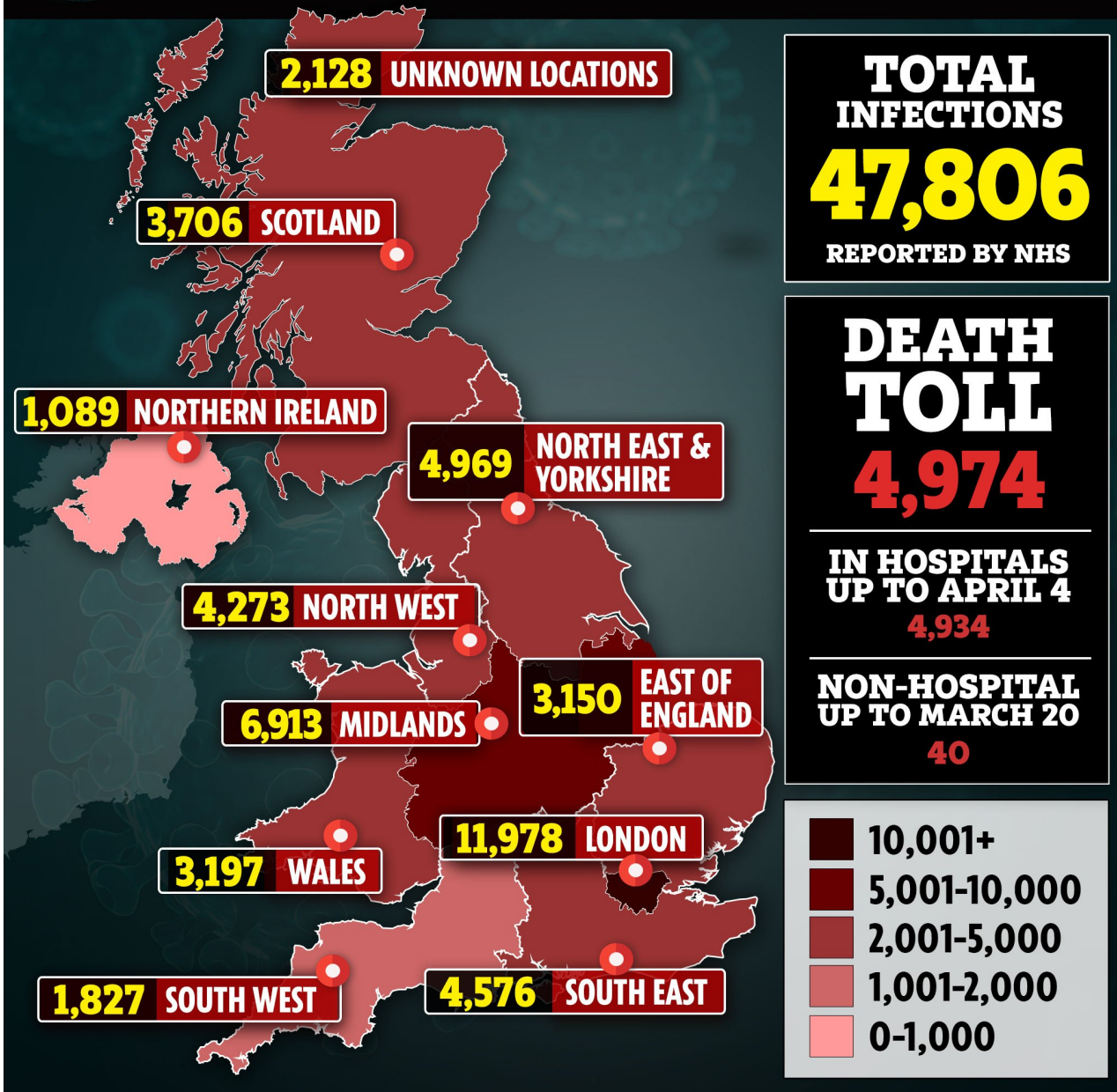
These results "can be used to further enhance the ability of management of Covid-19 pneumonia", it concluded.

It has been reported that more than 3,300 people have died of Covid-19 in China.



# OFFICIAL UK CASES & DEATHS

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PHE also says the virus is given an easy route of entry by the repetitive hand to mouth movement used by smokers.

Prof Newton told smokers that "it is never too late to quit, no matter your age" and the body will continue to repair the longer you stay smoke-free.

The elimination of carbon monoxide from the body is among the immediate benefits of quitting smoking.

People should find that their lungs start to clear out mucus and other smoking debris, PHE says.



It is never too late to quit, no matter your age

*Professor John Newton Public Health England*

Breathing becomes easier as bronchial tubes begin to relax after 72 hours of quitting smoking and blood circulation improves, making physical activity like walking and running easier within 12 weeks of giving up the habit.

Hazel Cheeseman, director of policy at Action on Smoking and Health (ASH), said: "Now, more than ever, smokers can help themselves, their families and their communities by quitting.

"There is a raft of help that smokers can still access.

"Stop smoking services are moving to provide telephone support, and pharmacists can provide advice on medications, but if you can't find help locally get advice online from the Todayistheday website, and through the nightly Quit Clinic on Twitter using #QuitForCovid."

## Evidence

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The first two patients to die at Jinyintan Hospital in Wuhan, detailed in the Lancet Medical journal, were both long-term smokers.

Researchers from China and the US carried out an analysis of the first 8,000 cases of coronavirus.

They found that men were more likely to be diagnosed with the disease and suffer severe symptoms, including pneumonia.

Their findings also revealed that the survival rates between males and females were markedly different.



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This is what happens to your body after your last cigarette

BRITAIN's four million NHS staff are on the frontline in the battle against coronavirus.

But while they are helping save lives, who is there to help them?

The Sun has launched an appeal to raise £1MILLION for NHS workers.

The Who Cares Wins Appeal aims to get vital support to staff in their hour of need.

We have teamed up with NHS Charities Together in their urgent Covid-19 Appeal to ensure the money gets to exactly who needs it.

The Sun is donating £50,000 and we would like YOU to help us raise a million pounds, to help THEM.

In the first six weeks of the outbreak 1.7 per cent of women died compared with 2.8 per cent of men.

Experts believe there are a few reasons for this discrepancy, including some biological and other lifestyle choices, such as smoking.

In China, men are much more likely to smoke than women, which can lead to a weaker immune system.



In fact China has the largest population of smokers in the world - accounting for nearly a third of the world's smokers - but just two per cent of them are women.

Meanwhile, in the UK 16.5 per cent of men - around 3.9 million - and 13 per cent of women - around 3.2 million - reported being current smokers.

The study showed that being an older male is another risk, with almost 10 per cent of infected men over the age of 60 succumbing to the disease.

The UK coronavirus death toll has continued to riseCredit: Reuters

Hopes for Boris as cases slow and UK death toll hits 6,159

Live Blog

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Opening times for Argos during coronavirus lockdown

Which shops ARE open today? Here's the full list

Serie A stars agree to give up four months' wages as Premier League delays move

Mourinho faces cop warning after training Spurs stars in park despite lockdown

How is Boris Johnson doing after he was admitted to hospital?

Opening hours and advice for Wickes during coronavirus lockdown

McGregor teaches fans pull up techniques as he trains in self-isolation

Levy 'plans to put ground staff to use on his private estate' amid coronavirus

Men were also disproportionately affected during the SARS and MERS outbreaks - which were caused by similar coronaviruses.

More women were infected by SARS in Hong Kong in 2003, but the death rate was 50 per cent higher, according to a study published in the Annals of Internal Medicine.

The Middle East Respiratory Syndrome killed 32 percent of men infected compared with 25.8 per cent of women.

NHS doctor explains why you should not wear gloves to protect yourself from the coronavirus

# Smoking and coronavirus: Why experts say people who smoke fare worse if they get COVID-19

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 [abc.net.au/news/health/2020-04-03/coronavirus-smokers-vulnerable-to-covid-19/12114734](https://www.abc.net.au/news/health/2020-04-03/coronavirus-smokers-vulnerable-to-covid-19/12114734)

April 3,  
2020

Health experts are urging smokers to quit now to reduce their risk of a severe outcome if they get COVID-19.

Smoking is one of a number of risk factors that have been linked to worse outcomes for those who get coronavirus.

While there is currently only limited data to show that smokers have worse outcomes from COVID-19, there are multiple "strands" of convincing evidence that point to this.

It's known for instance that smoking increases the incidence, duration and/or severity of infections from other respiratory viruses.

Compared with non-smokers, smokers:

- Get more colds and worse colds
- Have much higher rates (several-fold higher) of influenza infection
- Get more severe influenza
- Are at increased risk of bacterial pneumonia

And in the previous outbreak of Middle Eastern Respiratory Syndrome (MERS), caused by another coronavirus, smokers had higher death rates.

As well as causing direct lung damage, smoking impairs the body's immune response and damages the system of mucous and tiny hairs called cilia that help keep lungs clear of inhaled particles and viruses.

## Smoking and conditions that lead to severe disease

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Smoking can also cause or contribute to the development of health conditions, such as cardiovascular disease, that appear to be associated with a worse outcome in the current pandemic.

"You are about twice as likely to have severe COVID disease if you are a current or past smoker compared to someone who has never smoked," said Matthew Peters, head of respiratory medicine at Sydney's Concord Hospital.

He has based this conclusion on preliminary data from China and some as-yet-unpublished data from Italy he has seen.

There is also what we already know about how respiratory illnesses affect those with chronic lung disease caused by smoking, such as chronic pulmonary obstructive disorder (COPD).

"From everything we know about the effect of viral respiratory infections, people with COPD are very much more likely to be predisposed to bad outcomes from COVID-19," said Christine Jenkins, conjoint professor of respiratory medicine at UNSW.

## Your questions on coronavirus answered:

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### It's not too late to give up

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If you are worried about COVID, it's common sense to do everything you can to become a non-smoker, Professor Peters said.

"Smoking is bad for your lungs and this is a particularly good time to not be a smoker and not have that damage going on."

The sooner you can act, the better.

Given that some important health benefits of quitting smoking can start within weeks, kicking the habit now could help you as well as the broader community.

## Coronavirus questions answered

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Breaking down the latest news and research to understand how the world is living through an epidemic, this is the ABC's Coronacast podcast.



We know for instance that four to six weeks without smoking is enough to cause a significant drop in infections after surgery. This is why doctors often ask their patients to quit in the lead-up to a major operation.

"You cut the risk of wound infections, chest infections and pneumonia, as well as heart attacks and strokes around the time of the surgery," Professor Peters said.

(A slightly longer period of time — three to six months without smoking — is needed to reduce the risk of heart attacks and strokes that are not related to surgery).

The community benefit arises because, as we approach winter, underlying demands on the health system increase. Complications from flu and other illnesses often mean more people end up in hospital.

There are fears this will coincide with an influx of large numbers of patients requiring care for severe COVID-19.

"One of the things the community can do to reduce the demands on the healthcare system is not become a customer," Professor Peters said.

"You can't suddenly not be diabetic. You can't suddenly get rid of all the damage from past smoking. But you can get rid of the harms from current smoking.

"The benefits [of quitting] may well occur at the very time the health system is struggling to look after people with severe disease.

"Your airway inflammation will be improving, you will be less likely to have an acute heart problem or a common or garden-variety pneumonia. So your need for acute hospital care will diminish."

## First steps to quitting

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For free, evidence-based advice and support to stop smoking, you can call the QUIT line 13-QUIT or 13-7438. The number is printed on every cigarette pack.

The only cost is the cost of the phone call.

While the number of calls to the QUIT line has not significantly increased in the pandemic so far, "pretty much everyone" who contacts the service is citing the pandemic as their motivation, said QUIT Victoria director Sarah White.

"They are saying 'this virus has made me want to stop' or 'made me think about what I need to do'."

Although now is a stressful time for many, this does not necessarily reduce the chance of success at quitting, Dr White said.

"It can be a really good time if you use the right mindset. You might say 'I'm going to use health as my motivation and I've got the space to actually do it at the moment'."

Job losses or working from home free up time you might otherwise not have to focus on quitting, she pointed out, adding "now is absolutely not the right time to be subjecting anyone to second-hand smoke".

Professor Peters said impulsive decisions to quit were associated with "quite good success rates".

"It's wrong to think if you haven't prepared for this, you're not going to be successful. You might think 'damn, I'm going to quit smoking now because coronavirus frightens me' and that's quite okay.

"The only 100 per cent guarantee of failing to quit smoking is if you don't try."

While it may take a few attempts, this was not wasted effort because each attempt was "a learning opportunity", he said.

## Best chances at quitting

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The best chances of success at quitting come from using a form of nicotine replacement together with psychological support and advice.

Your GP can give you a script for subsidised nicotine replacement therapy and you can access the support for free for an extended period through the QUIT line.

## Health in your inbox

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Get the latest health news and information from across the ABC.

"You have to pay for nicotine replacement therapy for 12 weeks but [if you are successful], you won't have to pay for cigarettes for the rest of your life," Dr White said.

While many people have suggested smokers are more likely than non-smokers or past smokers to be infected with the virus that causes COVID-19 in the first place, Professor Peters says this was only 'speculation' and has not yet been proven.

However, smokers may also be more vulnerable because the habit involves bringing their hands to their mouths and inhaling repeatedly.

**Editor's note: This story has been amended to remove a line that suggested smokers are more at risk of developing COVID-19, at this stage experts say they are more at risk of developing a severe case of COVID-19.**