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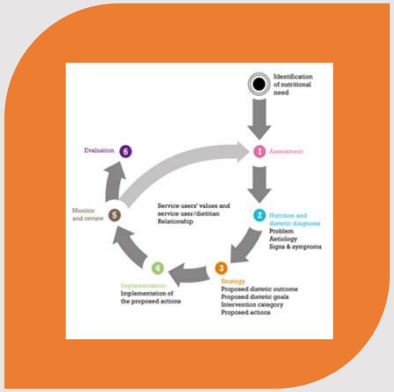
Bariatric surgery in the acute setting

Ness Osborne

Overview



USE THE MODEL AND PROCESS TO IDENTIFY KEY CONSIDERATIONS WHEN SEEING A PATIENT WHO IS ACUTELY UNWELL WHO HAS A HISTORY OF BARIATRIC AND METABOLIC SURGERY (BMS)

USE A CASE STUDY TO START TO APPLY OUR LEARNING TO A PATIENT IN THE ACUTE SETTING

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Identification

Scenarios nutrition support may be required

- Severe nausea/vomiting/pain.
- Anastomotic leak/fistula, anastomotic strictures, intestinal obstruction
- Severe malabsorption or diarrhoea

- Further surgery is required for reversal

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Assessment

Anthropometry

- Weight history
  - Maximum weight
  - Usual weight
- Current weight loss
  - Was their weight loss quicker than typical? (1 stone per month for first month or so)
  - Had their weight loss slowed down?
- Consider starting BMI and current BMI

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Anthropometry

By-Band-Sleeve

Bariatric Procedure	Mean change from baseline	% Body weight loss
Bypass	35.3kg	25%
Sleeve	25.3kg	18%
Band	18.3kg	12%

Biochemistry

- U&E’s, LFT, Bone panel, FBC, Fasting lipids, vitamin D, HbA1c (if relevant)
- If persistent vomiting -> check thiamine
- Deficiencies in vitamin B12, iron, vitamin D, calcium and copper are most often seen

Clinical

- When did they have surgery
- What surgery did they have

- Where did they have it -In the UK –Private? –NHS?
- -Abroad?
  - If done abroad, can come across procedures done such as
    - SADI-S
    - Duodenal switch

- What supplements are they taking?

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Vitamin supplement recommendations

Procedure	Balloon	Sleeve	Bypass	Duodenal Switch
A-Z complete multivitamin and mineral	Forceval or OTC One daily	Forceval One daily OTC – Two daily	Forceval One daily OTC – Two daily	Forceval One daily OTC – Two daily
Calcium and vitamin D		☑	☑	☑
Vitamin D	*Continue maintenance dose if required	'many patients will require additional vitamin D '		
Iron	*Continue maintenance dos e if required	☑	☑	☑
Vitamin B12 injections		☑	☑	☑
Fat soluble vitamins A, E & K				AquADEKs Softgels - one to two daily
Thiamine	Prolonged vomiting - additional thiamine required (thiamine 200–300 mg daily, vitamin B co strong 1 or 2 tablets, three times a day) and refer to bariatric centre urgently. IV thiamine is needed where there is clinical suspicion of acute deficiency or in patients who are symptomatic.			

Estimating Nutritional Requirements

- Kcal/Kg actual weight
  - Tables 3.1 and 3.2 lack data >30Kg/m^2
- Kcal/Kg ideal body weight (IBW)
  - How do you define IBW?
- Kcal/Kg adjusted body weight
  - How much do we adjust? 25% or 50%?
- Predictive equations for PLWO-
  - Harris-Benedict (1919), Mifflin St Jeor (1990)

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Estimating Nutritional Requirements

Choban Review 2013

Study	Study size	Accuracy	
Frankenfield (2003) Healthy subjects and those who have had BMS	Total N = 130 PLWO N = 47	MSJ BMI 30-39.9kg/m2 BMI ≥40Kg/m2 HB BMI 30-39.9kg/m2 BMI ≥40Kg/m2	 70% 70% 50% 74%
Dobratz (2007) Females who have had BMS	N= 14 (BMI 49.8 (± 6.2)Kg/m2)	MSJ HB (actual weight)	86% 69%

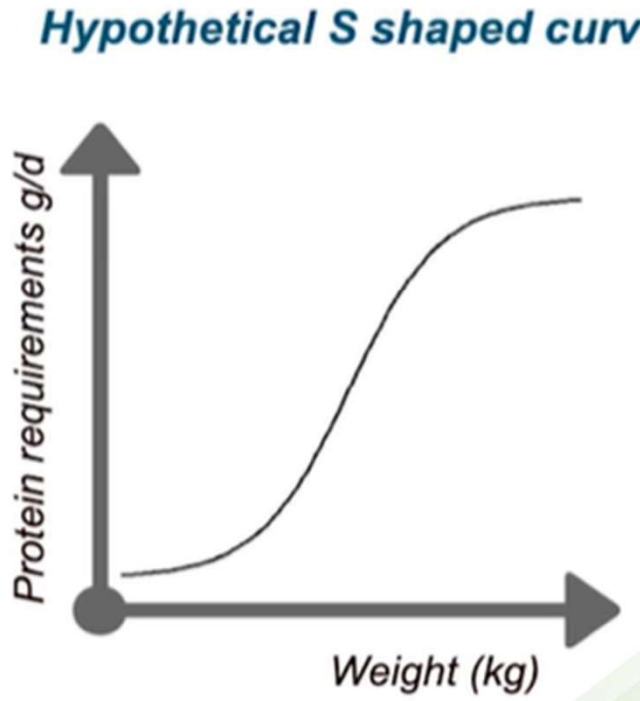
Estimating Nutritional Requirements

- Just a starting point, clinical judgement and monitoring are essential

- Mifflin St Jeor equation (MSJ) for BMI >30kg/m^2
- (convert height in m to cm)
- May wish to omit PAL

Estimating Protein Requirements

- Minimal guidance
- Choban looked at safety of hypocaloric high protein diets, not Requirements
- PENG consensus guidance:
  - **Adjust to 75% (BMI 30-50)**
  - **Expert opinion**



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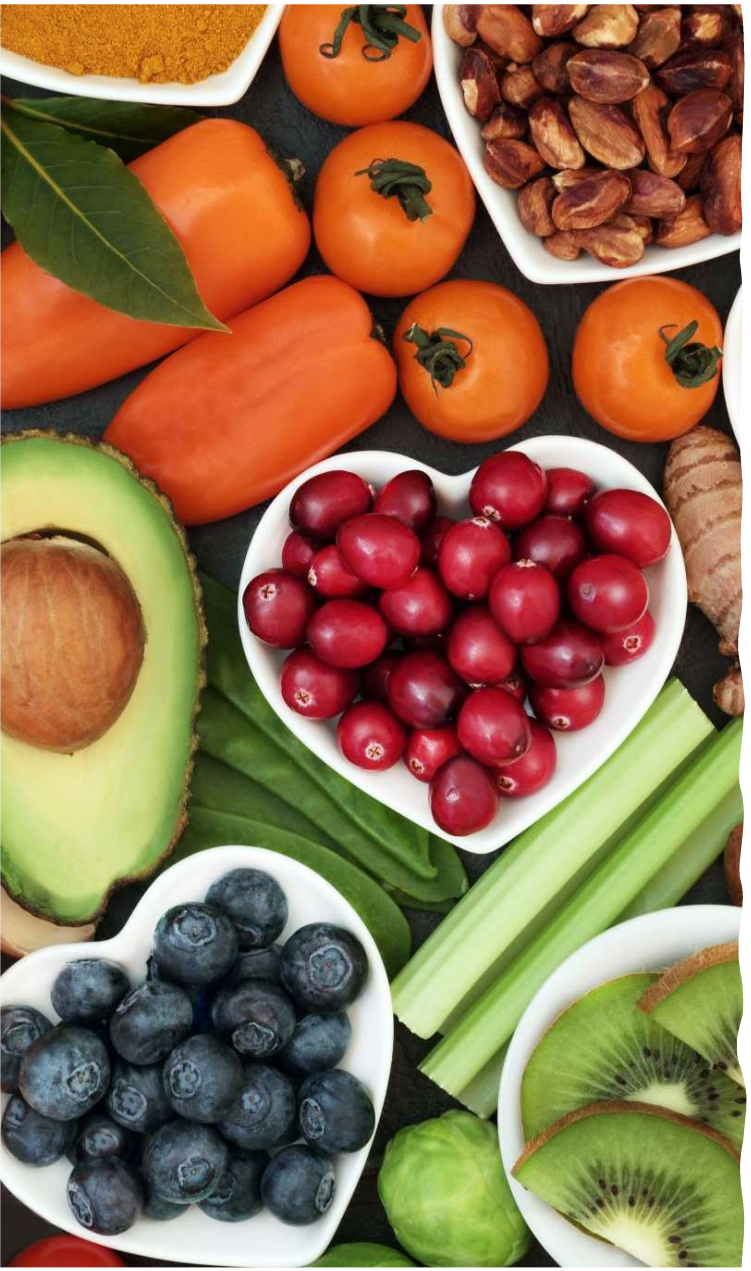
Estimating Protein Requirements

Procedure	Estimated requirements	Reference
AGB	at least 60–80g/day total protein intake or 1.0–1.5 g/kg ideal body weight (IBW)	(Parrott et al 2020).
SG		
RYGB		
BPD/DS, SADI-S, and OAGB with long biliopancreatic limb	at least 90g/day or as high as 2.1g/kg/IBW	(O'Kane 2021)



Dietary

- Dietary intake is much smaller
- Texture changes (depending on how far post-op)
- Not able to tolerate certain foods
- Patient preferences can change after surgery

Environment

- Are they smoking
- Social:
  - what support do they have
  - Occupation
  - Hobbies

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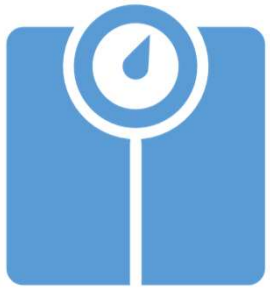
Functional or Patient Focused?



Discuss priorities

Are they wanting to lose further weight?

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Nutrition and Dietetic Diagnosis

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PASS Statement

Problem

At risk of malnutrition

Aetiology

Secondary to ***** on background of [insert surgery type]

- Severe nausea/vomiting/pain.
- Anastomotic leak/fistula, anastomotic strictures, intestinal obstruction
- Severe malabsorption or diarrhoea

Signs and symptoms

- Evidenced by reduced appetite, poor oral intake, and vomiting.

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Strategy

Dietetic Aims

- Typically if patient is acutely unwell and hasn't had a bariatric procedure, we might aim to meet nutritional requirements to support with weight maintenance.

- If your patient has had bariatric surgery recently (in last few months) aim might shift to minimising weight loss- to make it more realistic/take into account aspect of malabsorption if had a malabsorptive procedure.

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Oral nutritional support

- Consider risk of dumping syndrome
  - Sip feeds high in sugar *can* causing dumping
- Consider volume patient can manage orally

Enteral Nutrition

Route of feeding

- NG vs NJ (very difficult to get an aspirate following RYGB so is treated the same)
- PEG is often placed into the remnant stomach

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Implementation

Communication

Imperative to communicate with the bariatric MDT

When communicating the plan to ward staff, highlight the risk of dumping syndrome if appropriate, and reiterate expected portion sizes

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Monitor and Review

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Monitor and Review

- Portion sizes tolerated
- Tolerating feed
- Bowels
- Compliant/given correct micronutrient supplementation
- Biochemistry
- Weight changes
- Changes in clinical situation

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Case study

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Mrs X

39 year old female, admitted with pain, nausea and vomiting on eating

Current weight 138kg

Had bariatric surgery abroad

Is managing to eat once daily

Is taking an A-Z multivitamin and mineral supplement OTC daily

Has family who comes in to visit daily

Mrs X- Assessment

- **A**

-usual weight : 148kg
-Weight at day of surgery 152kg
-Height: 1.7m, current BMI 47.8kg/m2

- **B**

-Lab results: U+Es were within range, however thiamine was low

- **C**

-RYGB was performed in Turkey 23rd May 2024

- **D**

-Her one meal per day is typically noodles (small bowl), or scrambled egg x 1 with beans (1/3 tin)
-She drinks well: water, squash, milky coffee x 1

- **E**

-Continued to smoke post-op

- **F**

-Mrs X is petrified of gaining weight

Estimating Nutritional Requirements

Energy

REE = 10 x weight (kg) + 6.25 x height (cm) – 5 x (age)+ 5

(10 x 138) + (6.25 x 170) – (5 x 39) + 5 = 2253kcal

1380 + 1062.5 - 195 + 5

Protein

1.0–1.5 g/kg ideal body weight = 72- 108g

1.0-1.5 g/kg then adjust to 75% = 103 - 155g

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Secondary to ***** on background of [insert surgery type]

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Signs and symptoms

- Evidenced by reduced appetite, poor oral intake, and vomiting

Strategy

- What might be the possible plan you wish to discuss with Mrs X?

References and Resources

Parrott JM, Craggs-Dino L, Faria SL, O'Kane M (2020) The Optimal Nutritional Programme for Bariatric and Metabolic Surgery. Curr Obes Rep 9:326–338

O'Kane M. Nutritional consequences of bariatric surgery - prevention, detection and management. Curr Opin Gastroenterol. 2021 Mar 1;37(2):135-144. doi: 10.1097/MOG.0000000000000707. PMID: 33332915.

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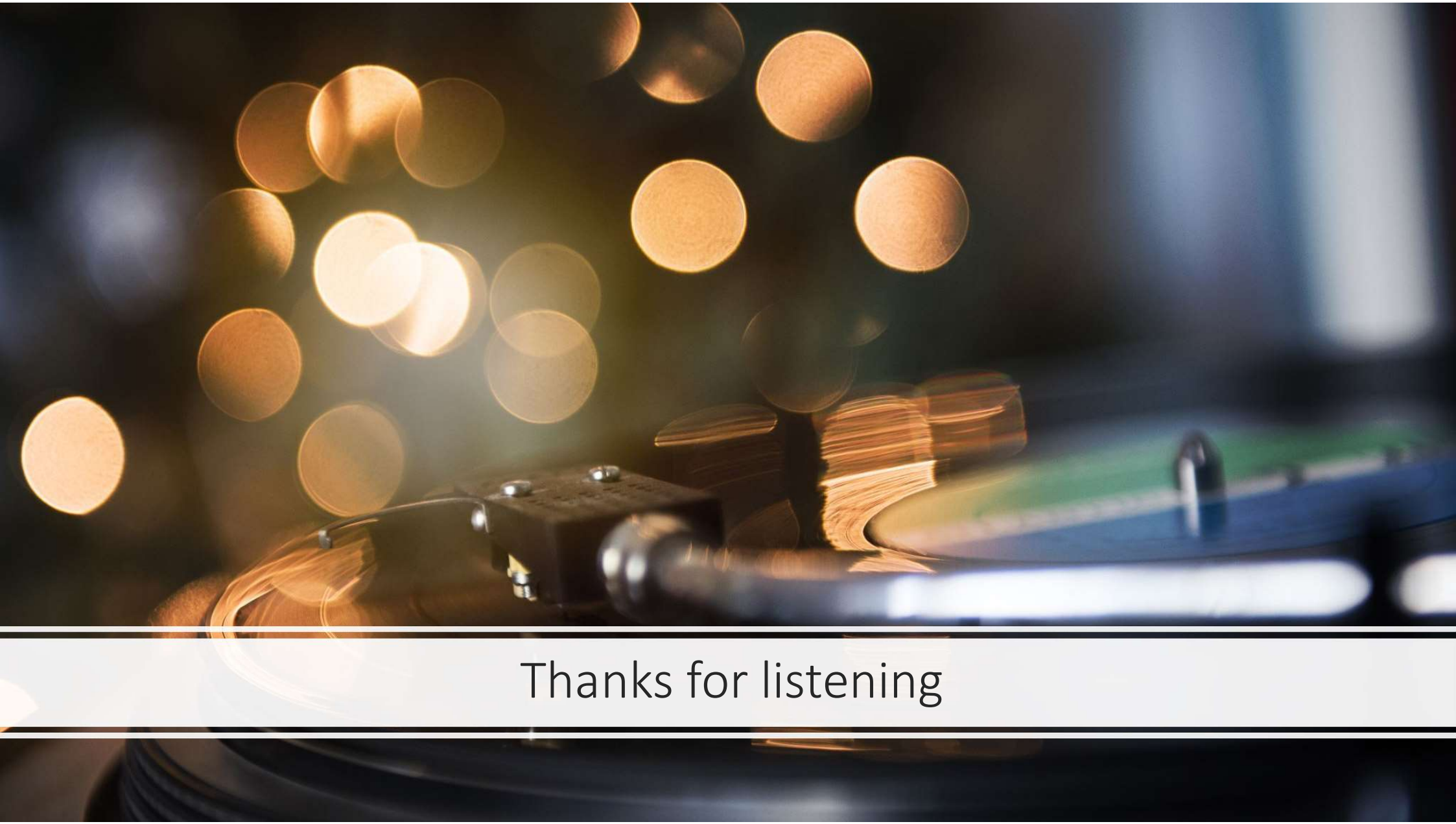
Thanks for listening