



Dietary Recommendation for Survival During COVID-19

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Corona viruses are a large family of viruses that exist in many different species of animals including camels, bovine animals, and bats. The new strain of corona virus identified as the cause of outbreaks of respiratory disease in people first detected in Wuhan, China, was COVID-19. WHO has published a new guide on how to eat healthily during the COVID-19 COVID pandemic and self-quarantine. The guideline contains valuable information about nutrition to help keep the immune system strong. It also has tips for a diet that supports good health while advised to stay at home and may have less opportunity to consume fresh foods and be physically active. The FDA continues important research to protect public health during the COVID-19 pandemic along with other federal, state, and local agencies and public health officials around the country [1,2,3].

Keywords: COVID-19; CDC; FDA; MERS-CoV; SARS-CoV; UNICEF; WHO.

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1. INTRODUCTION

Coronavirus is an ailing infection. Coronavirus disease (COVID-19) is a newly discovered coronavirus-caused infectious disease. Most people infected with the COVID-19 virus will experience mild to moderate respiratory disease and recover without any special treatment being required. Older people and those with underlying medical conditions such as cardiovascular disease, diabetes, chronic respiratory disease and cancer are more likely to develop serious diseases [1].

1.1 Objectives

- Identify the etiology, signs and symptoms, treatment modalities and prevention of COVID-19.
- Summarize the latest available treatment in the management of COVID-19, including the different vaccines available to prevent COVID-19.
- Discuss dietary recommendations for survival during COVID-19

1.2 Spread of Corona Disease

According to Current evidences the virus spreads mainly between people who are in close contact with each other, typically within 1 metre (short-range). A person can be infected when aerosols or droplets containing the virus are inhaled or

come directly into contact with the eyes, nose, or mouth [4,5].

1.3 Clinical Features

- Fever (fever above 37.8 ° C or skin that feels hot to touch).
- Fresh, recurrent cough.
- Breathlessness and trouble breathing.
- Tired.
- Chills/Headache
- Pneumonia
- Septic shock
- Renal failure
- Diarrhoea
- Hemoptysis

1.4 Diagnostic Testing

- **Molecular Testing-** nasopharyngeal swab for SARS-CoV-2 real-time PCR assay .
- **Serology Testing**
- **Other Laboratory Assessment-** Complete blood count(CBC), Liver function test, Kidney function test, ESR, C-reactive protein (CRP), ferritin, lactate dehydrogenase, D-dimer, and procalcitonin
- **Imaging Modalities-** Chest X-ray, Chest Computed Tomography (CT), Lung ultrasound.

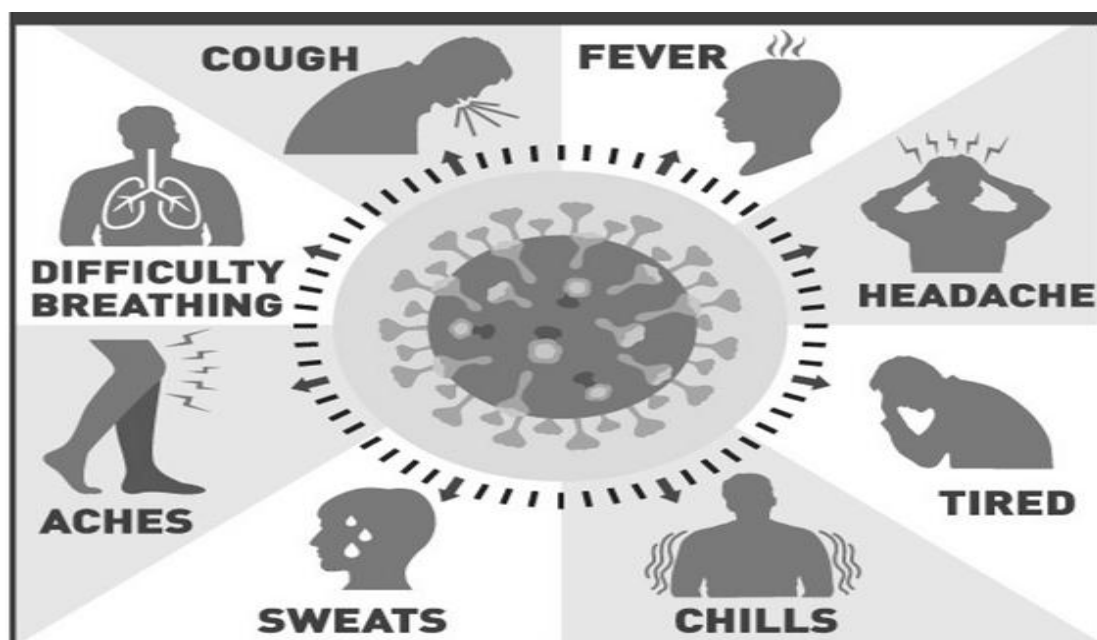


Fig.1. Symptoms of coronavirus covid -19

1.5 Hospitalization

If anybody develops emergency warning signs for COVID-19 they get immediate medical attention. The included emergency warning signs are:

- Respiratory trouble
- Lasting chest pain or pressure
- Bluish eyes or lips

1.6 Treatment

Self-care-Asymptomatic cases, mild cases of COVID-19:

- Isolate yourself in a well ventilated room.
- Use N95 medical mask, discard mask after 8 hours of use or earlier if they become wet or visibly soiled. Mask should be discarded only after disinfecting it with 1% Sodium Hypochlorite.
- Take rest and drink a lot of fluids to maintain adequate hydration.
- Follow respiratory etiquettes at all times.
- Frequent hand washing with soap and water for at least 40 seconds or clean with alcohol-based sanitizer.
- Avoid to share personal items with other people in the household.
- Ensure cleaning of surfaces in the room that are touched often (tabletops, doorknobs, handles, etc.) with 1% hypochlorite solution.
- Monitor temperature and oxygen saturation with a pulse oximeter daily.
- Connect with the treating physician promptly if any deterioration of symptoms is noticed.

1.7 Medical Treatments

- Treatment for patients with mild/asymptomatic disease in home isolation
- Patients must be in communication with a treating physician and promptly report in case of any worsening.
- Continue the medications for other co-morbid illness after consulting the treating physician.
- Patients to follow symptomatic management for fever, running nose and cough, as warranted.

- Patients may perform warm water gargles or take steam inhalation twice a day.

2. MEDICATIONS

2.1 Painkillers

To relieve pain and fever eg. paracetamol.

2.2 Antiviral Therapies

1. Remdesivir
2. Hydroxychloroquine and chloroquine
3. Lopinavir/ritonavir
4. Ivermectin

2.3 Anti-SARS-CoV-2 Neutralizing Antibody Products

- Convalescent Plasma therapy
- REGN-COV2 (Casirivimab and Imdevimab)
- Bamlanivimab and Etesevimab (LY-CoV555 or LY3819253 and LY-CoV016 or LY3832479)
- Sotrovimab (VIR-7831)

2.4 Immunomodulatory Agents

- Corticosteroids
- Interferon- β -1a (IFN- β -1a)
- Interleukin (IL)-1 Antagonists
- Anti-IL-6 receptor Monoclonal Antibodies
- Tocilizumab
- Sarilumab and Siltuximab
- Janus kinase (JAK) inhibitors
- Baricitinib
- Ruxolitinib
- Tofacitinib
- Bruton's tyrosine kinase inhibitors such as acalabrutinib, ibrutinib, rilzabrutinib [6,7,8]

2.5 Oxygenation And Ventilation Management In COVID-19

- Conventional Oxygen Therapy
- Management of Acute Hypoxemic Respiratory Failure in COVID-19

Acute hypoxemic respiratory failure is the most common complication in adult patients with COVID-19, and conventional oxygen therapy is not helpful to address the oxygen demand in these patients. These patients should be managed with enhanced respiratory support modalities such as [9].

High-flow nasal cannula (HFNC),

- Noninvasive positive pressure ventilation (NIPPV),
- Endotracheal intubation, and
- Invasive mechanical ventilation (IMV) or extracorporeal membrane oxygenation (ECMO)

2.6 Vaccination

BNT162b2 vaccine, mRNA-1273 vaccine, Ad26.COV2.S vaccine, ChAdOx1 nCoV-19 vaccine, NVX-CoV2373 vaccine, India(Covaxin), Russia(Sputnik V), and China(CoronaVac) [9].

2.7 Prevention

- Wash your hands regularly with soap and water for at least 20 seconds, particularly after going to the bathroom;

before eating; and after blowing your nose, coughing or sneezing [10].

- If soap and water are not readily available, use an alcohol-based hand sanitizer with at least 60 percent alcohol. Where hands are clearly dirty, always wash hands with soap and water [11].
- Stop rubbing your eyes, nose and mouth with unwashed hands.
- Avoid direct contact with people who are sick [12].
- Stay home when you're sick.
- Using tissue paper, hankerchief during cough or sneeze and then dump the tissue in the garbage [13].
- Clean and disinfect products safely [14]
- Vaccination is must to prevent from corona virus infection [9].

2.8 The COVID-19 Outbreak- Nutrition Advice for Adult

Everyone needs good nutrition and hydration and the two are vital. Those who eat a well-balanced diet tend to be safer with better immune systems and less chance of developing chronic diseases and infectious diseases. Start eating unprocessed and nutritious food every day [15,16].



Fig. 2. Ways of prevention from COVID-19(Coronavirus)

Table1. Food types and food items

S. No	Food Types	Food Items
1.	Fruits	Seasonal
2.	Vegetables, legumes	Boobs, lentils
3.	Total grain and nuts	Maize, millet, oats, wheat, brown rice or starchy tuber or roots such as cabbage, yams, taro or cassava
4.	Flesh originates from animal sources	Meat, fish, eggs and milk

Table 2. Diet Chart: Daily every person need

S. No	Food Types/Items	Quantity
1.	Veggies	2.5 (5 portions)
2.	Outfits(Fruits)	2 cups (4 servings)
3.	Grains	180 gm
4.	Meat and beans: <ul style="list-style-type: none"> • Red meat • Poultry 	<ul style="list-style-type: none"> • 1 to 2 days a week • Twice a week
5.	Snacks:	
6.	Fresh fruit	2-3 cups
7.	Raw vegetables, instead of food	Evite High sugar, fat, or salt. 2 Pockets
8.	Canned or dried vegetables and fruits	Pick varieties that do not have salt or sugar added. 2 Pockets

Note: Don't overcook fruits and vegetables because of the loss of important vitamins



Fig. 3. Adult diet guidance during covid -19 pandemic

2.9 Nutrition and Health Tips during Self-Quarantine: General Tips

- ✚ Make a plan - take only need based food items
- ✚ Be strategic about the use of ingredients - prioritize fresh products
- ✚ Prepare home-cooked meals
- ✚ Take advantage of food delivery options
- ✚ Be aware of portion sizes
- ✚ **Follow safe food handling practices:** Food safety is a prerequisite for healthy diets and food security.

2.10 Tips for Food Hygiene During Outbreak of Corona Virus Disease (COVID-19)

The tips for General food hygiene are:

- Before cooking any meal, need to thoroughly wash our hands with soap and water for at least 20 seconds before eating and make sure that children do the same.
 - When preparing uncooked meat and fish, Raw meat must be prepared separately on the red chopping board, and fish on yellow chopping board to avoid cross-contamination
 - For cooking food recommended temperature need to be use.
 - Maintain food at safe temperatures below 5 ° C or over 60 ° C
 - Use clean water and raw materials.
 - Keep the products cooled or frozen and pay attention to the expiry dates of the product, where possible, and keep the freezer clean.
 - Recycle or dispose properly of food waste and packaging in an adequate and sanitary manner, avoiding the build-up of pest-attracting refuse.
 - Always keep clean the kitchen, utensils, dishes and hands.
 - Separate raw and cooked food, especially fresh and raw meat
 - Meat – thoroughly cook.
- ✚ **Limit salt intake:** The WHO recommends eating less than 5 g of salt a day. To do so, priority should be given to foods with reduced or no added salt.
 - ✚ **Limit sugar intake :** WHO recommends that ideally less than 5% of total energy intake for adults should come from free

sugars (about 6 teaspoons). Limit the amount of sugar or honey added to foods and avoid sweetening our beverages.

- ✚ **Limit fat intake:** Limiting the total intake of fat to less than 30 percent of the total intake of oil, which no more than 10% should come from saturated fat. To achieve this, opt for cooking methods that require less or no fat, such as steaming, grilling or sautéing instead of frying foods.

- ✚ **Consume enough fibre:** Fiber contributes to a healthy digestive system and provides a prolonged sense of fullness which helps prevent excessive eating. To ensure an sufficient intake of fibre, all meals will contain vegetables, fruit, pulses and wholegrain foods. Wholegrain products include peas, brown pasta and rice, bread and wraps of quinoa and whole wheat rather than refined grain foods, such as white pasta and rice, and white bread.

- ✚ Stay hydrated
- ✚ Avoid alcohol or at least reduce alcohol consumption
- ✚ Enjoy family meals

3. ACCORDING TO UNICEF GUIDELINE

The healthy eating tips are;

1. Take fruit and vegetable
2. When fresh produce is not available swap in healthy dried or canned alternatives
3. Keep stock of healthy snacks
4. Reduce intake of highly processed foods
5. Make cooking and eating a fun with family

3.1 Breastfeeding Advice for Children

Between 6-24 months breast milk remains a great food for children. Women with COVID-19 are permitted to continue breastfeeding if they wish to. If mother with COVID-19 separates the mother and newborn baby and starts artificial feeding or if human milk bank is available also give that milk or use the available options [6].

Breast milk provides babies with the best source of nutrition and protects them from disease. Breastfeeding disruption can lead to a drop in milk supply, the infant's refusal to take the breast and a decrease in protective immune factors in breast milk [3].

3.2 According to UNICEF Guideline

3.2.1 Continue breastfeeding while keeping hygiene in mind

The virus was not found in breast milk and all mothers recommended that breastfeeding continue while practicing good hygiene while feeding. The 3Ws include in breastfeeding:

- Wear a mask while being fed,
- Wash hands with soap before and after baby has touched,
- Wipe the surfaces and disinfect them regularly.

The main risk to a baby is to catch the virus from close contact with the mother or other family member who is infected. If someone in the household is sick, take extra care in practicing the 3 Ws to protect the baby [6].

Many mothers may opt to wear a mask as a routine during feeding to ensure their child is covered to the full. If a mom suspects she may have contracted coronavirus, she may wish to use a clean cup or cup and spoon to express her breastmilk and feed the baby [17].

3.2.2 Take more hygiene steps and continue to breastfeed if mother is sick

Prior to delivery, mothers who are infected with coronavirus and begin breastfeeding and those mothers who are infected during breastfeeding will produce immune factors (antibodies) in their milk to protect their baby and improve the baby's own immune responses. Which means the only way to fight the infection and protect the unborn baby is to start breastfeeding. If a mother is sick with signs of fever, cough, or breathing problems, Mother will seek medical treatment as early as possible and obey a health care provider's instructions. Those mothers who are good enough to breastfeed their baby should continue to do so by taking additional hygienic care by practicing the 3 Ws whenever the mother goes to near her baby including wearing a mask [17].

3.2.3 When the mother is too ill and is unable to breastfeed, using a cup and a spoon of concentrated breast milk to feed infants

Sick lactating mother should seek immediate medical advice. If mom can still express breast milk and ask a non-infected family member to feed the newborn using cup or cup & spoon. Please remember to keep track of the 3Ws all the time and keep the baby safe, clean and healthy [17].

3.2.4 Special care While formula feeding

Breastfeeding is the right food for healthy baby's growth and development, but when the mother lactates she can't breastfeed or decides not to breastfeed her, advice on formula feeding. In this condition feed the babies as per the packaging instructions. Every time, the 3 Ws followed [17].

4. CONCLUSION

COVID-19 coronavirus outbreaks are a community health emergency. This time period is very stressful for everyone. Remember it's important to stay informed and to be kind and supportive to each other. Peoples maintain our health by taking healthy nutritious diet and also follow the available, updated guideline's provided or published by the government and not to believe on fake news.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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