

Question submitted to RapidInfo4U

What is the impact of achieving adequate nutrition in the rehabilitation phase post COVID-19 infection?

Short Answer

At this time, there is no evidence on the impact of adequate nutrition in the rehabilitation phase post COVID-19. There is also limited evidence for the impact of adequate nutrition in the prevention and treatment of COVID-19. However, given the broader evidence on the impact of nutrition on recovery from infectious diseases, guidelines highlight the need to assess malnutrition in COVID-19 patients and to develop an appropriate plan to ensure necessary energy, protein, vitamin and mineral intakes.

Long answer

Impact of nutrition on COVID-19 rehabilitation

There is limited evidence for the impact of adequate nutrition on the treatment and rehabilitation of COVID-19 patients. An update of the American National Institutes of Health (NIH) COVID-19 treatment guidelines in December 2020 concluded that there is insufficient evidence on the effect of Vitamin C, Vitamin D, or Zinc supplementation on COVID-19 outcomes for both critically and non-critically ill patients [1] (Access the NIH Guidelines [here](#)). An evidence review published by the UK National Institute for Health and Care Excellence in December 2020 found only one RCT study of very low quality on Vitamin D supplementation for treatment of COVID-19 [2]. The review found that the evidence on the association between Vitamin D status and COVID-19 severity was mixed and of very low quality. Additional trials are recommended. On this basis, NICE recommended that people take a vitamin D supplement to maintain bone and muscle health at times where they have limited sun exposure which may be a particular risk when staying indoors due to the COVID-19 pandemic [3]. However, they do not currently recommend offering a vitamin D supplement solely to prevent or treat COVID-19 as part of routine practice (Access the NICE Guidelines [here](#)). The RapidInfo4U team produced an evidence summary on COVID-19 and Vitamin D which can be accessed [here](#).

Guidance on nutrition support for individuals with COVID-19

Given the lack of evidence on the impact of nutrition on rehabilitation from COVID-19, recommendations for adequate nutrition are primarily based on extrapolations regarding the symptoms of COVID-19 and their impact on nutrition. The symptoms and consequences of COVID-19 may affect dietary intake in a variety of ways such as through respiratory symptoms that create challenges for eating and drinking; high temperatures which affect energy utilisation; loss of taste and smell which may affect appetite; and fatigue which may impact on ability to prepare food [4,5,6]. There is also evidence that COVID-19 can cause gastrointestinal symptoms in a subgroup of patients [7]. The risk of malnutrition also increases with severity of COVID-19 infection. ICU admission and periods of mechanical ventilation can impact nutritional status, swallow ability as well as muscle mass and function [8].

In Ireland, the HSE provides guidance in relation to nutritional care for COVID-19 which highlights the need to support patients in their recovery from acute malnutrition and continued monitoring of nutritional status. It suggests that this may include counselling the patient to monitor their body weight following discharge. Access this information [here](#). The HSE has also published public advice on eating well while recovering from coronavirus. Access this information [here](#). Other resources are primarily targeted toward nutritional support during the treatment of COVID-19 but information from these may be used to inform the rehabilitation phase. The HSE National Health Library and Knowledge Service Virtual Team produced an evidence summary in April 2020 on dietetic advice for managing COVID-19 in patients over 65 years. Access this document [here](#).

A review of nutrition support guidelines in individuals with COVID-19 or recovering from it, was published in October 2020. It identifies three key areas of action: screening for malnutrition risk; development of care plans to address nutritional needs and ensuring continuity of nutrition support between settings [9]. Across the guidelines, there was emphasis on attention to meeting energy (calories) requirements as well as ensuring adequate protein, vitamin and mineral intakes are met. An expert consensus group in Australia and New Zealand developed guidelines for the nutrition management of critically and acutely unwell hospitalised

COVID-19 patients [6] Access the Australia and New Zealand guidelines [here](#). The European Society for Clinical Nutrition and Metabolism (ESPEN) also produced guidance for nutritional management of individuals with COVID-19 [8]. It includes recommendations for nutritional management for those in ICU or undergoing mechanical ventilation but also includes considerations for the post-ventilation period and broader nutritional management associated with COVID-19. Minimising the risk of spreading COVID-19 is a continued consideration when ensuring adequate nutrition in the rehabilitation phase. The following considerations from the ESPEN guidelines may be relevant to the rehabilitation phase of COVID-19 as well as the treatment phase. Accessed the full ESPEN guidelines [here](#).

- Malnutrition should be checked in those at greater risk such as older adults and individuals with chronic conditions.
- Diet counselling from an experienced healthcare professional should help patients with malnutrition optimise their nutritional status considering energy, protein and fat and carbohydrate needs. Counselling could be carried out remotely where possible to minimise risk of COVID-19 transmission.
- Patients with malnutrition are recommended to supplement with daily allowances of vitamins and minerals to maximise nutritional defence, though there is no direct evidence that micronutrients prevent or improve the outcomes of COVID-19.
- Exercise should be encouraged within the home or outdoors when safe to do so.
- Oral nutritional supplements should be used when nutritional goals cannot be reached through counselling and food fortification. Nutritional support should be continued after hospital discharge with oral nutritional supplements.
- When nutritional goals are not met by oral intake, enteral nutrition should be administered. Parenteral nutrition should be considered with enteral nutrition is unable to meet targets. Following mechanical ventilation, swallowing problems and dysphagia can be problematic for patients. Texture-adapted food can be considered and if unsafe, enteral nutrition can be administered.

Conclusion

Currently, there is no evidence on the impact of adequate nutrition in the rehabilitation phase post COVID-19. However, ensuring adequate nutrition is endorsed by guidelines with particular emphasis on identifying and treating malnutrition during and following COVID-19 infection. Guidelines for nutrition support are primarily targeted at the treatment of COVID-19 but have relevant considerations for the rehabilitation phase post COVID-19 infection.

Disclaimer

This document has not been peer-reviewed; it should not replace individual clinical judgement. The views expressed in this document are not a substitute for professional medical advice. The content of this document is correct as of 11/01/2020

Rapid Evidence Search & Summary (RESS)

Our team of multidisciplinary researchers and clinicians in conjunction with the University of Limerick Library and Information Services have developed a detailed protocol for conducting a Rapid Evidence Search & Summary (RESS) to answer questions submitted to RapidInfo4U. Our RESS protocol uses PICO or PEO methods to refine your question and follows a detailed search procedure capturing guidance documents from governments, institutions and professional bodies; searching clinical and COVID specific repositories; and identifying the most recent reviews and RCTs in the scientific literature using established databases.

References

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