

COVID-19 - WHAT CAN BE DONE THROUGH US

David Bayever

3 JUNE 2020

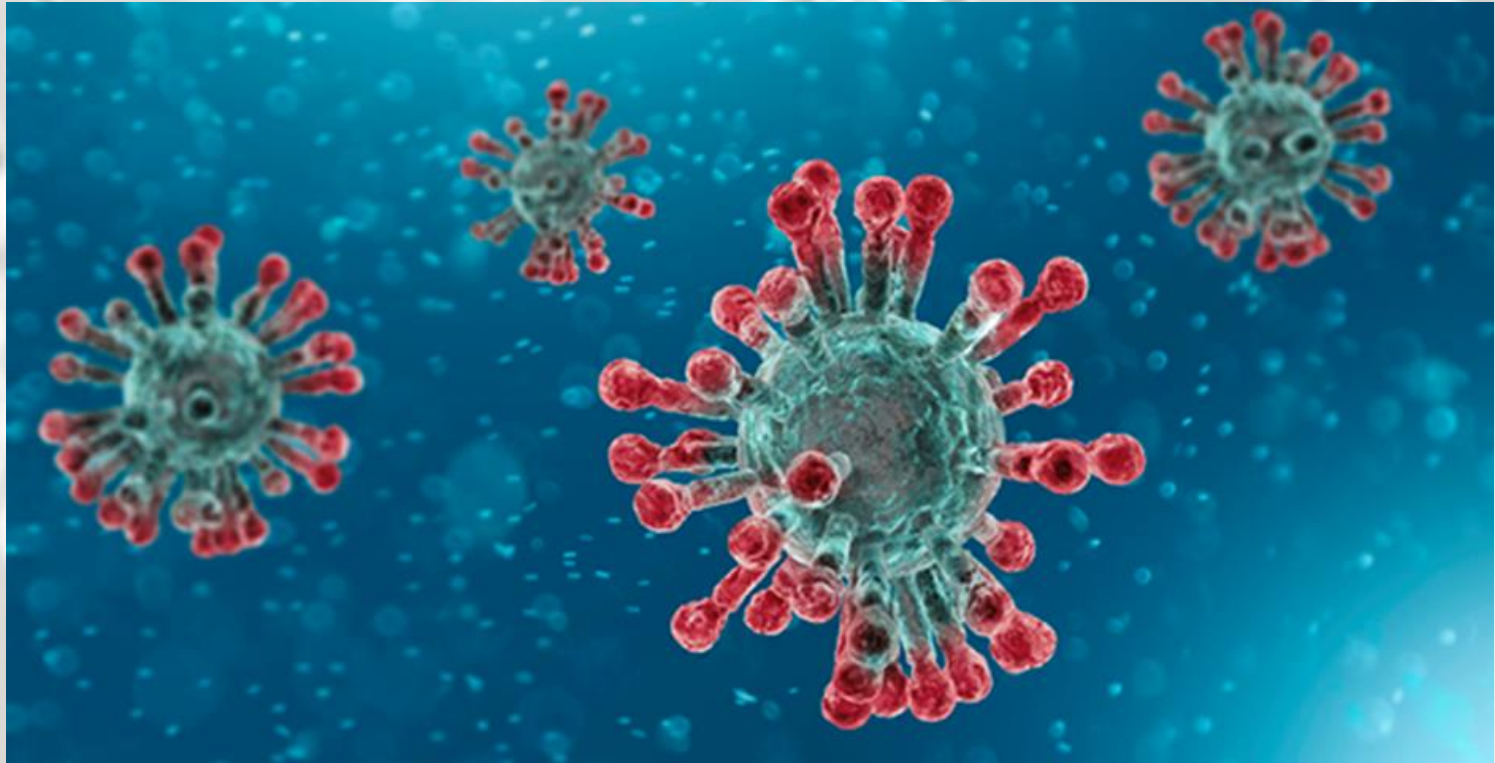
ISSUP

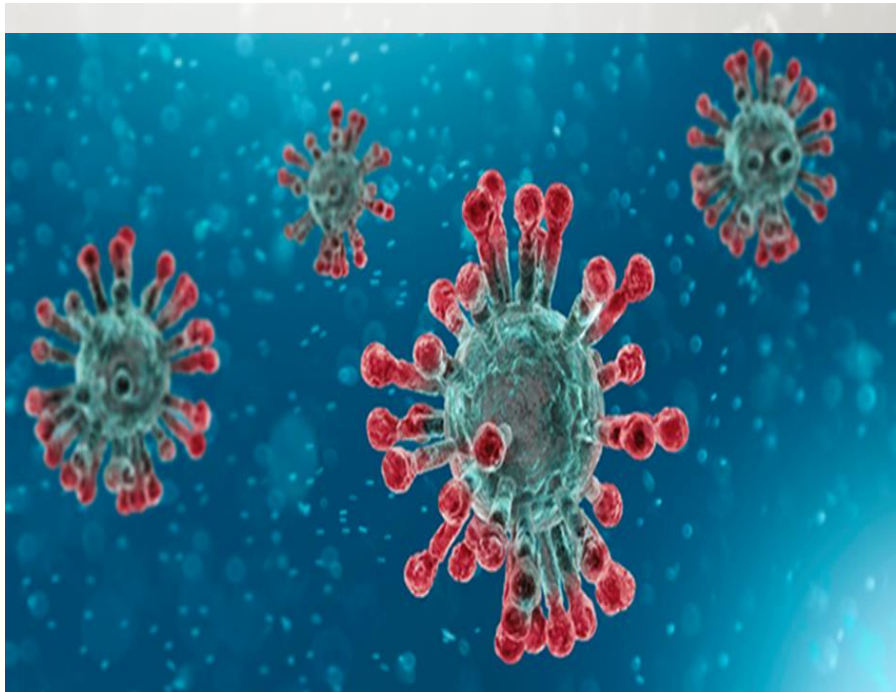
INTERNATIONAL
SOCIETY OF
SUBSTANCE USE
PROFESSIONALS

SOUTH AFRICA chapter



Corona viridae





SARS-CoV – Severe
Acute Respiratory
Syndrome

MERS-CoV – Middle
East Respiratory
Syndrome

SARS-CoV-2 - Covid-19

How is the virus spread?



How is the virus spread?

People spread the virus by **coughing** and **sneezing**

One cough = **3000** droplets

Attacks **throat** and **lungs**

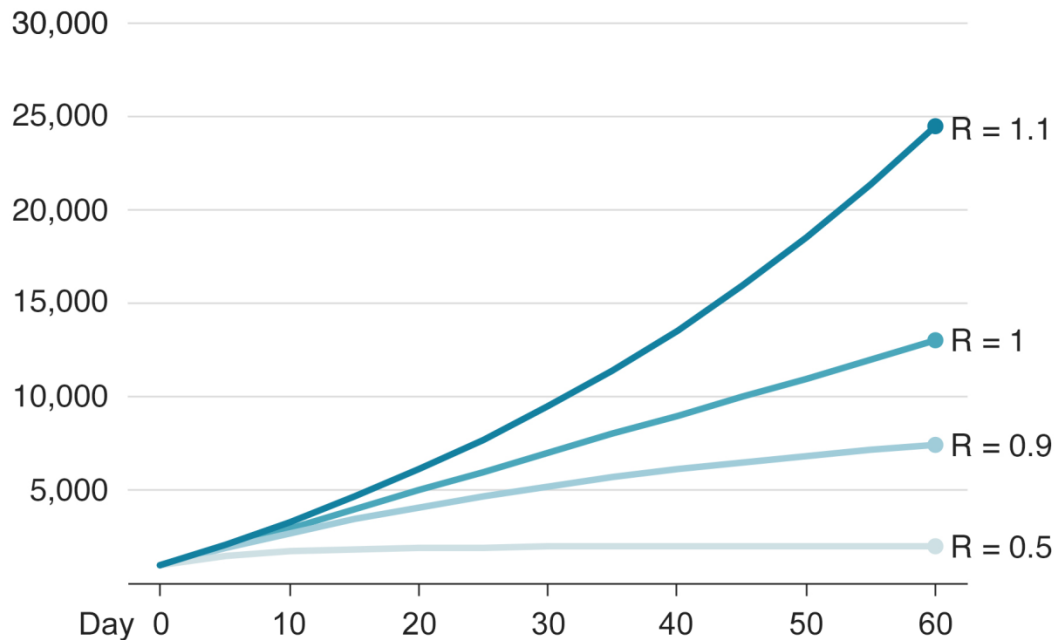
In the air droplet can stay = **3 hours**

On surfaces droplet can stay **2-3 days** or more

Reproductive number

Reproductive number for SARS-CoV-2 = 1.4 – 2.5

How 1,000 cases would increase under different infection rates



The Coronavirus

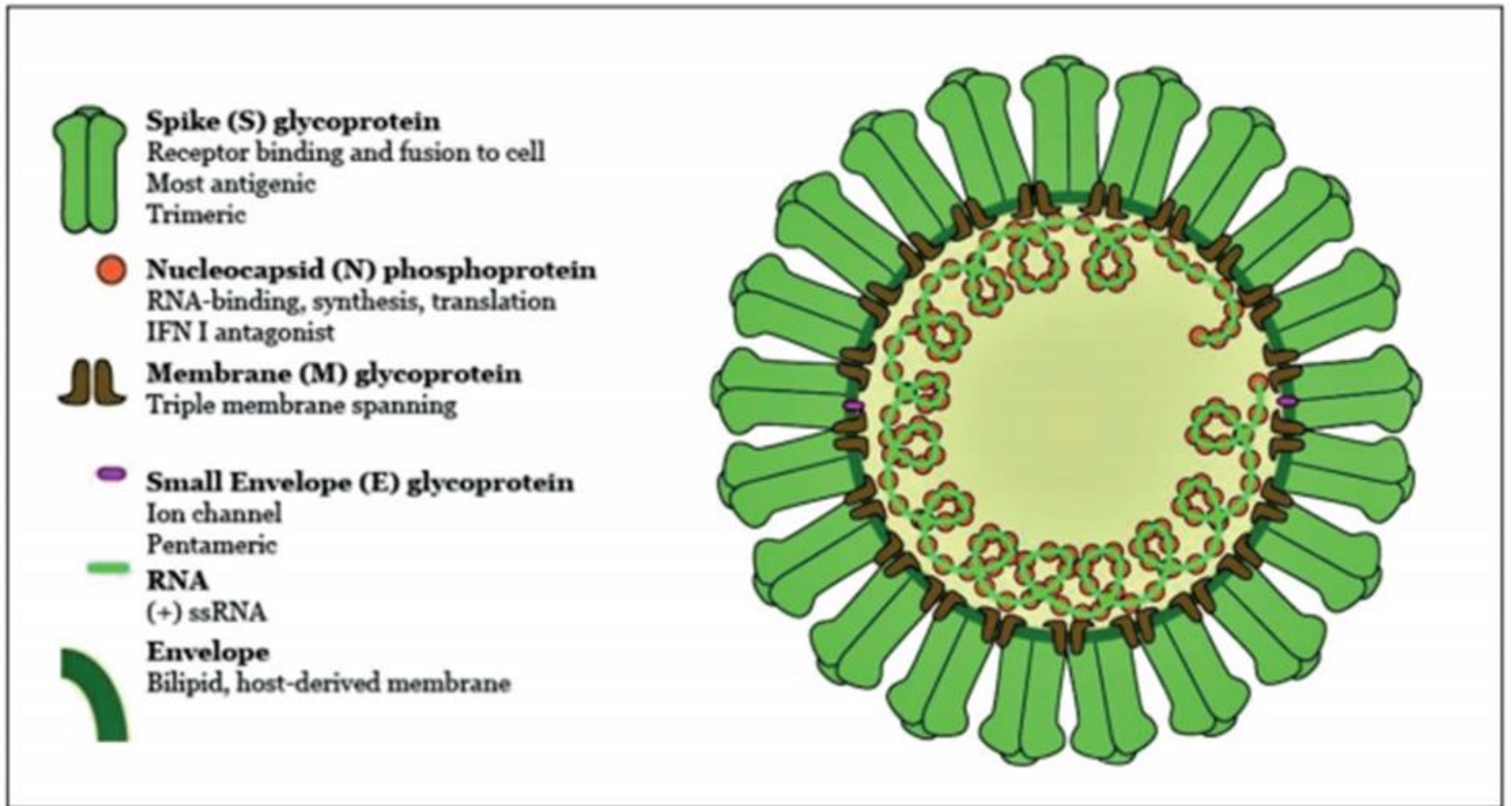
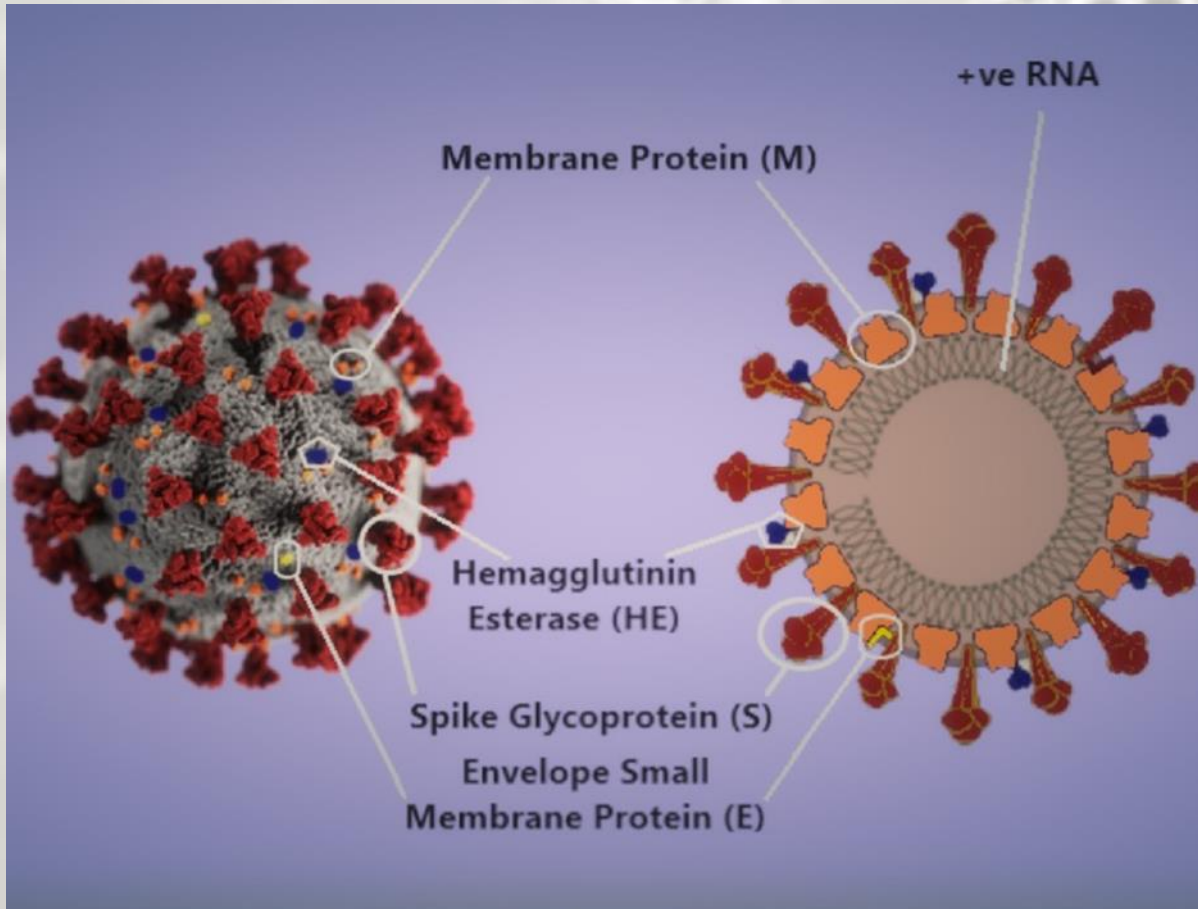


Figure 1. Coronavirus schematic diagram. (Courtesy from Dr. Ian M Mackay, Ph.D.).

The Coronavirus



Angiotensin-converting-enzyme 2 (ACE2) receptors act as doorway to cells

Found in tissue in

- Lungs
- Heart
- Blood vessels
- Kidneys
- Liver
- Gastrointestinal tract

Incubation and symptoms

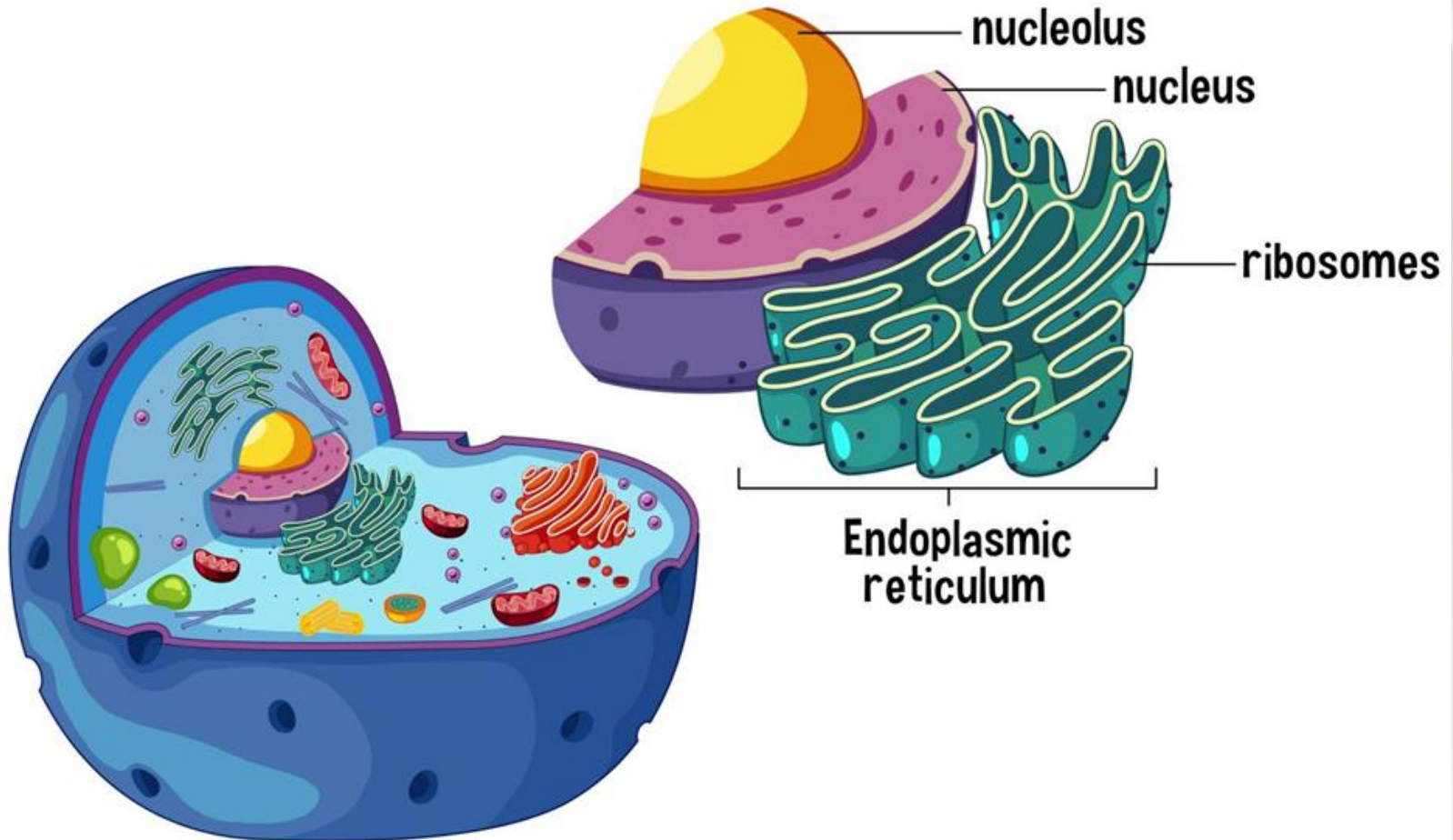


Symptoms

The background of the slide is a light gray color with several large, stylized, white virus particles scattered across it. These particles have a central core and many thin, radiating spikes, resembling coronaviruses. The overall aesthetic is clean and scientific.

- Fever or chills
- Cough
- Shortness of breath or difficulty breathing
- Fatigue
- Muscle or body aches
- Headache
- New loss of taste or smell
- Sore throat
- Congestion or runny nose
- Nausea or vomiting
- Diarrhoea

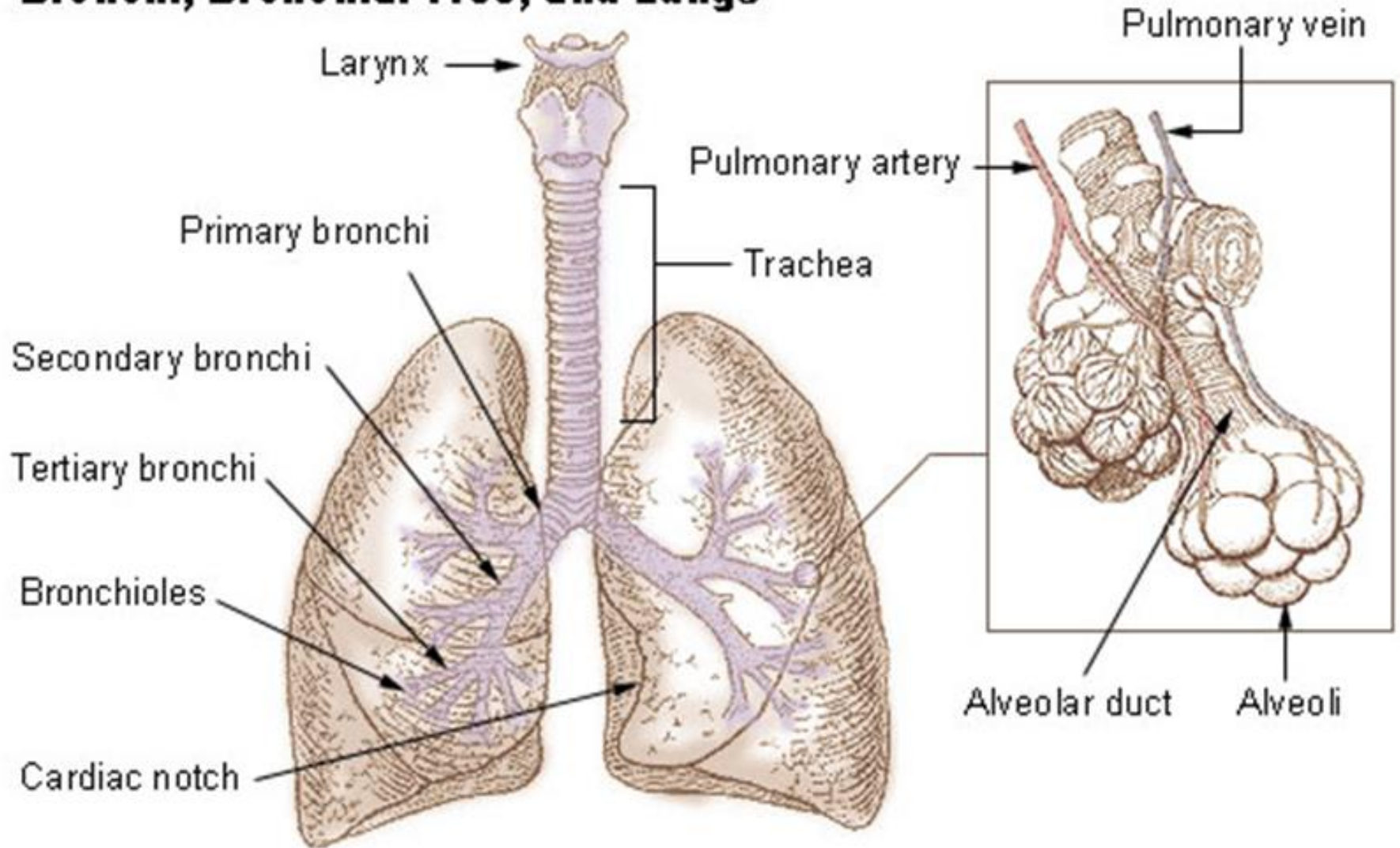
Ribosomes



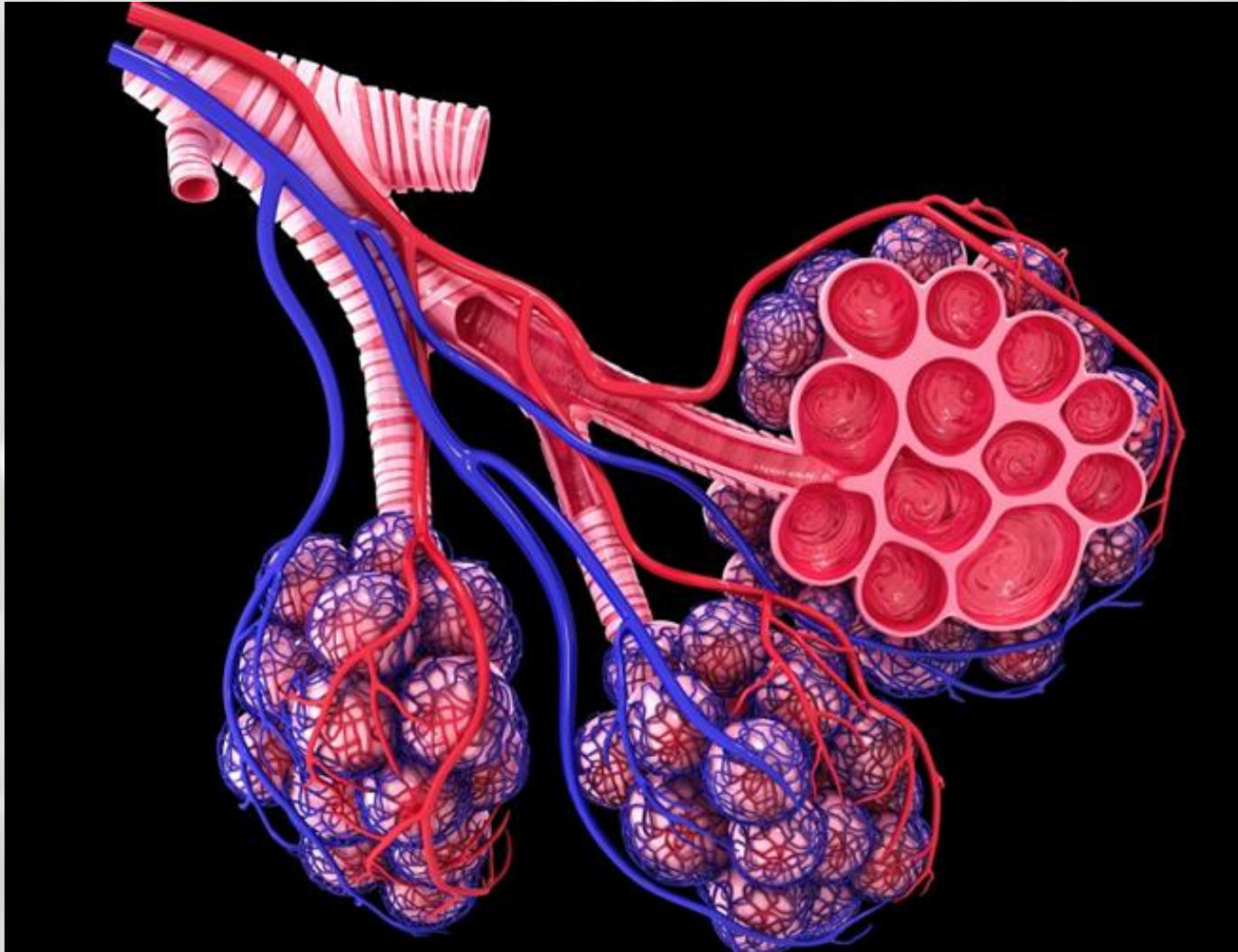
Human Lungs



Bronchi, Bronchial Tree, and Lungs



Alveoli



Small blood vessels called capillaries surround the alveoli. Oxygen and carbon dioxide move in and out of capillaries

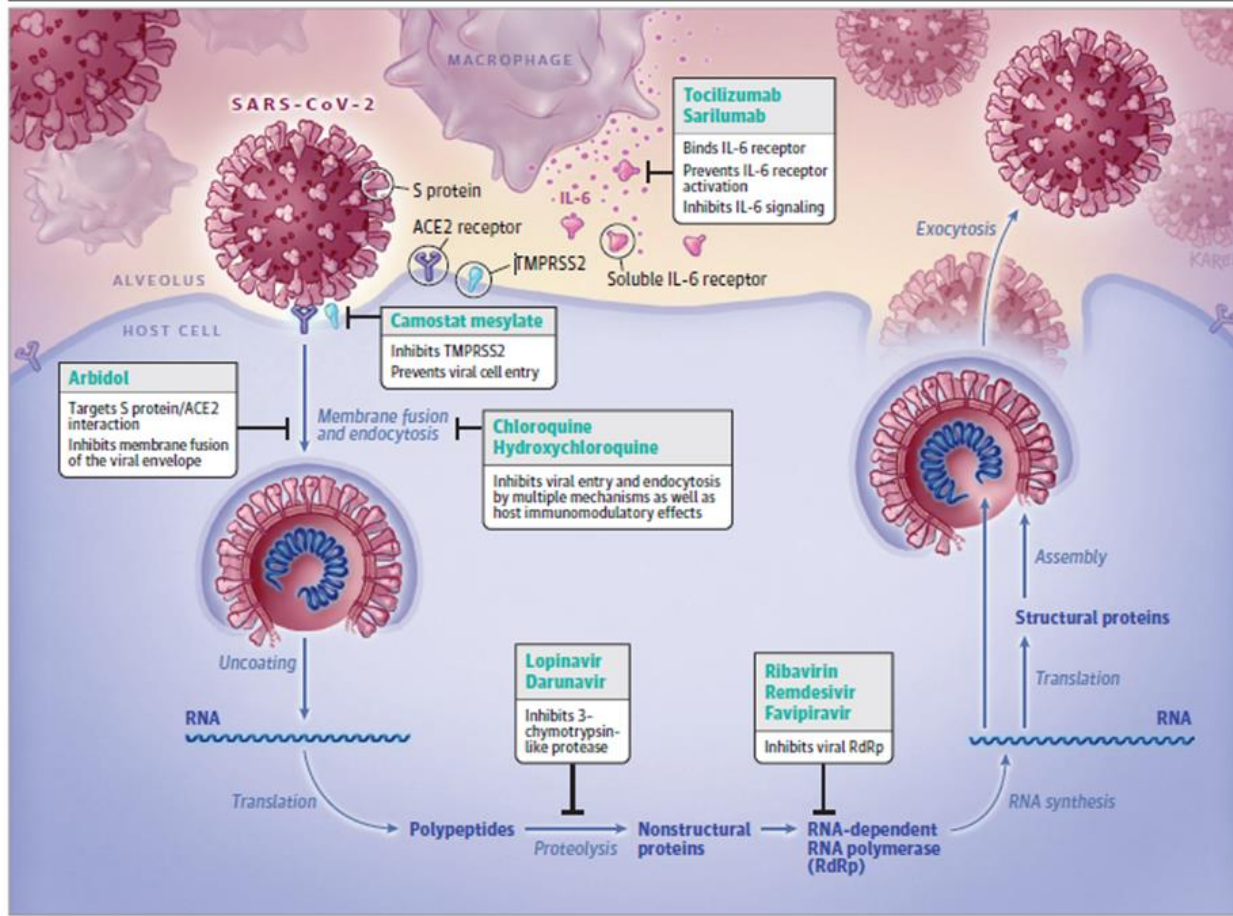
Cilia



<https://www.google.co.za/url?sa=i&url=https%3A%2F%2Ffootage.framepool.com%2Fen%2Fshot%2F604471811-respiratory-epithelium-cilium-windpipe-lung&psig=AOvVaw1-sDnOjHDwGk8WlzGoQWu3&ust=1590678128511000&source=images&cd=vfe&ved=0CAMQjB1qFwoTCLjpxP6n10kCFQAAAAAdAAAAABAI>

Immune system

Figure. Simplified Representation of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Viral Lifecycle and Potential Drug Targets

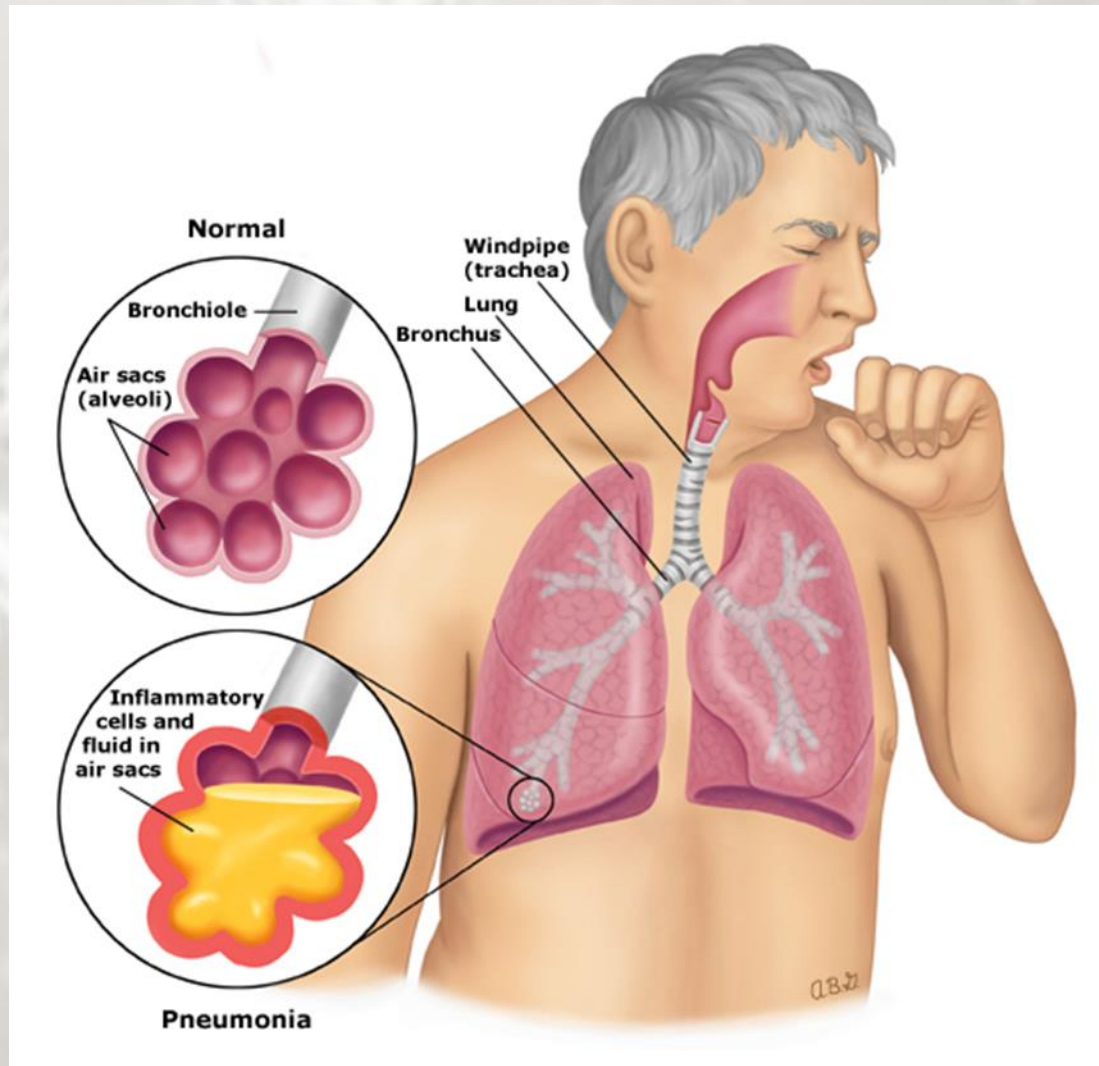


Schematic represents virus-induced host immune system response and viral processing within target cells. Proposed targets of select repurposed and investigational products are noted. ACE2, angiotensin-converting enzyme 2; S protein, spike protein; and TMPRSS2, type 2 transmembrane serine protease.

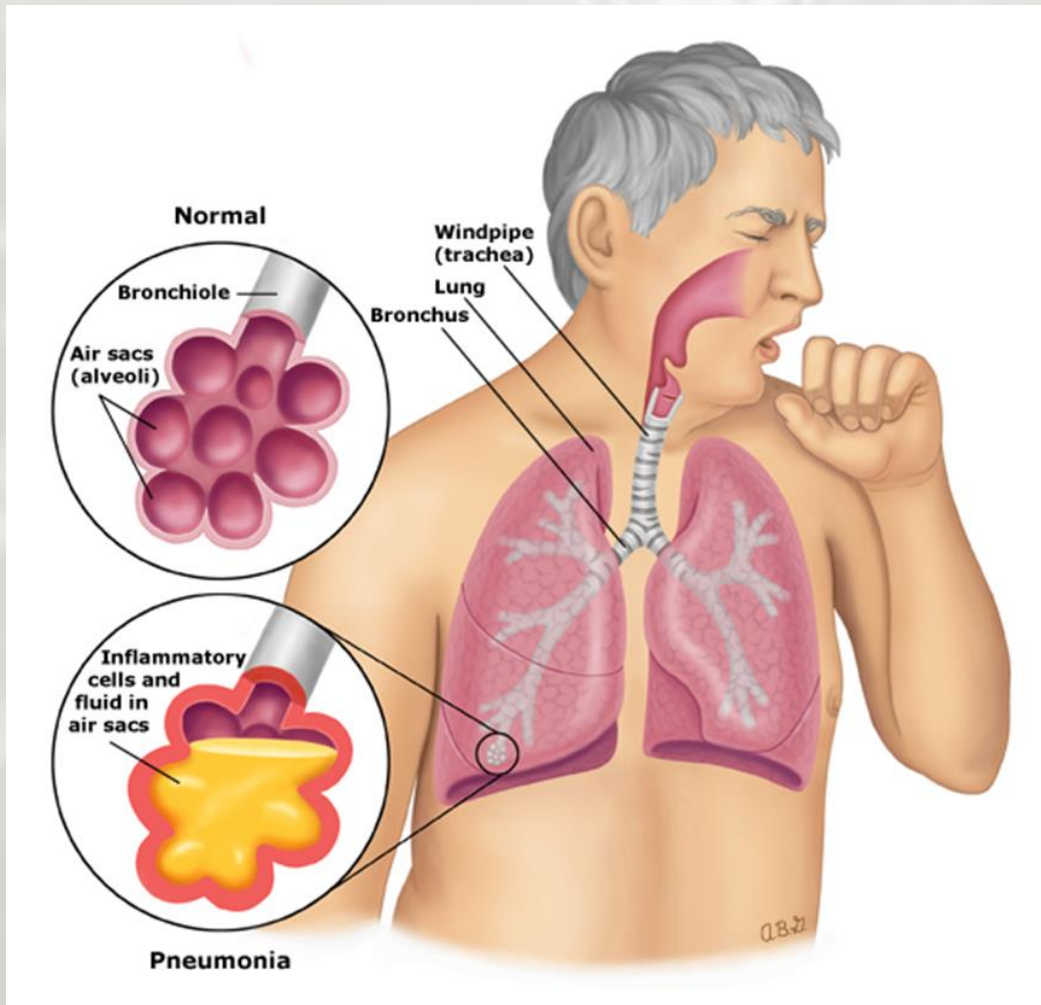
Virus-induced host immune system response and viral processing within target cells

JAMA. 2020;323(18):1824-1836.
doi:10.1001/jama.2020.6019

Pneumonia



Pneumonia



Accute Respiratory Distress Syndrome (ARDS) cause;

- difficulty breathing,
- chest pain,
- coughing,
- fever and chills,
- confusion,
- headaches,
- muscle pain
- fatigue

ECMO Ventilator

ECMO = Extracorporeal membrane oxygenator



Who is at risk of catching Covid-19

Everyone is at risk

- aged
- a pre-existing underlying health conditions
- heart disease,
- lung disease,
- immunosuppression,
- diabetes.
- 68% - people between 30 to 69 years of age
- 20% - symptoms of severe illness.

Vaccine



Principle of vaccine;

- Faint version of virus
- Too weak to cause infection
- Stimulates immune response
- Produces markers = antibodies
- Attaches to virus and prevents virus attaching to cells

HOW CAN COVID-19 INFECTIONS BE TREATED?

TREATMENT IS SUPPORTIVE



(E.G. PROVIDE **OXYGEN** FOR PATIENTS WITH SHORTNESS OF BREATH OR TREATMENT FOR FEVER).



THERE IS NO SPECIFIC ANTIVIRAL TREATMENT AVAILABLE.



ANTIBIOTICS DO NOT TREAT VIRAL INFECTIONS. HOWEVER, ANTIBIOTICS MAYBE REQUIRED IF BACTERIAL SECONDARY INFECTIONS DEVELOPS.

Treatment options



Remdesivir – not available in South Africa

Lopinavir/ritonavir - first line antiretroviral treatment
in South Africa

Hydroxychloroquine with and without **azithromycin**

Chloroquine

Lopinavir/ritonavir

The background of the slide features several stylized, white, spiky virus particles, characteristic of coronaviruses, scattered across a light gray background. The particles vary in size and orientation, with some showing prominent surface proteins and spike-like structures.

Adverse effects:

Nausea and diarrhoea – 28%

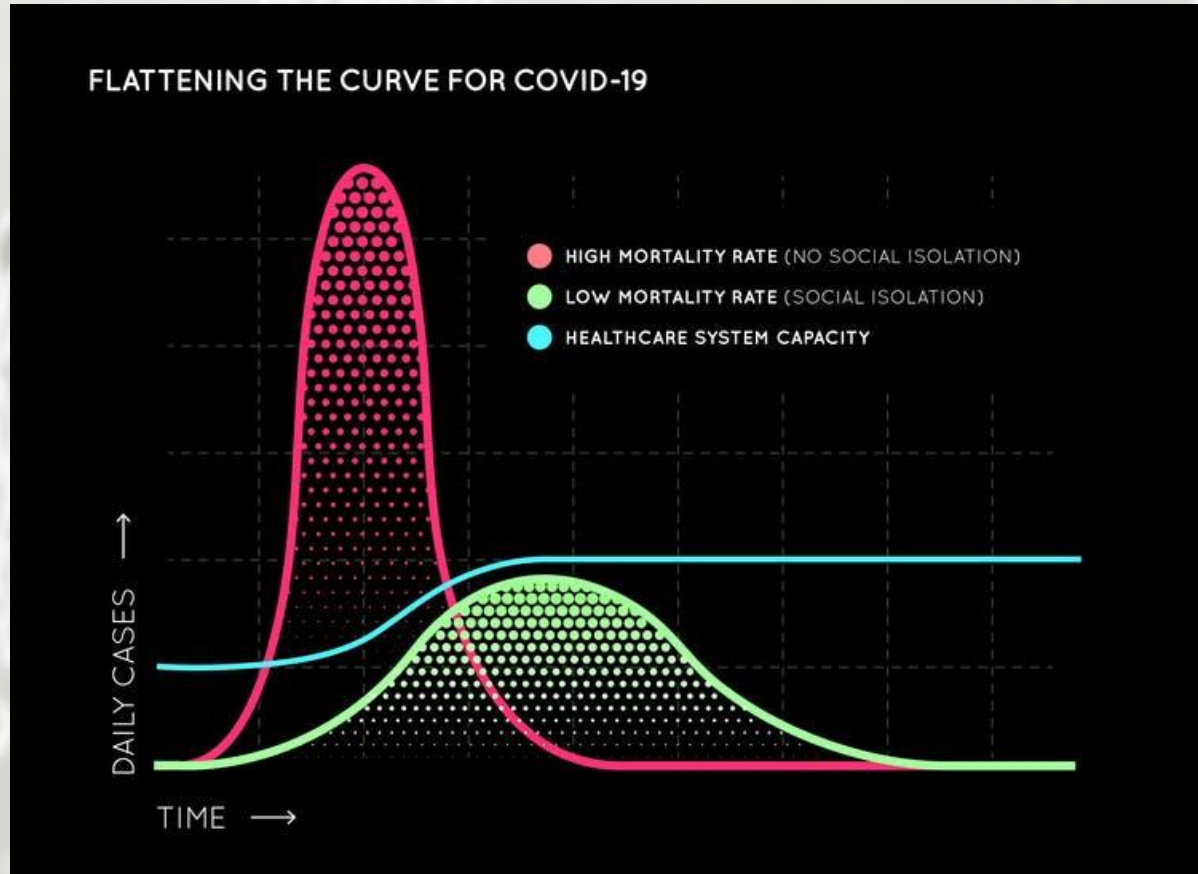
Hepatotoxicity – 2%-10%

Elevated transaminase – 20%- 30%

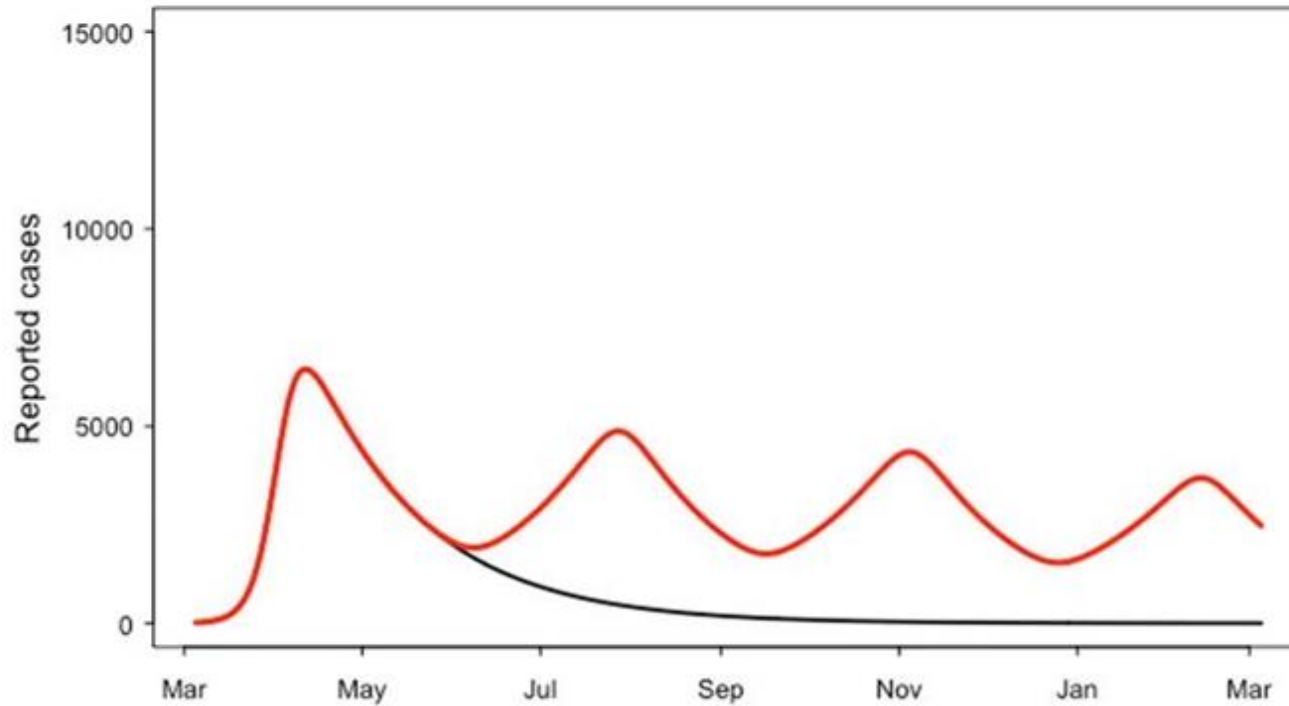
Discontinued therapy – 14%

SARS and MERS treatment – no clear benefit

Flatten the curve



Second wave



ALCOHOL: HOW DRINKING AFFECTS YOUR BODY

BRAIN

AFTER ABOUT AN HOUR, MOST WILL NOTICE THAT THEIR JUDGMENT AND CONCENTRATION HAS BEEN IMPAIRED.

MENTAL HEALTH

THE INTOXICANT CAN CAUSE MOOD SWINGS AND BECAUSE OF THE REMOVAL OF INHIBITION.

SPEECH

SPEECH MAY START TO BECOME SLURRED AFTER AN HOUR OF DRINKING

LIVER

AS THE LIVER IS PUT TO WORK WHEN YOU DRINK, LONG TERM EFFECTS CAN BE EXTREME AND CAN INCLUDE CIRROHOSIS.

SEX

THE LIKELIHOOD OF PARTAKING IN UNSAFE SEX IS INCREASED DRAMATICALLY.

EYES

PEOPLE WHO ARE DRUNK WILL OFTEN FIND THEIR EYES ARE IMMEDIATELY AFFECTED BY BLURRED OR DOUBLE VISION.

LUNGS

WHEN YOU ARE DRUNK YOUR RISK OF PNEUMONIA IS INCREASED

STOMACH

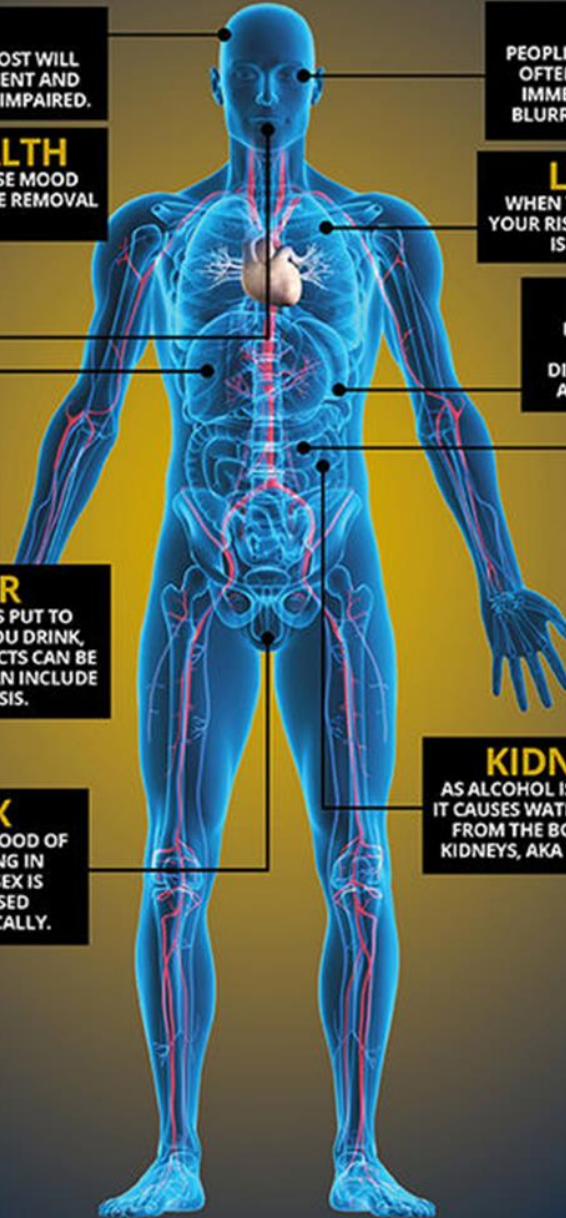
DRINKING CAN CAUSE VOMITING, NAUSEA, DIARRHOEA, HEARTBURN AND LOSS OF APPETITE.

PANCREAS

DRINKING CAN LEAD TO LOW BLOOD SUGAR WHICH CAN LEAD TO SHAKING OR DIZZINESS

KIDNEYS

AS ALCOHOL IS A DIURETIC, IT CAUSES WATER TO BE LOST FROM THE BODY VIA THE KIDNEYS, AKA YOUR URINE.



RESEARCH ARTICLE

Open Access

Public health system challenges in the Free State, South Africa: a situation appraisal to inform health system strengthening



B. Malakoane¹, J. C. Heunis^{2*}, P. Chikobvu^{1,3}, N. G. Kigozi² and W. H. Kruger^{1,3}

Abstract

Background: Since the advent of democracy, the South African government has been putting charters, policies, strategies and plans in place in an effort to strengthen public health system performance and enhance service delivery. However, public health programme performance and outcomes remained poor while the burden of disease increased. This was also the case in the Free State Province, where major public health system challenges occurred around 2012. Assessment was necessary in order to inform health system strengthening.

WILEY DRUG AND ALCOHOL REVIEW

[This Article](#)

[For Authors](#)

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[Drug Alcohol Rev.](#) 2018 Aug; 37(Suppl Suppl 2): S2–S3.

PMCID: PMC6175166

Published online 2018 Aug 13. doi: [10.1111/dar.12846](https://doi.org/10.1111/dar.12846)

PMID: [30376697](https://pubmed.ncbi.nlm.nih.gov/30376697/)

Robust research tools shed light on the crucial development issue of alcohol harm and enable effective policy adoption

[Natacha Lecours](#)¹ and [Greg Hallen](#)¹

[Author information](#) [Article notes](#) [Copyright and License information](#) [Disclaimer](#)

The global epidemic of non-communicable diseases represents one of the main global health challenges of current times, and a formidable threat to development and economies [1](#), [2](#). The harmful use of alcohol is one of the leading risk factors contributing to preventable deaths from non-communicable diseases; it is a causal factor in 60 types of diseases and injuries and a component cause in 200 others [3](#). It also negatively affects the well-being and health of people around those that consume alcohol in a harmful way [4](#).



Alcohol and Covid-19:

World Health Organization's advice

Avoid alcohol altogether

If you drink keep it to a minimum

Immune system

weakened by alcohol, especially if you drink heavily

Reduces ability to cope with infectious diseases

Can cause acute respiratory distress syndrome

Drinking also increases risk of domestic violence

Source: WHO

World Health Organisation rules for alcohol consumption during the lockdown

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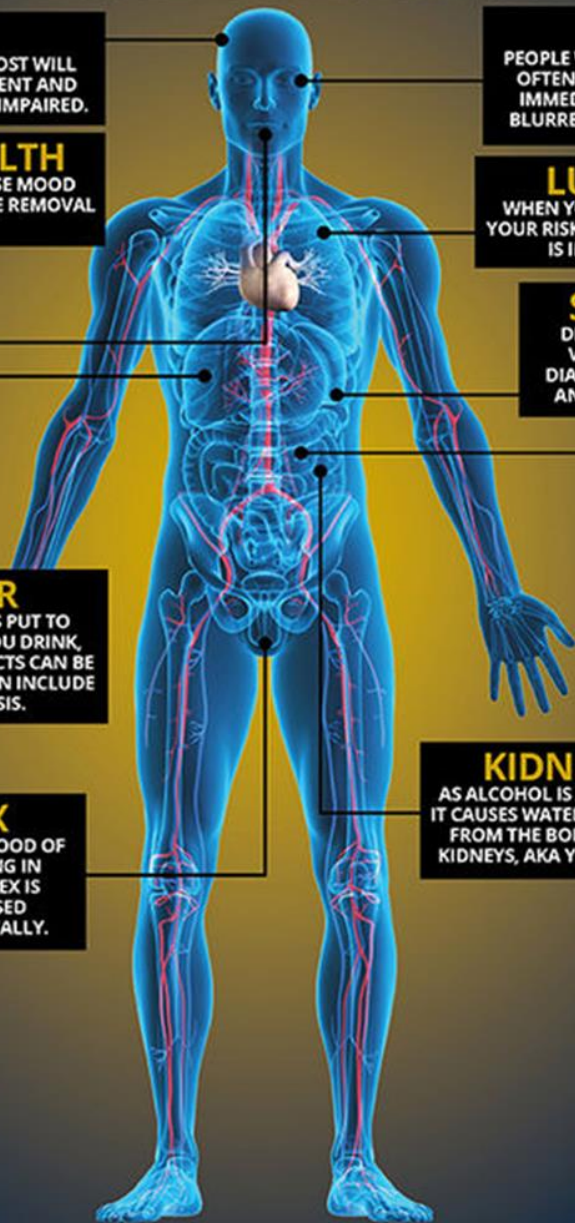
DRINKING CAN CAUSE VOMITING, NAUSEA, DIARRHOEA, HEARTBURN AND LOSS OF APPETITE.

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AS ALCOHOL IS A DIURETIC, IT CAUSES WATER TO BE LOST FROM THE BODY VIA THE KIDNEYS, AKA YOUR URINE.



LIST: Cele on law enforcement operations during lockdown

Friday 22 May 2020 - 6:00pm



Police Minister, Bheki Cele says there's been a decrease in serious and violent crimes during the lockdown. Courtesy [#DStv403](#)

Alcohol fuels gender-based violence

When men feel both entitled and inadequate, and when their personalities are brittle and impulsive, then alcohol pushes them over the edge.



THE EFFECTS OF ALCOHOL INTOXICATION ON AGGRESSIVE RESPONSES IN MEN AND WOMEN

PETER N. S. HOAKEN* and R. O. PIHL

Department of Psychology, 1205 Dr Penfield Avenue, McGill University, Montreal, Quebec, Canada H3A 1B1

(Received 21 December 1999; in revised form 28 March 2000; accepted 12 April 2000)

Abstract — A considerable literature, clinical and experimental, has demonstrated the aggression-eliciting effects of alcohol intoxication. However, the focus of the experimental literature has been primarily on men and the studies on women have been inconclusive. This study was conducted to test for possible gender differences in the manifestation of alcohol-induced aggression. Participants were 54 males and 60 females, aged 18–30 years, who competed in a competitive aggression paradigm either sober or intoxicated. As expected, intoxicated men were more aggressive than their sober peers. However, under high provocation, both sober and intoxicated, women manifested aggression comparable to the intoxicated men. This study suggests that women can be as aggressive as men, and that alcohol intoxication does not seem to be as important a determining factor.

ALCOHOL

Does alcohol harm or help these chronic diseases?

Naveed Saleh, MD, MS, for MDLinx | May 4, 2020

Rectangular Snip

The effects of alcohol on chronic diseases can be either a blessing or a curse, depending on the amount consumed.

At lower levels of intake, alcohol can be protective. At higher levels, it can be detrimental. Alcohol-specific factors also play a role, including ethanol content, drinking frequency, and beverage type (ie, beer, wine, or



While the results of the review were encouraging for those who are light or moderate drinkers, the authors state that even though alcohol may offer some protective effect, there is no reason to start drinking.

“For healthy adult drinkers, no more than one drink for females or two drinks for males every day, especially red wine, is acceptable and relatively safe, and might be protective for the cardiovascular system, but occasional binge drinking should be avoided,” wrote the researchers.

“On the other hand, for non-drinkers, regular moderated drinking, regardless of beverage types, should not be recommended as a way to attain health, because risks for certain diseases, such as colorectal and breast cancer, [are] already increased [with] light drinking,” they concluded.

MORE:

ALCOHOL

ISCHEMIC HEART DISEASE

STROKE

LIVER CANCER

Risks from Smoking

Smoking can damage every part of the body

Cancers

Head or Neck

Lung

Leukemia

Stomach

Kidney

Pancreas

Colon

Bladder

Cervix

Chronic Diseases

Stroke

Blindness

Gum infection

Aortic rupture

Heart disease

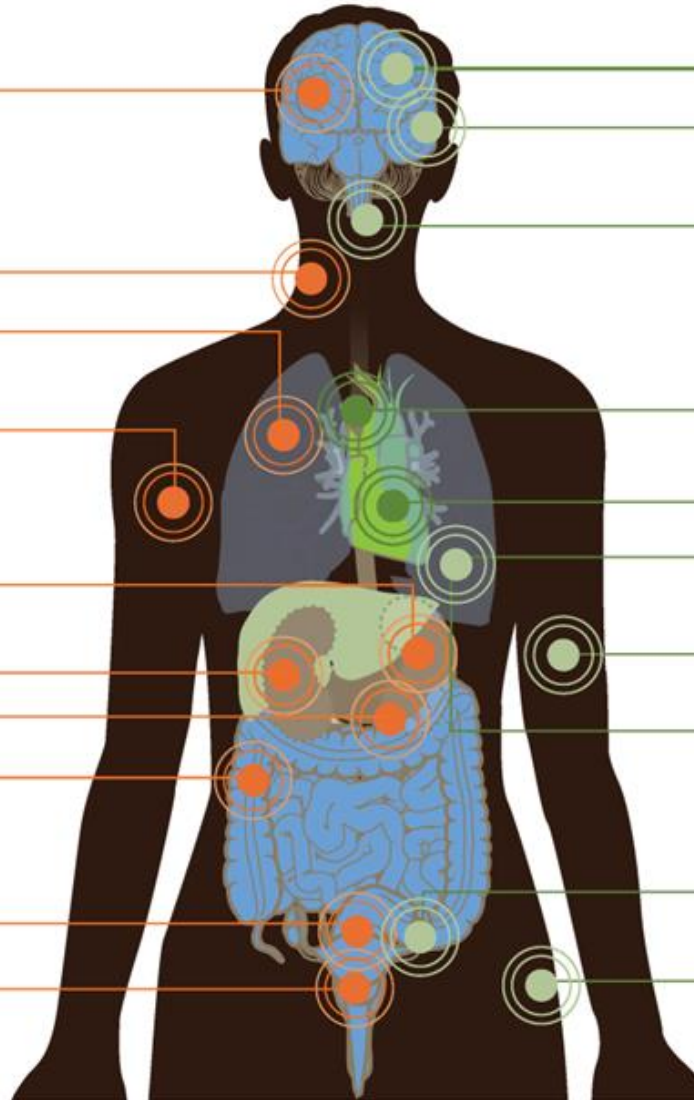
Pneumonia

Hardening of the arteries

Chronic lung disease & asthma

Reduced fertility

Hip fracture



Health effects of smoking

8 million people die a year around the world.

More than **7 million** from direct tobacco use

1.2 million are the result of second-hand smoke.

There are more than **7000** chemicals in tobacco smoke,

250 are known to be harmful

69 are known to cause cancer.

Second-hand smoke causes :

- cardiovascular
- respiratory diseases,
- coronary heart disease
- lung cancer.

In infants, it raises the risk of sudden infant death syndrome.

In pregnant women, it causes pregnancy complications and low birth weight.

Second-hand smoke causes 65 000 children to die each year

Electronic nicotine delivery system ENDS



Content source: Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion
<https://www.cdc.gov/reproductivehealth/maternalinfanthealth/tobaccousepregnancy/healthcare-providers-end-systems-pregnancy.htm>

Electronic nicotine delivery system ENDS



WHO 6 **MPOWER** measures are:

- **M**onitor tobacco use and prevention policies
- **P**rotect people from tobacco use
- **O**ffer help to quit tobacco use
- **W**arn about the dangers of tobacco
- **E**nforce bans on tobacco advertising, promotion and sponsorship
- **R**aise taxes on tobacco

ALCOHOLISM & DRUG ABUSE WEEKLY

Wiley-Blackwell

[Alcoholism & Drug Abuse Weekly](#). 2020 Mar 30; 32(13): 1–4.

PMCID: PMC7161783

Published online 2020 Mar 27. doi: [10.1002/adaw.32670](https://doi.org/10.1002/adaw.32670)

Alcohol and isolation: Experts comment on drinking behavior during COVID-19

[Alison Knopf](#)

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Abstract

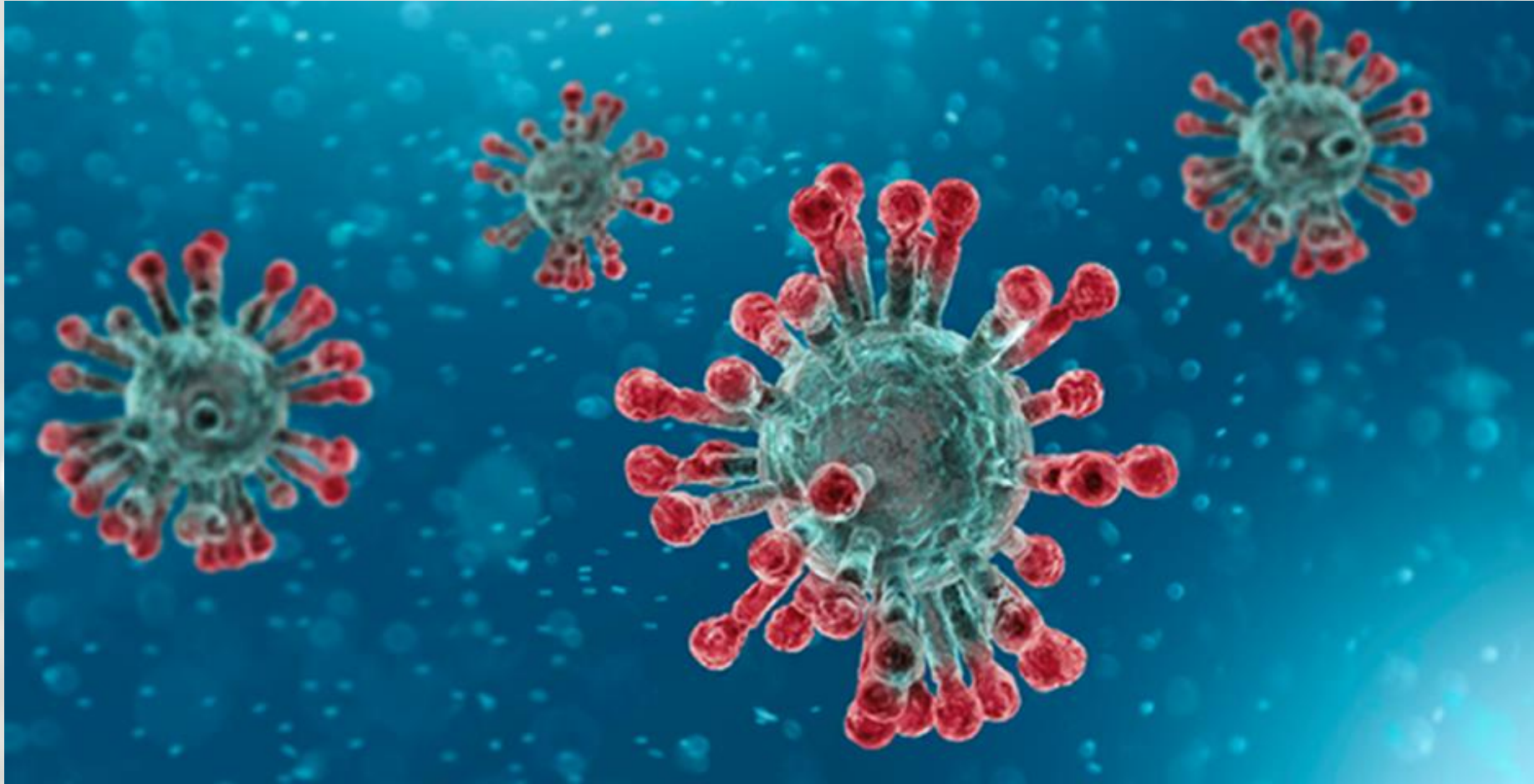
Go to: Go to:

Are people drinking more now that they are locked in a house with their nearest and dearest, facing job loss or having lost a job, bored and stressed? Probably. Is drinking a healthy way of coping? No.

Bottom Line...

Alcohol relieves stress, temporarily, and people are probably using it now — and using too much of it.

Refresh - Where are we



Immune System: Your Natural Protection Against Invaders



Level 1: Barriers

Skin and cilia
prevent invaders
from entering

Level 2: Innate

Cells and chemicals
stop invaders from
spreading

Level 3: Adaptive

Blood warriors (with a
grudge) attack invaders

PSYCHIATRY RESEARCH

Elsevier

[Psychiatry Res.](#) 2020 May 13 : 113096.

PMCID: PMC7219362

doi: [10.1016/j.psychres.2020.113096](https://doi.org/10.1016/j.psychres.2020.113096) [Epub ahead of print]

PMID: [32405115](https://pubmed.ncbi.nlm.nih.gov/32405115/)

The COVID-19 Pandemic and its Impact on Substance Use: Implications for Prevention and Treatment

[Felipe Ornell](#)^{a,b,c,*}, [Helena Ferreira Moura](#)^{a,b}, [Juliana Nichterwitz Scherer](#)^{a,b,d}, [Flavio Pechansky](#)^{a,b},
[Felix Kessler](#)^{a,b} and [Lisia von Diemen](#)^{a,b,e}

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Associated Data

▸ [Supplementary Materials](#)

Abstract

[Go to:](#) [Go to:](#)

The COVID-19 pandemic has brought major challenges to healthcare systems and public health policies globally, as it requires novel treatment and prevention strategies to adapt for the impact of the pandemic. Individuals with substance user disorders (SUD) are at risk population for contamination due to multiple factors – attributable to their clinical, psychological and psychosocial conditions. Moreover, social and economic changes caused by the pandemic, along with the traditional difficulties regarding treatment access and adherence – will certainly worsen during this period, therefore aggravate their condition. In

ASIAN JOURNAL OF PSYCHIATRY

Elsevier

[Asian J Psychiatr](#). 2020 Jun; 51: 102064.

PMCID: PMC7151310

Published online 2020 Apr 10. doi: [10.1016/j.ajp.2020.102064](https://doi.org/10.1016/j.ajp.2020.102064)

PMID: [32305033](https://pubmed.ncbi.nlm.nih.gov/32305033/)

COVID-19 pandemic and addiction: Current problems and future concerns

[Sujita Kumar Kar](#),^{a,*} [S.M. Yasir Arafat](#),^b [Pawan Sharma](#),^c [Ayushi Dixit](#),^d [Marthoenis Marthoenis](#),^e and [Russell Kabir](#)^f

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This article has been [cited by](#) other articles in PMC.

To the Editor,

COVID-19 pandemic is a global public health emergency. It affected more than 512,000 people with 23,495 confirmed deaths in 202 countries by 28th March 2020 ([Organization, 2020](#)). The disease spread rapidly across the globe due to the unique properties of the virus (extraordinary genetic diversity, highly contagious, easy mode of spread, relatively unaffected by climatic variations) ([Mackenzie and Smith, 2020](#)).

People around the globe, during this crisis period, are expected to encounter several mental health challenges ranging from panic, phobia, health anxiety, sleep disturbances to dissociative like symptoms ([Benerjee, 2020](#)).

ANNALS OF INTERNAL MEDICINE

Various

[Ann Intern Med.](#) 2020 Apr 2 : M20-1212.

PMCID: PMC7138334

Published online 2020 Apr 2. doi: [10.7326/M20-1212](https://doi.org/10.7326/M20-1212)

PMID: [32240293](https://pubmed.ncbi.nlm.nih.gov/32240293/)

Collision of the COVID-19 and Addiction Epidemics

[Nora D. Volkow, MD](#)

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See "[An Epidemic in the Midst of a Pandemic: Opioid Use Disorder and COVID-19](#)" in *Ann Intern Med*, M20-1141.

See "[When Epidemics Collide: Coronavirus Disease 2019 \(COVID-19\) and the Opioid Crisis](#)" in *Ann Intern Med*, M20-1210.

This article has been [cited by](#) other articles in PMC.

Abstract

Go to: [Go to:](#)

People with substance use disorder may be especially susceptible to COVID-19, and compromised lung function from COVID-19 could also put at risk those who have opioid use disorder and methamphetamine use disorder. This commentary describes the risks of the collision of the COVID-19 and addiction epidemics.

ALCOHOL RESEARCH

Current Reviews

[Alcohol Res.](#) 2015; 37(2): 153–155.

PMCID: PMC4590612

Alcohol and the Immune System

[Dipak Sarkar](#), Ph.D., D.Phil., [M. Katherine Jung](#), Ph.D., and [H. Joe Wang](#), Ph.D.

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Clinicians have long observed an association between excessive alcohol consumption and adverse immune-related health effects such as susceptibility to pneumonia. In recent decades, this association has been expanded to a greater likelihood of acute respiratory stress syndromes (ARDS), sepsis, alcoholic liver disease (ALD), and certain cancers; a higher incidence of postoperative complications; and slower and less complete recovery from infection and physical trauma, including poor wound healing.

THANK YOU
FOR
LISTENING

