

## Guide to commencing parenteral nutrition in adult patients in intensive care with suspected or confirmed COVID-19

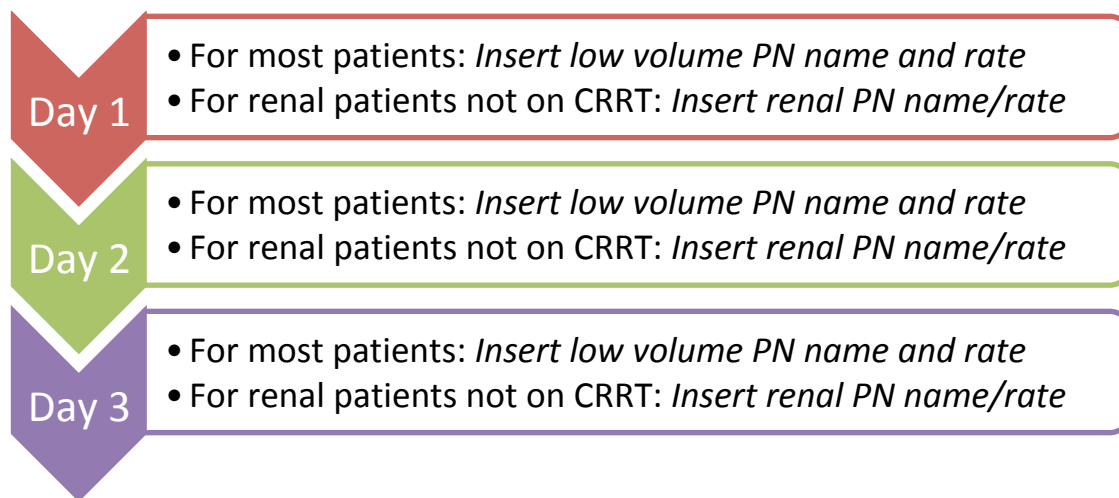
- **Enteral nutrition (EN)** should be used in preference to **parenteral nutrition (PN)** where the GI tract is functional and accessible.<sup>1-4</sup> PN should not be commenced unless all strategies to maximise EN delivery have been exhausted, such as motility agents and jejunal feeding.<sup>2,4</sup>
- **Parenteral nutrition (PN)** should be considered in patients that are malnourished, or at risk of malnutrition, and have:
  - An inadequate or unsafe oral / enteral intake<sup>3</sup>
  - Non-functional, inaccessible or perforated GI tract<sup>3</sup>
  - See local PN Policy for indications for short-term PN.
- **Timing of PN:**
  - For low nutritional risk patients: Day 3-7 in ICU if EN contraindicated<sup>4</sup>
  - For high nutritional risk patients and for severely malnourished: start early PN when EN is contraindicated.<sup>2,4</sup>
- Choose a lower volume, higher protein, normal electrolyte PN regimen for most patients – lower glucose and lower fat may also be beneficial initially.
- For renal patients not on CRRT, choose lower volume renal regimen.
- See Figure 1 for PN rates in patients not at refeeding syndrome risk.
- See Figure 2 for PN rates in patients at high refeeding syndrome risk.

**Once assessed by the dietitian:** follow the individualised patient specific care plan, or as per ICU Team.

\* **Propofol** is a lipid-soluble, short-acting IV sedative administered continuously to provide sedation in mechanically ventilated ICU patients. It is available in a lipid emulsion that provides energy as lipid, and needs to be considered when prescribing PN.

\*\***CRRT** – continuous renal replacement therapy.

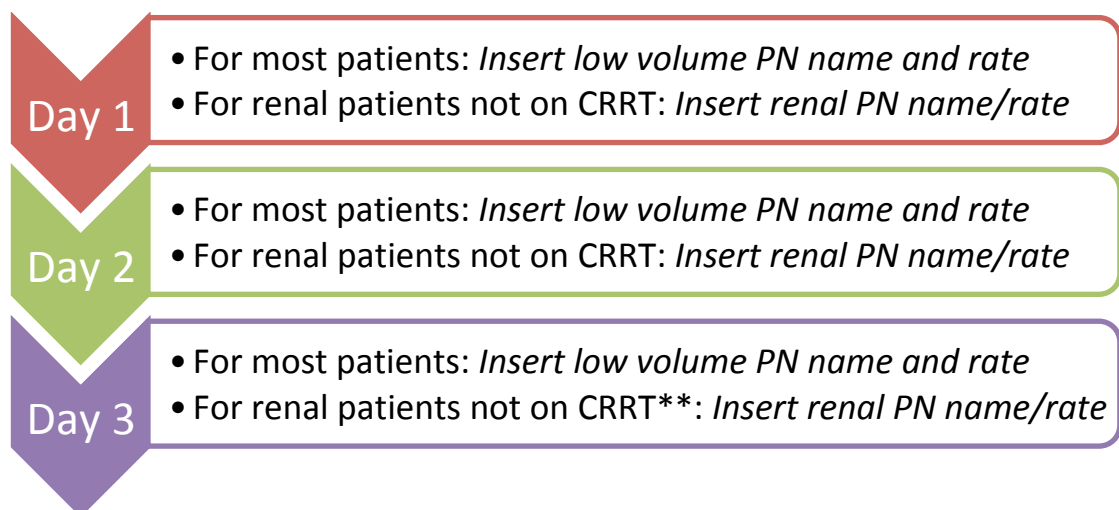
**FIGURE 1: Out-of-hours PN for patients **NOT** at refeeding syndrome risk**



**Note:**

- I. Slow increase over 2-3 days, e.g. 900kcal day 1, 1100kcal day 2, 1300kcal day 3.
- II. Give energy and protein provision for day 1, day 2 & day 3 for the low volume, high protein, regular electrolyte regimen, and for the renal regimen.
- III. Concurrent propofol infusion will give extra kcal and fat. Monitor triglyceride level.

**FIGURE 2: OUT-OF-HOURS PN FOR PATIENTS **AT HIGH RISK OF REFEEDING SYNDROME****



**Note:**

- I. Slow increase over 2-3 days, e.g. 500kcal day 1, 650kcal day 2, 800kcal day 3.
- II. Give energy and protein provision for day 1, day 2 & day 3 for the low volume, high protein, regular electrolyte regimen, and for the renal regimen.
- III. Give intravenous Pabrinex I and II od x 3d, and intravenous Cernevit od x 3d, or as per local Refeeding Syndrome PPPG.
- IV. Concurrent propofol infusion will give extra kcal and fat. Monitor triglyceride level.

## REFERENCES:

1. Canadian clinical practice guidelines for nutrition support in adult critically ill patients – 2015 updated recommendations. Available from: [www.criticalcarenutrition.com](http://www.criticalcarenutrition.com)
2. McClave SA, Taylor BE, Martindale RG, et al. (2016) Guidelines for the provision and assessment of nutrition support therapy in the adult critically ill patient: *Society of Critical Care Medicine (SCCM) and American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) Journal of Parenteral and Enteral Nutrition*, 40 (2), 159-211.
3. National Institute for Health and Care Excellence (NICE). (2006) Nutrition Support in Adults: Oral Nutrition Support, Enteral Tube Feeding and Parenteral Nutrition. Clinical Guideline 32. London, UK: National Collaborating Centre for Acute Care. Available from: <https://www.nice.org.uk/guidance/cg32>
4. Singer P, Blaser AR, Berger MA, Alhazzani W, Calder PC, Casaer MP, Hiesmayr M, Mayer K, Montejo JC, Pichard C, Preiser JC, Van Zanten ARH, Oczkowski S, Szczeklik W, Bischoff SC. (2019) ESPEN guideline on clinical nutrition in the intensive care unit. *Clinical Nutrition*, 38, 48-79.