

# **ESPEN expert statements and practical guidance for nutritional management of individuals with SARS-CoV-2 infection**

Barazzoni R, Bischoff SC, Breda J, Wickramasinghe K, Krznaric Z, et al. *Clin Nutr.* 2020

## **Introduction:**

The acute respiratory complications associated with COVID-19 cause significant morbidity and mortality in patients. Older patients with compromised immunity, with polymorbidity (i.e., two or more chronic diseases), and those suffering from malnutrition are at even a greater risk of complications and death from COVID-19.

## **Objective:**

The European Society for Clinical Nutrition and Metabolism (ESPEN) proposes recommendations based on current ESPEN guidelines and on expert advice for the nutritional management of patients with COVID-19. The focus of these recommendations is patients at-risk-for or infected with SARS-CoV-2 and patients in the intensive care unit with SARS-CoV-2. The aim of these guidelines is to improve the short- and long-term recovery of these seriously ill patients.

## **Expert Opinion Recommendations**

### **Statement 1: Check for malnutrition**

Nutritional Screening and Assessment should be completed on all older adults and for those with polymorbid conditions using the MUST criteria, or if the patient is hospitalized, using the NRS-2002 tool.

### **Statement 2: Optimization of nutritional status**

Patients identified with malnutrition (undernutrition and overnutrition) should receive dietary counseling from a nutrition professional.

**Energy needs should be assessed based on indirect calorimetry, prediction equations, or weight-based calculations.**

- Polymorbid patients >65 years: 27 kcal/kg body weight per day
- Severely underweight polymorbid patients: 30 kcal/kg body weight per day
- Older persons: 30 kcal/kg body weight per day

**Protein needs are estimated using weight-based calculations.**

- Older persons: 1 g/kg body weight per day.
- Polymorbid medical inpatients:  $\geq 1$  g/kg body weight per day

Fat to carbohydrate (CHO) calorie ratios should be adapted for the patient's respiratory status: no respiratory deficiency — fat: CHO 30:70 and on supportive ventilation — fat: CHO 50:50.

### **Statement 3: Supplementation with vitamins and minerals**

Patients with malnutrition should receive daily allowances of vitamins and trace elements (vitamins A, D, E, B<sub>6</sub> and B<sub>12</sub>; zinc; selenium; and other micronutrients).

### **Statement 4: Regular physical exercise**

Patients, in quarantine taking precautions, should achieve at least 30 minutes of regular physical exercise each day or >1 hour of exercise every other day to maintain fitness, muscle mass, and mental health.

### **Statement 5: Oral nutritional supplements (ONS)**

Oral nutritional supplements should be used to meet the patient's needs when dietary counseling and regular food fortification are not meeting the patient's nutritional needs. ONS should be initiated within 24-48 hours of hospital admission and provide at least 400 kcal/day with 30 g protein/day.

## **Statement 6: Enteral nutrition (EN)**

Enteral nutrition should be given to patients whose nutritional needs can not be met orally for more than 3 days or is expected to be below half of energy requirements for a week or more. Parenteral nutrition can be used if EN is not possible.

## **Statement 7: Medical nutrition in non-intubated ICU patients**

In non-intubated ICU patients who are unable to meet their energy and protein requirements with regular dietary intake, the use of ONS should be initiated. Enteral nutrition is the secondary choice, followed by peripheral parenteral nutrition.

## **Statement 8: Medical nutrition in intubated ICU patients**

In intubated and ventilated ICU patients, EN should be initiated via a nasogastric tube. Post-pyloric feedings should be given to patients with gastric intolerance and/or high risk for aspiration. The patient's prone position does not prohibit the use of EN.

Energy requirements are calculated using indirect calorimetry. If calorimetry is not available, use V<sub>O2</sub> (oxygen consumption) from the pulmonary arterial catheter or V<sub>CO2</sub> (carbon dioxide production) from the ventilator.

Hypocaloric nutrition (not exceeding 70% of energy expenditure) should be used in the early phase of acute illness. After day 3, increase to 80-100% energy requirements.

Protein requirements are calculated for frail patients at 1.3 g/kg protein per day and obese patients at 1.3 g/kg per day of adjusted body weight.

## **Statement 9: Medical nutrition in intubated ICU patients (intolerance to full dose EN)**

All efforts should be made to administer enteral nutrition via a gastric tube during the first week of the patient's stay in ICU. Energy requirements can be increased to meet 80-100% caloric requirements by day 4. Protein requirements should be met by day 3-5. The use of omega-3 fatty acids may improve oxygenation. Parenteral nutrition should be considered on a case-by-case basis.

## **Statement 10: Nutrition in ICU patients with dysphagia**

Consider the use of texture-adapted foods after extubation. Post-extubation swallowing disorders may occur after prolonged intubation and last up to 21 days in the elderly. If aspiration occurs, post-pyloric enteral nutrition may be needed.

## **Discussion:**

ESPEN has provided expert guidance on the management of nutritional support for older, frail and comorbid patients with COVID-19 to optimize recovery.

## **Conclusions:**

Nutritional intervention should be an integral part of the patient's care plan to optimize care and improve survival. To support a full recovery, patients should be discharged from the hospital with an individualized nutrition plan including ONS. ONS usage should be continued for one month after discharge with efficacy assessed on a monthly basis.

Summary prepared by Nestlé Health Science.

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