



## RECOVERY OF PATIENTS DIAGNOSED WITH COVID-19, ASSOCIATED WITH NUTRITIONAL SUPPORT

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### SUMMARY

In December 2019, China reported the occurrence of several cases of pneumonia of unknown etiology, with common exposure. On January 7, 2020, Chinese authorities identified a new type of virus in the Coronaviridae family as the causative agent of the Severe Acute Respiratory Syndrome – Coronavirus outbreak.

- 2 (SARS-CoV-2). Since then, the sudden emergence, the rapid rate of contagion and evolution, as well as the social, economic and health system impacts, have frightened Brazil and the entire world. The selection was made based on articles that talked about covid-19 and its degradation in the patient's nutritional status, in addition to the consequences of their treatments on their health, articles were also selected that showed how nutrition was linked to improvement in the patient's health. nutrition of patients with covid-19. Keywords: Covid-19, Patient, Nutrition.

### INTRODUCTION

The World Health Organization (WHO) declared at the beginning of 2020 that the outbreak of the disease caused by the new coronavirus (COVID-19) constitutes a public health emergency of international importance, this being the organization's highest level of alert, what was foreseen in the International Health Regulations, characterized it as a global pandemic (BRASIL, 2020b). Every day, the Ministry of Health, through the Health Surveillance Secretariat (SVS/MS), publishes consolidated data on COVID-19 and aims to officially communicate about the epidemiological situation of this pathology in Brazil (BRASIL, 2020c).

SARS-COV-2 is a respiratory virus that causes acute respiratory syndrome, with inflammatory potential. The clinical symptoms are diverse and may include fever, cough, dyspnea, fatigue, headache, ophiophagia, ageusia, anosmia, nausea, runny nose, diarrhea, in addition to other respiratory and multisystem symptoms. In Severe Acute Respiratory Syndrome (SARS) due to COVID-19, the serious increase in pro-inflammatory cytokines has been associated with extensive pulmonary infiltration of neutrophils and the need for mechanical ventilation (Wang et al., 2020b).

Scientific evidence has shown that elderly individuals, over 60 years of age, or even individuals of any age, with chronic diseases, such as metabolic syndrome, cardiovascular diseases, obesity, hypertension, diabetes, hypovitaminosis D, asthma, chronic lung diseases and renal failure, are the most prone to complications from COVID-19. In these people, there is a high rate of hospitalization due to the frequent occurrence of respiratory complications and the need for oxygen support, increasing the mortality rate from the disease (Szklo, 2020; Costa et al., 2020; De Lucena, 2020).

Nutrition also has a well-established positive impact on immune function. Vitamins and minerals have important roles, as they participate in supporting the innate and adaptive immune system, therefore, micronutrient deficiency can affect immunity and reduce the body's ability to fight infections, assist in the development and maintenance of physical and to produce antimicrobial activity (CALDER PC, et al., 2020).

Due to the emergency situation caused by the spread of the virus, it has become essential to review all nutritional assistance protocols and practices in order to bring them closer to the current experience, with the aim of ensuring the well-being of hospitalized patients and employees, as well as maintaining the quality of the hospital service provided (COELHO-RAVAGNANI CF, et al., 2020; MULHERIN DW, et al., 2020; PIOVACARI SMF, et al., 2020).

### 2. DEVELOPMENT

This study was an integrative review, according to Ercole, Flaviafalci (et.al), integrative review





It is a method that provides the synthesis of knowledge and the incorporation of the applicability of results from significant studies in practice.

To carry out this study, the following descriptors were used (recovery from covid-19, nutritional support from covid-19, patient recovered from covid-19), limited to Portuguese and English, studies carried out with human beings, texts in integrates and themes compatible with those researched in this work, with time limits on the publication period from 2020 to 2021, using the following databases: Scielo (5 articles), Ministry of Health (2 articles), Google Scholar (10 articles).

The selection was made based on articles that talked about covid-19 and its degradation in the patient's nutritional status, in addition to the consequences of their treatments on their health, articles were also selected that showed how nutrition was linked to improvement in the patient's health. nutrition of patients with covid-19. After excluding 12 articles that did not address the topic compatible with the research, 5 articles remained that were read in full, concluding the study.

## RESULTS AND DISCUSSION

COVID-19 is a critical illness that, in individuals who present with more severe signs and symptoms, is associated with a state of catabolic stress in which patients demonstrate a systemic inflammatory response associated with complications of increased infectious morbidity, multiple organ dysfunction, prolonged hospitalization and considerable mortality rate (MCCLAVE et al., 2016).

Related to prevention stages, which are generally associated with a set of measures aimed at combating some health hazard, safety practices and actions related to personal hygiene have become fundamentally strategic points for preventing the new coronavirus. Among the most varied measures are practices such as: frequent hand hygiene with soap and water, use of some antiseptic material, such as 70% alcohol; Avoid touching your face without prior hygiene; Do not have contact with sick people; Cover areas of the face when coughing or sneezing, with the elbow flexed over the face or use disposable tissues; Preferring to stay at home to avoid contact with other people (distancing measures); Clean and disinfect objects and surfaces frequently; Wear a mask in public environments; Correctly sanitize food purchased in supermarkets and open-air markets; Carry out basic hygiene measures (BRASIL, 2020a).

Social distancing is a very important point to prevent the spread of the virus, and the possible growth of the epidemiological curve. According to the most varied studies, the decrease in direct contact between people, where it is no longer allowed to identify the direct route of contagion, at a given moment, will directly reflect on the statistics (BEZERRA et al., 2020).

As for the specific treatment for this new virus, its protocol is still uncertain, being in the testing phase, however, both the WHO and the health authorities of various governments around the world, based on observation of the occurrence of the disease, indicate following current medical guidelines, mainly due to the lack of a specific treatment. If the individual acquires the disease, the WHO has developed some basic recommendations, such as staying in home isolation; Wear a mask when coming into contact with another person; Whenever you use the bathroom, perform the necessary hygiene, both personally and in the environment; Separate cutlery, glasses, towels and personal objects; Sofas and chairs should not be shared, but they should be frequently cleaned with bleach or 70% alcohol; Keep windows open for air circulation, clean door handles frequently; Keep one meter away from other people; If someone in the house tests positive, all other residents will also be isolated for the next 14 days; If another resident of the house presents mild symptoms, the isolation period must be restarted; in case of more severe symptoms, seek emergency care (BRASIL, 2020b).

The diet must be varied and consist of foods of good nutritional quality. The quantity must be adequate, since both under and over nutrition are equally harmful. What does it say With regard to the Brazilian population, it is recommended that the diet is mostly composed of fresh or minimally processed foods. (ABARCA-GÓMEZ et al., 2017; BRASIL, 2014).

Among the most varied measures that can be used to prevent diseases, nutrition is a fundamental point, which is also reflected in human development, maintenance, balance and body homeostasis, and can act both in the prevention and treatment of various pathological conditions. Food is characterized as a human right, being the primary need that is directly linked to religious and cultural customs, habits, among other factors. An inadequate diet based on bad habits, which most often consists of nutrient deficiencies, promotes changes

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negative effects that directly interfere with the immune system, weakening it (OLIVEIRO et al., 2020).

Energy and nutrients obtained from food play an important role in the development and preservation of the immune system, therefore, any nutritional imbalance affects its competence and integrity (LÓPEZ; BERMEJO, 2017).

However, there is no scientifically proven superfood or nutritional formula capable of preventing viral contamination (CFN, 2020).

Some nutrients such as Vitamin A, C, Iron, Zinc and Selenium can act positively on the immune system. Under normal physiological conditions, it is possible to meet the daily needs for these micronutrients (MAGGINI et al., 2018; CFN, 2020).

Figure 1 – Foods rich in vitamins and minerals that support the immune system.

MICRONUTRIENTE:	ALIMENTOS FONTE:
<b>Vitamina A</b>	Pode ser encontrada em vários alimentos tanto de origem animal como vegetal: ovos, leite, queijos, fígado, legumes e verduras de cor alaranjada (abóbora, buriti, mamão, manga, cenoura) e de cor verde-escuros (almeirão, agrião, couve, espinafre, ora-pro-nobis, rúcula).
<b>Vitamina C</b>	As principais fontes de vitamina C são os alimentos cítricos como a laranja, limão, mexerica, acerola, dentre outras. O mamão a couve e o pimentão também são fontes de vitamina C.
<b>Ferro</b>	Pode ser encontrado em alimentos de origem animal e vegetal: carnes vermelhas, frango, feijão, guariroba, gergelim, jenipapo, mangaba, mostarda, ora-pro-nobis, rúcula, taioba dentre outras. A ingestão de alimentos fontes de vitamina C concomitante com fontes de ferro não-heme, favorecem sua absorção.
<b>Zinco</b>	É encontrado em alimentos de origem animal como carnes, peixes (sardinha), ovos e em alguns alimentos de origem vegetal como: feijão, lentilha, castanhas, gergelim e linhaça.
<b>Selênio</b>	São fontes desse nutriente: castanha-do-Brasil, feijão, farinha de trigo (integral), fubá de milho, macarrão integral e frutas como ameixa, manga, maracujá e melancia, com destaque para a castanha-do-Brasil que fornece uma generosa quantidade desse nutriente.

Source: BRAZIL, 2020; TACO, 2011.

Adequate nutritional status reflects the balance between a balanced food intake and the energy consumption necessary to maintain the body's daily functions. Whenever there is any factor that interferes with any of the stages of this balance, the risk of the individual developing malnutrition is imminent. These are more frequent situations in hospitalized patients, especially those who are seriously ill (SANTOS, et al. 2015).

In patients infected with SARS-CoV-2, protein intake has been identified as a determining factor in nutritional evolution and clinical prognosis (Zhang & Liu, 2020).

Current recommendations determine that, even in those patients who are not at risk of malnutrition, the supply should be hyperprotein (1.5 g/kg of weight/day), with calories around 25 to 30 Kcal/kg of weight/day. In addition, the diet must be enriched in vitamins and nutrients with immunomodulatory, anti-inflammatory and antioxidant properties (Jin et al., 2020). To achieve these recommendations, the use of oral nutritional supplements (ONS) has been a strategy adopted with good efficacy in patients with COVID-19, being necessary due to lack of appetite and difficulty in eating orally caused by dyspnea and respiratory discomfort. The nutritional strategy consists of offering ONS between meals or immediately after them (Jin et al., 2020).

## CONCLUSION

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Finally, the literature highlights the importance of nutrition as a strong ally for strengthening the immune system and adequate nutritional status, the daily consumption of healthier foods, thus ensuring faster recovery, thus the adoption of healthier eating practices represents an important aspect fundamental in preventing and combating COVID-19.

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