Protocol for Managing the Ileostomy Patient

(depends on site of ileostomy, extent of ileal resection and condition of remaining bowel)

Common clinical problems

- High output/ileostomy diarrhoea (>500-1000ml daily) and/or lack of adaptation
- Loss of ileocaecal valve or loss of "ileal brake" mechanism
- Gastric hypersecretion
- Base deficit acidosis
- Slower gastric emptying of solids, but not liquids
- Bile acid loss/failure of enterohepatic recirculation of bile salts
- Malabsorption with malnutrition
- Inability to absorb vitamin B12

Clinical consequences

High output/ileostomy diarrhoea (>500-1000ml daily) and/or lack of adaptation; Loss of ileocaecal valve or loss of "ileal brake" mechanism; Gastric hypersecretion →

- **Dehydration/Fluid and electrolyte imbalances**
  Ileostomy losses contain 200mEq Na, 100mEq Cl and 10mEq K per litre which have to be replaced
- **Acute Kidney Injury**
- **Lactate acidosis**

Base deficit acidosis →

- **Large amounts of pancreatic bicarb lost through stoma.** In concomitant renal insufficiency (e.g. due to dehydration) renal bicarb reclamation may not be able to compensate for stoma losses.
- **Metabolic acidosis which may be worsened by lactate production from hypovolaemia/dehydration**

Slower gastric emptying of solids, but not liquids →

Nausea and early satiety may impair oral intake of adequate nutrition

Bile acid loss/failure of enterohepatic recirculation of bile salts →

- Depletion of bile salts may lead to progressive steatorrhoea with high stoma output/weight loss
- Fat soluble vitamin deficiency
- Unabsorbed fatty acids may bind Ca, Mg and Zn in fatty acid soaps leading to losses in stoma output and loss of bone mineral density
- Excess oxalate absorption may lead to renal oxalate stones
- Bile may become concentrated in cholesterol leading to cholesterol gallstones with cholecystitis

Malabsorption with malnutrition →

- Poor tolerance of oral and/or enteral nutrition
- Weight loss/poor nutritional status
- Development of nutrient deficiencies

Inability to absorb vitamin B12 →

Vitamin B12 deficiency with clinical symptoms
Vit B12 deficiency may precipitate secondary folate deficiency due to the methyl folate trap.

Essential management approach

Dehydration/Fluid and electrolyte imbalances; Acute Kidney Injury; Lactate acidosis →

1. **<u>MAINTAIN IV ACCESS</u> to replace fluid and electrolytes**
2. **ALL oral fluids must be isotonic** (e.g. oral rehydration solution or WHO cholera solution)
   Recipes: WHO <u>cholera</u> solution = 3.5g NaCl + 2.5g Na bicarb (or 2.9g Na citrate) + 20g glucose + 1 litre H20. Contains 90mmol Na per litre.
3. **NO FREE WATER should be allowed orally, due to dehydration risk**
4. **If on enteral nutrition, use isotonic formula using continuous delivery/controlled rate**
5. **Avoid hypertonic fluids and medications including undiluted electrolyte solutions, syrups and medications containing sugar alcohol sweeteners**
6. **If possible, avoid medications which interfere with the renin-angiotensin-aldosterone system**
7. **CONTROL DIARRHOEA/Manage ileostomy output by combination of anti-diarrhoeals (loperamide 4mg up to 4x daily or codeine, plus gastric anti-secretory agents such as H2-blockers or PPIs)**
8. **Incorporate guar gum or psyllium fibre to improve output consistency**
8. **Check for and treat infectious causes** (Clostridium difficile or other fungal, bacterial, viral or protozoal causes, or bacterial overgrowth)
9. **Rule out stricture/obstruction/other stoma dysfunction**
10. **Once oral diet established used modified diet/foods**

Base deficit acidosis consequences →

Provide IV fluids and replace sodium bicarbonate IV if serum levels <10mmol/l

Nausea and early satiety →

- **Provide oral nutrition supplement drinks**

Bile acid loss consequences →

- **Provide water-miscible forms of fat soluble vitamins (or if not available, very high dose fat soluble vitamins)**
- **Provide calcium and magnesium supplementation as necessary**
- **Provide bile acid binding agents e.g. cholestyramine**

Malabsorption consequences →

- **Use full (often not needed) or supplemental parenteral nutrition if ileostomy output not controlled; transition to enteral and oral as tolerated**
- **Enteral nutrients promote trophic adaptation of gut mucosa**
- **Compensate by increasing nutritional intake (double requirements may be needed)**
- **Provide semi-elemental feeds to facilitate absorption**
- **Provide MCT oil as energy supplement**

Vitamin B12 deficiency →

Provide IM vitamin B12 injections
If already deficient: 1000 ug IM alternate days for 2 weeks, then weekly til serum levels normalize, then monthly to quarterly for as long as ileostomy in place.
If prophylactic: Replacement 2-4 times a year as long as ileostomy present.

Nutritional factors impacting the Ileostomy Patient

Foods that may cause excessive flatulence (stoma bag explosions)	Foods that may cause excessive odour (should only occur when changing bag)	Foods that may cause unacceptable stool consistency or increased stoma output	Foods that stick in the stoma or come out whole
• Asparagus	• Onions	• Fat	• Beef
• Onions	• Eggs	• Alcohol	• Cabbage
• Baked and dried beans	• Fish/seafood	• Large meals	• Coleslaw
• Artichokes	• Baked beans	• Spicy foods	• Lamb
• Cabbage	• Cheese	• Prunes	• Nuts
• Cauliflower	• Cucumber	• Raw fruit	• Pineapple
• Lettuce	• Parsnips	• Beans	• Potatoes
• Corn	• Cauliflower	• Peas	• Mushrooms
• Mushrooms	• Broccoli	• Chocolate	• Sweetcorn
• Broccoli	• Turnips	• Curry	• Fruit and vegetable skins and pips
• Peas		• Cabbage	• Lentils
• Cucumber		• Liquorice	• Seeds
• Dried fruit		• Sprouts	• Tomato
• Brussels sprouts		• Spinach	• Coconut
• Carbonated drinks		• High fibre cereals	• Celery
• Beer		• Peaches	• Chinese food
• Fibrous fruit and vegetables		• Broccoli	
• Cereals		• Lettuce	
• Pineapple		• Celery	
• Celery		• Gooseberries	
• Lentils		• Grapes	
• Eggs		• Mango	
• Banana		• Orange	
• Curry		• Coffee	
• Radishes		• Hot drinks	
		• Apples	
		• Apricots	

Generally "safe" food items: marshmallows, rice, pasta, apples, pears, bananas, yoghurt, buttermilk, peppermint flavours