Obesity & Metabolic Surgery: Benefits and Risks for the Treatment of Type 2 Diabetes

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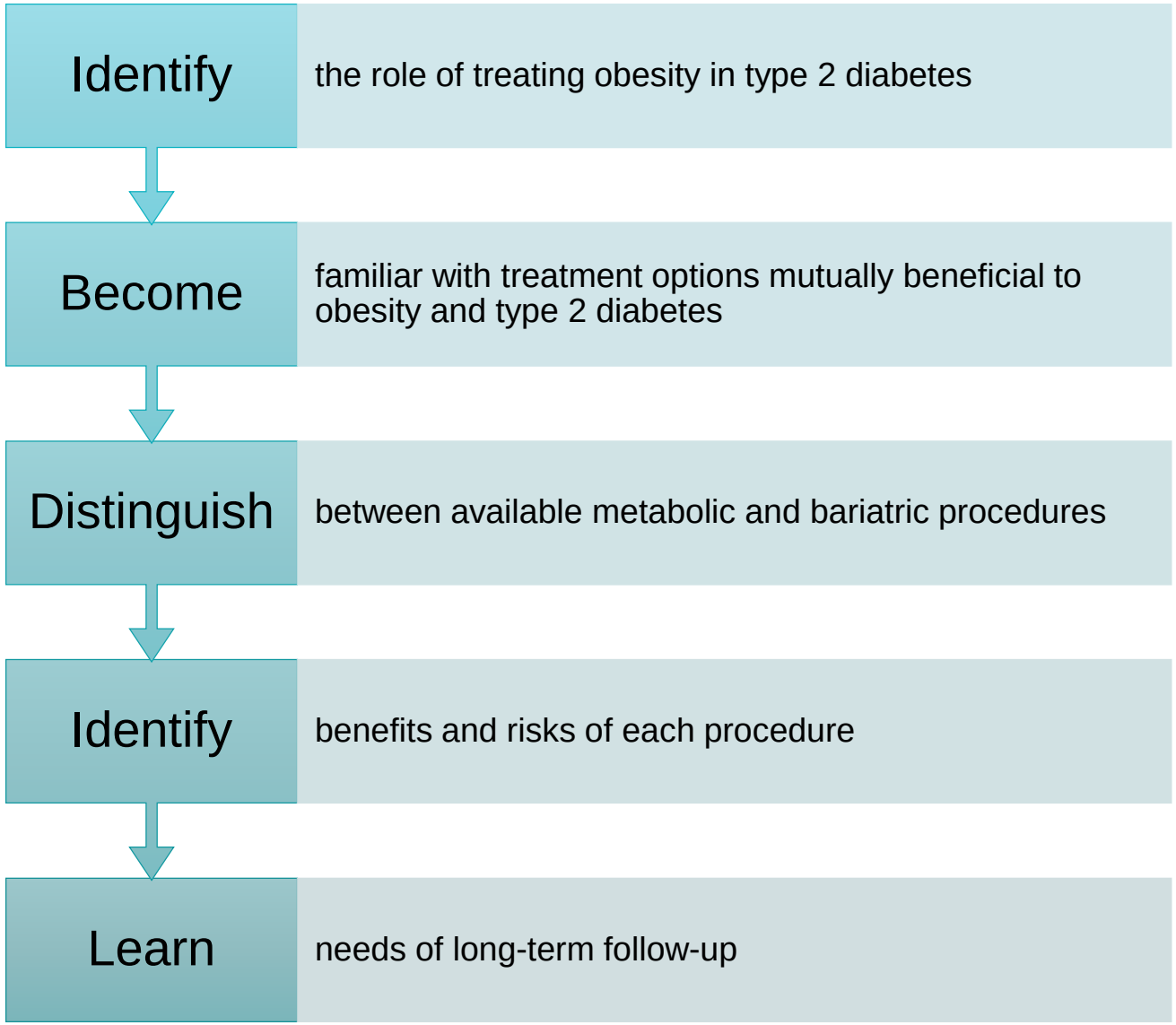
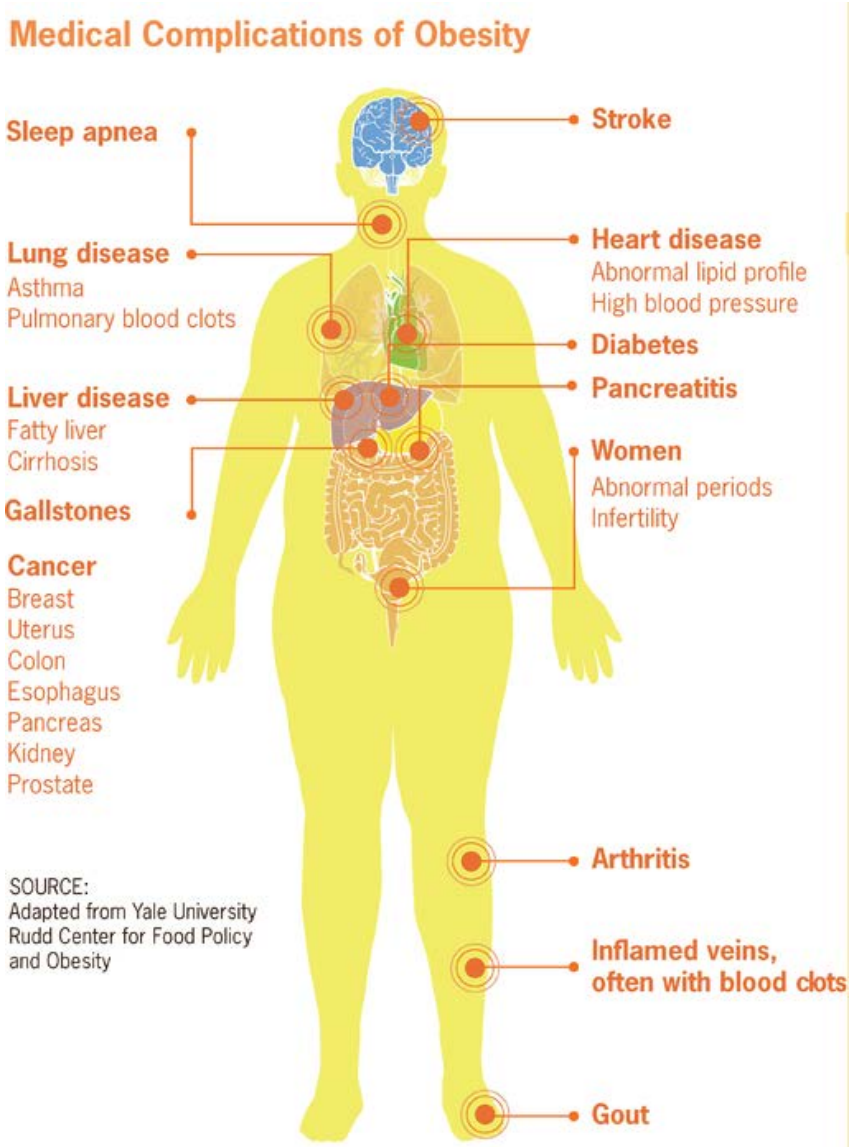
I have nothing to disclose.

OBJECTIVES

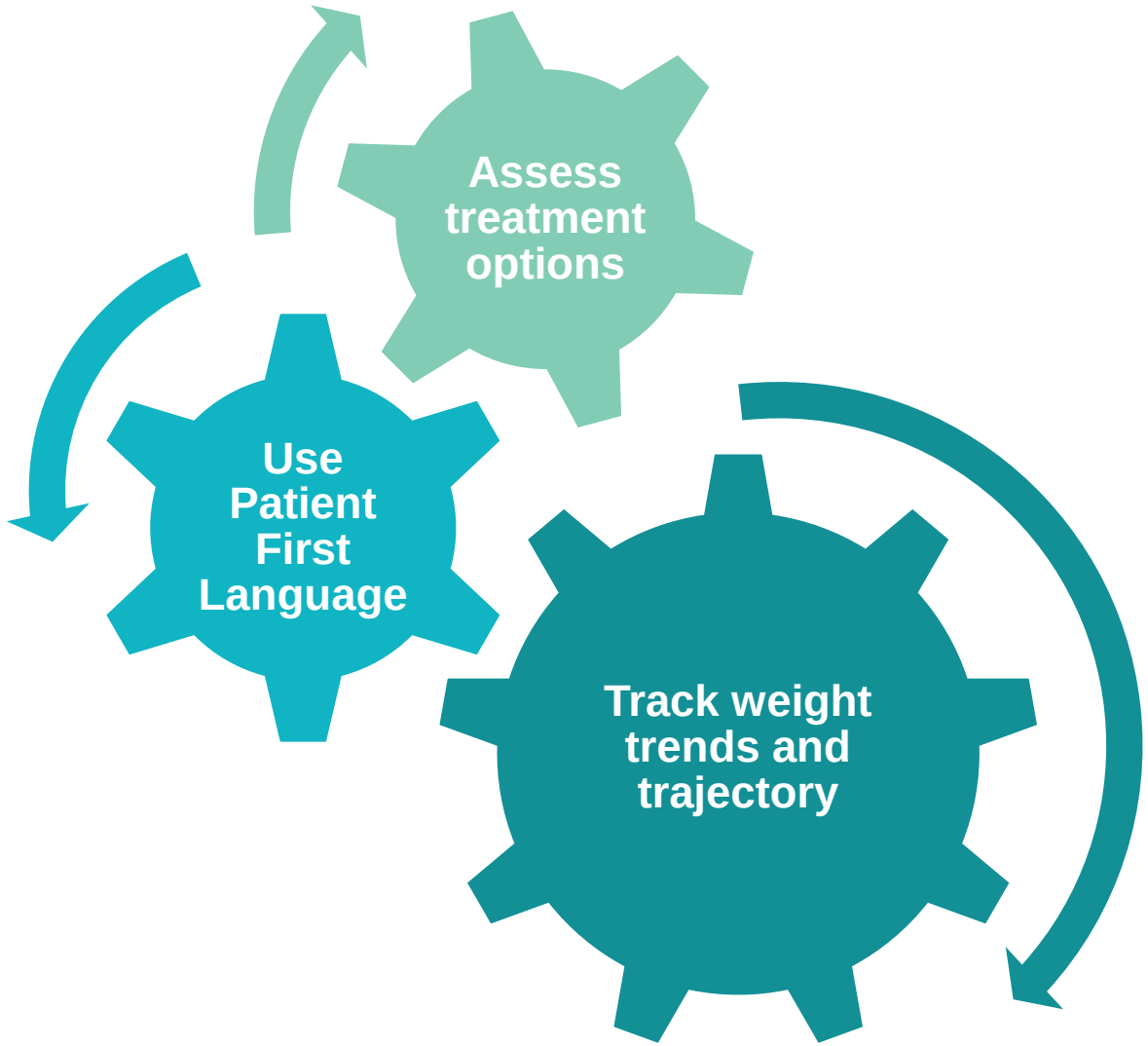

Identify
the role of treating obesity in type 2 diabetes
Become
familiar with treatment options mutually beneficial to obesity and type 2 diabetes
Distinguish
between available metabolic and bariatric procedures
Identify
benefits and risks of each procedure
Learn
needs of long-term follow-up

Diabesity Quick Facts

- Obesity was declared a chronic disease in 2013 by the American Medical Association
- 41.9% of American adults fall into the obese category
- 10% have diabetes
- Small to moderate amounts of weight loss improve glycemic control
- $173 Billion=Annual Medical Costs Associated with Obesity in US



HOW YOU CAN SUPPORT YOUR PATIENTS



ASSESS FOR OBESOGENIC MEDICATIONS

- Antidepressants
  - Selective Serotonin Reuptake Inhibitors (SSRIs)
  - Tricyclic antidepressants
- Beta-blockers
- Hormones

Antihyperglycemics:

- Long-acting insulin
- Sulfonylureas
- Thiazolidinediones (TZDs)

PHARMACOLOGIC TREATMENT OF HYPERGLYCEMIA IN ADULTS WITH TYPE 2 DIABETES

FIRST-LINE THERAPY depends on comorbidities, patient-centered treatment factors, including cost and access considerations, and management needs and generally includes metformin and comprehensive lifestyle modification^

TO AVOID THERAPEUTIC INERTIA REASSESS AND MODIFY TREATMENT REGULARLY (3–6 MONTHS)

ASCVD/INDICATORS OF HIGH RISK, HF, CKD†

NONE

RECOMMEND INDEPENDENTLY OF BASELINE A1C, INDIVIDUALIZED A1C TARGET, OR METFORMIN USE‡

+ASCVD/INDICATORS OF HIGH RISK*

GLP-1 RA with proven CVD benefit[1] — EITHER/OR — SGLT2i with proven CVD benefit[1]

IF A1C ABOVE TARGET

- For patients on a GLP-1 RA, consider incorporating SGLT2i with proven CVD benefit and vice versa[1]
- TZD[2]

+HF*

SGLT2i with proven benefit in this population[1]

+CKD**

CKD and albuminuria (e.g., ≥200 mg/g creatinine)

CKD without albuminuria (e.g., eGFR <60 mL/min/1.73 m²)

PREFERABLY

SGLT2i with primary evidence of reducing CKD progression

OR

SGLT2i with evidence of reducing CKD progression in CVOTs

OR

GLP-1 RA with proven CVD benefit[1] if SGLT2i not tolerated or contraindicated

For patients with CKD (e.g., eGFR <60 mL/min/1.73 m²) without albuminuria, recommend the following to decrease cardiovascular risk

GLP-1 RA with proven CVD benefit[1] — EITHER/OR — SGLT2i with proven CVD benefit[1]

If A1C above target, for patients on SGLT2i, consider incorporating a GLP-1 RA and vice versa

If A1C remains above target, consider treatment intensification based on comorbidities, patient-centered treatment factors, and management needs

Incorporate agents that provide adequate EFFICACY to achieve and maintain glycemic goals

Higher glycemic efficacy therapy: GLP-1 RA; insulin; combination approaches (Table 9.2)

- **Consider additional comorbidities, patient-centered treatment factors, and management needs in choice of therapy, as below:**

MINIMIZE HYPOGLYCEMIA

No/low inherent risk of hypoglycemia: DPP-4i, GLP-1 RA, SGLT2i, TZD

For SU or basal insulin, consider agents with lower risk of hypoglycemia[3,4]

IF A1C ABOVE TARGET

Incorporate additional agents based on comorbidities, patient-centered treatment factors, and management needs

MINIMIZE WEIGHT GAIN/ PROMOTE WEIGHT LOSS

PREFERABLY

GLP-1 RA with good efficacy for weight loss

OR

SGLT2i

IF A1C ABOVE TARGET

For patients on a GLP-1 RA, consider incorporating SGLT2i and vice versa

- If GLP-1 RA not tolerated or indicated, consider DPP-4i (weight neutral)

Incorporate additional agents based on comorbidities, patient-centered treatment factors, and management needs

CONSIDER COST AND ACCESS

Available in generic form at lower cost:

- Certain insulins: consider insulin available at the lowest acquisition cost
- SU
- TZD

IF A1C ABOVE TARGET

Incorporate additional agents based on comorbidities, patient-centered treatment factors, and management needs

1. Proven benefit refers to label indication (see Table 9.2)
2. Low dose may be better tolerated though less well studied for CVD effects
3. Choose later generation SU to lower risk of hypoglycemia
4. Risk of hypoglycemia: degludec / glargine U-300 < glargine U-100 / detemir < NPH insulin
5. Consider country- and region-specific cost of drugs

^For adults with overweight or obesity, lifestyle modification to achieve and maintain ≥5% weight loss and ≥150 min/week of moderate- to vigorous-intensity physical activity is recommended (See Section 5: Facilitating Behavior Change and Well-being to Improve Health Outcomes).

†Actioned whenever these become new clinical considerations regardless of background glucose-lowering medications.

‡Most patients enrolled in the relevant trials were on metformin at baseline as glucose-lowering therapy.

*Refer to Section 10: Cardiovascular Disease and Risk Management.

**Refer to Section 11: Chronic Kidney Disease and Risk Management and specific medication label for eGFR criteria.

WEIGHT FRIENDLY DIABETES MEDICATIONS

- Metformin
- Liraglutide
- GLP-1 agonists
- SGLT-2 inhibitors
- Pramlintide

ADDITIONAL ANTI-OBESITY MEDICATIONS

- FDA approved:
  - Liraglutide
  - Lisdexamfetamine*
  - Lorcaserin
  - Naltrexone/bupropion
  - Orlistat
  - Phentermine (short-term)
  - Phentermine/topiramate
  - Semaglutide
  - Setmelanotide

*approved for Binge-Eating Disorder

- Off Label:
  - Bupropion
  - Metformin
  - Phentermine beyond 12 weeks
  - Naltrexone & bupropion separately
  - Phentermine & topiramate separately

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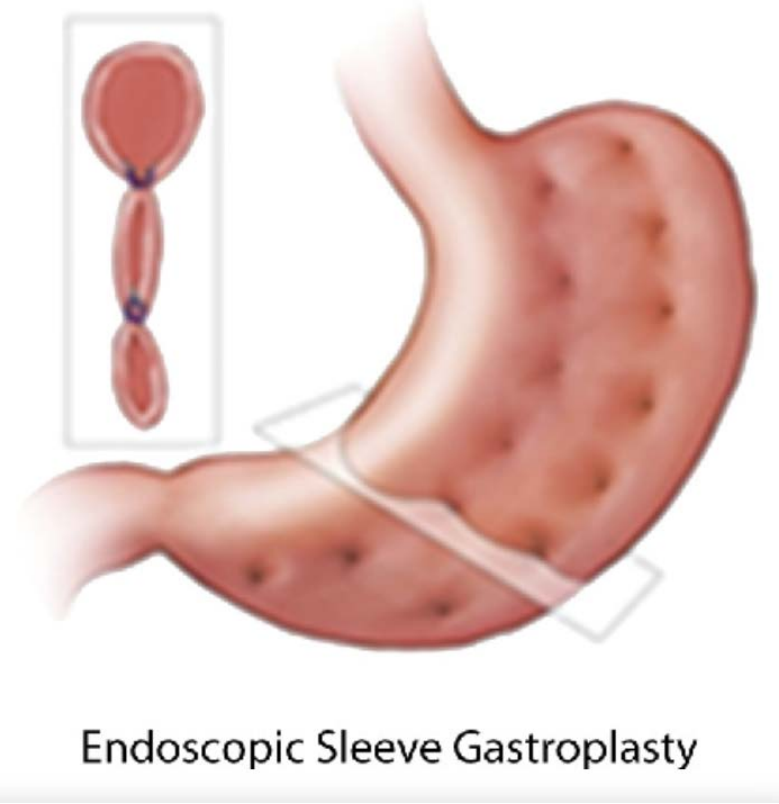
BUT WHAT IS THE MOST EFFECTIVE TREATMENT FOR OBESITY & TYPE 2 DIABETES?

METABOLIC & BARIATRIC SURGERY

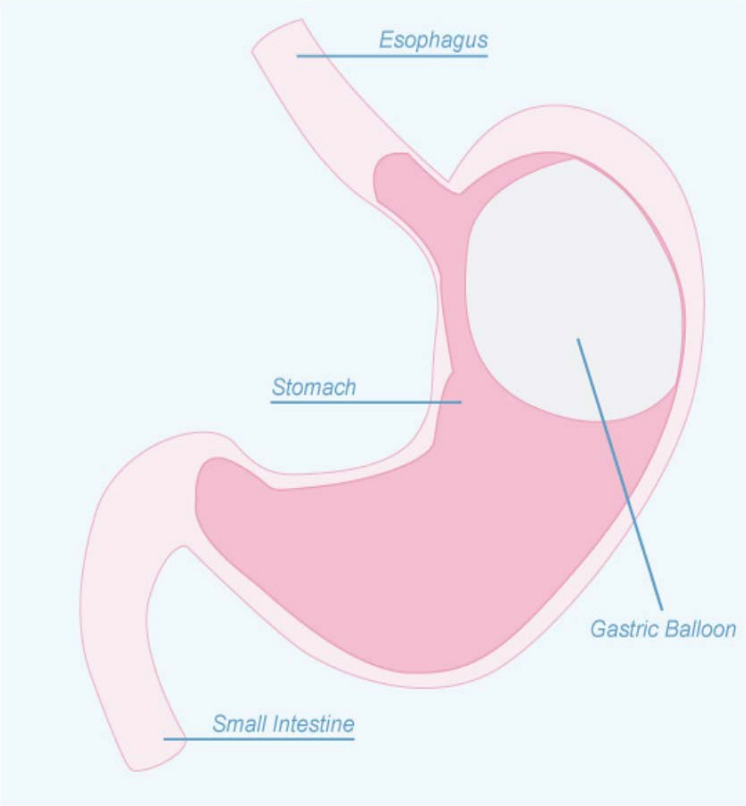
COMMON PROCEDURES

- Endoscopic
  - Gastric Balloon
  - Gastroplasty
- Laparoscopic
  - Adjustable Gastric Band
  - Vertical Sleeve Gastrectomy
  - Roux-en-Y Gastric Bypass
  - Duodenal Switch

ENDOSCOPIC PROCEDURES



Endoscopic Sleeve Gastroplasty



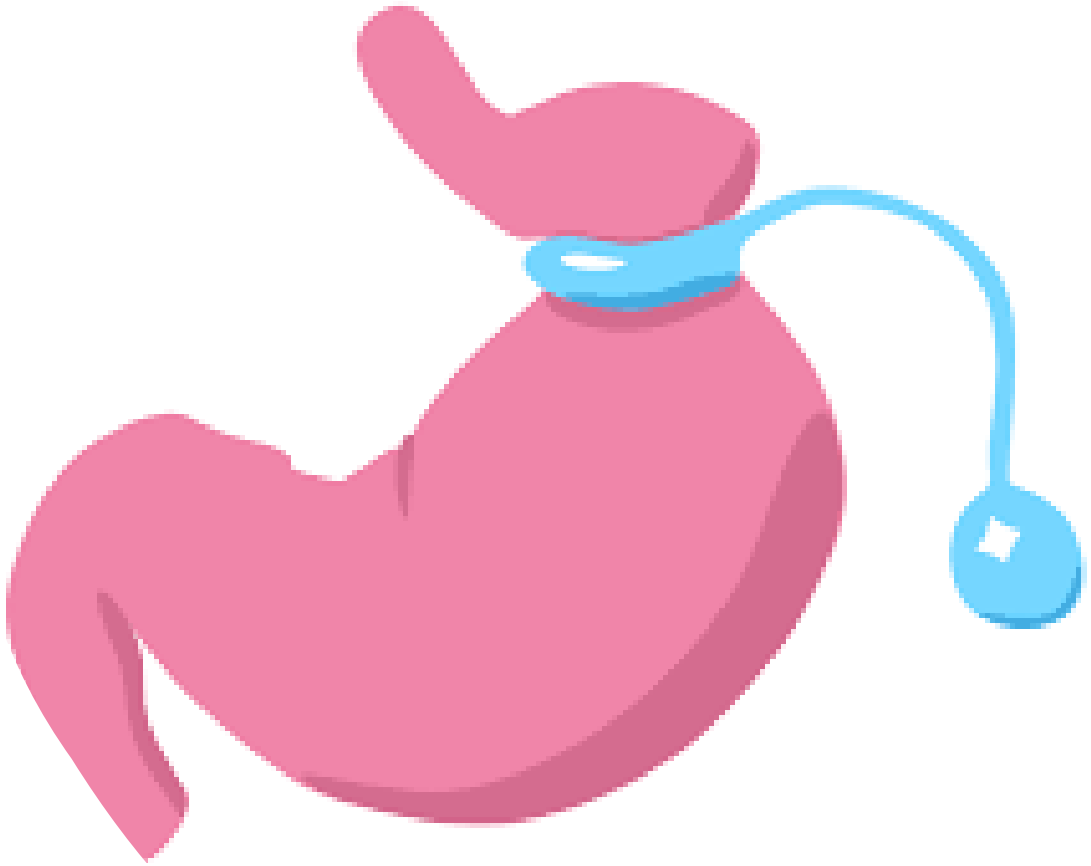
ENDOSCOPIC PROCEDURES

BENEFITS

- Restricts intake
- Less invasive
- Shorter hospital stay
- Available for lower BMIs

RISKS

- Costly
- Less weight loss
- Perforation
- Obstruction



GASTRIC BAND

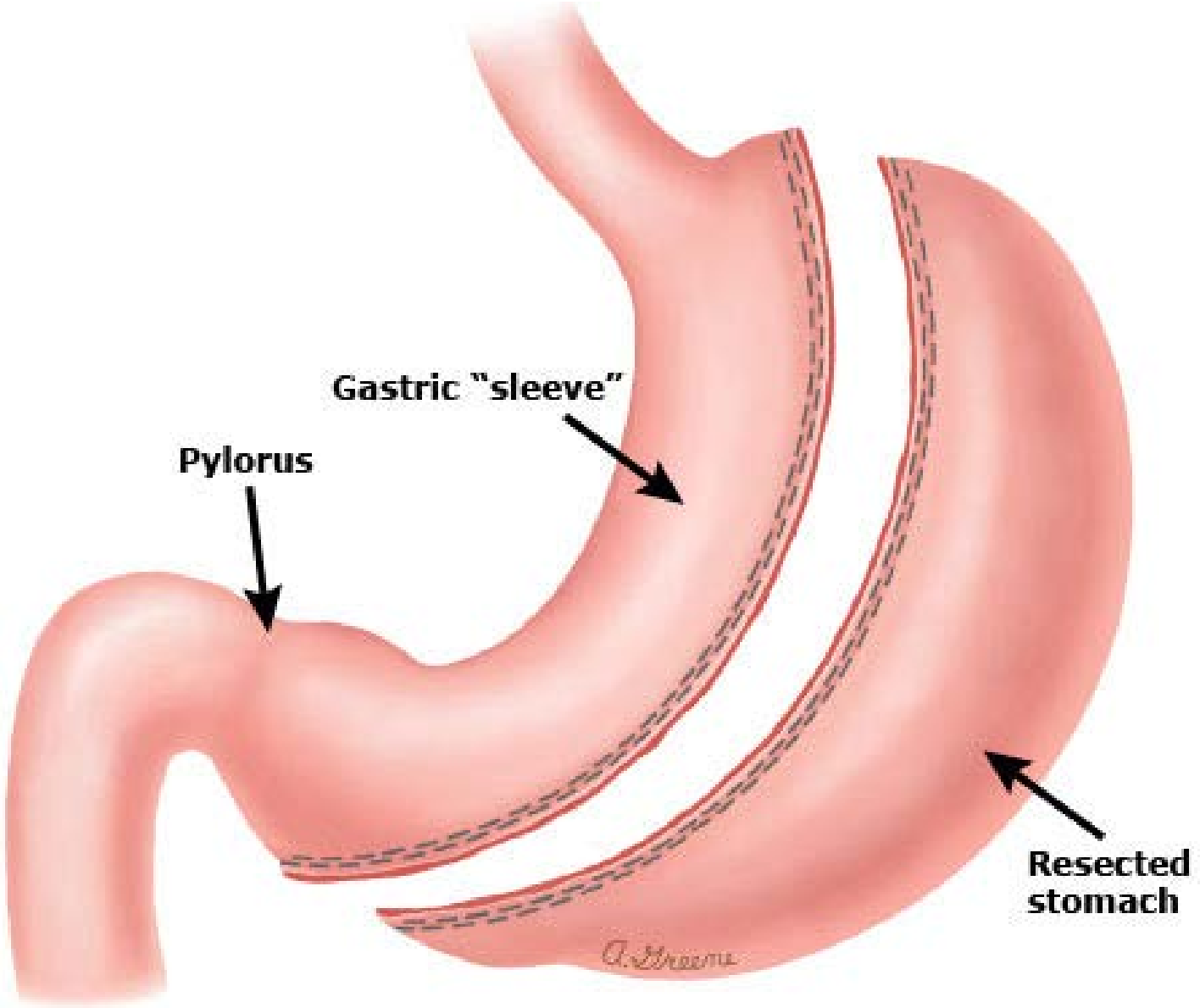
GASTRIC BAND

BENEFITS

- Restricts intake
- Modest weight loss
- Reversible
- Adjustable
- Less malnutrition risk

RISKS

- Reflux
- Slippage
- Obstruction
- Erosion
- Esophageal dilation
- Port dislodgement
- Highest reoperation rate



https://www.ohsu.edu/bariatric-services/gastric-sleeve-surgery-weight-loss

VERTICAL SLEEVE GASTRECTOMY

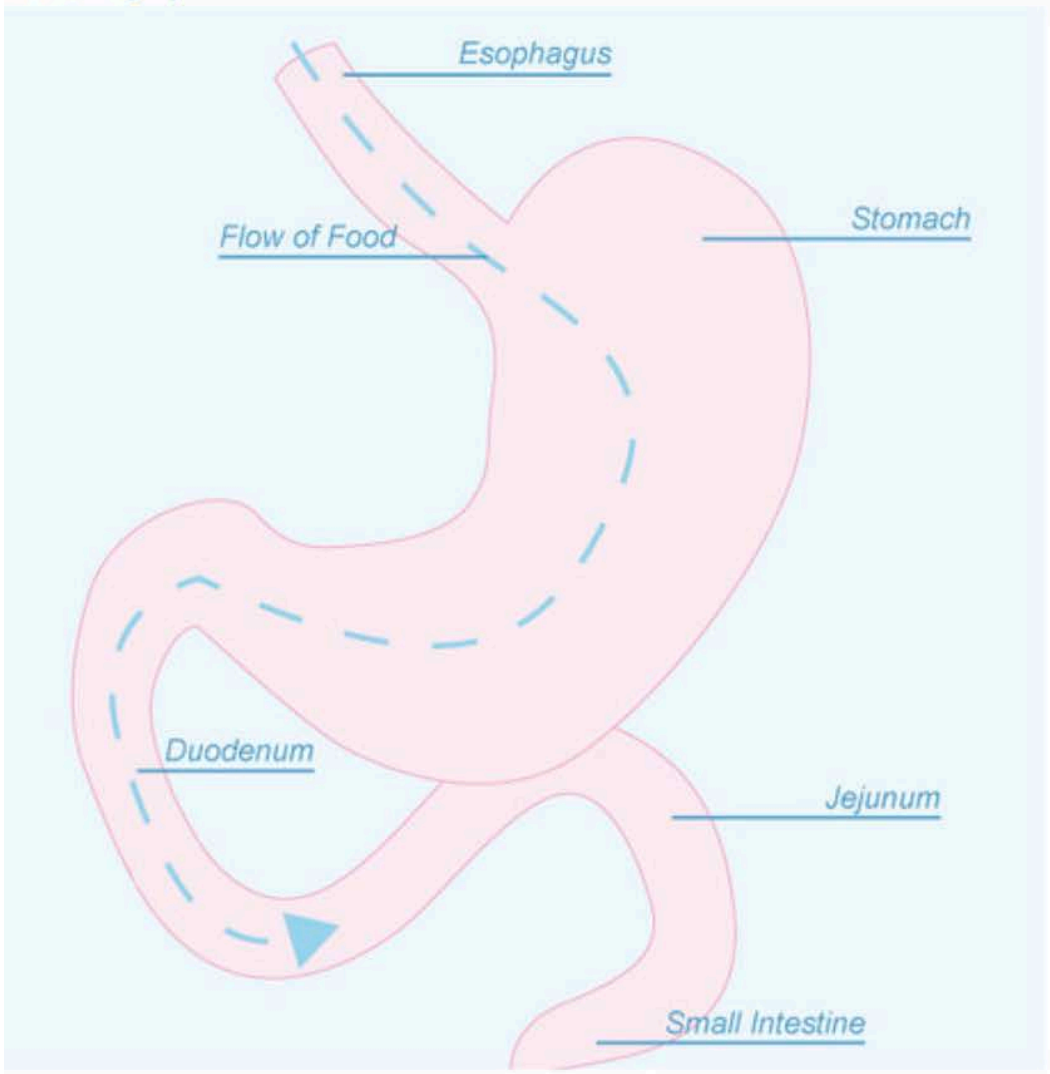
BENEFITS

- Restricts intake
- Reduction in ghrelin production
- No foreign body
- >50% of excess weight loss

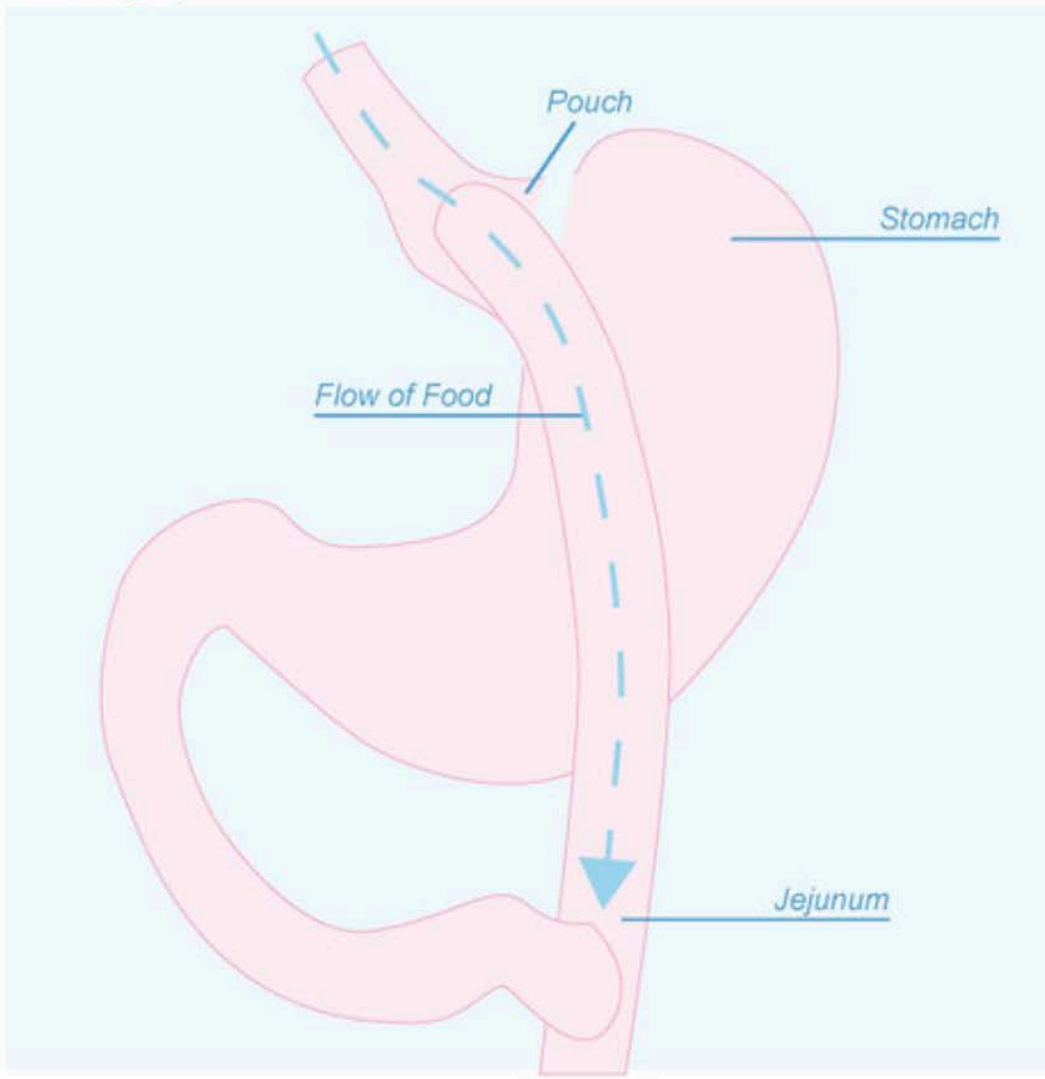
RISK

- Complication rate <1%
- Irreversible
- Leak
- Bleed
- Malnutrition
- Reflux
- Infection
- DVT
- PE

efore Surgery



After Surgery



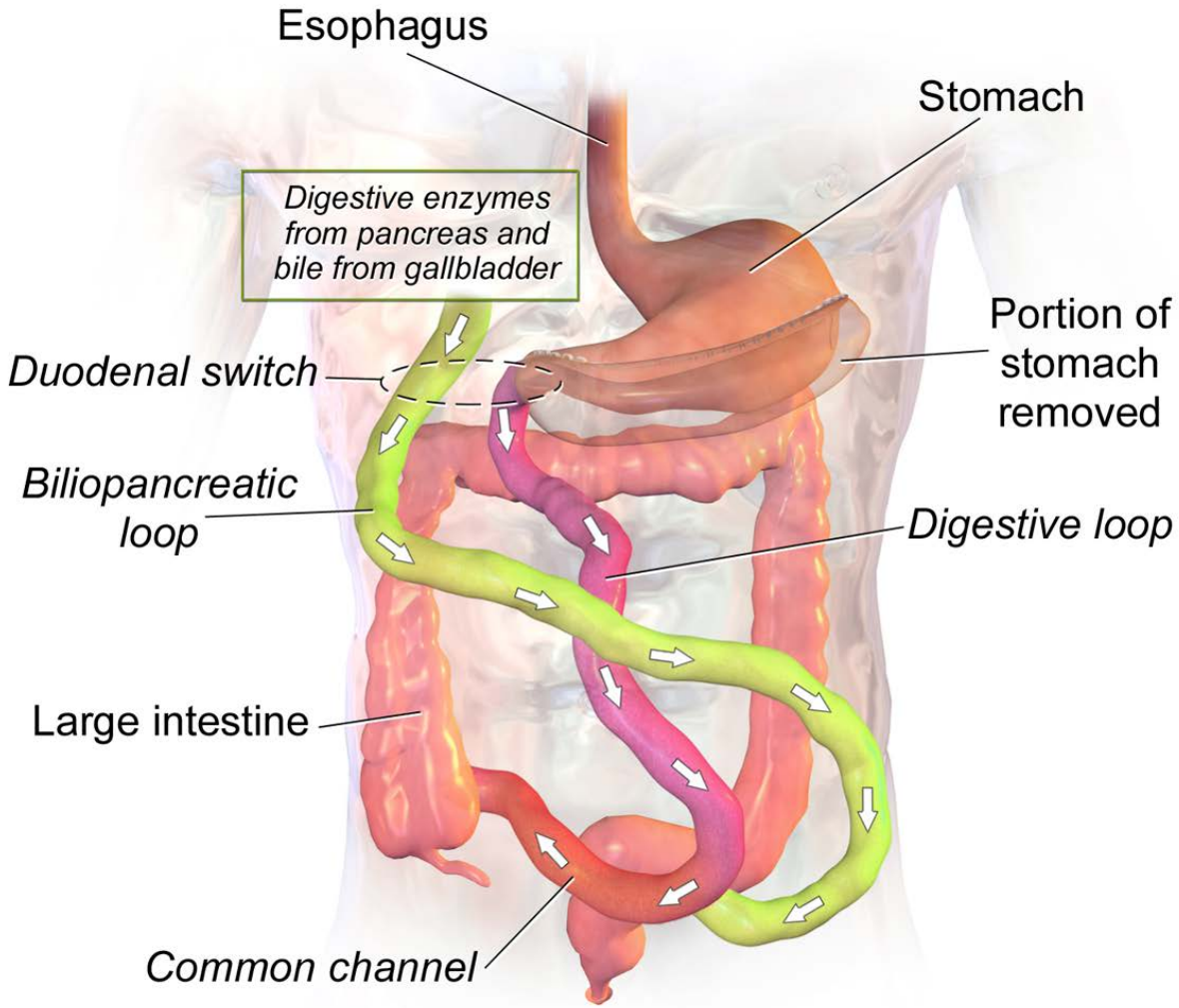
ROUX-EN-Y GASTRIC BYPASS

BENEFITS

- Restricts intake
- Improved BG control
- Increased satiety
- Good for gastroparesis and reflux
- Up to 80% of excess weight loss
- No foreign body

RISKS

- 1.25% complication rate
- Marginal ulcer
- Internal hernia
- Bowel obstruction
- Malnutrition
- SSI
- Dumping syndrome
- Post-prandial hypoglycemia
- DVT
- PE



Biliopancreatic Diversion with Duodenal Switch

DUODENAL SWITCH

BENEFITS

- Restricts intake
- Significant weight loss, reserved for super obesity
- Improved BG control
- Increased satiety
- Good for gastroparesis and reflux
- No foreign body

RISKS

- Comparable to RYGB
- Bleed
- Leak
- Marginal ulcer
- Internal hernia
- Bowel obstruction
- Dumping syndrome
- Malnutrition
- Infection
- DVT
- PE

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HOW YOU CAN SUPPORT YOUR PATIENTS SEEKING SURGERY

Refer!!!

Benefit verification completed by surgeon's office

Coverage improving:

- Medicare
- Some state Medicaid plans
- Commercial plans vary by policy

Qualifiers for Surgery:

- BMI ≥ 40
- BMI ≥ 35 with comorbidities
- Previous attempts at weight loss

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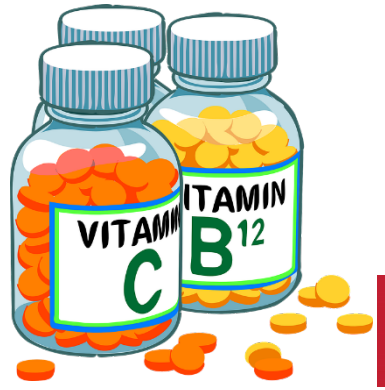
HOW YOU CAN SUPPORT YOUR POST-SURGERY PATIENTS

Encourage regular follow-up with surgical team (surgeon, dietitian, behavioral health, support groups, etc.)

Ensure patient is maintaining vitamin and mineral supplementation

Adjust medications as needed

Check labs!!! Every 3 months for the first year, then at least annually thereafter



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RECOMMENDED TESTING

- CBC
- SMA-21
- Lipids
- Thyroid panel
- PTH
- Iron studies
- 25-vitamin D

- Vitamin A
- Folic acid
- Copper
- Zinc
- Selenium
- Thiamin
- DXA

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RESOURCES

Find a Provider	https://abom.learningbuilder.com/public/membersearch
	https://asmbs.org/patients/find-a-provider
Coverage	https://www.obesitycoverage.com/insurance-and-costs/am-i-covered/check-my-insurance
Standards of Care	https://professional.diabetes.org/content-page/practice-guidelines-resources

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QUESTIONS?