COVID-19 Information
for First Nations in Alberta

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Introduction

This information package was conceived as an aid to on-going COVID-19 preparedness and management for First Nations in Alberta.

Some information may already be familiar to you as we are sure many have thoroughly researched COVID-19 and have been following the news diligently. We have provided some background information as a refresher to assist in interpreting and understanding the material on coronaviruses and the SARS-CoV-2 virus which causes the COVID-19 disease.

A short list of websites and YouTube channels are also included for reference. Some, like Ninja Nerd Science, are for those who are looking for more detailed and clinically-oriented information.

Given the dynamic nature of a pandemic, please be aware that this information may change and will definitely evolve as time progresses. Therefore, we will be posting more links and information of our website: www.afngc.ca and our Facebook page facebook.com/AFNIGC/ on a regular basis.
Background Information

What is a virus as compared to bacteria and other single-celled organisms?

Unlike bacteria, which are living, single-celled organisms, viruses are actually somewhere between being alive and not being alive! Scientists are still debating what an organism needs in order to be considered alive. From what we know now, viruses are still considered as not being alive. In very simplified terms, this is part of what makes it hard to kill viruses – how do you kill something that isn’t alive?

Single-celled (or unicellular) organisms

Very basic single-celled organisms have what are called organelles. Organelles roughly correspond to our own organs in that each organelle performs a specific function that enables the cell to stay alive on its own. Inside a protective layer (cell membrane) these cells have some protoplasm (liquid matter), where all the organelles are housed. By using these organelles, single-celled organisms have a way to get food, are able to produce their own energy, can store enzymes and other products manufactured by other organelles, house their reproductive matter (RNA and DNA), and can even store and evacuate waste products. They are also able to reproduce on their own.

Bacteria

Bacteria are organized even more simply on the inside but they do have the ability to remain alive on their own (given the right environment) and they are able to reproduce on their own. They have a protective capsule around a cell membrane that has protoplasm inside. The protoplasm contains no organelles but it has ribosomes (molecules that produce proteins) and clumps of circular DNA. Bacteria can move around by various means such as a flagellum (whip-like tail) and create copies of themselves by either dividing in two, over and over and over again (asexual reproduction) or by attaching to other bacterial cells (using their pili – little hair-like projections) and exchanging genetic material.

Antibiotics work to kill bacteria by attacking the cell wall. They prevent the cell wall from making the substance that gives it the strength and structure to hold itself together and survive in our bodies.

Bacteria are all around us - in the air, soil, water, and even our bodies. The vast majority (over 99%) are either harmless or helpful to humans. For example, some bacteria live in our digestive tract and assist us in digesting our food; some help us make cheese, pickles,
yoghurt, or other food products, and lately, some species of bacteria are being used to help clean up oil spills and sewage.

**Viruses**

By contrast, viruses have an outer layer of protein and lipids (a fatty substance) rather than a fully-developed protective cell wall, some protoplasm inside, and then a pouch of reproductive matter which must be inserted into living cells in order for the virus to replicate. Viruses are unable to produce their own energy, cannot collect food, and can perform none of the functions that even simple single-celled organisms are capable of.

Viruses require a host cell to enable them to multiply. They do this by inserting their genetic material (either RNA or DNA, but never both) into a living cell and reprogramming the cell’s ribosomes to produce copies of the viral genes. In essence, they hijack host cells, stop them from performing their normal functions, and cause them to focus only on replicating the virus. In doing so, they often manage to kill the host cell.

**FIGURE 04:** Like bacteria, viruses come in a variety of shapes and sizes. Viruses essentially work by what can be described as a lock-and-key mechanism. Shapes (referred to as spike proteins) contained on the outside of the virus are like keys that fit into receptors (concave areas that normally serve as locks for specific compounds to enter) on the outside of host cell walls. If the virus spike doesn’t fit the space available on the host cell, then it cannot infect that cell. Some viruses, called Bacteriophages, even invade and kill bacteria, but work in a slightly different way and have an altogether different shape than other viruses.

This diagram, adapted from an image by Anna Hupalowska, shows what a spike protein on a virus looks like and how it fits into a receptor (in this case ACE2, CTSL, and TMPRSS2 receptors) on a host cell. Once the virus attaches to these receptors the host cell “believes” they are supposed to be there and unknowingly lets the virus in to do its damage. This begins to happen all over the body as host cells manufacture more and more copies of the virus and cease to perform their own functions. In the case of some viruses (such as SARS-CoV-2) the host cells self-destroy during the process.

Another difference between bacteria and viruses is that while bacteria are large enough to be visible using a light microscope (the kind you might see in the lab at a high school or university), most viruses are so small that they can only be seen with what is called an electron microscope.
An electron microscope uses a beam of accelerated negative atomic particles (electrons) as the source of light. For reference, an atom has 3 basic particles; a proton (positively charged), an electron (negatively charged), and a neutron (no charge). When you see an image of an atom, the proton and neutron are in the centre (called the nucleus) while the electron is represented orbiting around the nucleus. The diagram below happens to show an atom along with the relative sizes of bacteria, viruses, and various cells.

**FIGURE 06:**

Note the sizes here are in shown in millimeters, micrometers, and nanometers. One micrometer (μm) is equal to 0.001 (or 1000th) of a millimeter. One nanometer (nm) is equal to 0.001 (or 1000th) of a micrometer which is also equal to 1 millionth of a millimeter.

**What is a coronavirus?**

As discussed in the previous section, viruses come in a variety of shapes and sizes. One particular configuration is what is called a coronavirus. The word corona, in Latin (and other languages), means *crown*. Coronaviruses are referred to in this way because have little spike proteins sticking out. These spikes create a crown-like effect around the virus when being viewed under the electron microscope. Hundreds of coronaviruses have been identified but there are only 7 that effect humans. (WebMD, 2020).

All human coronaviruses cause upper respiratory symptoms - like you would get with a cold or flu. The 4 most common ones usually cause mild to moderate symptoms and most people
recover quickly and without complications simply by taking over-the-counter medications, resting, and drinking lots of fluids.

There are 3 more serious coronaviruses effecting humans, and those are thought to be zoonotic in origin i.e. they have mutated from a virus that infects an animal to a virus that can now infect humans as well.

**FIGURE 07:**

The first of these coronaviruses, SARS-CoV, is the virus responsible for Sudden Acute Respiratory Syndrome (SARS). It was discovered in February of 2003, although the first case may have occurred in November 2002. SARS spread to 29 countries in Asia, Europe, North America, and South America. It was contained in July 2003. The World Health Organization received reports totalling 8,096 SARS infections with 774 resultant deaths. (CDC, n.d. a).

MERS-CoV, responsible for (Middle East Respiratory Syndrome), also known as “camel flu” was first reported in Saudi Arabia in September 2012, although it may have originated in Jordan in April of the same year. The virus is also known as Human Coronavirus-Erasmus Medical Center (HCoV-EMC). Unlike SARS, MERS has a known animal host – dromedary camels – and occasional outbreaks do still occur. MERS is mainly restricted to countries in and near the Arabian Peninsula but in 2015 there was an outbreak in North Korea due to a returning traveller. Some cases were also reported in the United States. (CDC, n.d. b)

**FIGURE 08:**

SARS-CoV-2, also known as 2019 Novel Coronavirus, causes COVID-19 or 2019 nCoV Acute Respiratory Disease. This is the latest in the list of zoonotic coronaviruses. The first case is thought to have occurred in Wuhan, China in December 2019.

By March 2020, the World Health Organization had officially declared COVID-19 to be a pandemic. COVID-19 has been reported in almost all countries and is still spreading. There have already been many more deaths than with either SARS or MERS and new information is being discovered daily.
COVID-19 has so far been found to be more infectious than influenza strains, and about the same as SARS. It is about half as infectious as MERS, and much less infectious than measles. No-one knows for sure at this point as there are new cases daily, however, the $R_0$ (R naught, or reproductive ratio) does seem to hover between 2 and 4. That means each individual infected with the SARS-CoV-2 virus can pass the virus on to between 2 and 4 people. The $R_0$ for influenza is roughly 1.5 (Ninja Nerd Science. 2020, April 20).

**What is COVID-19?**

COVID-19 is the name of the illness caused by the SARS-CoV-2 virus. The “spikes” on SARS-CoV-2 fit particularly well into the ACE2 (angiotensin-converting enzyme 2) and TMPRSS2 (transmembrane serine protease 2) on our bodies’ cells, in addition to CTSL (lysosomal cysteine protease cathepsin L) receptors in our bodies’ cells.

The following diagrams demonstrate the organs and cells within them that have ACE2 and other receptors that are favourable to the SARS-CoV-2 virus. The receptors the various cells have in addition to ACE2 are represented by coloured dots. The orange dots indicate the presence of TMPRSS2 receptors and the green dots indicate the presence of CTSL receptors.

**FIGURE 10:**

The Alberta First Nations Information Governance Centre

afnigc.ca
These cells are found in our respiratory systems, the lining of our intestines, and the muscle tissue of our hearts, among others. Because of the many locations the virus can attach itself there are many types of symptoms patients can present with.

The variety of places the SARS-CoV-2 virus can attach is what makes it difficult for doctors to properly and quickly diagnose COVID-19 in cases that don’t necessarily present with the list of common symptoms (fever, dry cough, and fatigue). The following is a diagram, by Dr. Mikael Häggström, of symptoms and the percentage of patients presenting with them.

**FIGURE 11:**

<table>
<thead>
<tr>
<th>Common symptoms:</th>
<th>Uncommon symptoms:</th>
<th>In severe disease:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever (88%)</td>
<td>Headache (14%)</td>
<td>Difficulty waking</td>
</tr>
<tr>
<td>Dry cough (68%)</td>
<td>Loss of smell (15 to 30%)</td>
<td>Confusion</td>
</tr>
<tr>
<td>Fatigue (38%)</td>
<td>Nasal congestion (5%)</td>
<td>Bluish face or lips</td>
</tr>
<tr>
<td></td>
<td>Sore throat (14%)</td>
<td>Coughing up blood</td>
</tr>
<tr>
<td></td>
<td>Coughing up sputum (33%)</td>
<td>Persistent chest pain</td>
</tr>
<tr>
<td></td>
<td>Shortness of breath (19%)</td>
<td>Decreased white blood cells</td>
</tr>
<tr>
<td></td>
<td>Pain in muscles or joints (15%)</td>
<td>Kidney failure</td>
</tr>
<tr>
<td></td>
<td>Chills (11%)</td>
<td>High fever</td>
</tr>
<tr>
<td></td>
<td>Nausea and/or vomiting (5%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diarrhea (4 to 30%)</td>
<td></td>
</tr>
</tbody>
</table>

By Dr. Mikael Häggström, used with permission.

Scientists have recently discovered that there are two variations (not really new strains yet) of the SARS-CoV2 virus; S Type and L Type. The S Type is responsible for about 30% of cases and it causes mild to moderate symptoms. The L Type is the variant that accounts for approximately 70% of cases and has the potential for more severe symptoms. There is speculation that the S Type is the original zoonotic version (i.e. mutated from an animal virus to one that can also infect humans) and that the L Type is a further mutation that came about once the virus was already infecting humans (Hamzelou, 2020; Ninja Nerd Science, 2020-April 20).
**Myths about COVID-19**

There are still many questions about COVID-19 and many rumours going around regarding transmission, cures, and susceptibility. The World Health Organization (WHO) has put together a series of mini-posters addressing some of these myths. Printable copies can be found on their website at: who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters. We have listed 23 myths adapted from the WHO information for your convenience. The corresponding visuals are available in Appendix A.

<table>
<thead>
<tr>
<th>Myth:</th>
<th>Fact:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some drugs are available to treat COVID-19.</td>
<td>There are currently no drugs licensed for the treatment or prevention of COVID-19.</td>
</tr>
<tr>
<td>Adding hot pepper to your food can prevent or cure COVID-19.</td>
<td>Hot peppers in your food, although very tasty, cannot prevent or cure COVID-19.</td>
</tr>
<tr>
<td>Vaccines against pneumonia protect you against the new coronavirus.</td>
<td>Vaccines against pneumonia, such as pneumococcal vaccine and Haemophilus influenza type B (Hib) vaccine, do not provide protection against the new coronavirus.</td>
</tr>
<tr>
<td>Eating garlic can prevent infection with the new coronavirus.</td>
<td>Garlic is a healthy food that may have some antimicrobial properties ... there is no evidence that eating garlic has protected people from the new coronavirus.</td>
</tr>
<tr>
<td>Regularly rinsing your nose with saline can help prevent infection with the new coronavirus.</td>
<td>There is no evidence that regularly rinsing the nose with saline has protected people from infection with the new coronavirus.</td>
</tr>
<tr>
<td>COVID-19 is transmitted through houseflies.</td>
<td>There is no evidence or information to suggest that the COVID-19 virus is transmitted through houseflies.</td>
</tr>
<tr>
<td>Drinking methanol, ethanol, or bleach prevents or cures COVID-19.</td>
<td>Drinking methanol, ethanol, or bleach does NOT prevent or cure COVID-19 and can be extremely dangerous. They are poisons and drinking them can lead to disability and death!</td>
</tr>
<tr>
<td>Spraying or introducing bleach or another disinfectant into your body will protect you against COVID-19.</td>
<td>Do NOT, under any circumstance, spray or introduce bleach or any disinfectant into your body. These substances can be poisonous if ingested and cause irritation and damage to your skin and eyes.</td>
</tr>
<tr>
<td>Myth:</td>
<td>Fact:</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>The new coronavirus cannot be transmitted in areas with hot and humid climates.</td>
<td>From the evidence so far, the new coronavirus can be transmitted in ALL AREAS, including areas with hot and humid weather.</td>
</tr>
<tr>
<td>5G mobile networks spread COVID-19.</td>
<td>Viruses can NOT travel on radio waves/mobile networks. COVID-19 is spreading in many countries that do not have 5G mobile networks.</td>
</tr>
<tr>
<td>Ultra-violet (UV) lamps can be used to disinfect hands or other areas of your skin.</td>
<td>UV radiation can cause skin irritation and damage your eyes. Soap and water, or alcohol-based hand rub are the most effective ways to remove the virus.</td>
</tr>
<tr>
<td>Drinking alcohol protects you against COVID-19.</td>
<td>Not only does drinking alcohol NOT protect against COVID-19 infection, frequent or excessive alcohol consumption can increase your risk of health problems.</td>
</tr>
<tr>
<td>Being able to hold your breath for 10 seconds or more without coughing or feeling discomfort means you are free from COVID-19.</td>
<td>Not true! The common symptoms of COVID-19 are dry cough, tiredness, and fever … The best way to confirm is with a laboratory test.</td>
</tr>
<tr>
<td>Catching the new coronavirus means you will have it for life.</td>
<td>Most of the people who catch COVID-19 can recover and eliminate the virus from their bodies.</td>
</tr>
<tr>
<td>Cold weather and snow can kill the new coronavirus.</td>
<td>There is no reason to believe that cold weather can kill the new coronavirus or other diseases.</td>
</tr>
<tr>
<td>Taking a hot bath prevents the new coronavirus disease.</td>
<td>Taking a hot bath will not prevent you from catching COVID-19. Actually, taking a bath with extremely hot water can be harmful, as it can burn you.</td>
</tr>
<tr>
<td>The new coronavirus can be transmitted through mosquito bites.</td>
<td>To date there has been no information nor evidence to suggest that the new coronavirus could be transmitted by mosquitos. The new coronavirus is a respiratory virus!</td>
</tr>
<tr>
<td>Exposing yourself to the sun or to temperatures higher than 25C degrees prevents or cures COVID-19.</td>
<td>You can catch COVID-19 no matter how sunny or hot the weather is!</td>
</tr>
</tbody>
</table>
**Myth:**

- The new coronavirus only affects older people.
- Antibiotics are effective in preventing and treating the new coronavirus.
- There are specific medicines to prevent or treat the new coronavirus.
- Thermal scanners are effective in detecting people infected with the new coronavirus.
- Hand dryers are effective at killing the new coronavirus.

**Fact:**

- People of ALL AGES can be infected by the new coronavirus (nCoV-2019).
- No, antibiotics do not work against viruses, only bacteria.
- To date, there is no specific medicine recommended to prevent or treat the new coronavirus (2019-nCoV).
- Thermal scanners are only effective at detecting whether or not people have developed a fever (i.e. have a higher than normal body temperature) which MAY be due to infection by the new coronavirus.
- No. Hand dryers are not effective in killing the 2019-nCoV. Cleaning your hands with soap and water or using an alcohol-based hand rub ARE!

**Who is Susceptible to COVID-19?**

The majority of people who have COVID-19 symptoms suffer what could be described as a mild to moderate bout of the flu and recover on their own with the help of rest, plenty of fluids, and over-the-counter medications.

The elderly, those with pre-existing medical conditions (e.g. cancer, diabetes, heart conditions, high blood pressure, and respiratory conditions), and those with compromised immune systems are the most at risk. For some as yet unknown reason, males seem to be more at risk than females overall. There have also been instances of perfectly healthy younger adults who have had serious, and at times, deadly cases of COVID-19. Evidence is also growing that children and teens who usually present with mild symptoms (if any) and were previously thought to be asymptomatic carriers, are also at risk for severe complications.

Breaking news as of the writing of this document is what is being referred to as pediatric multi-system inflammatory syndrome. It is thought that children’s immune systems may be able to effectively fight off the virus that causes COVID-19, but then their immune systems go into overdrive causing autoimmune responses that now begin to fight the body’s own cells. Symptoms are similar to Toxic Shock Syndrome and Kawasaki’s Disease. This is very rare (less that 1% as of this writing) but doctors in Europe, the United States, and now Montréal have taken note that children and teens with these symptoms either have the virus that causes COVID-19 or have antibodies to it. Again, these are rare cases but they do exist.

There are many other factors at that can effect the transmission of SARS-CoV-2. Crowded living conditions, inability to practice proper hand hygiene (lack of clean water or access to alcohol-
based hand sanitizers), socio-economic conditions, and lack of access to medical care represent just a few.

**Risk Factors in First Nations Communities**

Data from the Regional Health Survey 3 (RHS 3 – 2016/2016) can help inform us of risk factors in First Nations communities. First Nations communities have increased risk due to more than medical conditions. Remoteness, housing conditions, food security, socio-economic status, difficulty accessing medical care, and other factors also play a role. As of this writing most, if not all, First Nations communities in Alberta have effected lock-downs. This is an important and commendable step in helping keep communities safe.

**Income/Poverty Level**

In 2017 the Low Income Cut-Off (LICO) for a single person was $24,949. The RHS 3 contains data for both personal and household income. We know how many people are “usually” living in respondents’ households, however we have not measured how many people are actually living in each household at any given time. We know that most households are overcrowded due to lack of housing on reserve. We can therefore only estimate poverty by looking at personal income; i.e. whether or not the individual respondent receives enough personal income to keep them out of the “poverty” category as defined by the LICO. For the purposes of our chart (based on predetermined income categories) we will consider up to $24,999 as low income. The average income for 2017 was $33,000 for a single individual living in Canada.

**FIGURE 12:**

![RHS 3: Income Level (Poverty Estimate) for Adults](chart.png)
Figure 12 explains the majority of adult respondents (55.7%) can be classified as low-income (earn less than $25,000).

When broken down into age/gender groups we find that over half (58.1%) of the respondents with low income are adults aged 18-54, with the majority of these being males (61.7%).

**FIGURE 13:**

Low income can lead to food security challenges for individuals of all age groups.
Food Security

The RHS 3 Adult survey asked a series of questions about food security. The responses to these questions were tabulated and a food security score was then calculated for each respondent. These scores were then categorized into: food secure, moderately food insecure, and severely food insecure. The results can be seen in Figure 14.

FIGURE 14:

Over half of adults (58.5%) were moderately to severely food insecure, as were 46.7% of children.

Employment Rates and Food Security

In those nations that participated in the RHS3, 47.0% of respondents are currently working for pay; the remaining 50.8% are not working but looking for a job.

Despite having a job, only 46.6% of respondents are classified as Food Secure. The remaining 53.4% are at least moderately Food Insecure. Working does not guarantee food security!
Since the COVID-19 outbreak has caused many workplaces to lay off employees (either temporarily or permanently) the number of unemployed and those looking for work is likely much higher than what is presented here. It can also be postulated that due to the collapse of the oil and gas sector the numbers are higher still, especially in those communities where oil and gas companies were the major employer.

**Vulnerable Populations for COVID-19**

As discussed in a previous section, COVID-19 has been shown to effect populations with certain vulnerabilities. The elderly are most at risk, however those with chronic conditions or illnesses are also expected to be at greater than average risk. These include, but are not limited to people with:

- Chronic Respiratory Ailments (Asthma, Chronic Bronchitis, COPD, Emphysema, etc.)
- Compromised Immune Systems (either from an illness or its treatment)
- Diabetes
- Heart Disease
- High Blood Pressure
- Kidney Problems
- Liver Disease
- Stomach and Intestinal Problems

The following graph shows the incidence of each of these vulnerabilities in on-reserve First Nations members in Alberta (as self-identified by respondents).
**FIGURE 16:**

RHS 3: Vulnerable Populations (not necessarily elderly)

- Smoking

Smoking has been shown to play a role in COVID-19 infection outcomes. Recent data from China reports that smokers who contract COVID-19 are at a 14% greater risk of complications from the illness (Liu, W. et al, 2020). Of the respondents surveyed for RHS 3, 61.2% smoke at least occasionally. These 61.2% are all at a 14% higher risk of developing more severe COVID-19 symptoms than individuals who don’t smoke and don’t have other risk factors.

- Obesity

Obesity has also been shown as a risk factor for COVID-19 complications. Level III (high-risk morbid obesity) – anyone with a BMI ≥ (greater than or equal to) 40 is at greater risk. The RHS 3 showed that 3.9% of respondents have a BMI ≥ 40.
**Risk Factor Calculations Based on RHS 3**

Over 15% of individuals who responded to the RHS 3 have 2 or more of the basic risk factors mentioned in Figure 1. This increases their chances of more severe COVID-19 symptoms and outcomes.

**FIGURE 17:**

![Bar Chart]

RHS3: Number of Risk Factors of the Type Described in Figure 16

When level III Obesity and smoking are added to the risk factors the numbers change dramatically.

**FIGURE 18:**

![Bar Chart]

RHS 3: Number of Risk Factors of the Type Described in Figure 16 Obesity (Level III) and Smoking Added
The number of people with no risk factors drops down to almost 1/3 of its original value, while the number of people with 3 or more risk factors more than doubles (12.3% vs. 5.2%), as does the number of people with at least one risk factor (48.4% vs. 23.0%).

**Housing Conditions**

**Overcrowding**

Nations have reported that they are experiencing housing shortages and that their members are living in crowded conditions. Nationally just over 24% of First Nations adults reported living in crowded households with the percentages being higher in remote and rural communities than in urban communities. Similar conditions exist in Alberta.

**Water Supply**

Nations in Alberta generally get their water supply from 3 main sources:
- Piped in from a local or community water supply – 53.8%
- Trucked in – 26.5% or
- Well (individual or shared) – 18.3%

Only 68.6% of respondents considered the water supply for their home to be safe for drinking year round. Other than resorting to boiling their water 18.1% of respondents said they use other sources of drinking water. These were: bottled water (74.4%), and filtered tap water (11.1%).

**Mould and Mildew**

Over 40% (41.3%) of respondents reported having mould or mildew in their homes in the preceding 12 months. Mould and mildew can cause allergic reactions, exacerbate asthma, and cause general malaise in those with weakened immune systems, breathing challenges, and other chronic health conditions. (WebMD. n.d.)

**Internet Access**

Internet access has recently become an imperative for people working from home during this pandemic. It is also critical for keeping current with the latest news, and maintaining contact while social distancing is in effect. Many First Nations, especially those in remote areas, have little to no access to the Internet at home. Just over half (55.6%) of adult respondents to the RHS 3 reported that they had an internet connection at home, with the urban nations being more likely to have access (62.4%) than the rural nations (46.8%).
Resources

There are many great sources of information available online. We recommend starting with websites and YouTube channels such as:

**Websites:**
- Alberta Health: [COVID-19 Info For Albertans](#)
  - [COVID-19 in Alberta – Interactive Data App](#)
- Government of Canada: [Coronavirus disease (COVID-19)](#)
- Centres for Disease Control and Prevention (CDC): [Coronavirus (COVID-19)](#)
- World Health Organization (WHO): [Coronavirus disease (COVID-19) Pandemic](#)
- Canadian Institute for Health Information (CIHI): [COVID-19 resources](#)

**YouTube:**
- Centres for Disease Control and Prevention (CDC):
  - [Answering 20 Questions About COVID-19](#)
  - [Can COVID-19 last on surfaces and in the air?](#)
  - [COVID-19: What Older Adults Need to Know](#)
  - [How does COVID-19 spread?](#)
- Dr. Mike Hansen (Internal Medicine, Pulmonary Disease, and Critical Care Medicine Specialist) - [many videos on various COVID-19 topics](#)
- Ineqe Safeguarding Group
  - [What is Coronavirus? An explainer for Children.](#)
- Kurzgesagt – In a Nutshell
  - [The Coronavirus Explained & What You Should Do](#)
- NYU Langone Health
  - [Child-Friendly Ways to Address COVID-19](#)
- Ninja Nerd Science:
  - [COVID-19 | Coronavirus: Epidemiology, Pathophysiology, Diagnostics](#)
  - [COVID-19 | Coronavirus: Treatment, Prognosis, Precautions](#)
  - [COVID-19 | Coronavirus: Epidemiology, Pathophysiology | APRIL UPDATE](#)
  - [COVID-19 | Coronavirus: How is Coronavirus Diagnosed | APRIL UPDATE](#)
- Nucleus Medical Media
  - [COVID-19 Animation: What Happens If You Get Coronavirus?](#)
  - [What Happens If You Get a Severe Case of COVID-19?](#)
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Appendices

Appendix A: World Health Organization COVID-19 Myth Busters

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.

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

27 April 2020

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.

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

27 April 2020
Do vaccines against pneumonia protect you against the new coronavirus?

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.

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?

Can regularly rinsing your nose with saline help prevent infection with the new coronavirus?

No. There is no evidence that regularly rinsing the nose with saline has protected people from infection with the new coronavirus. There is some limited evidence that regularly rinsing the nose with saline can help people recover more quickly from the common cold. However, regularly rinsing the nose has not been shown to prevent respiratory infections.
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

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

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.

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

Remember to keep chlorine (bleach) and other disinfectants out of the reach of children.
From the evidence so far, the new coronavirus can be transmitted in ALL AREAS, including areas with hot and humid weather. Regardless of climate, adopt protective measures if you live in, or travel to an area reporting COVID-19. The best way to protect yourself against COVID-19 is by frequently cleaning your hands. Eliminate viruses that may be on your hands and avoid infection that could occur by then touching your eyes, mouth, and nose.

FACT: The new coronavirus can be transmitted in areas with hot and humid climates

Viruses cannot travel on radio waves/mobile networks. COVID-19 is spreading in many countries that do not have 5G mobile networks. COVID-19 is spread through respiratory droplets when an infected person coughs, sneezes or speaks. People can also be infected by touching a contaminated surface and then their eyes, mouth or nose.

FACT: 5G mobile networks DO NOT spread COVID-19

UV radiation can cause skin irritation and damage your eyes. Cleaning your hands with alcohol-based hand rub or washing your hands with soap and water are the most effective ways to remove the virus.

FACT: Ultra-violet (UV) lamps should not be used to disinfect hands or other areas of your skin.
Frequent or excessive alcohol consumption can increase your risk of health problems.

**FACT:**
Drinking alcohol **DOES NOT** protect you against COVID-19 and can be dangerous.

The most common symptoms of COVID-19 are dry cough, tiredness and fever. Some people may develop more severe forms of the disease, such as pneumonia. The best way to confirm if you have the virus producing COVID-19 disease is with a laboratory test. You cannot confirm it with this breathing exercise, which can even be dangerous.

**FACT:**
Being able to hold your breath for 10 seconds or more without coughing or feeling discomfort **DOES NOT** mean you are free from the coronavirus disease (COVID-19) or any other lung disease.

Most of the people who catch COVID-19 can recover and eliminate the virus from their bodies. If you catch the disease, make sure you treat your symptoms. If you have cough, fever, and difficulty breathing, seek medical care early – but call your health facility by telephone first if possible. Most patients recover thanks to supportive care.

**FACT:**
You can recover from the coronavirus disease (COVID-19). Catching the new coronavirus **DOES NOT** mean you will have it for life.
FACT:
Cold weather and snow CANNOT kill the new coronavirus

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.

#Coronavirus  #COVID19

FACT:
Taking a hot bath does not prevent the new coronavirus disease

Taking a hot bath will not prevent you from catching COVID-19. Your normal body temperature remains around 36.5°C to 37°C, regardless of the temperature of your bath or shower. Actually, taking a hot bath with extremely hot water can be harmful, as it can burn you. The best way to protect yourself against COVID-19 is by frequently cleaning your hands. By doing this you eliminate viruses that may be on your hands and avoid infection that could occur by then touching your eyes, mouth, and nose.

#Coronavirus  #COVID19

FACT:
The new coronavirus CANNOT be transmitted through mosquito bites

To date there has been no information nor evidence to suggest that the new coronavirus could be transmitted by mosquitoes. The new coronavirus is a respiratory virus which spreads primarily through droplets generated when an infected person coughs or sneezes, or through droplets of saliva or discharge from the nose. To protect yourself, clean your hands frequently with an alcohol-based hand rub or wash them with soap and water. Also, avoid close contact with anyone who is coughing and sneezing.

#Coronavirus  #COVID19
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 25°C degrees DOES NOT prevent nor cure COVID-19

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.

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

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?
To date, there is no specific medicine recommended to prevent or treat the new coronavirus (2019-nCoV). However, those infected with the virus should receive appropriate care to relieve and treat symptoms, and those with severe illness should receive optimized supportive care. Some specific treatments are under investigation, and will be tested through clinical trials. WHO is helping to accelerate research and development efforts with a range of partners.

#Coronavirus

Thermal scanners are effective in detecting people who have developed a fever (i.e., have a higher than normal body temperature) because of infection with the new coronavirus. However, they cannot detect people who are infected but are not yet sick with fever. This is because it takes between 2 and 10 days before people who are infected become sick and develop a fever.

#2019nCoV

No. Hand dryers are not effective in killing the 2019-nCoV. To protect yourself against the new coronavirus, you should frequently clean your hands with an alcohol-based hand rub or wash them with soap and water. Once your hands are cleaned, you should dry them thoroughly by using paper towels or a warm air dryer.

#2019nCoV