The Lennard-Jones
Intestinal Failure Unit

St Mark's Hospital

Weaning parenteral nutrition

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Why?

- Improved survival if on PN <2 years[1]
- Reduced complications:
  - Associated with improved survival[2]
- European survey
  - 18% suitable for transplant, 2% weaned off HPN within 2 years[3]
- Quality of life
  - Increased number of infusions[4]
  - Daily CVC use[5]
  - Duration of HPN[6]
  - Fatigue induced by nocturia[7]
  - Fear of complications: CVC infections and liver failure[8]

1 Jeppesen, P.B.et al (1998) *Scand J Gastroenterol*, 33, 839. 2 Vantini, I et al (2004) *Dig Liver Dis,* 36, 46. 3 Pironi, L., et al (2008) *Gastroenterology,* 135, 61. 4 Pironi, L., et al (2004) *Transplant Proc.* 36, 255. 5 Bozzetti, F., et al (2002) *Clin Nutr,* 21, 475. 6 Smith, C.E. (1993) *JPEN,* 17, 501. 7 Persoon, A. et al (2005) *Clin Nutr*, 24, 304. 8 Winkler, M.F. (2005) J*PEN,* 29, 162.

Who?

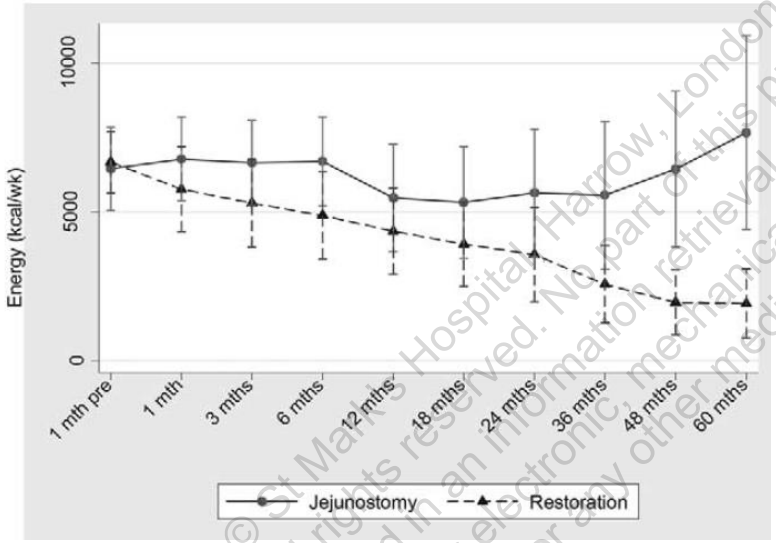
- Short bowel
  - Non malignant n=40, 12.5% rate of weaning[1]
  - Non malignant n=39, 23% rate of weaning[2]
- Highest rate of weaning in patients with Crohn's disease, mesenteric infarction, fistula closure, presence of colon and ICV
- Negative effect of deterioration in nutritional status[3]

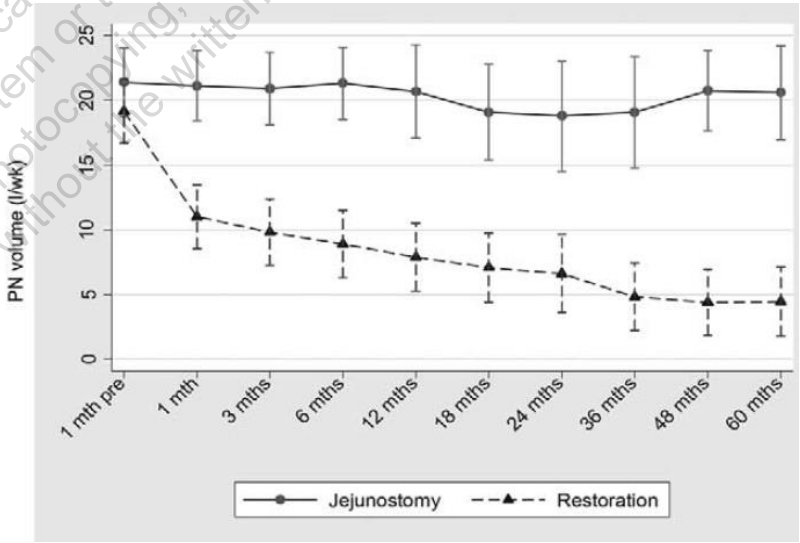
1 Pironi, L et al (2003) D*ig Liver Dis*, 35, 314. 2 Vantini, I et al (2004) *Dig Liver Dis,* 36, 46. 3 Pironi, L., et al (2004) *Transplant Proc.* 36, 255

Save the colon!!!

The effects of restoring bowel continuity on PN requirements after mesenteric infarction

- A retrospective review of data on patients from 2000 to 2010.
- 113 patients (61 women, median age 54 years)
- Fifty-seven (49%) patients had restoration of bowel continuity.
- PN was stopped within 1 year in 20 (35%), within 2 years in 29 (50%) patients and within 5 years in 44 (77%) patients (P = 0.001)





Conclusion: Anastomosis of remaining jejunum to colon can allow PN to be stopped

Adaba F *et al* (2015) *Annals of surgery*, 262:1059

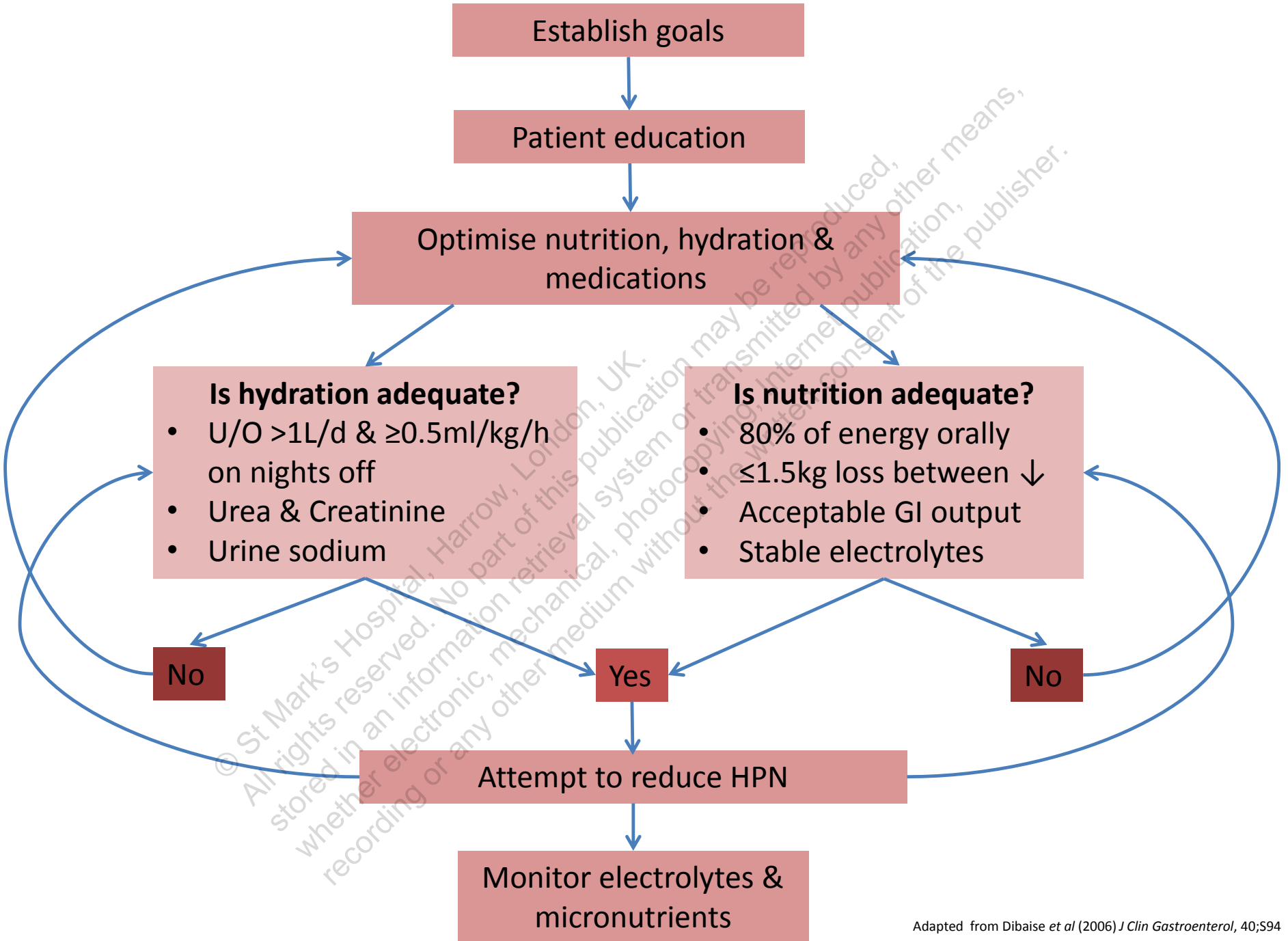
Issues to consider

- Length & quality of bowel, presence of colon & ICV
- Absence of disease in remaining bowel
- Nutritional status
- Need to optimise food & fluid management based on anatomy
- Ability to consume appropriate diet
  - Difficulties adhering to short bowel regimen
- Patient understanding and education
  - Provide written information and educational sessions
- Experienced MDT

How?

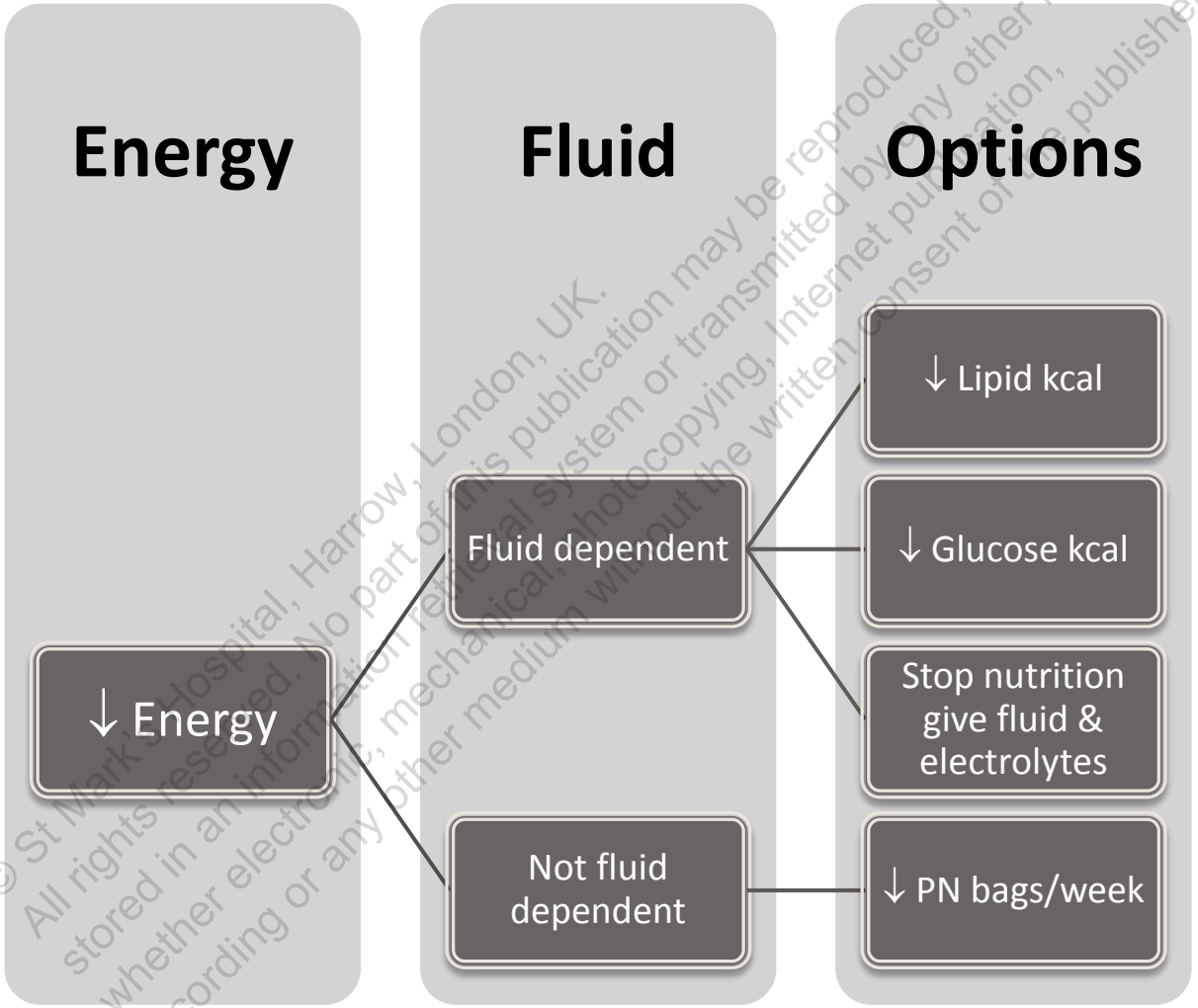
- Provide minimum amount of parenteral support to maintain acceptable nutritional status & prevent dehydration
- Manage patient expectations
- Intensive in patient stay[1]
  - 18 HPN patients admitted to a specialist ward
  - 7 weaned (39%)

Rovera, G.M et al (2000) *Clin Nutr,* 19, (Suppl 1) 2



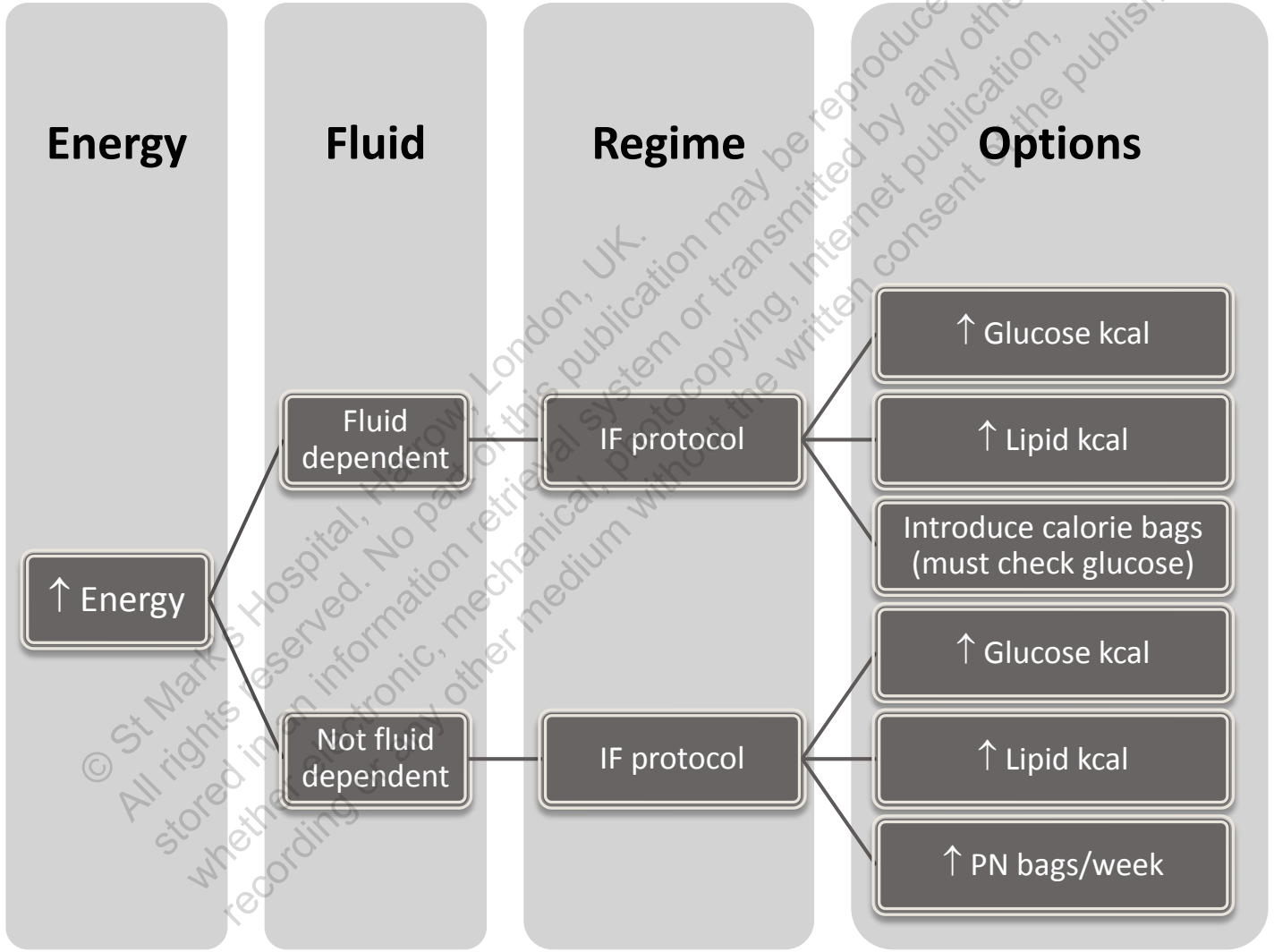
Adapted from Dibaise *et al* (2006) *J Clin Gastroenterol*, 40;S94

HPN patient gaining weight



Avoid consecutive nights off initially

HPN patient loosing weight



Micronutrients

Prevention & treatment

- Important to provide adequate micronutrients when weaning off HPN[1]
- Give orally but vitamin D an issue after weaning [2]

Monitoring

- Lack of reliable biochemical assays especially during acute phase[3]

AGA guidelines

- Observe for clinical manifestation of deficiencies & regular monitoring[4]

1. DiBiase *et al* (2006), *J Clin Gastroenterol*, 40,S94. 2. Fan *et al* (2016) *Nutr Clin Pract*, 32: 258, 3. Duncan *et al* (2012) *Am J Clin Nutr*, 95:64. 4. Buchman *et al* (2003) *Gastroenterology.* 124:1111

Vitamin D status post weaning

N=60
Normal 30-70ng/ml
Patients received 1200UI/d

Severe Deficiency <10ng/ml %	Moderate deficiency 10-19ng/ml %	Insufficiency 20-29ng/ml %	Osteopenia %	Osteoporosis %
65	30	5	68	28

Suboptimal Vitamin D status common post weaning despite oral supplementation. Importance of monitoring of serum Vitamin D and BMD. IV & IM required

Fan *et al* (2017) *Nutr Clin Pract*, 32:258

Summary

Withdrawal should be planned and stepwise with a daily review of progress (in patients)

No evidence to support the most effective way of weaning

(NICE 2006)

Key dietetic role

- Risk of deterioration in nutritional status if requirements not met
- Risk assessment regarding catheter complications
- Patients need support and advice from an experienced MDT