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**HIM SCIENCE CONGRESS ASSOCIATION**

**eBooklet Series:  
SCIENCE AND ITS IMPACT ON SOCIETY**

**THE CORONAVIRUS  
(COVID - 19) PANDEMIC**

Coronavirus Disease 2019 Outbreak

**COVID-19**

# THE CORONAVIRUS (COVID - 19) PANDEMIC

## About HSCA

Science in India and especially in Himachal has significant potential for further development. Although scientists from Indian origin excel on an international level, the huge potential offered by the Himalayan state's young population is far from being fully leveraged. As economic development advances and a broader section of society benefits from high-quality research, science in the state will be able to fully capitalize on this unique heritage. For the advances and promotion of Sciences in Himachal Pradesh the Research community has taken an initiative to come under one umbrella in the name of Him Science Congress Association (HSCA). HSCA has been registered under the HP Societies Registration Act, 2006 (Reg. No. 566/2012). The main objective of HSCA is advances and promotion of Sciences and to bring the Research community under one umbrella. One of the main objectives of the HSCA is to encourage original researches and their publication.

## About the eBooklet

Generation of science based awareness among school children and society is one of the key objectives of HSCA. In present time of Covid-19 pandemic, the most important responsibility of any scientific society is to collect and disseminate authentic information to various stakeholders in the society. Such information, can help people in various ways and at various steps of their day to day life. It will also facilitate them to understand various myths and facts about this pandemic and to follow various DOs and DON'Ts for its prevention. Causes and consequences of Covid-19 are presented in brief and effective steps for breaking the infection chain suggested with a view to reduce the time of trouble.

Enormous information is available about Coronavirus on web and Social Media, but everything is not true to be followed. Our Endeavour to compile this eBooklet is to collect information from genuine sources, and to present it at a single place in a very simplified manner. It is hoped that this eBooklet will serve the purpose of generating awareness about the spread and prevention on Covid-19, in the public, in general, and in school & college students, in particular.

I thank all contributors for their valuable and timely inputs. HSCA fraternity strongly hope that the whole world will soon be free from Covid-19 catastrophe. The best way to cope with the present situation is to take care of ourselves, hope for the best and prepare for the worst!

*Prof Deepak Pathania*  
President, HSCA



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THE CORONAVIRUS (COVID - 19) PANDEMIC

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# THE CORONAVIRUS (COVID - 19) PANDEMIC

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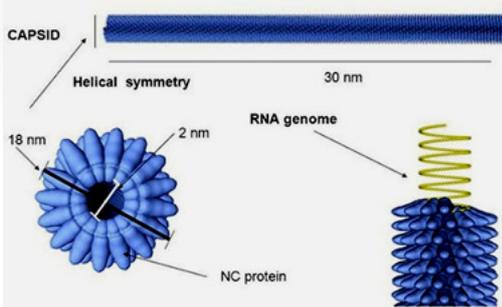


# THE CORONAVIRUS (COVID - 19) PANDEMIC

## 1. Know about Coronavirus

Mahender Singh Thakur

STRUCTURAL FEATURES OF TMV



Virus (literary means poison) is an ultramicroscopic obligate parasite that can multiply only inside the living organism. It can stay inert in nonliving environment but become active as soon as it comes in contact with a specific host. Since the discovery of rod-shaped tobacco mosaic virus (TMV) in 1898, more than 6000 virus species have so far been described.

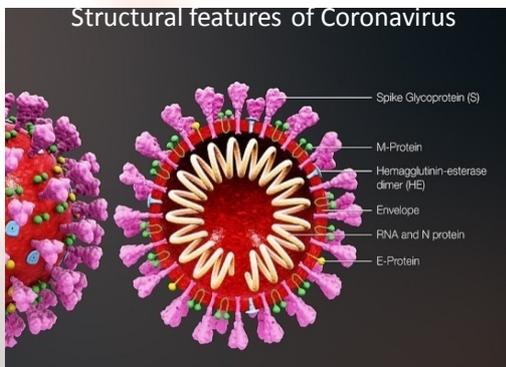


Small pox, chicken pox, common flu, polio, rabies, hepatitis, measles, mumps, herpes, tuberculosis, AIDS, etc. are some viral diseases in humans.

When not inside an infected cell, viruses exist as independent particles (virions) consisting of (i) genetic material (DNA or RNA), (ii) a protein coat (capsid), surrounding the genetic material, and in some cases, (iii) an outside envelope of lipids.

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the strain of coronavirus that causes coronavirus disease 2019 (Covid-19). It is a single-stranded RNA virus.

Structural features of Coronavirus



Coronaviruses are spherical, or pleomorphic (changeable in shape), particles with an average diameter of about 125 nm. The envelope consists of a lipid bilayer, in which the membrane (M), envelope (E) and spike (S) structural proteins are anchored. The S-protein is a multifunctional molecular machine that mediates coronavirus entry into host cells.



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Since the virus is not a living organism, it is not killed, but decays on its own. The disintegration time depends on the temperature, humidity and type of material where it lies.

Outside body, it disintegrates in: 3 hrs (fabric and porous material), 4 hrs (Copper), 8 hrs (wood), 24 hrs (Cardboard), 42 hrs (metal) and 72 hrs (plastic). If you shake it or use a feather duster, the virus molecules float in the air for up to around 3 hrs, and can lodge in your nose. The virus is not thought to be transmissible via food, but it can stay on surfaces for several days. It is therefore important to wash groceries before being used.



The virus is very fragile; the only thing that protects it is a thin outer layer of fat. That is why any soap or detergent is the best remedy, because the foam removes the covering of fat (rub so much for 20 seconds or more to make a lot of foam).

Heat melts fat; this is why it is so good to use water above 25°C for washing hands, clothes and everything.

Alcohol or any mixture with alcohol over 65% dissolves any fat, here the external fat layer of the virus. No vodka can kill virus as the strongest vodka is 45% alcohol. Vinegar is not useful as it does not break down the protective layer of fat.

The virus particles remain stable in external cold, or artificial as air conditioners in houses and cars. They also need moisture to stay stable. Therefore, dehumidified, dry, and warm bright room will degrade it faster.

Starting symptoms include itching in the throat, dry throat and dry cough.



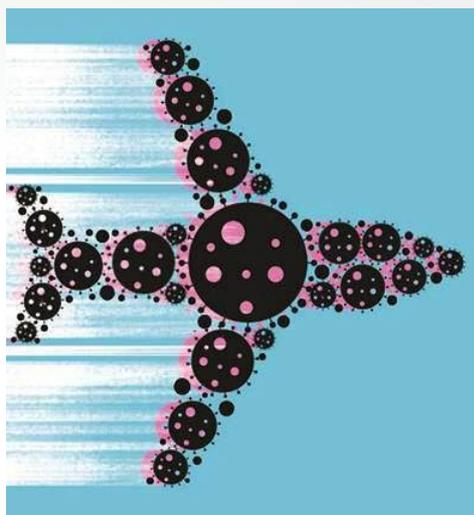
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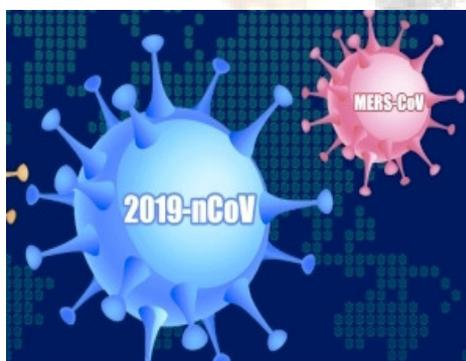
# THE CORONAVIRUS (COVID - 19) PANDEMIC

## 2. Origin, spread & prevention of Covid-19

N C Kothiyal



Coronavirus disease (COVID-19) is caused by a newly discovered severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). This virus was reported first from Wuhan city of China in December 2019. The virus spread to other countries through passengers travelling by Air/other route. Some of the governments including India evacuated their citizen back from Wuhan and other countries by Air.



Bats have been recognized as the natural reservoirs of a large variety of viruses. Two emerging Coronaviruses which have caused unexpected human disease outbreaks in the 21st century, Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV) and Middle East Respiratory Syndrome Coronavirus (MERS-CoV), are suggested to be originated from bats. SARS-CoV-2 is closely related to the original SARS-CoV, and is thought to have a zoonotic origin. It is 96% identical at the whole genome level to other bat coronavirus samples (BatCoV RaTG13).



Some people say that the virus may be genetically modified weapon developed by some country. There is another opinion that the virus spread may be accidental from some lab during research Investigations. However, there are no concrete evidences to support these claims. There is a third opinion of natural origin of the virus which cannot be neglected.



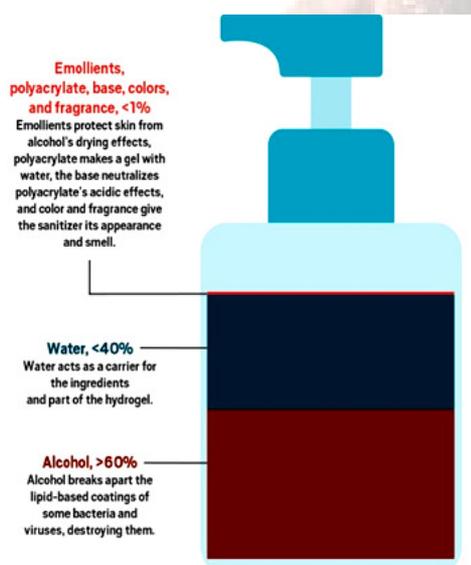
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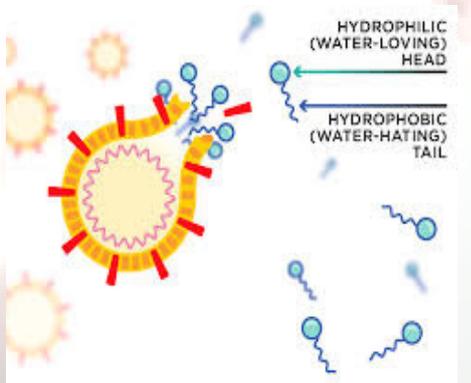


The WHO has published several testing protocols for the disease. The standard method of testing is real-time reverse transcription polymerase chain reaction (rRT-PCR).

People can catch Covid-19 virus from others who are already infected. The disease spreads primarily from one person to another through small droplets from the nose or mouth, which are expelled when an infected person coughs, sneezes, or speaks. This is why it is important to stay at least one metre (3 feet) away from others. The droplets are relatively heavy, do not travel far and quickly sink to the ground. However, they can land on objects and surfaces around the person such as tables, doorknobs and handrails. People can become infected by touching these objects or surfaces, and then touching their eyes, nose or mouth. This is why it is important to wash your hands regularly with soap and water or clean with alcohol-based hand rub.



Alcohol's job is to break up the outer coatings of bacteria and viruses. But alcohol can quickly dry out your skin because it will also disrupt the protective layer of oils on your skin. That's why hand sanitizers contain a moisturizer to counteract this drying.



Water alone may rinse off dirt, but viruses and bacteria are so small they often need soap (A biphillic molecule) to get their sticky nanoparticles out of the crevices (tiny spaces on hand surfaces). Like a nail popping a tire, water-repelling end of the soap molecule, a hydrophobic tail that can bond with oil and fats, stabs Covid-19 and leaves the virus a deflated and broken sack of RNA cells.



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Around one out of five persons who gets Covid-19 becomes seriously ill and develops difficulty in breathing. People above 55-60 years and above, and those suffering with disease like high blood pressure, heart and lung problems, diabetes, or cancer, are at higher risk.



These days, the word 'Quarantine' has gone viral on TV and social media. What does it mean? **QUARANTINE** refers to restricting activities or separating people who are not ill themselves but may have been exposed to Covid-19. **ISOLATION** means separating people who are ill with symptoms of Covid-19 and may be infectious to prevent the spread of the disease. On the other hand, **SOCIAL DISTANCING** means being physically apart from each other by at least 3 feet distance.

PREVENTION OF COVID-19 SPREAD:  
SOCIAL DISTANCING



Hackers and cyber scammers are taking advantage of the Covid-19 pandemic by sending fraudulent emails and WhatsApp messages that attempt to trick you into clicking on malicious links or opening attachments. These actions can reveal your user name and password, which can be used to steal money or sensitive information. So act cautiously!



Whereas we all see the negative impacts of this pandemic, we have some positive aspects also. The environment is clean, air quality has improved and rivers are reviving. People have also stopped visiting hospitals for minor problems.

Let's be positive and keep hope on God and nature. Think differently in post pandemic period!

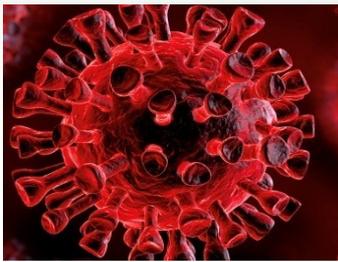


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# THE CORONAVIRUS (COVID - 19) PANDEMIC

## 3. Coronavirus History, Symptoms & Spread

B S Kaith and Amit Kumar Sharma



World Health  
Organization



Coronavirus disease (Covid-19) is an infectious disease caused by severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2). The disease was first identified in December 2019 in Wuhan, China. Thereafter it spreads globally, resulting in the ongoing 2019–20 Coronavirus pandemic.

As of 1 May 2020, more than 3.26 million cases have been reported across 187 countries resulting in more than 233,000 deaths. More than 1.02 million people have recovered. The rate of spread of virus is very fast.

The World Health Organization (WHO) declared the 2019–20 Coronavirus outbreak a Public Health Emergency of International Concern (PHEIC) on 30 January 2020 and a pandemic on 11 March 2020.

Common symptoms include cough, fever, fatigue, shortness of breath, and loss of smell. While the majority of cases result in mild symptoms, some progress to viral pneumonia, multi-organ failure, or cytokine storm. The time from exposure to onset of symptoms (incubation period) is typically around five days but may range from two to fourteen days. Some infected persons even don't show any symptom; they are asymptomatic.

The virus that causes Covid-19 is mainly transmitted through droplets generated when an infected person coughs, sneezes, or exhales. These droplets are too heavy to hang in the air, and quickly fall on floors or surfaces. You can be infected by breathing in the virus if you are within close proximity of someone who has COVID-19, or by touching a contaminated surface and then your eyes, nose or mouth.

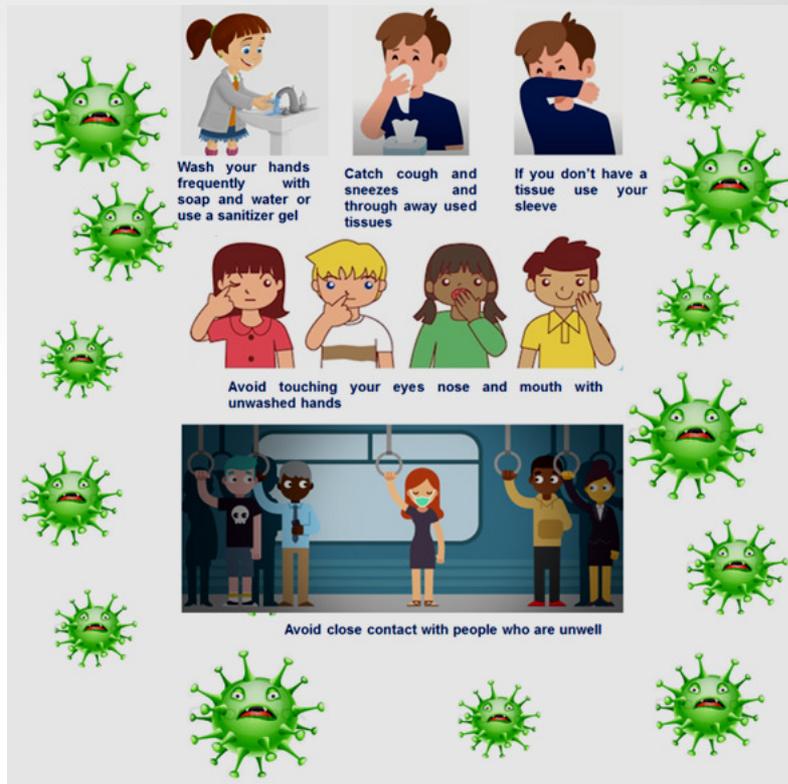


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Recommended measures to prevent Covid-19 infection are:

Stay home and Wash hands frequently.

Keep a safe physical distance from others.

Cover your cough.

Keep unwashed hands away from your face.

Use a face covering for those who suspect they have the virus and their caregivers.

Face covering is also recommended in public areas.



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## 4. Covid-19 - Silent pandemic respiratory illness outbreak: An overview

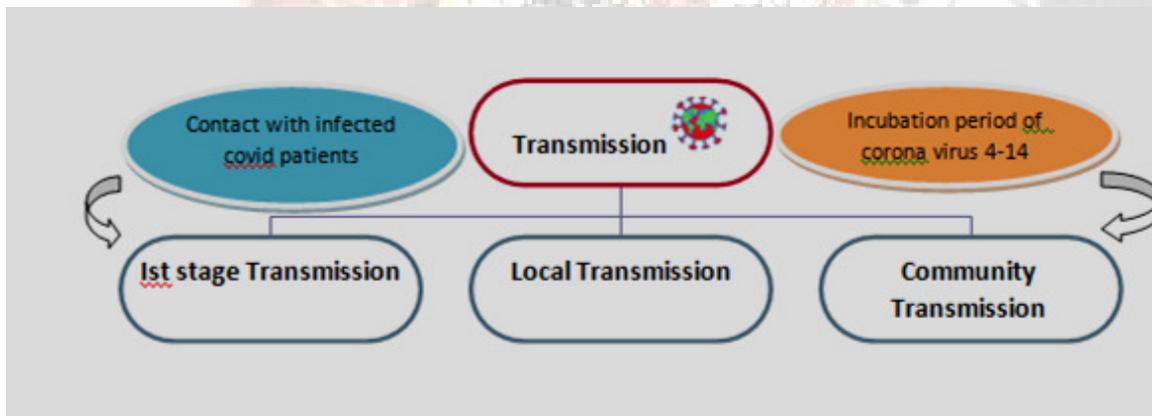
Chetan Chauhan



Pandemic respiratory illness outbreak, Covid-19 is a new public health crisis threatening humanity across the globe. Thought to be originated in bats, and is further transmitted through unknown intermediary sources to humans.

The clinical representation of viral infection ranges from asymptomatic to severe pneumonia. Covid-19 is also called as “silent hypoxia” because of its insidious, hard-to-detect nature.

The challenges posed by the Coronavirus are wide-ranging from early detection, containment, isolation, mitigation, and the end of the disease.



World Health Organization

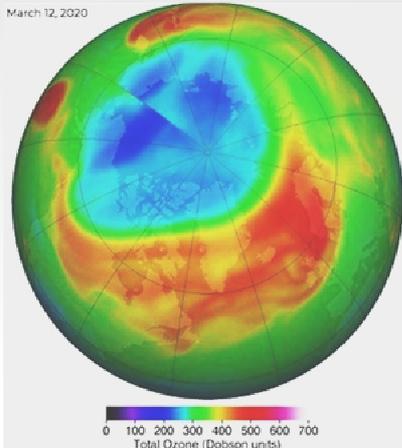
The WHO has declared Covid-19 as a pandemic due to its severity, as well as the shifting of epidemic zones across the globe, and infection spread with infected droplets more rapidly than seasonal flu.

The WHO has already announced a large global trial, called SOLIDARITY focusing on promising panacea therapies including remdesivir; chloroquine and hydroxychloroquine; a combination of two HIV drugs, lopinavir, and ritonavir; and that same combination plus interferon-beta.



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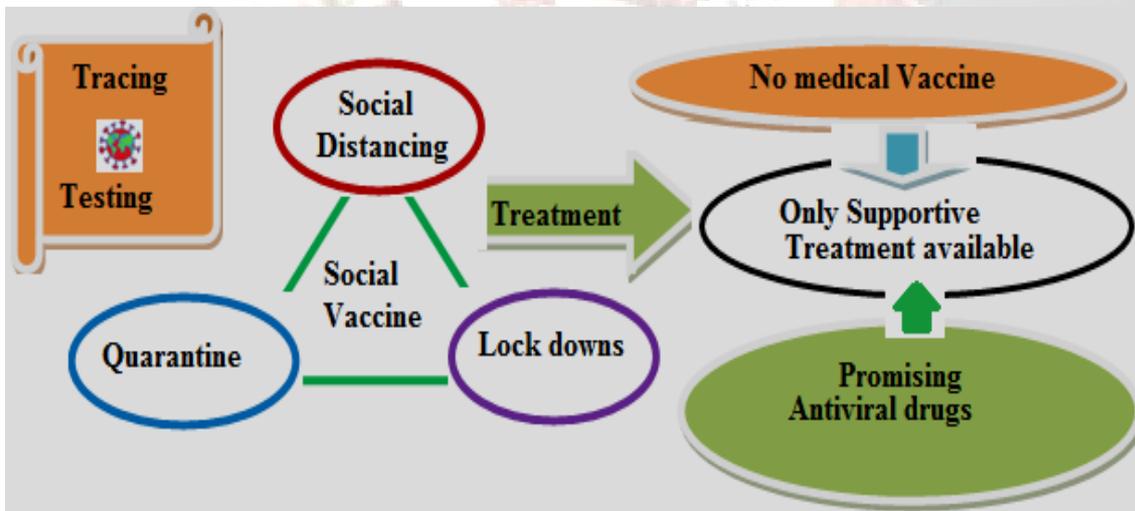
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The global efforts to control the outbreak seem to have curbed energy consumption and reduced the pollution level as indicated by various satellite data collected by NASA and the European Space Agency.

The exact global impact and extension of this new pandemic acceleration are yet uncertain.

Treatment is essentially supportive, no drug can be effectively administered without knowing the entire genome sequence of differently existing possible strain of Covid-19.



Covid-19 pandemic has adverse consequences on the global economy. Most of the governments across the globe announced various relief packages and the IMF already stands ready to support vulnerable countries with different lending facilities.

The global respiratory illness crisis can be most plausibly managed by 'hoping for the best and preparing for the worst'.

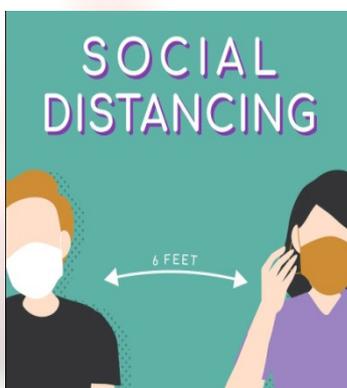
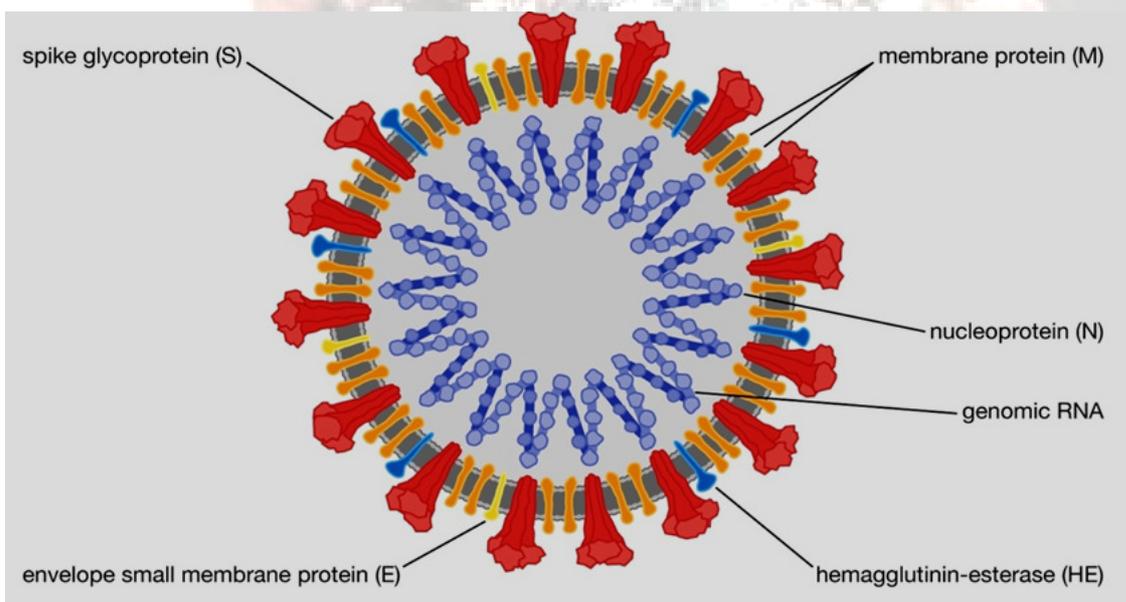
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## 5. Covid-19: Prevent & Protect

Adesh K Saini



Covid-19 virus is a nanometer size vector which contains RNA as genetic material. The genome size is approx. 26-32 kilobases. The swabs from nose or throat are used to test the virus. The samples are tested for the viral RNA using RT-PCR machine which generally take 4-7 hours. Besides this some antibody tests are also available to test this virus.



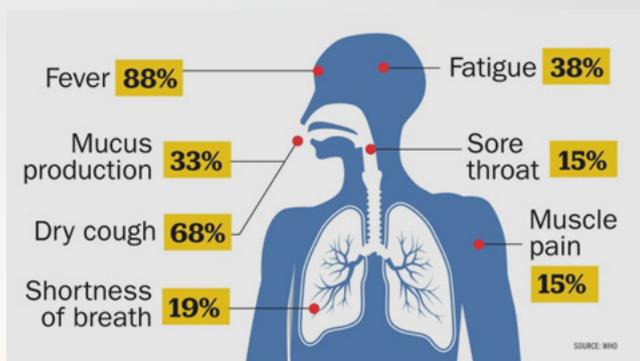
The droplets of saliva or discharge from the nose when an infected person coughs or sneezes is the primary cause of spread. It can further spread through touching surfaces, close contact with patients and going into crowds.

All shall strictly follow the government guidelines of lock down. Social distancing which includes avoiding handshakes or hugs, Keeping a distance of about 3-6 ft, avoiding crowds, staying home can decrease the number of patients.



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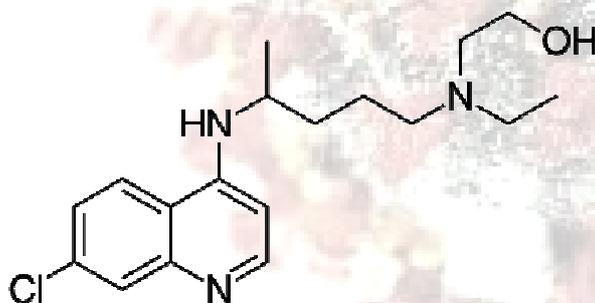


Most symptoms start with respiratory illness and as soon as one sense it, do see a doctor. Patient feels fever, dry cough, shortness of breath, aches & pain, sore throat and fatigue.

Covid-19 can be Prevented by using masks, gloves, by frequent hand wash and using hand sanitizer, and by boosting immunity.

Plasma therapy which uses blood donated by recovered patients to introduce antibodies in those under treatment. It is also on trial.

According to WHO, "At this time, there are no specific vaccines or treatments for COVID-19. However, there are many ongoing clinical trials evaluating potential treatments. The use of hydroxychloroquine tablets as a preventive measure for frontline healthcare workers also has started in some Indian states.



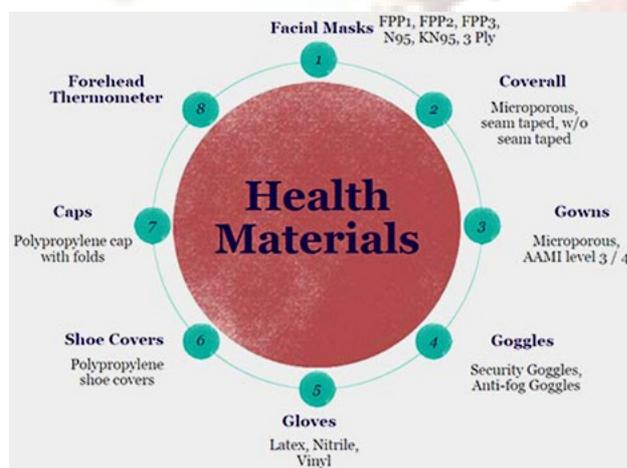
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## 6. Nanotechnology & mask battle against Covid-19

Deepak Pathania



Coronavirus is of nanometer size, which spread mainly through respiratory droplets when an infected person coughs, sneezes or speaks.



Apart from staying at home, people need other items to halt the spread. These are of absolute use during visit to local markets for collecting essential stuffs or even at workplace.

The frontline warriors need PPE (Personal Protective Equipment) products. Mask (face cover) is also required by general public. It is important to know that every mask is not good enough for preventing Coronavirus spread.



Nanofiber membranes with high surface area can be incorporated into masks with a view to increase their efficiency and usefulness.

Face masks that filter out up to 95 percent of fine pollutants that are at least 300 nm in diameter, are referred to as N95 masks.



Hydrophobic coating helps making any mask more resistant to the microbes. A professor of physics at the University of Houston reported that the hydrophobic coating improve the ability of surgical masks to protect against transmission of the virus.



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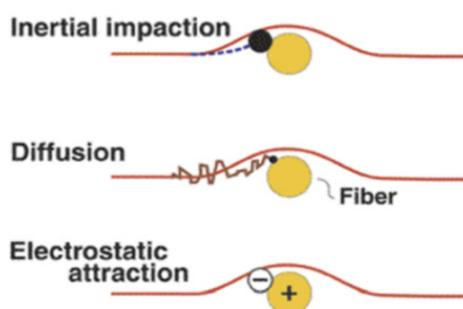
There is a 3-step mechanism of filtration in N95 masks. (1) Inertial Impaction: Aerosol or dust particles of one micron or larger size with enough inertia to prevent them from flowing around the fibers in the filtration layers slam into mask material and get filtered. (2) Diffusion: Particles smaller than one micron, are not subject to inertia undergo diffusion and get stuck to fibrous layers of the filter while undergoing brownian motion around the tortuous porous matrix of the filter fiber. (3) Electrostatic attraction: Electrocharged polymer or resin fibers attract both large and small oppositely charged particles and trap them.



A network of fibres of 100 nm in diameter and 1000 times thinner than human hair offered a larger surface area of the face mask. The nanofibres contain silver nanoparticles about 50 nm in diameter capable of killing viruses.

For face masks, either single or a combination of nanofibre layers on substrate is used as the middle layer between the spun-bonded nonwoven layers. It is water-resistant with more than 94 per cent filtering efficiency. It also showed no deformation in nano-membrane structure despite the 20 hand washes.

(a) Filtration mechanisms



Scientists who specialize in developing nano-scale medicine and technology to treat diseases, are working on ideas and technology for Covid-19 disease prevention and control. A variety of medical supplies are being produced on the basis of nanosilver technology. Excellent antimicrobial, antibacterial and antiviral properties of silver nanoparticles can be exploited in such products.



Virologists are also developing some protective films of nanostructures which catch and kill the virus. They trigger a chemical reaction using ultraviolet (UV) light to destroy it. If successful, the coating could be applied to hospital masks, gloves, and gowns.



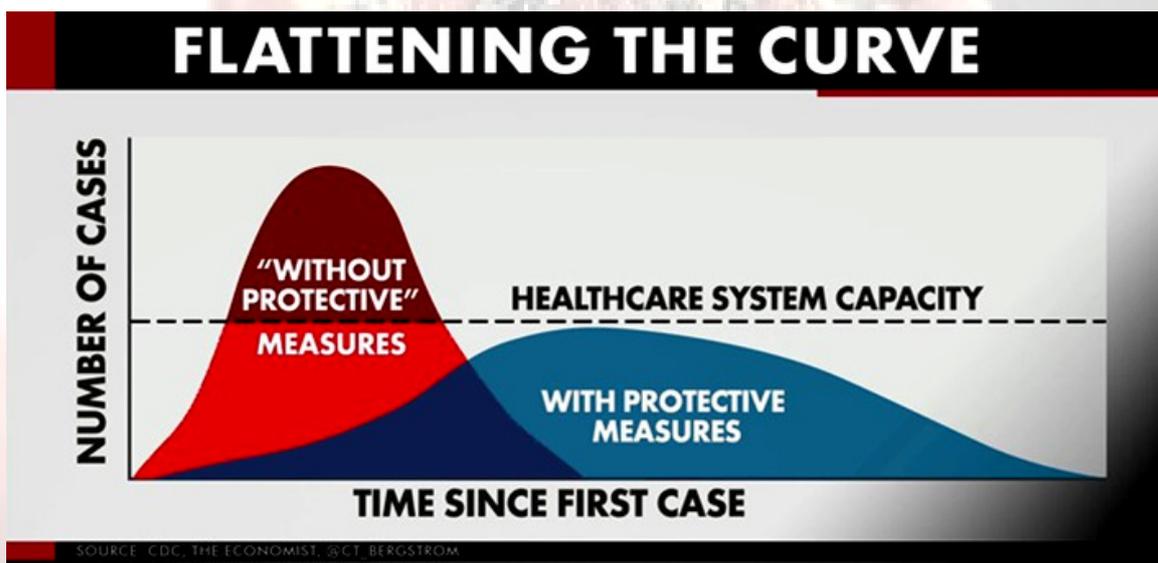
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## 7. Statistical Analysis - Coronavirus Pandemic (Covid-19) Sita Ram

The spread of Covid-19 is very rapid and it has played havoc in almost every corner of the globe. The WHO has already declared it as pandemic. This section presents an insight into the statistical analysis of spread of coronavirus, and measure to maintain the flattening of curve so that we must become compatible with our health care system. National Centre for Disease Control (NCDC) is also keeping eye on progressing cases of Covid-19 as a part of its large scale surveillance under the integrated disease surveillance programme.

Flattening of the curve means we can get medication available in our country i.e. medical treatment that hospitals can provide such as medicines, number of beds for patients, number of doctors and support staff. Only lockdown, social distancing, quarantine and isolation can help us in maintaining flattening of curve which can make us safe. If there are no preventive and protective measures and the number of cases progress at higher rate, we may not be in position to get medication as number of beds for patients, medicines, number of doctors and support staff will not be sufficient. It could result in increased number of deaths.



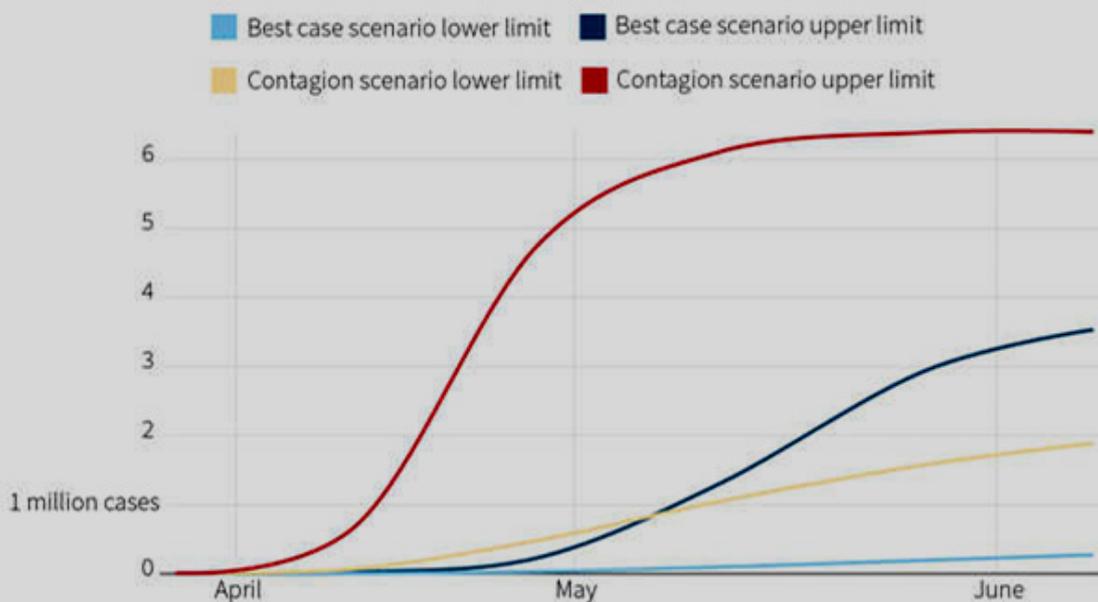
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In India, it is very important to stick to various advisories issued by the Government time to time. This can help minimizing the spread of virus.

If we fail to maintain flat curve, the predicted cases may cross 6 million (60 lacks) mark in India, as shown by red curve below in the month of June.

## Predicted cases of COVID-19 in India

By the end of April, India could see between around 30,000 and 230,000 confirmed COVID-19 cases, according to the team of biostatisticians and epidemiology experts, many of them from the University of Michigan.



Source: COV-IND-19 Study Group

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## 8. Natural herbs as immune boosters

Bhuvanesh Gupta

At present there is no drug available to treat Covid-19 disease. But one can boost his/ her body's natural defense system (immunity) to fight disease and maintain optimum health.

Ministry of AYUSH also recommends some self-care guidelines for preventive health measures and boosting immunity with special reference to respiratory health.

Daily practice of yogasana, pranayama and meditation for at least 30 minutes a day is recommended.

Drinking haldi (turmeric) supplemented milk, herbal juice or herbal tea made from Tulsi (Basil), Dalchini (Cinnamon), Kalimirch (Black pepper), Shunthi (Dry Ginger) and Munakka (Raisin) - once or twice a day, and warm water throughout the day.



Look... Corona is coming

DON'T  
WORRY..... We  
have our house full of  
herbal plants  
Long live with a Glass  
Herbal Juice



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Use of spices like Haldi (Turmeric), adrak (ginger), Jeera (Cumin), Dhaniya (Coriander) and Lahsun (Garlic) in cooking.

Use of Chayanprash is also recommended for improving immune system.



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## 9. Coronavirus facts

Rajesh K Sharma

The Covid-19 pandemic has pushed all of us to stay at home. While indoors, it is absolutely essential to take care of ourselves and maintain a good psychological equilibrium. There are a number of myths prevailing in the society as well as social media, which can create panic. Here are some facts regarding Coronavirus.

While several drug trials are ongoing, there is currently no proof that hydroxychloroquine or any other drug can cure or prevent COVID-19. The misuse of hydroxychloroquine can cause serious side effects and illness and even lead to death. WHO is coordinating efforts to develop and evaluate medicines to treat COVID-19.



#Coronavirus #COVID19

27 April 2020

**FACT:**  
There are currently no drugs licensed for the treatment or prevention of COVID-19



There are currently **NO DRUGS** licensed for the treatment or prevention of Covid-19.

Hot peppers in your food, though very tasty, cannot prevent or cure COVID-19. The best way to protect yourself against the new coronavirus is to keep at least 1 metre away from others and to wash your hands frequently and thoroughly. It is also beneficial for your general health to maintain a balanced diet, stay well hydrated, exercise regularly and sleep well.



#Coronavirus #COVID19

27 April 2020

**FACT:**  
Adding pepper to your soup or other meals **DOES NOT** prevent or cure COVID-19.



Adding pepper to your soup or other meals **DOES NOT** prevent or cure Covid-19.

To date, there is no evidence or information to suggest that the COVID-19 virus is transmitted through houseflies. The virus that causes COVID-19 spreads primarily through droplets generated when an infected person coughs, sneezes or speaks. You can also become infected by touching a contaminated surface and then touching your eyes, nose or mouth before washing your hands. To protect yourself, keep at least 1-metre distance from others and disinfect frequently-touched surfaces. Clean your hands thoroughly and often and avoid touching your eyes, mouth and nose.

**FACT:**  
COVID-19 IS NOT transmitted through houseflies



Covid-19 is **NOT** transmitted through houseflies and mosquitoes.



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# THE CORONAVIRUS (COVID - 19) PANDEMIC

**Do not under any circumstance spray or introduce bleach or any other disinfectant into your body. These substances can be poisonous if ingested and cause irritation and damage to your skin and eyes.**

Bleach and disinfectant should be used carefully to disinfect surfaces only.

Remember to keep chlorine (bleach) and other disinfectants out of the reach of children.

**FACT: Spraying or introducing bleach or another disinfectant into your body WILL NOT protect you against COVID-19 and can be dangerous**



World Health Organization #COVID19 #coronavirus 27 April 2020

Spraying and introducing bleach or another disinfectant into your body will NOT protect you against Covid-19 and can be dangerous.

**Methanol, ethanol, and bleach are poisons. Drinking them can lead to disability and death. Methanol, ethanol, and bleach are sometimes used in cleaning products to kill the virus on surfaces – however you should never drink them. They will not kill the virus in your body and they will harm your internal organs.**

To protect yourself against COVID-19, disinfect objects and surfaces, especially the ones you touch regularly. You can use diluted bleach or alcohol for that. Make sure you clean your hands frequently and thoroughly and avoid touching your eyes, mouth and nose.

**FACT: Drinking methanol, ethanol or bleach DOES NOT prevent or cure COVID-19 and can be extremely dangerous**



World Health Organization #COVID19 #coronavirus 5 April 2020

Drinking methanol, ethanol or bleach DOES NOT prevent or cure Covid-19 and can be extremely dangerous .

**You can catch COVID-19, no matter how sunny or hot the weather is. Countries with hot weather have reported cases of COVID-19. To protect yourself, make sure you clean your hands frequently and thoroughly and avoid touching your eyes, mouth and nose.**

**FACT: Exposing yourself to the sun or to temperatures higher than 25C degrees DOES NOT prevent nor cure COVID-19**



Exposing yourself to the sun or to temperatures higher than 25°C DOES NOT prevent the coronavirus disease.

**There is no reason to believe that cold weather can kill the new coronavirus or other diseases. The normal human body temperature remains around 36.5°C and 37°C, regardless of the external temperature or weather. The most effective way to protect yourself against the new coronavirus is by frequently cleaning your hands with alcohol-based hand rub or washing them with soap and water.**

**FACT: Cold weather and snow CANNOT kill the new coronavirus**



Cold weather and snow DO NOT Kill the new coronavirus.

# THE CORONAVIRUS (COVID - 19) PANDEMIC

No. Vaccines against pneumonia, such as pneumococcal vaccine and Haemophilus influenza type B (Hib) vaccine, do not provide protection against the new coronavirus.

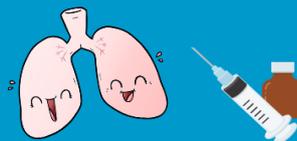
The virus is so new and different that it needs its own vaccine. Researchers are trying to develop a vaccine against 2019-nCoV, and WHO is supporting their efforts.

Although these vaccines are not effective against 2019-nCoV, vaccination against respiratory illnesses is highly recommended to protect your health.



#2019nCoV

## Do vaccines against pneumonia protect you against the new coronavirus?



Vaccines against pneumonia **DO NOT** protect you against the new coronavirus.

People of all ages can be infected by the new coronavirus (nCoV-2019).

Older people, and people with pre-existing medical conditions (such as asthma, diabetes, heart disease) appear to be more vulnerable to becoming severely ill with the virus.

WHO advise people of all age to take steps to protect themselves from the virus, for example by following good hand hygiene and good respiratory hygiene.



#Coronavirus

## Does the new coronavirus affect older people, or are younger people also susceptible?



Coronavirus affect people of **ALL AGE GROUPS**.

No, antibiotics do not work against viruses, only bacteria.

The new coronavirus (2019-nCoV) is a virus and, therefore, antibiotics should not be used as a means of prevention or treatment.

However, if you are hospitalized for the 2019-nCoV, you may receive antibiotics since bacterial co-infection is possible.

## Are antibiotics effective in preventing and treating the new coronavirus?



Antibiotics **ARE NOT** effective in preventing and treating the new coronavirus.

Garlic is a healthy food that may have some antimicrobial properties. **However, there is no evidence from the current outbreak that eating garlic has protected people from the new coronavirus (2019-nCoV)**

## Can eating garlic help prevent infection with the new coronavirus?



Eating garlic can help boosting immune system. **There is NO evidence to prevent infection of new coronavirus by eating garlic.**



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# THE CORONAVIRUS (COVID - 19) PANDEMIC

## 10. Guide to stay safe from Coronavirus

Sveta Thakur and Lakhveer Singh



Stay at home. Do not go outside to play or meet friends. You may get infected with Coronavirus if going outside. Then it can spread to other family members.

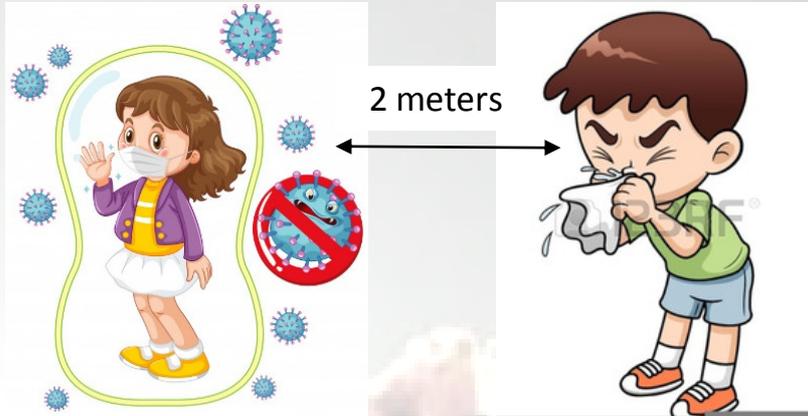


Instead, play indoors! There are so many games such as ludo King, snake and ladder, carrom, etc. to play with your parents, brothers or sisters. Try them.



Or, read books and learn new hobbies like gardening, painting etc. This will diversify your intellect. Gardening will keep home fresh.

# THE CORONAVIRUS (COVID - 19) PANDEMIC



Wear mask if you need to go outside and Keep a minimum of 2 meters distance from other persons. Cough or sneeze into a tissue or your elbow and throw the tissue in the trash.



Wash your hands regularly and thoroughly (see the picture) with soap and water for at least 20 seconds. Do not touch your face, eyes and mouth. This will help keep germs out of your body. If you don't have soap and water available, use hand sanitizer to keep your hands clean.



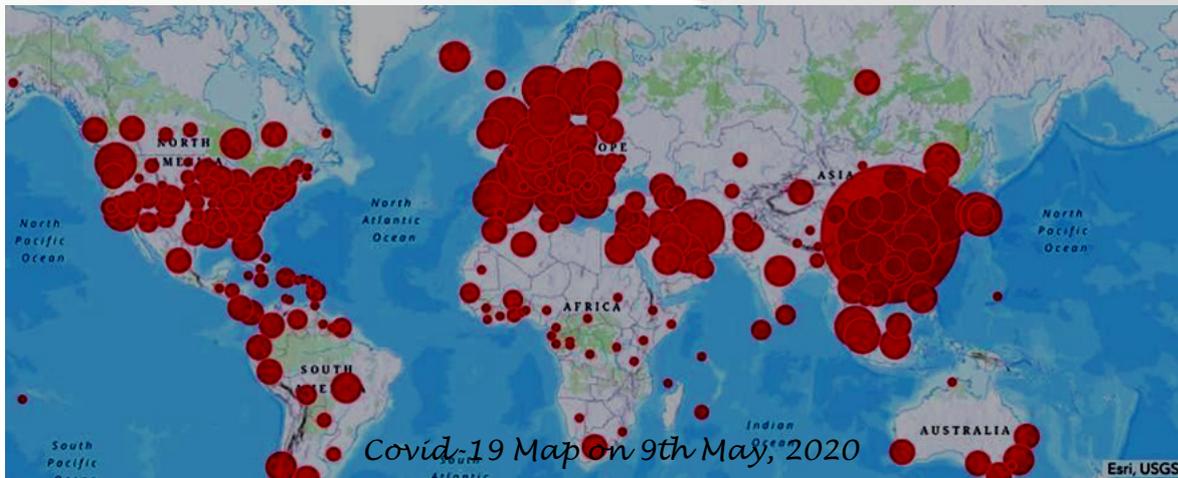
Eat fresh fruits and vegetables, and healthy food to boost your immunity. Strong immunity means stronger you!

# THE CORONAVIRUS (COVID - 19) PANDEMIC

## 11. An Overview of the Covid-19 cases

Kranti Thakur

As on 10th May, 2020, the total number of people infected with Coronavirus throughout the world is more than 41 lakh. It has been reported to spread into more than 180 countries.



Around 23.8 lakh Cases are in active state on this date.

More than 2.8 lakh deaths have been reported till date.

However, it is quite encouraging that about 14.4 lakh people have already recovered from the disease.

Around 13 lakh cases have been recorded in USA alone, followed by Spain (2.5 lakh), Italy and UK (2 lakh each), Russia (1.9 lakh), France and Germany (1.7 lakh each), Brazil (1.5 lakh), and Turkey (1.3 lakh). China, which is thought to be the country of Coronavirus origin, has around 82 thousand active cases.

The death toll was highest in USA (80 thousand). The number of deaths was close to 30 thousand each in UK and Italy, and was around 26 thousand in Spain and France. Brazil reported 10 thousand deaths till 10th May.

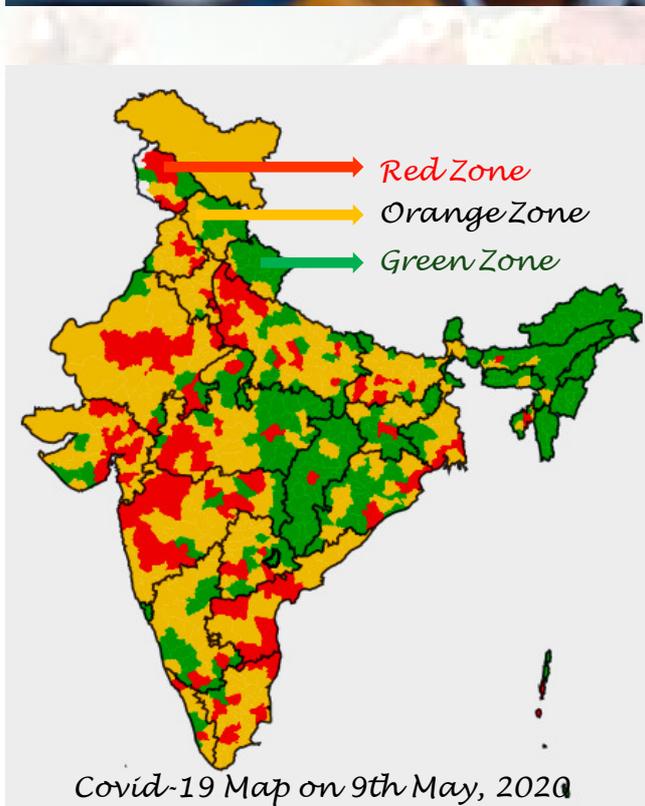
# THE CORONAVIRUS (COVID - 19) PANDEMIC



According to *The Tribune*, the number of Covid-19 cases in India crossed 62,000 on 10th May.

Of these, there were around 41,000 active cases.

As many as 19,000 persons had already recovered and gone back home.



Depending upon the number of cases recorded, various districts/ areas in different states have been designated as Red zone (highest number and high doubling rates of confirmed cases), Orange zone (intermediate between Red and Green) and Green zone (no case reported since last 21 days).

Of the various states affected, Maharashtra alone reported more than 20 thousand cases. It is followed by Gujarat (7.7 thousand). Delhi and Tamil Nadu recorded more than six thousand cases each.

Around 2,100 persons died of this viral infection across the country till 10th May.



Indian Government launched Missions 'Vande Bharat' and 'Samudra Setu' to evacuate Indian Nationals stranded overseas. They are being brought back by Air India flights and Indian Navy ships.



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# THE CORONAVIRUS (COVID - 19) PANDEMIC



In Himachal Pradesh, the total number of tests done for Covid-19 was around ten thousand as on 9th May, 2020. The number of confirmed cases is 51.

Seven districts have confirmed Covid-19 cases as follows:

Una (17), Chamba (9), Solan (9), Kangra (8), Hamirpur (4), Mandi (2), and Sirmaur (2).

Thirty five patients have recovered so far and there have been two deaths.

No area/ district in the state has been designated as Red zone.

The number of Covid-19 cases in the neighboring states/ UTs is: 1762 in Punjab, 675 in Haryana, 67 in Uttarakhand, 169 in Chandigarh and in 836 Jammu and Kashmir (as on 10th May, 2020).



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# THE CORONAVIRUS (COVID - 19) PANDEMIC

## 12. Stay home Stay safe

Jagdeep Verma

In the present time of trouble when whole world is coping with Covid-19 pandemic, our Government is trying hard to contain the spread of this virus thus minimizing the impact. Staying @ home is one of the most important steps for breaking the chain of infection.

But what to do indoors? Here are some simple steps to take care of your physical as well as mental health and to stay positive and energetic while staying @ home.

family  
MAKES  
THIS HOUSE A  
home



Live together, watch TV together, Cook together, Try new dishes together, Eat together, Laugh together, Sing together.

Read from books, Read from online resources, Read good stories, Write down your own experiences, Use AROGYA SETU App and IGOT DIKSHA App for updated information on Covid-19.

Spend time in kitchen gardening, Plant a sapling, Talk to plants, Water them, Click photographs of plants and flowers, Collect seeds for your friends.

Stay in touch with family and friends, Boost their morale, Share some new recipes, Share jokes, share health tips.

This is the time to take care of those who once cared for yourself, Talk to them, Laugh with them, Request them to share some life experiences, Seek their blessing, Be polite and respectful.

Make meditation a habit, Try light exercise and yoga, Take care of yourself, Don't be rigid, Forgive.



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# THE CORONAVIRUS (COVID - 19) PANDEMIC



Pick up your brush,  
Paint your ideas, Draw  
snowy mountains, Draw  
fresh lakes and rivers,  
Draw moon and stars,  
Make posters to aware  
people.

Take sound sleep,  
Rejuvenate yourself,  
Early to bed and early to  
rise, makes man healthy,  
wealthy and wise,  
Prevent negativity and  
depression, Keep  
yourself busy, Help the  
needy.



Thank our super heroes  
in fight against Covid-19,  
They put their lives on  
risk to save us, Help  
them by staying indoors,  
Pray for their well being  
and for their families,  
Remember their immense  
contribution.

Thank God for a number  
of reasons, Pray for the  
good health of all, Pray  
for peace, Believe in  
yourself, Don't panic.

# THE CORONAVIRUS (COVID - 19) PANDEMIC

## Helpline Numbers (Covid-19)

If you experience symptoms of Covid-19 such as cough, fever, fatigue, or shortness of breath  
Contact the 24X7 Central helpline number (New Delhi)  
011-23978046

or  
Contact your State/UT helpline number as given below

- 1 Himachal Pradesh 104
- 2 Punjab 104
- 3 Haryana 8558893911
- 4 Uttarakhand 104
- 5 Chandigarh 9779558282
- 6 Jammu & Kashmir 0191-2520982, 0194-2440283
- 7 Ladakh 0198-2256462
- 8 Delhi 011-22307145

The '108' Ambulance Service can also be contacted.

# THE CORONAVIRUS (COVID - 19) PANDEMIC

## HSCA eBooklet Series: SCIENCE AND ITS IMPACT ON SOCIETY

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Coronavirus Disease 2019 Outbreak

# COVID-19

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