

# NUTRITIONAL MANAGEMENT OF INDIVIDUALS WITH SARS-COV-2 INFECTION<sup>1-4</sup>

Prevention, diagnosis and treatment of malnutrition should be an integral part of the management of **COVID-19 patients** to improve both short- and long term prognosis



**STAGE/  
SEVERITY OF  
SARS CoV-2-  
infection**

## ESPEN Practical Guidance<sup>1</sup> - Statement 1:

Patients at risk for poor outcomes and higher mortality following infection with SARS-COV-2, namely older adults and polymorbid individuals, should be checked for malnutrition through screening and assessment. The check should initially comprise the MUST criteria\* or, for hospitalised patients, the NRS-2002 criteria\*\*.

## LOCAL AND GLOBAL GUIDANCE

### ESPEN Practical Guidance<sup>1</sup>-Statement 5:

Oral nutritional supplements (ONS) should be used whenever possible to meet patients' needs, when dietary counseling and food fortification are not sufficient to increase dietary intake and reach nutritional goals.

ONS shall provide at least 400 kcal/day including 30g or more of protein/day and shall be continued for at least one month. Efficacy and expected benefit of ONS shall be assessed once a month.

### Renal Nutrition Group (RNG) of BDA Guidance<sup>2</sup> - Recommendation 5.1:

For patients whose dialysis schedule is reduced, the following guidance should be considered, to minimise risk of potential complications associated with hyperkalaemia and fluid overload:

- Potassium - 50-70mmol per day, or no more than 1mmol/kgIBW/day where possible
- Fluid - No more than 500-750ml/d in anuric patients, or 500mls plus daily urine output, in accordance with local policy
- Salt - No more than 5g per day
- Protein - Consider advising patients to reduce dietary protein intake to 0.8-1g/kg/d, particularly in patients who are complaining of uraemic symptoms.

### AuSPEN Critical Care Guidelines<sup>3</sup> - Recommendation 3:

- 25kcal/kg bodyweight/day after the first 5 days of illness (and up to 30kcal/kg bodyweight/day for severely unwell patients or those who have a prolonged admission (e.g. ultracorporeal membrane oxygenation (ECMO), continuous renal replacement therapy (CRRT), or length of mechanical ventilation (MV) >7days)
- Protein: at least 1.2g/kg bodyweight/day.

### Recommendation 8:

Recommend the use of an energy-dense EN formula (1.25-1.5 kcal/ml).

## ABBOTT NUTRITION SELECTION GUIDE

### ENSURE<sup>®</sup> TWOCAL HN

### ENSURE<sup>®</sup> PLUS

For patients with, or at risk of developing disease-related malnutrition.



2 x 200mL bottles  
per day:  
800kcal  
34g protein



2 x 200mL tetra paks  
per day:  
600kcal  
25g protein

### NEPRO<sup>®</sup> LP

For renal patients not on dialysis or receiving infrequent dialysis



2 x 220mL bottles  
per day:  
802kcal  
20g protein  
13mmol potassium  
0.9g salt

### NEPRO<sup>®</sup> HP

For renal patients on dialysis



2 x 220mL bottles  
per day:  
802kcal  
36g protein  
12mmol potassium  
0.8g salt

**AT HOME**  
Disease Specific

**ICU**  
Severe cases

### JEVITY<sup>®</sup> PLUS

Fibre-enriched



1.2kcal/mL, 56g/L protein;  
18% energy from protein

### JEVITY<sup>®</sup> HICAL

Fibre-enriched



1.5kcal/mL, 64g/L protein;  
17% energy from protein

### ENSURE<sup>®</sup> PLUS HN

Fibre-free



1.5kcal/mL; 63g/L protein;  
17% energy from protein

Increase energy and protein\* levels progressively

## STAGE/ SEVERITY OF SARS CoV-2- infection

### ESPEN Practical Guidance<sup>1</sup> - Statement 1:

Patients at risk for poor outcomes and higher mortality following infection with SARS-CoV-2, namely older adults and polymorbid individuals, should be checked for malnutrition through screening and assessment. The check should initially comprise the MUST criteria\* or, for hospitalised patients, the NRS-2002 criteria\*\*.

## LOCAL AND GLOBAL GUIDANCE

### AuSPEN Critical Care Guidelines<sup>3</sup> - Recommendation 8:

Recommend avoiding the prescription of a highly concentrated enteral formula (2kcal/ml) unless essential for further fluid restriction.

### Critical Care Specialist Group (CCSG) of BDA Guidance<sup>4</sup> - Renal replacement therapy recommendation:

CCSG recommends that volume restricted/ low electrolyte enteral feeds are considered where necessary according to usual practice.

### Proning recommendation:

If post-pyloric feeding is not available, consider alternative options such as a semi-elemental enteral feeds or Parenteral Nutrition (PN).

Loss of skeletal muscle mass and muscle function may be tremendous and a major problem in ICU survivors. Prolonged reported duration of ICU stay above two weeks for many COVID-19 patients is likely to further enhance muscle-catabolic conditions. Appropriate energy delivery avoiding overfeeding and adequate protein administration are critical to prevent this severe loss of muscle mass and function<sup>5</sup>.

### AuSPEN Critical Care Guidelines<sup>3</sup> - Recommendation 18:

Nutrition for non-ventilated patients and those receiving high flow nasal oxygen (HFNO): Recommend routine provision of an appropriate oral diet (e.g. high energy, high protein), and oral nutrition supplements (e.g. 1.5 or 2 kcal/ml oral supplement) as soon as oral intake is commence.

### As noted in ESPEN Polymorbid guidelines<sup>6</sup>

In polymorbid medical inpatients at high risk of malnutrition or with established malnutrition aged 65 and older, continue nutritional support post hospital discharge with either ONS or individualised nutritional intervention shall be considered to lower mortality.

## ABBOTT NUTRITION SELECTION GUIDE

### TWOCAL® HN RTH

Fibre-enriched  
For volume/fluid  
restricted patients



2kcal/mL; 84g/L protein;  
17% energy from protein

### NEPRO® HP

Fibre-enriched  
For renal patients  
on dialysis



Per 500mL RTH: 911kcal;  
41g protein; 18% of energy  
from protein;  
14mmol potassium;  
15mmol sodium

### VITAL® 1.5KCAL

Fibre-free  
For some GI intolerant  
patients



1.5kcal/mL; 68g protein;  
18% energy  
from protein; 100%  
peptides; 70% of  
total fat as medium chain  
triglycerides

Increase energy and protein\* levels progressively

## ICU

### Complications

## ICU ACQUIRED WEAKNESS

### Recovery

### ENSURE® TWOCAL HN

### ENSURE® PLUS

For patients with, or at risk of developing disease-related malnutrition.



Strawberry in  
Australia only

2 x 200mL bottles  
per day:  
800kcal  
34g protein



2 x 200mL tetra paks  
per day:  
600kcal  
25g protein

### ENSURE® TWOCAL HN

### ENSURE® PLUS

For patients with, or at risk of developing disease-related malnutrition.



Strawberry in  
Australia only

2 x 200mL bottles  
per day:  
800kcal  
34g protein



2 x 200mL tetra paks  
per day:  
600kcal  
25g protein

EN = Enteral Nutrition  
RTH = Ready-to-Hang

+ Additional protein may be required

The above Abbott Nutrition Selection Guide has been developed based on local and global guidelines for the nutritional management of individuals with COVID-19. This is a guide only. Further details can be found at [www.abbottnutrition.com.au](http://www.abbottnutrition.com.au) or contact your local Abbott representative.

\*MUST criteria: see <https://www.bapen.org.uk/screening-and-must/must-calculator>

\*\* NRS-2002 criteria: <https://www.mdcalc.com/nutrition-risk-screening-2002-nrs-2002>

Note: In Australia and New Zealand other screening tools may be used such as Malnutrition Screening Tool (MST) or the Mini Nutritional Assessment - Short Form (MNA-SF).

#### References:

- Barazzoni R et al., ESPEN expert statements and practical guidance for nutritional management of individuals with SARS-CoV-2 infection, Clinical Nutrition: <https://doi.org/10.1016/j.clnu.2020.03.022>
- Renal Nutrition Group (RNG) of the British Dietetic Association guidance on management of renal nutrition and dietetic services during the COVID-19 pandemic: <https://www.bda.uk.com/uploads/assets/bed84fc4-aea8-4880-bd6bf0d478464ef6/Renal-Nutrition-Group-COVID-19-Guidance-final-version-v1.pdf>
- Australasian Society of Parenteral and Enteral Nutrition (AuSPEN), Nutrition Management for Critically and Acutely Unwell Hospitalised Patients with COVID-19 in Australia and New Zealand: <https://custom.cvent.com/FE8ADE3646EB4896BCEA8239F12DC577/files/93ecb5eadf7244faa98d9848921428a8.pdf>
- Critical Care Specialist Group (CCSG) of the BDA Guidance on management of nutrition and dietetic services during the COVID-19 pandemic: <https://www.bda.uk.com/uploads/assets/f5215258-7a34-4426-83620ba89f87c638/63decf82-d8b5-41d7-b5a6cbabe757a4a2/CCSG-Guidance-for-COVID-19-Formatted.pdf>
- Deutz N et al. Readmission and mortality in malnourished, older, hospitalized adults treated with a specialized oral nutritional supplement: A randomized clinical trial. Clinical Nutrition (2015)
- Gomes F et al. ESPEN guidelines on nutritional support for polymorbid internal medicine patients, Clinical Nutrition (2017)

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