# Nutrition Therapy in Critical Care

Use of enteral nutrition (EN) strongly recommended over parenteral nutrition (PN). PN only indicated if gut cannot be used (e.g. bowel perforation, bowel obstruction, proximal high output fistula) and if patient is known to be malnourished on admission or has received inadequate nutrition for 5-7 days in hospital.

## When do we feed?

**Early - within 24-48 hours of admission:**

Feeding within 36 hours: Infection reduced – 55%, hospital length of stay shortened – 2.2 days, mortality decreased – 48%.
Marik (CCM 2001;29-2264), Heyland (JPEN 2003;27:355)

## Who do we feed?

Patients who have been adequately resuscitated and are expected to be mechanically ventilated for greater than 48 hours.

## Why do we feed early?

**To preserve gut integrity and immune function:**

- The gastrointestinal (GI) tract is the largest immune organ in the body.
- EN supports GI structure and function (maintenance of gut barrier function, increased secretion of mucous, bile, IgA, maintenance of peristalsis and blood flow, favourable effects on GALT/MALT).
- With even brief disuse, gut integrity may deteriorate which can lead to increased gut permeability resulting in increased risk of infection and multisystem organ failure.

## How do we feed?

**Route:**

Tube feeding into stomach or small intestine usually via OG/NG tube. Other routes include NJ tube, pre-existing G-tube, GJ tube, or J-tube.
Need x-ray confirmation of OG, NG or NJ tube prior to starting feeds.
Need confirmation by surgeon to initiate EN in the surgical population.

## What do we feed?

**Volume-Based Feeding Protocol*** - first choice for majority of patients.
**Trophic Feeding Protocol*** - for patients on vasoactive agents or those not suitable for volume-based feeding; e.g. non-invasive ventilation, impending intubation, therapeutic hypothermia, jejunostomy tubes, risk of refeeding syndrome. Reassess daily the ability to transition to the Volume-Based feeding protocol.

*Note: Both protocols include metoclopramide adjusted for renal function which is to be reassessed daily.
Access the protocols via The Wave – My Tools➡ Policies & Procedures➡ Protocols

## Reasons to Refer to Registered Dietitian (RD):

- Tube feeding or PN initiation.
- Prolonged requirement for non-invasive ventilation, e.g. BiPAP, Optiflow.
- Concerns re: tolerance to nutrition support therapy, difficulty progressing to goal rate, initiation/discontinuation/change of renal replacement modality, poor nutrition status prior to admission, poor oral intake, therapeutic diet teaching required.
- Large fluctuation in propofol requirements.
- RDs at Lakeridge Health have Medical Directives which authorize them to prescribe nutrition orders. Oral diets and tube feeding can be managed by the RD once the physician has written an order to initiate.