



Nutritional Risk Screening Tools

The First Step in the Fight Against Hospital Malnutrition

Nutritional risk screening is the first step in the more complex nutritional assessment process. However, in certain countries in Asia, nutritional risk screening is not routinely performed, raising the level of risk for malnutrition. To avoid unnecessary nutrient depletion, all hospitalized patients should be screened for a potential nutritional risk as recommended by the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.)¹ and the European Society for Clinical Nutrition and Metabolism (ESPEN).² Screening can be used to determine whether additional information from an assessment is required to warrant an intervention.¹

The roles and responsibilities of health care professionals who are accountable for risk screening may vary depending on the country involved, whether it is a public or private hospital, and available resources. The information contained in this article is meant to serve as a general guide.

Recommended Patient Screening Questionnaires

Various screening questionnaires have been designed to detect protein and energy under-nutrition in patients. These questionnaires are effective at predicting whether under-nutrition is likely to develop and/or worsen. Based on guidelines of the European Society for Clinical Nutrition and Metabolism (ESPEN),² and American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.),³ the following questionnaires have been recommended to avoid unnecessary nutrient depletion:

- Nutritional Risk Screening 2002 (NRS 2002)²
- Subjective Global Assessment (SGA)³

NRS 2002: Initial Screening for Hospital Patients

ESPEN recommends the NRS 2002 screening protocol to detect the presence and the risk of developing under-nutrition in a hospital setting. This protocol contains components of the Malnutrition Universal Screening Tool (MUST) extended by a grading of disease severity, an adjustment to age (if equal to or greater than 70 years), and includes all possible patient categories in a hospital.

NRS 2002 asks four pre-screening questions with regard to adult patients:⁴

- Is the patient's body-mass-index (BMI) less than 20.5? (BMI = weight/height m²)
- Has the patient lost weight within the last three months?
- Has the patient had a reduced dietary intake in the last week?
- Is the patient severely ill (e. g. in intensive therapy)?

If the answer is "Yes" to any question during this initial pre-screening, a final screening should be performed. If the answer is "No" to all questions, then the patient should be re-screened in weekly intervals to monitor nutritional status.

NRS 2002: Final Screening for Hospital Patients

Impaired nutritional status		Severity of disease (↓ increase in requirements)	
Score		Score	
Absent: 0	Normal nutritional status	Absent: 0	Normal nutritional requirements
Mild: 1	Wt loss >5% in 3 mths or food intake below 50 - 75% of normal requirement in preceding week.	Mild: 1	Hip fracture, Chronic patients, in particular with acute complications cirrhosis, COPD*. Chronic haemodialysis, diabetes, oncology
Moderate: 2	Wt loss >5% in 2 mths or BMI 18.5 - 20.5 + impaired general condition or food intake 25 - 60% of normal requirement in preceding week.	Moderate: 2	Major abdominal surgery, Stroke, Severe pneumonia, hepatologic malignancy
Severe: 3	Wt loss >5% in 1 mths (>15% in 3 mths) or BMI <18.5 + impaired general condition or food intake 0 - 25% of normal requirement in preceding week.	Severe: 3	Head injury, Bone marrow transplantation, Intensive care patients (APACHE >10)

Score (nutritional status) + score (disease severity) = Total score:

Adjustment for age: if ≥ 70 years: add 1 to total score above

➔ Age-adjusted total score

After the final screening, a scoring evaluation is performed to identify a potential impaired nutritional status and the severity of disease:⁴

Based on total patient score, the following evaluations and actions are recommended:

	<p>Score 0: No risk:</p> <p>Weekly re-screening of the patient, if the patient is scheduled for major surgery, consider a preventive nutritional care plan Severity of disease</p>
	<p>Score 1 - 2: Enhanced risk:</p> <p>Weekly re-screening of the patient, if the patient is scheduled for major surgery, consider a preventive nutritional care plan</p>
	<p>Score \geq 3: High risk:</p> <p>A nutritional care plan is initiated</p>

Subjective Global Assessment

As an extended alternative to the NRS 2002 protocol, the SGA can be used to identify patients with existing malnutrition or who are at risk of developing malnutrition, using a bedside assessment.^{5,6,7} SGA considers alterations in body composition and changes in physiological function. Originally developed to assess surgical patients, many studies have shown its applicability in other clinical situations, evaluating patients with renal failure, cancer, hepatic diseases, as well as the elderly and HIV-infected.⁵

SGA criteria take into account the following patient factors:⁷

- Weight loss
- Dietary intake
- Gastrointestinal (GI) symptoms
- Functional capacity
- Disease-related effects
- Physical signs of malnutrition (loss of subcutaneous fat or muscle mass, edema, ascites)

If a patient receives an SGA "A" rating, they are considered well nourished. An SGA "B" rating indicates a moderately malnourished patient; an SGA "C" rating indicates a severely malnourished patient.

Nutritional Risk Screenings: The Benefit to Patients

When nutritional risk screening is performed, the deleterious effects of hospital malnutrition can be prevented and reduced.

To read more about the benefits of nutritional risk screening, [click here](#)

Early Detection Is Critical to Enable Good Clinical Nutrition

To counteract hospital malnutrition and its consequences, timely identification of impaired nutritional status and quick response to start treatment are crucial for patients, especially in nutritional risk groups. Today, only 50 percent of hospital malnutrition cases are

recognized in regular clinical practice.^{8,9}

References

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