---NUTRITION---

Nutritional needs

Prealb: best for monitoring protein levels (t ½ 2-4 days; alb 18 days)
Proteins do not exist in storage form; when intake inadequate, functioning muscle is degraded
Determining pts protein need is 1st step in developing nutrition plan (1gr/kg for nl person)
Adding nonprotein calories increases the efficiency of protein use
Glycogen stores last only 1-2 days; fat is primary source during long fasts
NL calorie requirements = 25/kcal/kg/day
Pts on ABXs need vit K
Folic acid is #1 vitamin deficiency
Water soluble B comlex vitamins should be added to nutritional source
Zinc stored in muscle; needed for wound healing and immune function, taste, smell
Copper should not be replaced in biliary obstruction
Chromium needed as cofactor for insulin
Selenium needed in glutathione peroxidase; excess czs CNS dysfunction
Glycolytic tissues requiring glucose: brain, RBCs, bone marrow, periph nerves, renal medulla

Nutritional support

Parenteral nutrition:↓villous height, ↓enz production, ↓absorption, ↓IgE, altered microlora
Higher rates of infxn and overall cxs in TPN pts
Decide by POD 4 if TPN is needed
Always use gut if it is working

---Enteral nutrition
Polymeric foods: intact macronutrients ("blenderized" food)
Chemically defined foods: contains substrate admixtures not found in food; unpalatable
Elemental diets: substrates in forms that require no digestion
Pre pyloric feeding: ensures maximal GI surface use, many diets to choose from
    Disadvantages: risk of reflux, vomiting, aspiration (↓risk with post pyloric)
Transnasal intubation is simplest route of access (elev HOB to 30 deg to prev aspiration)
Jejunal feeds must be continuous (cannot serve as a reservoir like stomach)
All enteral feeds require free H2O boluses of 400ml 3-4 times daily
Cxs: GI overload (fullness, bloating, cramping, n/v)
    Reflux, aspiration; avoid by measuring gastric residuals before feeding (if >250ml, hold feed)
Indications for enteral nutrition: NPO>5d, ↓ LOC, dysphagia, mech ventilation, major burns

---Parenteral support
HypoK, hypoPhos common
Indications
    Gut unavailable: ileus, malabsorption, short bowel synd, EC fistulas
    Bowel rest or inadeq PO: pancreatitis, burns, intractable diarrhea
    Adjunct: IBD, hepatitis, radiation enteritis
Tip of central venous catheter must lie in SVC
IJV catheter: easier to place, w/ fewer technical cxs; but ↑infxn risk b/c difficult to stabilize
Catheter sepsis in 3-5% pts; fever in TPN pts, check cath; usu resolves in 1d after cath removal (no ABX)
Change dressings 3 times per week
Fat intake must be <2.5g/kg/day; fat metab has lower RQ ratio than carbs = may help wean pts off vent
Lipid free solutions may be used for up to 3 weeks before deficiency occurs
IBD: commonly def in vit B12, folate, calcium, vit D, zinc: elemental diet ≥ steroids in causing remission
    TPN helpful when fistulas, obstruction, or short bowel synd (prot malnutrit, diarrhea) are present