



Definition & types of intestinal failure

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Intestinal failure: definitions

Fleming & Remington, 1981

- Reduction in functioning gut mass below the minimum amount necessary for adequate digestion & absorption of nutrients

Nightingale, 2001

- Reduced intestinal absorption so that macronutrient and/or water & electrolyte supplements are needed to maintain health and/or growth

Pironi et al, 2014

- The reduction of gut function below the minimum necessary for the absorption of macronutrients and/or water & electrolytes
- Such that intravenous supplementation is required to maintain health and/or growth

Definitions

Intestinal failure

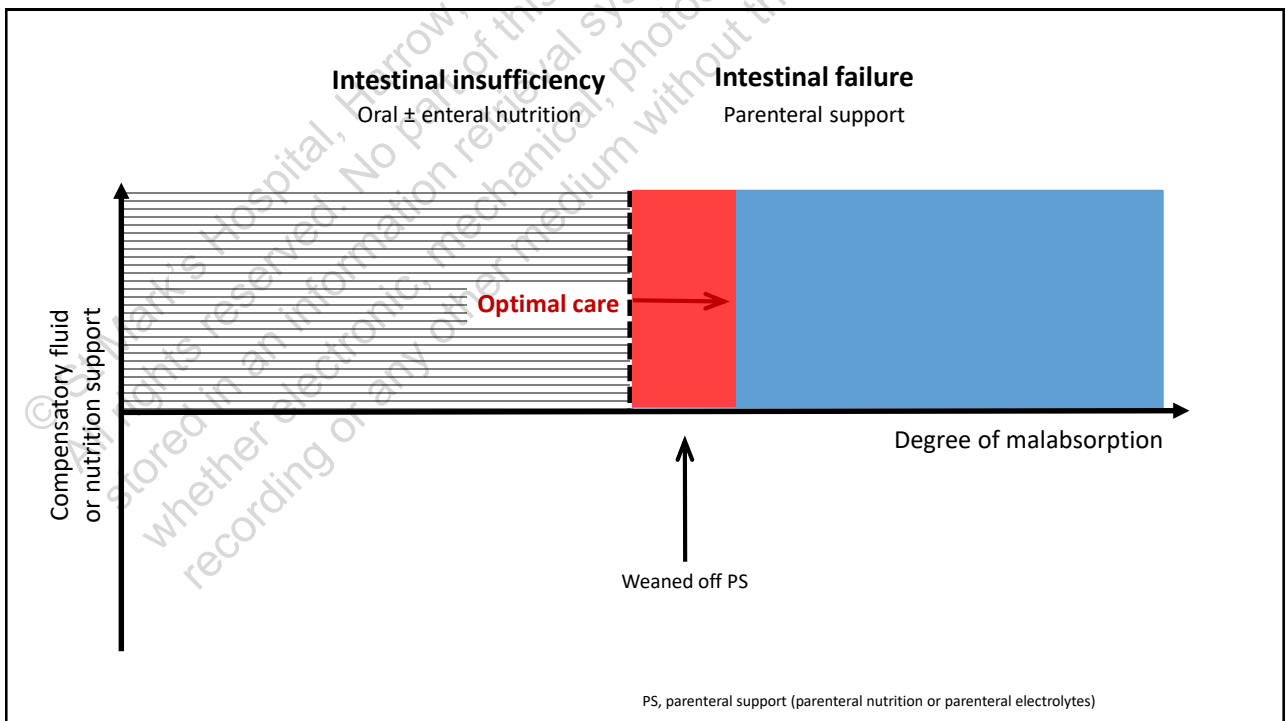
The reduction of gut function to below the minimum necessary for the absorption of macronutrients and/or water and electrolytes

such that IV supplementation is required to maintain health and/or growth

Intestinal insufficiency

The reduction of gut absorptive function that does **NOT** require intravenous supplementation to maintain health and/or growth

Pironi et al. Clin Nutr 2015 Apr;34(2):171-80



IF types: functional classification

Type 1 (self limiting)

- Acute post-op ileus
- Acute inflammation

Type 3 (long term)

- Short bowel syndrome
- Chronic obstruction
- Motility disorder

Type 2 (prolonged)

- GI complication
- EC fistula
- Abdominal sepsis

EC, enterocutaneous; GI, gastrointestinal

Lal et al. *Aliment Pharmacol Ther* 2006;24(1):19–31
Pironi et al. *Clin Nutr* 2015 Apr;34(2):171-80

Chronic IF requiring HPN

Chronic (benign) IF: 2014 Orphanet list of rare diseases²

Incidence

- 2–3 cases/million (Europe)^{1,3}
- 2–8 cases/million (UK)^{3,4,5}

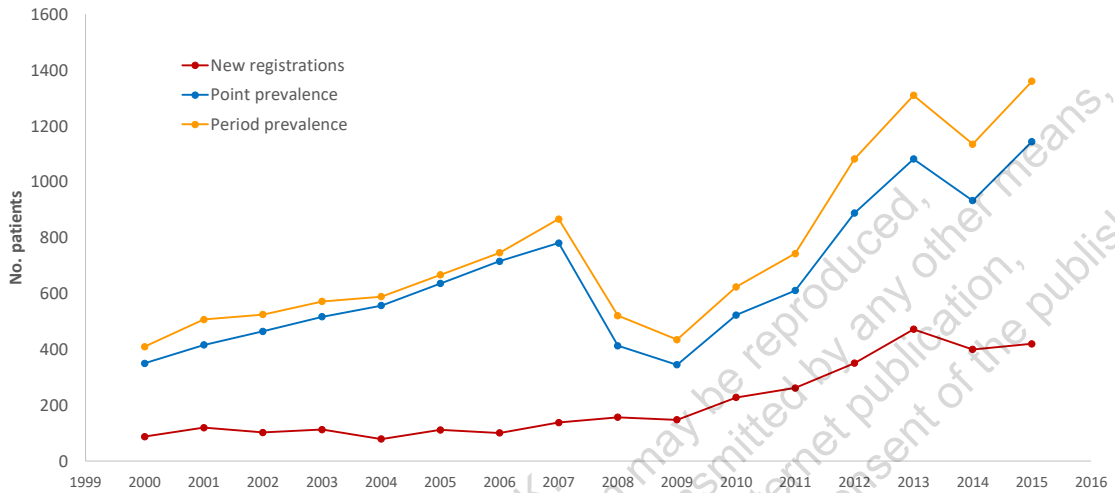
Prevalence

- 0.4/million (Poland)¹
- 5/million (Spain)¹
- 10–21/million (UK)^{3,4,5}
- 30/million (Denmark)¹
- 34/million (Europe)²

HPN, home parenteral nutrition
IF, intestinal failure

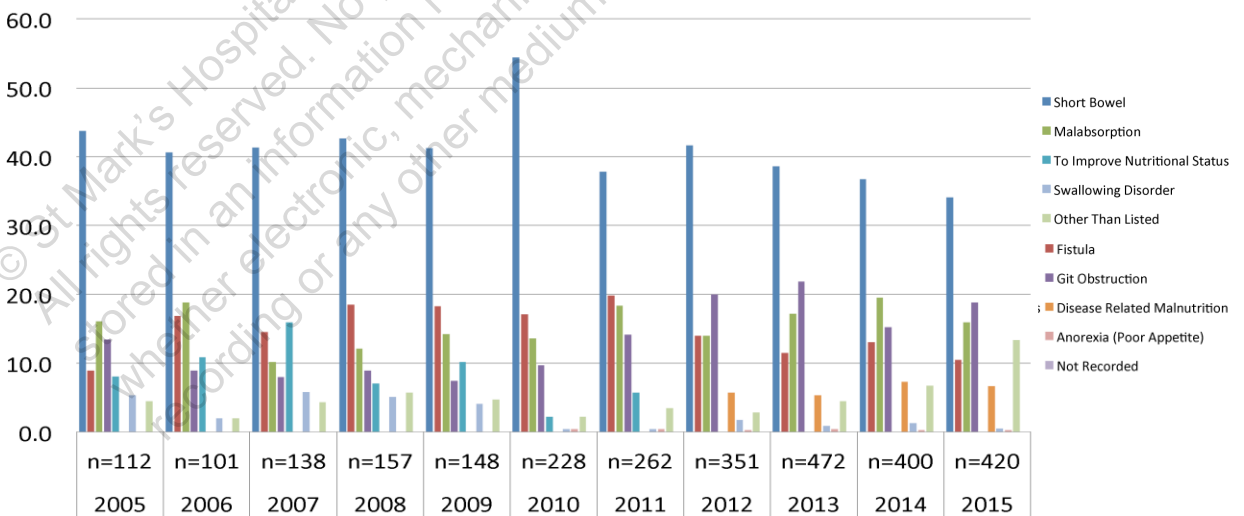
1. Jeppesen. *JPEN J Parenter Enteral Nutr* 2014;38(1Suppl):85–135
2. Orphanet Report Series. Prevalence of rare diseases: Bibliographic data. May 2014
3. BANS Report 2011, BAPEN. www.bapen.org.uk
4. BANS Report 2014, BAPEN. www.bapen.org.uk
5. BANS Report 2016, BAPEN. www.bapen.org.uk

BANS: HPN patients in the UK



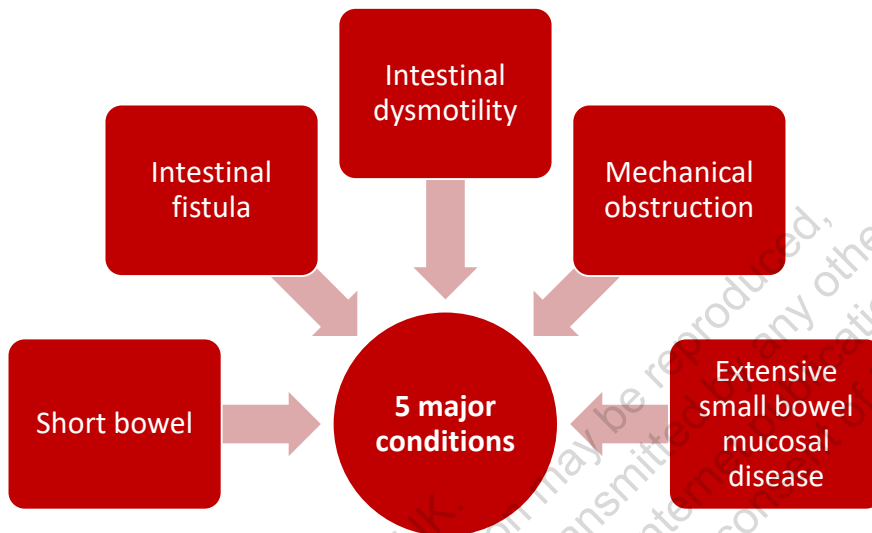
BANS Report 2016, BAPEN www.bapen.org.uk

UK: New HPN registrations 2005-15



BANS Report 2016, BAPEN www.bapen.org.uk

Intestinal failure: pathophysiological classification



Pironi et al. Clin Nutr 2015 Apr;34(2):171-80

Problem

Intestinal failure

Consequences

Dehydration

Malnutrition

Treatment

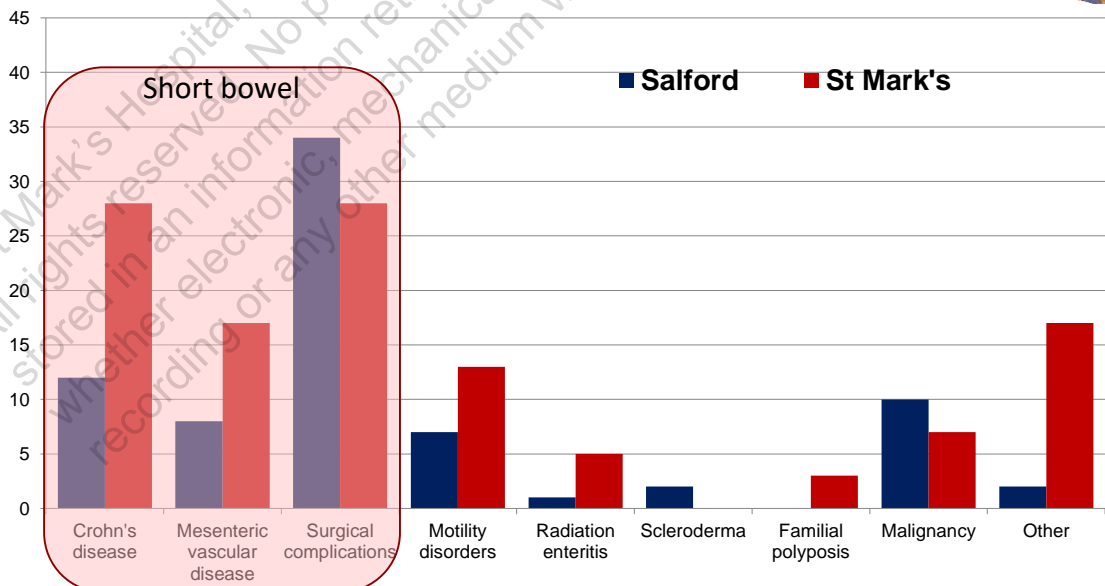
Water & salt

Nutrition

Severity of intestinal failure

	Nutrition	Water & electrolytes
Mild	Oral supplements Oral glucose / saline	Dietary adjustments Sodium chloride
Moderate (insufficiency)	Enteral	Enteral
Severe (failure)	Parenteral	Parenteral

IF aetiology: new patients (2014/15)



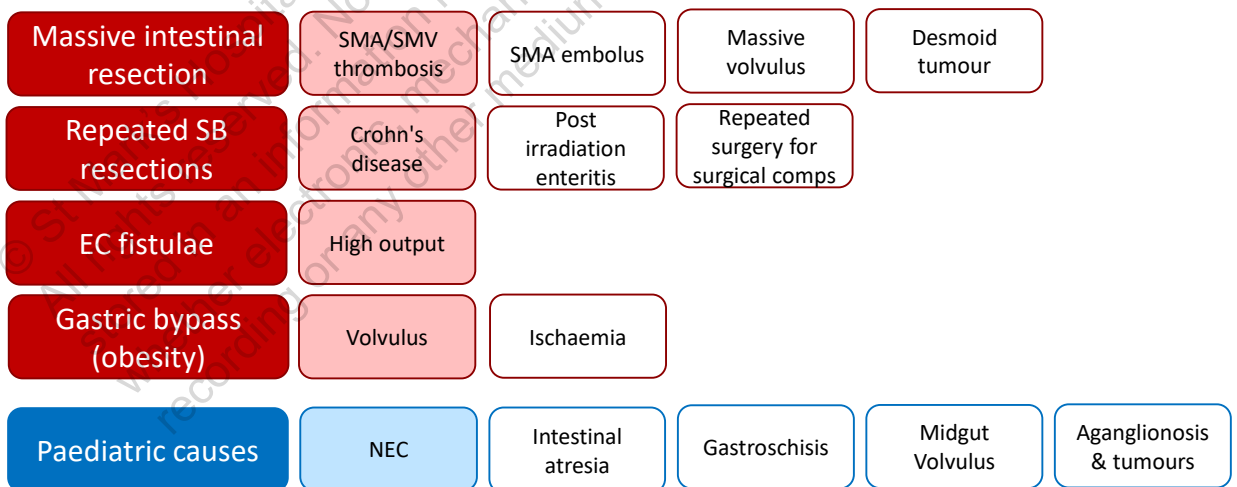
Short bowel: types

Mid small bowel resection	Jejunocolic anastomosis	Jejunostomy or high output fistula
Uncommon	Usually fluid balance maintained	Fluid balance <ul style="list-style-type: none"> • Net secretors • Net absorbers
Rarely problems <ul style="list-style-type: none"> • Nutrition • Fluid balance 	Nutritional issues when jejunal length <100 cm	Nutritional issues
Colonic digestion can salvage 700–950 kcal/day (carbohydrate fermentation and SCFA absorption)		

SCFA, short-chain fatty acids

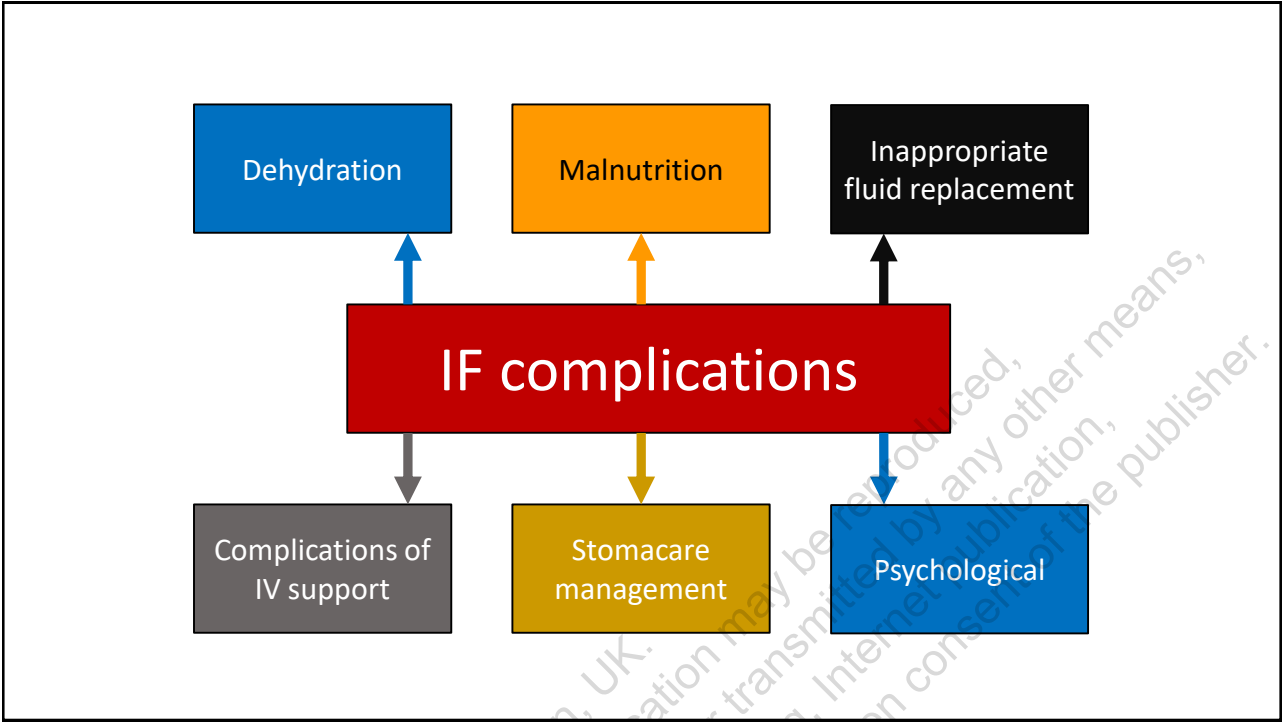
Nightingale (ed). *Intestinal failure*. 2001:177–361

Causes of short bowel



SMA, superior mesenteric artery; SMV, superior mesenteric vein

Weinstein WM, Hawkey CJ, Bosch J (Eds), *Clinical Gastroenterology & Hepatology: The Modern Clinician's Guide* 2005



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