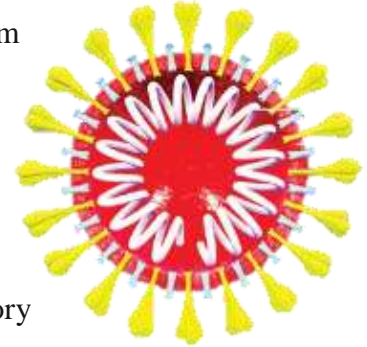


COVID-19: Good Health and Dietary practices

Introduction

Viruses enter our body in different forms and times. Our immune system in the body however, controls the spread of diseases, reduce the symptoms and controls the disease condition. The degree of complications depends on the ability and strength of our immune system. HIV AIDS (Human Immunodeficiency Virus - Acquired Immunodeficiency Syndrome), MERS (Middle East Respiratory Syndrome) and SARS (Severe Acute Respiratory Syndrome) are well known viruses. The new SARS CoV-2 (Severe Acute Respiratory Syndrome coronavirus -2) virus causes corona disease which has been given the name COVID-19 by the World Health Organization on 11 February 2020. As we know, most common cold and fever are also caused by viral infections.



Known virus diseases are – HIV AIDS, MERS, SARS, and SARS CoV-2.
SARS CoV-2 also named as COVID -19 by the WHO

Present status of spread of the disease

It will take some time to develop resistance of the body against SARS CoV-2 which originated in Wuhan, in the People's Republic of China in December 2019, which has now spread to more than 200 countries. As of April 11nd 2020, 1 436 19 cases and 85 522 deaths have been reported from these countries. At the time of writing, 197 cases and 7 deaths have been reported in Sri Lanka.

Guidance from WHO, MOH and GMOA

While advice has been given by the WHO in association with the Chinese authorities for the control of increase of complications and prevention of this disease transmitted from human to human, the Ministry of Health and Indigenous Medicine and the Government Medical Officers Association (GMOA) are also providing advice and guidance on correct health practices and how they should be followed through the media, it is the duty of all of us to follow them to control the spread of this deadly disease.

Symptoms of the disease

The main symptoms of this virus transmitted from human to human infection are fever, dry cough, pain in the throat and difficulty in breathing. If you have these symptoms it is very essential to obtain medical advice immediately. This will facilitate in minimizing the spread of the disease.

Research conducted so far has revealed that 80% of the infected patients have mild disease conditions and another 13% show normal disease conditions. In order to reduce the complications of the New Corona infected patients, it has been recommended by the WHO to feed the patients through a nasogastric tube (NG tube) and to obtain the services of a suitably qualified registered Dietitian/Nutritionist to prepare the diet plans.

Symptoms of the COVID-19 disease- fever, dry cough, pain in the throat and difficulty in breathing.

Steps recommended to prevent the disease

Observations made on the advice provided so far and the research related to prevention of this viral infection indicate that it is of utmost importance to adhere to the following instructions.

➤ Washing hands with soap

Studies on the structure of this virus show that there is a fatty layer around the virus. The S- Glycoprotein molecules in the outer layer of the new Corona virus attaches to a receptor on respiratory cells called angiotensin-converting enzyme 2 receptor, or ACE-2 receptor. Similarly the part of the virus which attaches to the receptors **can be captured by the molecules of the soap** and therefore, by **rubbing and washing the palms with soap** for about 20 seconds the virus molecules on the hand can be easily removed.



Using sanitizers will destroy the virus but it will not be washed and removed from the hands as in the case of soap. Therefore use of soap plays an important role in prevention of the disease.

Soap can remove the outer fatty layer of the COVID -19 virus. So rubbing and washing palms with soap for 20 seconds can remove the virus molecules from hand

➤ **Avoid touching face and nose**

As the virus can be entered into the body through touching the face and nose, frequent touching of these areas should be avoided. As per instructions given by the Ministry of Health mouth and nose should be covered with **your bent elbow** or tissue when you cough or sneeze and then dispose of the used tissue immediately.

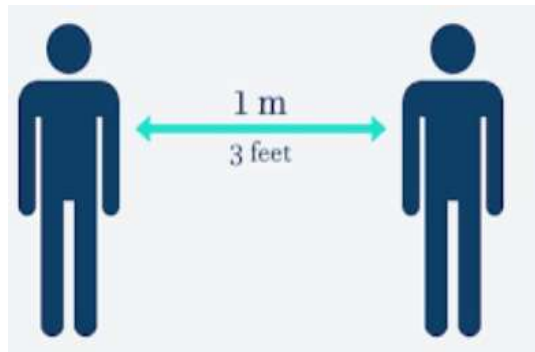
➤ **Wearing a mask**



By covering the nose and mouth with a mask can prevent the **spread of droplets**. It can also protect you from droplets released by others during cough or sneezing. Wearing a mask while purchasing food and preparing and cooking will help you in prevention of spread of droplets and mixing them with food. However, it is very important to follow the guidelines provided to you by the Ministry of Health.

➤ **Maintaining a minimum social distance**

When someone coughs or sneezes he will spray small liquid droplets from his nose or mouth which may contain virus. If you are too close, you can breathe in the droplets, including the COVID-19 virus if the person has the disease. Therefore, maintaining a minimum distances of 1 meter between you and the others will contribute to minimizing the spread of this disease. In certain countries this distance has been recommended as 1.5 meters.



Importance of a Balanced Diet to increase immunity

It is necessary to obtain a balanced diet for the maintenance of immunity in our body. In this connection the Health Ministry of Sri Lanka constantly creates awareness on this aspect and you should plan your diet correctly to enable obtaining maximum immunity.

➤ **Constituents of a balanced diet**

Most important thing here is to include **food containing anti-oxidant qualities** and **food providing high immunity** in your diet. By obtaining the food containing Vitamin D, Vitamin E and C the natural immunity system of your body can be enhanced. Research has revealed that Vitamin D plays a considerable role in reducing respiratory complications and other symptoms caused by viral infections. Exposure to sun will provide certain amount of Vitamin D through skin cholesterols. During the exposure to sunlight radiation (exposure to ultraviolet-B (UVB), vitamin D₃ (cholecalciferol) is synthesized in the human skin from 7-dehydrocholesterol. However, if you are an infected person or suspected to be infected with the virus it is more suitable to obtain your dietary Vitamin D requirement through your **diet or dietary**



supplements. As Vitamin D is fat soluble it can be obtained from fish such as Tuna, Mackerel, Salmon, egg yolk and mushrooms

etc. Addition of **coconut oil** in the process of preparation of your food will facilitate absorption of fat soluble vitamins such as Vitamin A , K and E in addition of Vitamin D. While it is suitable to obtain 30% of your daily requirement of energy for maintaining good health through fats, addition of coconut oil into your food will provide Lauric Acid (a fatty acid) which is required for maintaining health. It has been proved through research that **Lauric acid has the power to reduce the effects of viruses in the body.**

Vitamin D, Vitamin E and C can increase the natural immunity of the body. Exposure to sun will provide certain amount of Vitamin D through skin cholesterols. Vitamin D can be obtained from fish such as Tuna, Mackerel, Salmon, egg yolk and mushrooms. Addition of coconut oil in food preparation will facilitate absorption of fat soluble vitamins such as Vitamin D, A, K and E

As for **mineral requirement**, obtaining the food consisting of Cu, Iron, Mg, Zinc will be important. The bran of red rice contain Cu, Iron, Mg, Zinc, Vitamin B1, Vitamin B5 and Vitamin B6. Therefore, it is convenient to obtain these nutrients **by including red rice** in the meal. As there is no scarcity of rice at present in rural or urban areas in Sri Lanka you can buy rice with bran and obtain the above nutrients. It is also important to include correct amount of protein and

fats in the diet. Therefore you can obtain proper nutrition by including different types of food in your diet, with proper understanding of the nature and types of food stuffs available at your home.

The bran of red rice contain Cu, Iron, Mg, Zinc, Vitamin B1, Vitamin B5 and Vitamin B6

➤ **Practical approach to make a balanced diet**



If the preparation of food at your home is properly planned you can obtain a balanced diet daily. **Rice** is important as a daily source of **carbohydrate**. In the consumption of rice 2 cups are sufficient for an adult and for the others at home the quantity can be adjusted. Your daily minimum nutrition requirement can be met by including one or two types of vegetables, 2-3 table spoonful of greens and at least one type of fruits. It

has been recommended to use one nut of coconut for 5 persons per day. It is more suitable to add coconut into leafy vegetables (greens or keera) or prepare it as a Sambol. When greens are prepared the daily **Vitamin C requirement** can be met by adding lime juice into it. Balance requirement of fat is obtained from coconut oil.

Your daily **protein requirement** can be obtained from meat, fish and milk. By giving priority for fish it is possible to add good fats into your diet. It may not be possible to obtain fresh meat or fish during these days. Therefore, you may use dry fish, sprats etc. which can be kept for a long duration. If you are a vegetarian, cow pea, gram, mung seed or dhal can be used as a source of protein. By taking a certain quantity of rice daily, you can obtain some proteins too.

Consumption of rice 2 cups are sufficient for an adult. Include one or two types of vegetables, 2-3 table spoonful of greens and at least one type of fruits. Use one nut of coconut for 5 persons per day.

As any research has not been carried out for the recommendation of a diet plan for new Corona infected patients, consumption of various supplementary diets on one's own may result in increased the disease condition. On the other hand, consumption of suitably prepared traditional food, rice, fish, vegetables and pure coconut oil will increase the immunity of the body and

therefore the resistance to diseases will also be increased. Therefore the first step will be following good health practices. In addition it is important to include above mentioned nutrients in the diet.

➤ **Diet planning for Diabetic patients**

It is important for the Diabetic patients to plan their daily diets as three main meals and 4 small meals (Snacks) in between the main meals to enable them get sufficient amount of nutrients and to prevent sudden increase of their blood sugar levels. It has to be noted that, when the main diets are taken there should not be any unnecessary excessive quantities and there should be a sufficient interval between the diets. Proper planning of diets will be helpful for the Diabetic patients to minimize the complications in controlling blood sugar during any scarcity of drugs. Research has shown that blood sugar levels can be minimized by taking **tea without sugar**, 4 times a day. In addition to controlling blood sugar level it is also possible to reduce the dosage of drugs by consuming tea as stated above and taking a balanced diet while engaging in suitable exercises.

Three main meals and 4 small meals (snacks) in between main meals for diabetic patients. Consume tea without sugar, 4 times a day

➤ **Diet planning for patients with high blood pressure**

If you are a person suffering from high blood pressure the daily intake of salt through your diet should not exceed one tea spoonful. The salt intake can be reduced by reducing the consumption of processed food and preserved food. Research has shown that certain



constituents in the milk help in regulating blood pressure. Therefore daily consumption of milk is helpful in controlling blood pressure. As a method for reducing intake of fats it is recommended to use either nonfat milk or removal of fatty layer from the ordinary milk after cooling it slightly.

For high blood pressure patients- limit salt intake, increase consumption of milk. Milk can lower the blood pressure.

➤ **Avoid food containing refined sugar and processed food**

For all the diseases, consumption of food containing **refined sugar** and also **processed food** should be minimized. Excessive use of refined sugar will lead to difficulty in controlling the blood sugar levels in addition to increasing Triglycerides in the body. The excessive use of processed food will increase the salt content of blood. Due to addition of trans fatty acids and saturated fats it will cause harmful effects on heart patients as well as patients with high blood pressure. This type of food includes bakery products including bread, short eats fried in deep oil and highly sweetened food such as cakes and chocolates.

Limit consumption of refined sugars containing foods, high salt, sugar and saturated fats containing foods.

➤ **Garlic, ginger etc. to increase antioxidants**



Addition of garlic, ginger as well as cinnamon will be helpful in increasing immunity. If you are living in a village and when you prepare Jak fruit, polos etc., you can add sufficient quantities of garlic, ginger and condiments to enhance their quality. The anti-oxidants in Garlic, ginger and other condiments used daily at your home will help in increasing immunity towards viral diseases as well as other infected diseases. Similarly, the quality of the foods as well their healthy nature can be increased by addition of fresh vegetables and fruits in your daily diet.

Garlic, ginger and cinnamon increase the immunity towards viral diseases.

➤ **Role of tea against viral infections**

Research that has been conducted so far has revealed that **consumption of tea** could prevent viral diseases it is recommended to take tea 4 times a day with ginger or cinnamon added to it. Research carried on cinnamon has revealed that addition of 1/2 tea spoonful of cinnamon into tea will be helpful in developing immunity towards viral diseases. However if you are a diabetic

patient you should be careful as the sugar level may go down when the tea is consumed in this way.

Take tea 4 times a day with ginger or cinnamon added to it.

Importance of drinking sufficient water

Special mention has to be made on drinking of water too. Water is required for the regulation of body temperature, removal of metabolic by-products, maintenance of proper blood pressure, maintenance of an efficient respiratory process and absorption and transport of nutrients of the food in the body. The daily requirement of water for a person is 2-3 liters. However if you are a person mostly staying at home, during these days you may neglect drinking of water. Therefore, you should be concerned about your daily requirement of water.



Water is a key component of regulating metabolic activities in the body. The daily requirement of water for a person is 2-3 liters.

Importance of adequate sleep and control of mental health

As an adequate sleep is required for your immunity process, you should pay attention to sleep for a minimum period of 6 hours.

Controlling the mental stress too will be helpful in protecting the immunity of the body.

Role of pharmacists during the COVID-19 pandemic

It is a common sight that many of the patients come in long queues to purchase medicines from the pharmacies, especially during the period of lifting the curfew in each area and, also on the days where pensioners are given the opportunity to come to pharmacies to buy their medicines. During these specific days where the patients have to collect their medicines within a limited period of time, the pharmacists are compelled to come very early to their work places and work

continuously from morning to evening to supply the prescribed medications and over the counter medications to the customers. They have to work fast and with great care in checking the prescriptions, prescribed drugs, dosages and interactions with the other medications etc. before issuing medicines to the patients. The hard and dedicated work of the Pharmacists along with other medical and paramedical personnel during this critical period is praiseworthy.

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