# Malnutrition and the GLIM Criteria

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#### The Attendee Will....

- Learn how malnutrition is defined
- Gain knowledge of how malnutrition is assessed
- Gather knowledge and resources to successfully document and support a diagnosis of malnutrition.
- Identify the impact to DRGs when this comes up as an MCC or CC
- Problem solve how to help the provider establish this diagnosis(es)



#### Role of the Coder

- The distinction of making a clinical diagnosis is not up to the coder
- You are not required to be clinical, so why discuss this?
- You may need to be the person to raise a hand an bring this issue to light based on denials and nothing to support an appeal
- You may notice that there is a notation of malnutrition but nothing to support it after today.....



## Role of the CDI Specialist

- You may notice that there is a notation of malnutrition but nothing to support it
- Next Steps
  - Go to your physician champion for help
  - Build Query Templates
  - Initiate education



## **Defining Malnutrition**

 The World Health Association's definition of Malnutrition -

"Malnutrition refers to deficiencies, excesses, or imbalances in a person's intake of energy and/or nutrients."



### The Global Impact of Malnutrition

- This is a huge issue, malnutrition due to disease, poverty, hunger, war, and natural catastrophe is suffered by more than 1 billion people worldwide.
- Malnutrition is associated with poor clinical outcomes and quality of life.



#### 3 Key Drivers of the Diagnosis of Malnutrition

- Etiologic Factors What Caused the patient to be malnourished?
  - Disease Cancer, Crohn's, Intractable vomiting, Sepsis, COPD
  - Injury Burns, Multiple Trauma
  - Surgery Where a portion of the digestive tract is removed



#### 3 Key Drivers of the Diagnosis of Malnutrition

 Phenotypic Factors –Changes in appearance resulting from prolonged weigh loss or prolonged inability to assimilate nutrients.

Age – Parameters are different in adults,
 children and the elderly



## Malnutrition in Underweight or Under Nourished People

#### Undernourished includes:

- Stunting (low height for age),
- Wasting (low weight for height),
- Underweight (low weight for age) and
- Micronutrient deficiencies or insufficiencies (a lack of important vitamins and minerals).
- Half the Deaths in children under five are due to undernutrition



## Malnutrition in Overweight Individuals

Malnourished and Overweight includes:

 Obesity from excessive energy consumption with missing vital micronutrients results in malnutrition



## Malnutrition in Overweight Individuals

- Deficiencies of specific vitamins and minerals that play important roles in glucose metabolism and insulin signaling pathways may contribute to the development of diabetes in the obese population.
  - Obesity can other cause diet-related noncommunicable diseases (such as heart disease, stroke, and cancer).



#### Catabolic and Anabolic Processes

2 types

Anabolic - involves the synthesis of new molecules, like building a house like replacing your skin every month or two.
Catabolic -involves the breakdown of

 Catabolic -involves the breakdown of existing molecules, like taking out the old worn-out parts or diseased parts.

- The body's goal is a steady state often referred to as homeostasis.
- These processes rely on good tools and nutritional resources to function appropriately.



## The New Gold Standard to Support a Clinical Diagnosis of Malnutrition

- In 2016 a Global Leadership Initiative on
   Malnutrition (GLIM) was convened by several of the
   major global clinical nutrition societies to form a
   consensus opinion on clinical diagnostic criteria for
   malnutrition.
- GLIM Screening Criteria Tools
  - The first step in identifying malnutrition by the GLIM group was to identify and validate tools used to measure the risk for malnutrition.



## **GLIM Screening Criteria - Tools**

- NRS-2002: Nutritional Risk Screening-2002,
- MNA-SF = Mini Nutritional Assessment-Short Form, and
- MUST = Malnutrition Universal Screening Tool.
- See the original article
- <GLIM criteria for the diagnosis of malnutrition – A consensus report from the global clinical nutrition community - PMC (nih.gov)>



## What Happened to ASPEN?

 These parameters take the place of the ASPEN (ASPEN = American Society of Parenteral and Enteral Nutrition) criteria.

ASPEN is a charter member of the GLIM consensus group.



## Impact to Diagnosing and Coding Malnutrition

- The resulting clinical criteria required to establish a diagnosis of malnutrition, and the associated severity is causing a serious push back from insurance companies on documentation requirements, code assignment, and associated reimbursement.
- There is a \$ignificant monetary impact when employing clinical versus coding criteria for assigning or auditing a diagnosis code for malnutrition.



- Documentation in the medical record must support the etiology (underlying reason) for malnutrition and the phenotypic (physical signs and symptoms) findings supporting the diagnosis.
- Cloned pre-filled notes indicating the patient looks healthy and well nourished do not help in establishing clinical data to support this diagnosis.
- Current or past medical history for a surgery, underlying disease or injury interfering with meeting nutritional needs is a key criterion.



- Physical Examination
- Examination where there are no findings of muscle wasting such as sunken eyes, protruding clavicle or ribs by the provider is a common finding on audit.
- Nutritional Assessment Usually a dietary consultation is ordered.
  - The dietician should use the GLIM assessment tool(s) to establish the phenotypic parameters for malnutrition.





 Records with no consultation or notes from the hospital dietician are usually deficient in meeting the needed criteria for establishing a diagnosis of moderate to severe malnutrition.





- Dietician assessments that are not referenced or incorporated by the treating provider frequently leave the diagnosis unsupported.
- When was the last time you saw a provider with a scale and a pair of calipers?



#### **GLIM CRITERIA - Basic Malnutrition**

- Phenotypic and Etiologic Criteria
- There are phenotypic and etiologic criteria used to establish the diagnosis of malnutrition and the severity level of the malnutrition.
- A minimum of at least one phenotypic criterion and one etiologic criterion are required from the GLIM list of parameters to establish a diagnosis of malnutrition.



### Phenotypic Criteria - Weight Loss

- Repeated/recorded weight measurement over an identified period of time are required to identify weight losses or gains.
  - GLIM participants cited the importance of recognizing the rate of weight loss over time and the need to identify this early in the course of disease or injury.



## Phenotypic Criteria - Weight Loss

- The phenotypic parameters used to establish malnutrition based on weight loss are as follows:
  - Weight loss of >5% within past 6 months,
     or
  - Weight loss of >10% beyond 6 months.



### Phenotypic Criteria - BMI

- BMI parameters vary based on the age of the patient.
  - Patients less than 70 years old are expected to have a BMI of less than 20%
  - Patients over the age of 70 the BMI would need to be less than 22% to support a clinical diagnosis of malnutrition.



#### Phenotypic Criteria – Muscle Mass/Wasting

- Identify reduced muscle mass using body composition measuring techniques such as:
  - dual-energy absorptiometry or
  - bioelectrical impedance,
  - ultrasound,
  - computed tomography, or
  - magnetic resonance imaging,



#### **Phenotypic Criteria**

- Physical examination or anthropometric measures of calf or arm muscle circumference are therefore included as alternative measures per GLIM.
  - Recommendations are likely to evolve as portable and less costly body composition technologies are developed and become widely available."



## Subjective Global Assessment

- A Nutrition focused specific exam includes evaluation of
  - Muscle mass
  - Fat stores,
  - Edema
  - Functional capacity grip strength



#### **Muscle Mass and Fat Stores**

- Calipers measure triceps skin folds and mid arm circumference
- Muscle mass, is measured at the
  - temples
  - clavicles
  - deltoids
  - acromion
  - scapula
  - quadriceps
  - patellar region
  - calf



#### **Muscle Mass and Fat Stores**

- Subcutaneous Fat stores are evaluated at the
  - Orbital area, triceps and iliac crest
- Strength and Function
  - Hand grips / hand grip dynamometer



#### **Orbital Fat Loss**

- Orbital fat surrounds the eye and is under the eye.
- A bulging fat pad is found in someone who is well nourished
- Area around /under the eye looks hollow / sunken and there are slightly dark circles under the eyes in moderate malnutrition.
- The area around/under the eye is sunken and there is a depression where the fat should be, and there are dark circles under the eyes in a patient with severe malnutrition.



#### **Buccal Fat Loss**

- This is the area under the cheek bones
- Full round cheeks are found in healthy patients.
- Flat Cheeks can be seen in patients with moderate fat loss/malnutrition
- Hollow, narrow, depressed (looks like you are sucking in) under the cheek bones can be seen in the severely malnourished.



## **Triceps Brachii**

- This is the back of the upper arm, just under the shoulder and above the elbow.
- Pinch test -
  - Have the patient bend the arm at the elbow 90 degrees and pinch the area over the triceps.
  - Plen'ty of fat is found between the folds of skin and it is hard to pinch in a well-nourished

patient.

- There is not much fat, and your fingers almost touch in a mild to moderately malnourished patient.
- Fingers touch through the skin in a severely malnourished patient.



#### Ribs

- Visual Inspection
- Ribs are not visible or well defined in a wellnourished patient.
- Ribs are visible in a mild to moderately malnourished patient.
- A depression between the ribs is visible on inspection in the severely malnourished patient.



## **Temporalis**

- The temporalis muscle is on both sides of the forehead.
- Well defined in the well-nourished patient.
- Slight depression in this area in the mild to moderately malnourished patient.
  - Note place a finger over the area when you are chewing to get a good feel for this muscle.
- The area will appear hollowed out with a sunken depression in the severely malnourished patient.



#### **Pectoralis**

- The muscle under the clavicle
- The clavicle in a well-nourished person is not prominent, rather it is covered by the muscle.
- In a mild to moderately malnourished patient there is more of an outline of the clavicle with a slight protrusion.
- In a severely malnourished patient, there are prominent and protruding clavicle bones.



# **Etiologic Criteria**

- Deficiencies secondary to
  - Insufficient intake,
  - Chronic disease,
  - Increased nutrient needs,
  - Weight loss surgery



#### **Etiologic Criteria Reduced Intake**

- A deficit in intake is measured by calculating the percentage of energy requirements the patient can take in per meal or per day.
- According to GLIM reduced assimilation of food/nutrients is associated with a multitude of disorders.
- Inability to take in food and nutrients for example can occur in cases of nausea secondary to chemotherapy or esophageal ulcers or tumors.



# Etiologic Criteria- Inadequate Intake

- The criteria used to measure this are as follows:
- ≤50% of Energy requirements for >1 week,
   or
- Reduction for >2 weeks, or
- Chronic GI conditions that adversely impact food assimilation or absorption.



# Malabsorption

- Causes
  - Pancreatic insufficiency or
  - Chronic diarrhea, or
  - Patients with ostomies with high volume output or
  - Loss of gastrointestinal real-estate s/p surgery



# **Etiologic - Inflammation**

- Major infection or sepsis are acute disease processes that can cause severe inflammation resulting in increased nutritional demands as can injuries such as burns or head trauma.
- Chronic disease such as cancer, renal failure and COPD are examples where energy demands and the inability to meet them can occur.

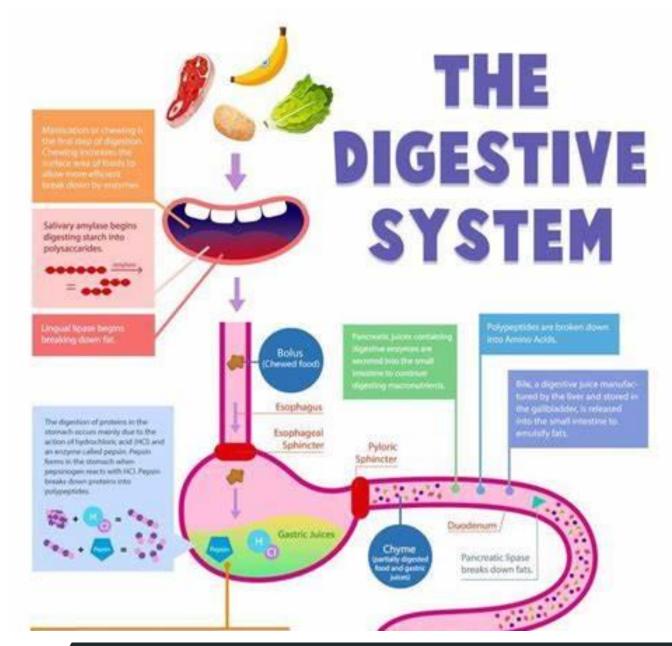


# Where Does a Snickers Bar Go?



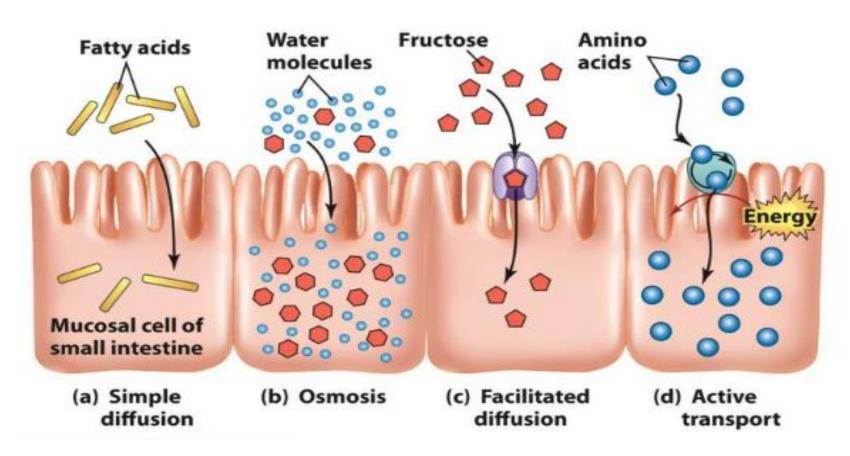


#### Where Does a Snickers Bar Go?



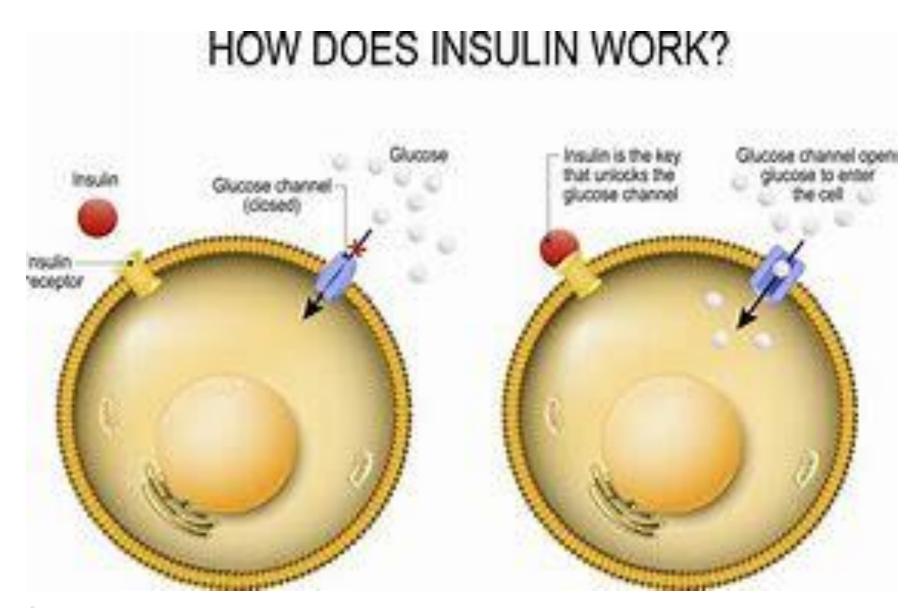
#### Where Does a Snickers Bar Go?

Most absorption happens in the small intestine



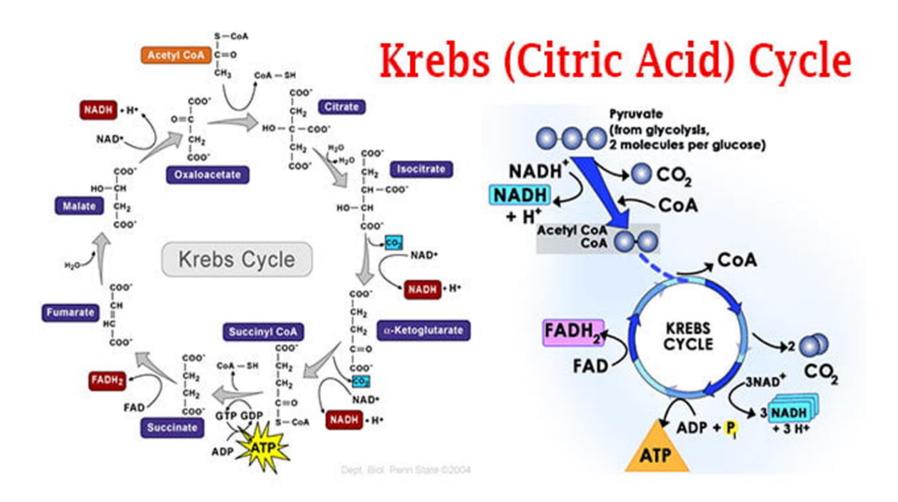


# Where do Snickers Bars Go?





# Where Do Snickers Bars Go?



# Step One Establish a Diagnosis of Malnutrition

- Need one of the phenotypic criteria reviewed above
- Need one of the etiologic criteria listed above
- Example 59 year old man with colon cancer stage IV with mets to liver, pancreas and lungs. He is S/P resection of the transverse and descending colon with ostomy.
- Presents for high output from colostomy and nausea. He has dropped 15 pounds over the past week and has a BMI of 19.7. His intake has been clear liquids for 3 days.
- Does he meet the criteria for Malnutrition.



# Stages of Malnutrition

- Categorization of the severity of malnutrition is dependent on the degree of deviation from established criteria.
- The committee suggested phenotypic metrics for grading severity of malnutrition as
  - Stage 1 (moderate) and
  - Stage 2 (severe) malnutrition.



#### Stage 1 - Moderate Malnutrition

- One of the following phenotypic criteria is required:
  - Weight loss of 5–10% within the past 6 months, or
  - 10–20% weight loss for greater than 6 months or
  - BMI of less than 20 if the patient is under the age of 70 years old, or
  - BMI less than 22 if the patient is over the age of 70 years old or
  - Approved measurement techniques (previously described) show mild to moderate loss of muscle mass.



#### Stage 2 - Severe Malnutrition

- One of the following phenotypic criteria is required to support a finding of severe malnutrition:
  - Weight loss of greater than 10% within the past 6 months, or
  - Greater than 20% weight loss for greater than 6 months or
  - BMI of less than 18.5 if the patient is under the age of 70, or
  - BMI less than 20 if the patient is over the age of 70 or
  - Approved measurement techniques (previously described) show severe loss of muscle mass.



#### **Pediatric Malnutrition**

 According to the National Institute of Health, pediatric undernutrition is a state of nutrition in which deficiency of energy, protein and other nutrients leads to measurable adverse effects on tissue and body functions, and a clinical outcome of growth deviation.



#### **Pediatric Malnutrition - ASPEN Definition**

 According to the American Society of Parenteral and Enteral Nutrition (ASPEN), pediatric malnutrition is defined as "an imbalance between nutrient requirement and intake, resulting in cumulative deficits of energy, protein, or micronutrients that may negatively affect growth, development, and other relevant outcomes."



#### **Pediatric Malnutrition - ASPEN Definition**

 Based on its etiology, malnutrition is either illness related (one or more diseases or injuries directly result in nutrient imbalance) or caused by environmental/behavioral factors associated with decreased nutrient intake and/or delivery.



# Protein Calorie Malnutrition vs Acute Malnutrition

- Acute malnutrition is a nutritional deficiency resulting from either inadequate protein or energy intake.
- In 1959 Jelliffe introduced the term "protein calorie malnutrition", which has been replaced by "acute malnutrition".
- "All terms, though, refer to pediatric undernutrition as a state of nutrition in which deficiency of energy, protein and other nutrients leads to measurable adverse effects on tissue and body functions, and a clinical outcome of growth deviation".



- The term "marasmus" originates from the Greek word "marasmus", which means wasting or withering.
- Per NIH, Marasmus is the most frequent syndrome of acute malnutrition.
- Marasmus is due to inadequate energy intake over a period of months to years.



- Marasmus results from the body's physiologic adaptive response to starvation.
  - This is a response to severe deprivation of energy and all nutrients
  - It is described as wasting of body tissues, especially muscles and subcutaneous fat.



- Children younger than five years are the most commonly involved because of their increased caloric requirements and increased susceptibility to infections.
  - They appear emaciated, weak and lethargic,
  - There can be associated bradycardia, hypotension, and hypothermia
  - Their skin is wrinkled, and loose because of the loss of subcutaneous fat, but is not characterized by any specific dermatosis



- Muscle wasting is graded and progresses from metabolically active muscle groups to those that are less active.
  - It frequently begins in the axilla and groin (grade I),
  - Second it moves to the thighs and buttocks (grade II),
  - Third it moves to the chest and abdomen (grade III), and
  - Lastly it moves to the facial muscles (grade IV),
  - In severe cases, the loss of buccal fat pads gives the children an aged facial aspect.
  - Children are often apathetic but become irritable and difficult to console when their symptoms are severe.



# Kwashiorkor (Sugar Babies) – E40

- The term "kwashiorkor" derives from the Kwa language of Ghana and its meaning is equivalent to "the sickness of the weaning".
- The was first used term in 1933, Kwashiorkor is thought to be the result of inadequate protein but reasonably normal caloric intake.
- It was first reported in children with maize diets which is typically low in protein but high in carbohydrate



# Kwashiorkor (Sugar Babies) – E40

- This is seen in developing countries and mainly involves older infants and young children.
- It mostly occurs in areas of famine or with limited food supply, and particularly in those countries where the diet consists mainly of corn, rice and beans



#### Kwashiorkor – E40

- Kwashiorkor represents a maladaptive response to starvation.
  - Edema is the distinguishing characteristic of kwashiorkor, which does not exist in marasmus,
  - Edema is due to a combination of low serum albumin, increased cortisol, and inability to activate the antidiuretic hormone.
  - It usually starts as pedal edema (grade I), then facial edema (grade II), paraspinal and chest edema (grade III) up to the association with ascites (grade IV).



#### Kwashiorkor – E40

- Besides edema, clinical features are
- Almost normal weight for age,
- Dermatoses,
- Hypopigmented hair, (dry, sparse, brittle, and depigmented, appearing reddish yellow)
- Distended abdomen, and
- Hepatomegaly...



#### **Nutritional Assessment in Children**

An adequate nutritional assessment includes:

A detailed dietary history,

Physical examination,

• Anthropometric measurements (including weight, length, and head circumference in younger children) using appropriate reference standards, such as the WHO standard growth charts, and

Başic laboratory indices for micro and macro

nutrients

 Skinfold thickness and mid-upper-arm circumference (MUAC) measurements represent a useful method for evaluating body composition



#### **Childhood Malnutrition**

#### Table 1

New terms used for childhood malnutrition (adapted from Koletzko, B. et al. (eds), 2015) [5].

Term	Definition
Moderate acute malnutrition	Mid-upper-arm circumference greater or equal to 115 mm and less than 125 mm Weight-for-height Z score < $-2$ but > $-3$
Severe acute malnutrition	Mid-upper-arm circumference < 115 mm  Weight-for-height Z score < -3  Bilateral pitting edema  Marasmic kwashiorkor
Global acute malnutrition	The sum of the prevalence of severe acute malnutrition plus moderate acute malnutrition at a population level



#### **Head Circumference**

- Head circumference a dependable indicator of nutritional status and brain development and is associated with scholastic achievement and intellectual ability in school-aged children.
- The long-term effects of severe malnutrition at an early age may result in delayed head circumference growth, brain development, and decreased intelligence and scholastic achievement



# Refeeding Syndrome

- Due to the sudden availability of glucose, leading to inhibition of gluconeogenesis and an insulin surge.
  - This causes rapid intracellular influx of potassium, magnesium, and phosphate which results in low serum levels and poor myocardial contractility.



# Refeeding Syndrome

- The syndrome shows up as
  - excessive sweatiness,
  - muscle weakness,
  - tachycardia, and heart failure,
- Prevention achieved by avoiding rapid carbohydrate feeding, supplementing phosphate and thiamine during the initial increase in nutritional intake, and monitoring the patient carefully for alterations in serum phosphate, potassium, and magnesium; (vii)



- Laparoscopic Sleeve Gastrectomy (LSG)
  - The stomach is divided vertically, reducing the volume by 75%.
  - An optimal procedure for extremely obese patients and young women.
  - The pylorus is preserved.



- Roux-en-Y Gastric Bypass (RYGB)
  - Creates a small pouch with a volume of 10–20 mL.
  - Food bypasses most of the stomach and enters the small intestine via an anastomosis.
  - After approximately 150 cm, the next anastomosis is made to the biliary limb.
    - Food bypasses the initial loop of the small intestine.



- Biliopancreatic Diversion with Duodenal Switch (BPD-DS)
  - Resulting in the greatest weight loss, and the most nutritional complications.
    - A distal horizontal gastrectomy is done leaving 200–250 mL of the upper stomach, which is anastomosed to the distal 250 cm of the small intestine.
    - The biliopancreatic limb is then connected to the alimentary limb 50 cm before to the ileocecal valve, only 50 cm of common limb is left,
      - Results in a significant malabsorption of fat and protein and other micronutrients.



- Based on the intended effect, bariatric surgeries can therefore be broadly categorized into restrictive or combined (restrictive and malabsorptive) depending on the purpose of the planned surgery.
- Restrictive surgeries: Surgery intended to decrease the stomach volume leads to reduced oral intake by promoting early satiety.
- Malabsorptive surgeries: Surgery intended to reduce small bowel length available for mixing biliopancreatic juices, resulting in calorie malabsorption.



# **Restrictive Surgery**

 LSG and laparoscopic adjustable gastric banding are the most common restrictive

operations.

• The gastrointestinal passage is not changed, meaning the problem of minerals, vitamins, and micronutrients is determined by the amount of food intake and the diversity of the various foods.

Following restrictive procedures, patients have problems especially with the B vitamins.
Vitamin B1 deficiency can lead to beriberi, one of the most severe metabolic complications caused by an inadequate dietary intake or by persistent vomiting.

• Treat with Thiamine



- RYGB and BPD-DS surgeries result in malabsorption of nutrients
- Iron deficiency after malabsorptive procedures due to
  - Maldigestion and malabsorption of iron as it bypasses the duodenum and proximal jejunum and
  - A reduction of gastric acid secretion.



- Iron deficiency also occurs due to altered food preferences and less intake of red meat.
- Anemia results from decreased iron.
- Vitamin B12 and folate deficiencies after malabsorptive procedures may aggravate anemia.



- The amount of iron deficiency also depends on the malabsorptive procedure,
- Iron Deficiency is highest in BPD-DS (13–62%) patients.
  - Intravenous supplementation is often necessary together with vitamin C administration, which permits a better intestinal uptake of iron.
  - Supplemental iron of 45–60 mg/day is highly recommended



- Protein Malnutrition is one of the most severe macronutrient problems encountered after malabsorptive surgery.
- It can occur after RYGB or even after LSG, but it most commonly affects patients after BPD-DS because of poor protein digestion and absorption as a consequence of changed biliary and pancreatic function.
- In RYGB or LSG patients, it occurs because protein food sources are avoided, and long vomiting phases can occur.



### **Protein Malnutrition**

- Clinical symptoms include edema, muscle loss, increasing appetite, and skin, hair, and nail problems.
- Protein intake should be increased by 30% for patients after BPD-DS.
- Exercise is also an important factor in maintaining muscle mass.
- If daily protein intake of 60–120 g (1.5 g/kg ideal body weight) is not reached, then protein shakes, protein powder, or protein water should be supplemented.



- Fat Malnutrition
- Fat malabsorption has a higher incidence in malabsorptive procedures.
- Symptoms associated can include steatorrhea (excessive fat in stool) and deficiencies of fat-soluble vitamins.



## **Normal Bariatric Post Operative Diet**

- Phase 1 clear liquid first week 4-6 oz
- Weeks 2-3 full liquid diet
- Weeks 3-6 Pureed foods
- Weeks 6-14 Soft food
- Guide For Eating After Bariatric Surgery –

**Bariatric Food Source** 



# ICD 10 CM Diagnoses Codes and GLIM Criteria

- Malnutrition codes fall into the family of E40-E46
  - Excludes 1 diagnoses include intestinal malabsorption (K90.-) and sequelae of protein-calorie malnutrition (E64.0).
  - Excludes 2 diagnoses include nutritional anemias (D50-D53) and starvation (T73.0).



# ICD 10 CM Diagnoses codes and GLIM Criteria

- Diagnosis code E46 Unspecified proteincalorie malnutrition is considered by ICD 10 CM to be a Comorbid Condition or Complication) (CC)
- DRG auditors target clinically unsupported CC and MCC to lower the DRG and associated reimbursement.
- On a clinical audit the clinical record would have to show and meet clinical criteria to meet the basic definition of malnutrition described above.



### ICD 10 CM Diagnoses codes and GLIM Criteria

- Diagnosis code E44 Protein-calorie malnutrition of moderate and mild degree includes
  E44.0 Moderate protein-calorie malnutrition and
  E44.1 Mild protein-calorie malnutrition.
- These are also considered by ICD 10 CM to be a
- E44.0 would require the clinical record to meet both the basic malnutrition and the moderate malnutrition criteria to pass a clinical audit.
- E44.1 would require clinical documentation to support the basic malnutrition criteria to pass a clinical audit.



# ICD 10 CM Diagnoses codes and GLIM Criteria

- Diagnosis code E43 Unspecified severe protein-calorie malnutrition is considered a Major Comorbidity or Complication (MCC) for ICD 10 CM.
- E43 requires the clinical record to include the basic malnutrition criteria and the severe malnutrition criteria to pass a clinical audit.



- Providers can benefit from training on these documentation needs.
- The provider can copy the dietician's assessment and agree with it to support these diagnoses.
  - The dietician consultation is often buried in the clinical record, and this helps bring it to light.
- Queries can be employed in real time to prompt the provider to marry the documentation with supportive clinical findings.



- Building a provider template to pull nutritional data into the record could solve the problems of:
  - Cloned progress notes typically undo the physical findings of malnutrition, and a template could draw attention to the actual physical findings.
  - Capture BMI BMI is not always noted in the record, but it could be added to the provider's templates.
  - Use of a well-developed template will support the diagnosis, if it is used.



- Once malnutrition is diagnosed treatment for malnutrition must also be documented to lend support to the presence and severity of the malnourished state.
  - Supplements
  - Special diet
  - Intravenous additives
  - Total Parenteral Nutrition
  - Gastric tube/ Dobhoff Tube Tube Feedings



- The "present on admission" indicator for malnutrition should not be N.
- This is a process that occurs over time.
- It would be an unusual circumstance to make this a valid indicator.
- Coding Malnutrition for someone who is having problems vomiting within a few days after bariatric surgery is also inappropriate unless they were identified as malnourished pre-operatively.



## Questions





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# THANK YOU

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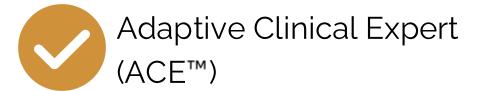


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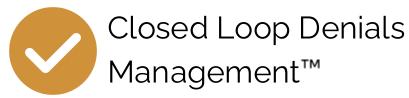


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