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COVID-19 Diet Considerations and Guidelines

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Abstract

It's been a while that people are struggling with COVID-19. Until this very moment, COVID -19 exceed 78 million cases around the world (December 2020). Taking all of the advises including social distancing and wearing masks into account, there are other influential factors which should be notified. Sedentary life style caused by social distancing and lockdown leads to several issues for people. Changes in dietary habits caused by boredom, stress and other factors is one of the related consequences of confinement. This review aims to outline the crucial importance of a healthy diet during COVID-19 pandemic.

Keywords: COVID-19; Coronavirus; Viral infections; Diet; Immune system; Nutrition

Introduction

Different advises are recommended for preventing the spread of Coronavirus, and most important ones include keeping social distancing [1], avoiding crowded and public places, washing hands regularly and wearing masks [2,3]. For making social distancing possible, majority of the people started working from home, so they spend all or most of their time in lockdown. It's no secret that this confinement impacted many aspects of everyday life. Sleeping pattern [4], eating and activity habits are changed.

Keeping the common advises in consider, there are other habits that people really need to take care during this pandemic. One of them is habits related to diet and food consumption. It is critical to wisely choose the daily food consumption to empower the immune system against this virus by making it strong and secure which furthermore reduces the risk of COVID-19 infection or progression [5,6]. A healthy diet also will modify the detrimental impacts of confinement on depression [7]. When people are strictly confined in home all day, they may become bored, angry, moody or exhausted. One of the impacts of confinement during COVID-19 pandemic is overeating [8]. Anxiety or fear would also lead to unhealthy dietary patterns [9], which may increase during this pandemic among people. The problem is that when people are at home, foods are available so they may not control what and how much they eat. Researches indicated that nutrition consumption before and after COVID-19 pandemic is not quite the same, for instance adolescents showed an increase in sweet food intake [10].

In the following, some of the most important parts of nutrition which should be consumed and other diet guidelines during COVID-19 will be presented to be ensured that the body is in a healthy state against any kind of viral infection [11].

Hydration

The importance of staying hydrated and drinking enough water during a day is well established. Staying hydrated also can empower the immune system [12]. Studies show that dehydration cause immunosuppression by decreasing neutrophil functions. It is hypothesized that sub-optimal hydration in the weeks prior to COVID -19 infection might increase the risk of mortality in several ways. Accordingly, by a simple act and staying hydrated, immune system robust and COVID -19 infection decrease respectively [12,13].

Vitamin C

One of the supplements that can be sure about its function on curing the immune system is Vitamin C. There are evidences indicating Vitamin C can boost the immune system and protect it against infections [14]. Vitamin C is one of the most essential water soluble vitamins. But human bodies cannot synthesize or save Vitamin C, so it is necessary to consider a proper amount of Vitamin C in a healthy diet [15,16].

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Vitamin D

Vitamin D also plays a great role in supporting innate immune responses to influenza A-B, parainfluenza 1-2. Low vitamin D status increase the risk of both upper and lower respiratory tract infections. Studies suggest that Vitamin D deficiency increase the risk of several pathologies such as diabetes, autoimmune and infection diseases including viral infections [17]. Accordingly evidences strongly demonstrate Vitamin D supplementation benefits and its prominent role in reducing the risk of COVID-19 infection and mortality [18-20]. In addition to Vitamin D, an adequate intake of selenium and zinc are essential for reducing inflammations and improving immune functions [21,22]. A sufficient amount of iron, and vitamins B12, B6, E and A is also required for the maintenance of immune functions [23].

Protein

A proper intake of protein in a healthy diet is well-founded. Especially at this critical time, in order to stay protected from muscle inactivity, a proper protein intake must be in a range of 1.4-2.0g/kg based on different factors including exercise intensity and age [24,25].

Detrimental Effects of Alcohol and Tobacco

Keeping in mind the nutrition that body needs, there are also items that should be avoided. As mentioned before, social isolation may have negative effects, and it may cause psychological and emotional changes which can lead to weight gain [26], increased use of alcohol, tobacco, or drugs. Some people cope with stress specifically by alcoholic drinks. These kinds of drinks have little nutrition value and high in calorie, consequently excess consumption is linked to many different health problems [27]. Moreover, smoking cessation will reduce the spread of COVID -19, hence it is important to make awareness and emphasize on reducing tobacco products during this pandemic [28].

Calorie Restriction

Since lockdown may cause inactivity, the calorie intake should be controlled and restricted. However, calorie restriction should include all of the necessary nutrients, because undernutrition has been associated as the primary factor of immunosuppression [29]. As calorie intake restriction will reduce the destructive effects of physical inactivity, overeating on the other hand will exacerbate the impacts [30].

Obesity

Contrary to undernutrition, there is diet-induced obesity which is caused by inactivity or an unhealthy diet. Also obesity may be the cause of problem in energy balance that lead to metabolic disorders and weight gain [31]. Studies have shown that obesity and MetS are associated with insulin resistance, low grade inflammation [32], cardiovascular disease [33], certain types of cancer and impaired immune responses [34-37]. Several studies revealed the negative impact of obesity on COVID-19 infection and mortality [38-41]. Curbing obesity by choosing a healthy diet will improve the quality of life and also decrease the risk of viral infections.

Conclusion

In this critical time, taking authority advices seriously and choosing food and nutrition intake with cautious is highly recommended. As Hippocrates said: "Let food be thy medicine and

medicine be thy food". It is crucial to understand the vital role of nutrition in order to strengthen the immune system and stay healthy to reduce the risk of viral infections including COVID-19.

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