

The GLIM approach

After reaching global consensus, the Global Leadership Initiative on Malnutrition (GLIM) proposed criteria for the diagnosis of malnutrition in the clinical setting.

The GLIM definition of malnutrition is based on **5 diagnostic criteria**:
3 phenotypic (clinical findings) and 2 aetiologic (causes).

The diagnosis of malnutrition requires at least **1 phenotypic criterion** and **1 aetiologic criterion**.

What is malnutrition?

Malnutrition is a condition which occurs when there is a deficiency of certain vital nutrients in a person's diet. Failure to meet the demands of the body leading to effects on the growth, physical health, mood, behavior and other functions of the body. Malnutrition commonly affects children and the elderly.

Malnutrition also entails conditions where diet does not contain the right balance of nutrients. This might mean a diet high in calories but deficient in vitamins and minerals. These second group of individuals may be overweight or obese but are still considered malnourished. Thus being malnourished does not always mean that the person is underweight or thin.

Common Signs of malnutrition?

1. Unplanned weight loss
2. Loss of appetite with lack of interest in food and drink
3. Inability to focus and concentrate
4. Feeling tired all the time even when sedentary
5. A general feeling of malaise
6. Getting sick often and taking longer to recover

Other symptoms include:

1. Increased susceptibility to infections.
2. Delayed and prolonged healing of even small wounds and cuts.
3. Irritability and dizziness.
4. Skin and hair becomes dry.
5. Nails may appear brittle and break easily.
6. Some patients suffer from persistent diarrhoea or long term constipation.
7. Menstruation may be irregular or stop completely in malnourished women.
8. Depression is common in malnutrition. This could be both a cause as well as an effect of malnutrition.

Who is at risk of malnutrition?

Malnutrition is commonly found in developing countries. It affects all age groups, especially children, pregnant women and the elderly.

It is prevalent in those with long-term chronic illnesses like chronic liver and kidney disease, cancer or other debilitating infections like HIV. It is also common among those that abuse drugs or alcohol and those that are food-insecure.

Worldwide malnutrition is found to be an important cause of illness and death. It increases the risk of developing infections like malaria, measles and respiratory tract infections. It is responsible for about half of all deaths in young children.

What is the GLIM diagnostic process



1 Risk Screening

You can use any validated screening tool, below are 4 commonly used examples.

1 Nutritional risk screening (NRS-2002),

<p>Nutritional status</p> <p>None <input type="radio"/></p> <p>Mild <input checked="" type="radio"/> • Weight loss > 5% in 3 months • 50 - 75% of the normal food intake in the last week</p> <p>Moderate <input checked="" type="radio"/> • Weight loss > 5% in 2 months or • BMI 18.5 - 20.5 kg/m² and reduced general conditions or • 25 - 50% of the normal food intake in the last week</p> <p>Severe <input checked="" type="radio"/> • Weight loss > 5% in 1 month (>15% in 3 months) or • BMI < 18.5 kg/m² and reduced general conditions or • 0 - 25% of the normal food intake in the last week</p>	<p>Severity of the disease (stress metabolism)</p> <p>None <input type="radio"/></p> <p>Mild <input checked="" type="radio"/> Hip fracture, chronic disease especially with complications, e.g. liver cirrhosis, COPD, diabetes, cancer, chronic hemodialysis</p> <p>Moderate <input checked="" type="radio"/> e.g. stroke, hematologic malignancy, severe pneumonia, extended abdominal surgery</p> <p>Severe <input checked="" type="radio"/> e.g. head traumas, hematopoietic stem cell transplantation, intensive care patients (APACHE-II > 10)</p>
<p>Advanced Age Age ≥ 70 years</p>	
<p>0 - 2 points Repeat screening weekly.</p>	<p>3 - 7 points Patient is at nutritional risk. Nutritional care plan should be set up.</p>

2 Malnutrition Screening Tool (MST),

1. Have you lost weight recently without trying?

No 0
Unsure 2

If yes, how much weight (kg) have you lost?

1 - 5 1
6 - 10 2
11 - 15 3
>15 4
Unsure 2

Weight loss score:

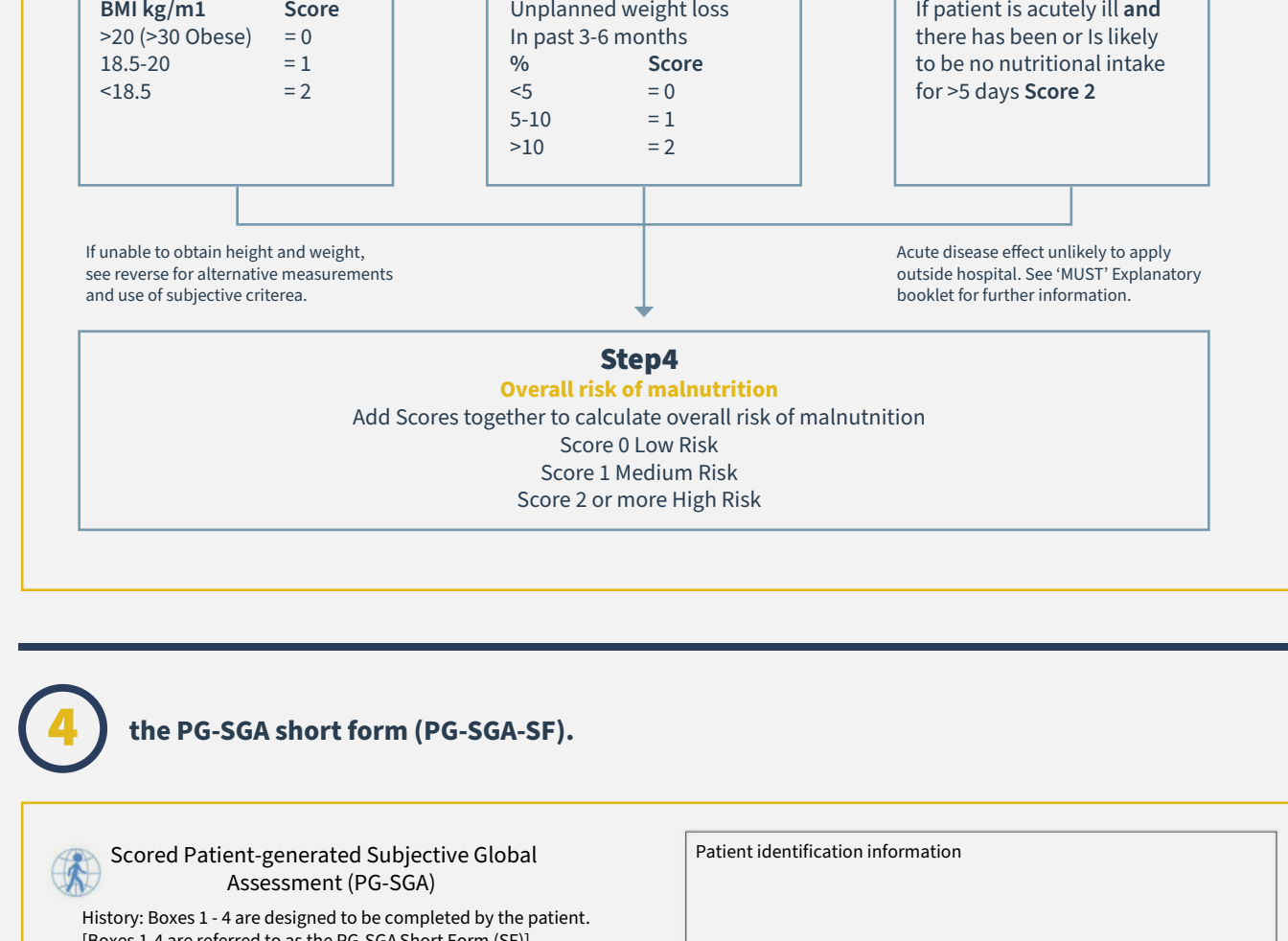
2. Have you been eating poorly because of a decreased appetite?

No 0
Yes 1

Appetite score:

Total MST Score (weightloss + appetite scores)

3 Malnutrition Universal Screening Tool (MUST)



4 the PG-SGA short form (PG-SGA-SF).

Scored Patient-generated Subjective Global Assessment (PG-SGA)
History: Boxes 1 - 4 are designed to be completed by the patient. [Boxes 1-4 are referred to as the PG-SGA Short Form (SF)]

1. Weight (see worksheet 1)
In summary of my current and recent weight:
I currently weigh about _____ pounds
I am about _____ eeti _____ nches tall
One month ago I weighed about _____ pounds
Six month ago I weighed about _____ pounds
During the past two weeks my weight has:
 Decreased (1) Not changed (2) Increased (3)

2. Food intake: As compared to my normal intake, I would rate my food intake during the past month as
 Unchanged (0)
 More than usual (0)
 Less than usual (1)
I am now taking
 Normal food but less than normal amount (1)
 Little solid food (2)
 Only liquids (3)
 Only nutritional supplements (3)
 Very little of anything (4)
 Only tube feedings or only nutrition by vein (3) **Box 2**

3. Symptoms: I have had the following problems that have kept me from eating enough during the past two weeks (check all that apply)
 No problem eating (0)
 No appetite, just did not feel like eating (3)
 Nausea (1)
 Constipation (1)
 Mouth sores (2)
 Things taste funny or have no taste (1)
 Problems swallowing (2)
 Pain, where? (3)
 Other: (1)
Examples: Depression, money, or dental problems **Box 3

Vomiting (3)
 Diarrhea (3)
 Dry moth (1)
 Smells bother me (1)
 Feel full quickly (1)
 Fatigue (1)

4. Activities and function: I would generally rate my activity as:
 Normal with no limitations (0)
 Not my normal self, but able to be up and about with fairly normal activities (1)
 Not feeling up to most things, but in bed or chair less than half the day (2)
 Able to be little activity and spend most of the day in bed or chair (3)
 Pretty much bed ridden, rarely out of bed (3) **Box 4**

The remainder of this form is to be completed by your doctor, nurse, dietitian, or therapist. Thank you.
©FD Ottery 2005, 2006, 2015 v3.22.15
email: faithotteryndphd@aol.com, or info@pt-global.org

Additive score of boxes 1-4 **A**

2 Diagnostic Assessment

The GLIM-process suggests a step-wise approach for diagnosing malnutrition

If your screening test score indicated at risk for malnutrition, the following step should be completed.

- 0 Step 0 is screening for the risk of malnutrition, for which GLIM suggests to use one of the existing, validated screening tools.
- 1 Step 1, GLIM introduces the new criteria for malnutrition diagnostics in which both aetiology (reduced intake, malabsorption and increased energy needs) and symptoms/signs (low BMI, weight loss and low muscle mass) are included. In the final step,
- 2 step 2, the severity of malnutrition is determined based on two sets of cut-off values for the GLIM-criteria in step 1.

3 GLIM Diagnosis

A two-step approach for the malnutrition diagnosis was selected, i.e., first screening to identify "at risk" status by the use of any validated screening tool, and second, assessment for diagnosis and grading the severity of malnutrition.

The malnutrition criteria for consideration were retrieved from existing approaches for screening and assessment.

The top five ranked criteria included

3x phenotypic criteria
(non-volitional weight loss, low body mass index, and reduced muscle mass)

2x aetiologic criteria
(reduced food intake or assimilation, and inflammation or disease burden).

To diagnose malnutrition at least one phenotypic criterion and one aetiologic criterion should be present. Phenotypic metrics for grading severity as Stage 1 (moderate) and Stage 2 (severe) malnutrition are proposed. It is recommended that the aetiologic criteria be used to guide intervention and anticipated outcomes. The recommended approach supports classification of malnutrition into four aetiology-related diagnosis categories.

4 Severity

Severity grading is based on

- Body mass index (BMI)
- Percentage weight loss
- Reduced Muscle mass

Summary

