Bariatric Surgery and Physiotherapy

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What is bariatric surgery?

Bariatric surgery refers to a group of operations performed endoscopically or laparoscopically that alter the stomach and/or small intestine to help people with obesity to lose weight and improve obesity-related complications

Key aims

- Weight reduction.
- Improvement of comorbidities
- Better quality of life and function.

Indications for surgery

- BMI≥40 or BMI≥35 with obesity complications, as part of a multidisciplinary behavioural/ medical programme
- Fit for surgery and anaesthesia
- Engaged with obesity management service and agrees to long-term follow-up
- Could be considered for BMI ≥ 30 with an obesity-related condition not controlled by medical treatment.

Pre-surgery physiotherapy

Key physiotherapy priorities

1. Address obesity complications have been addressed e.g. pain, untreated obstructive sleep apnoea, swelling, etc.
2. Optimising physical function (aerobic capacity, muscle strength) to reduce peri-operative risk and support early mobilisation.
3. Optimise CPAP adherence (as appropriate) and improve respiratory function to lower pulmonary complication risk.
4. Support PA engagement and consistent resistance training and encourage PA enjoyment.

Assessment:

Baseline outcomes may include

- Heart rate, blood pressure, oxygen saturation
- 6-minute walk test
- Self-reported measures (e.g. pain catastrophizing scale)
- Functional mobility and strength tests (e.g. sit-to-stand, grip strength)

Prehab components:

- **Aerobic training:** (e.g. walking)
  - typically low-moderate intensity guided by perceived exertion (e.g. Borg rating of perceived exertion scale) and heart-rate limits determined at baseline.
- **Strength and functional training:**
  - lower and upper-limb strengthening as part of structured resistance programme with dumbbells/ resistance bands
    - sit-to-stand and stairs practice,
    - balance tasks tailored to the individual pain and mobility.
- **Education and self-management:**
  - Importance of early mobilisation after surgery.
  - Positioning to reduce pain and breathlessness
  - Respiratory exercises that should be used after surgery (e.g. deep breathing and supported coughing)
- Safe physical activity progression.
- Guidance on timeframe for return to resistance training post surgery e.g 4-6 weeks

Early post-surgery physiotherapy

Immediate post-operative phase (acute hospital)

Timeframe: days 0–5, varies per hospital and per patient.

Key physiotherapy priorities

(May vary per patient and hospital protocol)

1. Prevent complications/ reduce risk of
   a. pulmonary/respiratory complications (e.g. atelectasis, pneumonia)
   b. venous thromboembolism
   c. deconditioning
2. Promote safe early mobilisation and independence in basic functional tasks.

Rehab components:

- Post-op respiratory care (e.g. deep breathing exercises, supported coughing, and early sitting out of bed, etc.)
- Early mobilisation:
  - Bed mobility and transfers with appropriate equipment and staffing
  - Teach log rolling to the patient
  - Short assisted walks on the ward as soon as medically appropriate.
  - Encourage upright posture, safe walking patterns
- Circulatory exercises (e.g. ankle pumps) to help reduce venous stasis and prevent deep vein thrombosis.
- Education:
  - The importance of continuing breathing and gradually increasing walking distance.
  - Progressive return to pre-surgery physical activity levels and progression as appropriate.

Key safety points

- **Know the procedures**: Sleeve, bypass, band, and BPD/DS each alter the stomach/intestine differently and have distinct risks and benefits.
- **Avoid excessive intra-abdominal pressure early post-op** to support recovery of the surgical sites, avoid leaks or hernias, and promote safe healing
- Patients with obesity have higher risk of respiratory complications, thromboembolism, and wound issues: **adjust intensity** and monitoring exertion accordingly.
- **Consider comorbidities** such as diabetes, cardiovascular disease, and osteoarthritis: monitor vitals and symptoms closely during physiotherapy sessions.

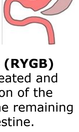
Types of bariatric surgery:

Sleeve Gastrectomy (SG)

- Removes 75–80% of the stomach
- Irreversible.
- One of the most commonly performed procedures.

Mechanism:

- Restricts food intake (smaller volume so earlier satiety).
  - Hormonal effects (changes in gut hormones influencing appetite and glucose control).

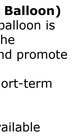


Roux-en-Y Gastric Bypass (RYGB)

- A small stomach pouch is created and connected directly to a section of the small intestine, bypassing the remaining stomach and part of the intestine.
- Typically not reversible.
- Strong impact on weight and metabolic conditions like type 2 diabetes.

Mechanism:

- Restrictive (very small pouch).
- Malabsorptive (less nutrient and calorie absorption due to bypassed bowel).



Intragastric Balloon (Gastric Balloon)

- A soft, saline- or gas-filled balloon is placed endoscopically into the stomach to occupy space and promote early satiety.
- Reversible, non-surgical, short-term option

Mechanism:

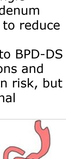
- Restrictive only (reduces available stomach volume).

Biliopancreatic Diversion with Duodenal Switch (BPD/DS)

- Combines a sleeve-type resection with extensive bypass of the small intestine, separating food and digestive juices until late in the bowel.
- Provides large weight loss but higher risk of nutritional deficiencies and complications.
- Used less commonly and often only in very severe obesity.

Mechanism:

- Strongly malabsorptive plus restrictive.

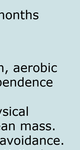


Single-Anastomosis Duodenal Switch (SADI)

- A modified duodenal switch combining sleeve gastrectomy with a single connection between the duodenum and a loop of small intestine to reduce absorption.
- Similar weight-loss benefits to BPD-DS with fewer surgical connections and potentially lower complication risk, but still requires lifelong nutritional monitoring.

Mechanism:

Restrictive (sleeve stomach) and malabsorptive (reduced bowel length for nutrient absorption).



Later post-surgery and long-term physiotherapy

Ongoing Rehab (community or outpatient based)

Timeframe: weeks - months

Key physiotherapy priorities

1. Restore and enhance strength, aerobic capacity, and functional independence beyond pre-operative levels.
2. Support safe, sustainable physical activity and prevent loss of lean mass.
3. Address pain and movement avoidance.
4. Support return to activity (e.g. work, daily tasks, recreation, sports)

Note: For most individuals some level of weight regain is normal and likely not preventable with physiotherapy.

Rehab components:

Note: Rehab post-surgery may be limited in duration. Most complications related obesity should/will have been addressed by pre-hab.

- Resistance and functional training (main priority for post-surgery rehab)
  - Focus on large muscle groups, Exercises include sit-to-stand, step-ups, stair climbing, and upper-body function relevant to daily activities and work.
- Progressive aerobic training: (e.g. walking programme) progressing duration and intensity as tolerated. Aquatic exercise may be considered once surgical sites are completely healed and/or the surgeon has reviewed the patient.
- Incontinence management (e.g. pelvic floor exercises) if relevant with loss of muscle mass widespread
- Posture and musculoskeletal care (if not addressed in pre-hab)
  - Address joint pain (e.g. knees, hips, lumbar spine), altered movement patterns from rapid weight loss and risk of falls.
- Behavioural support:
  - Goal setting, activity diaries,and strategies to support physical activity.
  - Collaboration with other members of multidisciplinary team.
- **Use appropriate bariatric equipment** (beds, plinths, hoists, walking aids) and safe moving and handling techniques.
- **Be aware of weight stigma**; use respectful, person-first language and involve patients in goal setting.
- **Work as part of a multidisciplinary team** with surgeons, nurses, dietitians, occupational therapists, psychologists, etc.

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