

Validated Malnutrition Screening and Assessment Tools: Comparison Guide

General notes on screening tools¹:

- The screening tools outlined below are relatively similar, using parameters such as recent weight loss, recent poor intake/ appetite and body weight measures and providing a numerical score to categorise risk of malnutrition.
- All tools listed generally perform well² with the exception of the nursing home population where all current tools carry limitations in relation to assessing nutritional status and predicting outcomes³.
- When choosing a screening tool that is suitable for your facility, it is important to consider the following:
 - o Ensure the tool is validated to the population⁴
 - o **Complexity:** If the tool requires calculations (e.g. BMI, percentage weight loss) or is lengthy with many parameters, it is likely to be more time consuming and subject to error. This may also result in a low compliance with screening.
 - o **Sensitivity:** As screening is only the first step to identify those that require nutritional assessment, a screening tool needs to achieve a high sensitivity (that is, identifies all those at risk), even if this is at the expense of a high specificity (or false positives).
- Other factors to consider: Who will perform screening? How can screening be incorporated into current procedures? What action will be taken for those screened at risk?

Name Author, year, country	Patient Population	Nutrition screening parameters	Criteria for risk of malnutrition	When/ by whom	Reliability established	Validity established
Malnutrition Screening Tool (MST) ⁵ Ferguson et al. (1999) Australia	Acute adults: inpatients & outpatients ^{5,6} including elderly ⁷ Residential aged care facilities ⁷	Recent weight loss Recent poor intake	Score 0-1 for recent intake Score 0-4 for recent weight loss Total score: ≥2 = at risk of malnutrition	Within 24 hours of admission and weekly during admission Medical, nursing, dietetic, admin staff; family, friends, patients themselves	Agreement by 2 Dietitians in 22/23 (96%) cases Kappa = 0.88 Agreement by a Dietitian & Nutrition Assistant in 27/29 (93%) of cases Kappa = 0.84; and 31/32 (97%) of cases Kappa = 0.93	Compared with Subjective Global Assessment (SGA) and objective measures of nutrition assessment. Patients classified at high risk had longer length of stay. Sensitivity = 93% Specificity = 93%

Name Author, year, country	Patient Population	Nutrition screening parameters	Criteria for risk of malnutrition	When/ by whom	Reliability established	Validity established
Mini Nutritional Assessment – Short Form (MNA-SF) ⁸ Rubenstein et al. (2001) United States	Elderly May be best used in community, sub-acute or residential aged care settings, rather than acute care ²	Recent intake Recent weight loss Mobility Recent acute disease or psychological stress Neuropsychological problems BMI	Score 0-3 for each parameter Total score: < 11 = at risk, continue with MNA	On admission and regularly Not stated	Not reported	Compared to MNA and clinical nutritional status. Sensitivity = 97.9% Specificity = 100% Diagnostic accuracy = 98.7% Compared with SGA in older inpatients Sensitivity = 100% Specificity = 52% ²
Malnutrition Universal Screening Tool (MUST) ⁹ Malnutrition Advisory Group, BAPEN (2003) UK	Adults – acute and community	BMI Weight loss (%) Acute disease effect score	Score 0 – 3 for each parameter. Total score: >2 = high risk 1 = medium risk 0 = low risk	Initial assessment and repeat regularly All staff able to use	Quoted to be internally consistent and reliable. Very good to excellent reproducibility Kappa = 0.8 – 1.0	Face validity, content validity, concurrent validity with other screening tools (MST and NRS) ¹⁰ Predicts mortality risk & increased length of stay and discharge destination in acute patients ¹¹
Nutrition Risk Screening (NRS-2002) ¹² Kondrup et al. (2003) Denmark	Acute adult	Recent weight loss (%) Recent poor intake (%) BMI Severity of disease Elderly	Score 0-3 for each parameter Total score: > 3 = start nutritional support	At admission and regularly during admission Medical and nursing staff	Good agreement between a Nurse, Dietitian and Physician Kappa = 0.67	Retrospective and prospective analysis. Tool predicts higher likelihood of positive outcome from nutrition support and reduced length of stay among patients selected at risk by the screening tool & provided nutrition support.

Table adapted, with permission, from Banks (2008)¹

For more information about nutrition screening tools and how to implement nutrition screening process in your healthcare facility, refer to the Evidence Based Practice Guidelines for the Nutritional Management of Malnutrition in Adult Patients across the Continuum of Care¹³.

Validated Nutrition Assessment Tools: Comparison Guide

General notes on assessment tools¹²:

The tools outlined below are recommended because of their higher sensitivity and specificity at predicting nutritional status. Training is required for the correct application of nutrition assessment tools. A link to a training DVD on completing the SGA is available on the [NEMO website](#).

Name Author, year	Setting and Patient Population	Nutrition assessment parameters	Rationale/ Clarification
Subjective Global Assessment (SGA) Detsky, A.S. et al. 1987 ¹⁴	<u>Setting:</u> Acute ^{14,15,16} Rehab ¹⁷ Community ¹⁸ Residential Aged Care ¹⁹ <u>Patient group:</u> Surgery ¹⁴ Geriatric ^{17,18,19,20} Oncology ¹⁵ Renal ¹⁶	Includes medical history (weight, intake, GI symptoms, functional capacity) and physical examination Categorises patients as: - SGA A (well nourished) - SGA B (mild-moderate malnutrition) <u>or</u> - SGA C (severe malnutrition)	<ul style="list-style-type: none"> • Requires training • Easy to administer • Good intra- and inter-rater reliability
Patent Generated Subjective Global Assessment (PG-SGA) Ottery, F. 2005 ²¹ http://pt-global.org/	<u>Setting:</u> Acute ²²⁻²⁴ <u>Patient group:</u> Oncology ²² Renal ²³ Stroke ²⁴	Includes medical history (weight, intake, symptoms, functional capacity, metabolic demand) and physical examination Categorises patients into SGA categories (A, B or C) as well as providing a numerical score for triaging. Global categories should be assessed as per SGA.	<ul style="list-style-type: none"> • Numerical score assists in monitoring changes in nutritional status • Easy to administer • Scoring can be confusing but this can be addressed through training • Patients can complete the first half of the tool
Mini-Nutritional Assessment (MNA) Guigoz Y et al. 1994 ²⁵ http://www.mna-elderly.com/	<u>Setting:</u> Acute ²⁵ Community ²⁵ Rehab ²⁵ Long term care ²⁵ <u>Patient group:</u> Geriatric ²⁵	Screening and Assessment component Includes diet history, anthropometry (weight history, height, MAC, CC), medical and functional status. Assessed based on numerical score as: - no nutritional risk - at risk of malnutrition <u>or</u> - malnourished	<ul style="list-style-type: none"> • Lengthy • Low specificity for screening section of tool in acute populations² • Can be difficult to obtain anthropometric data in this patient group • Need calculator to calculate BMI

For more information about nutrition assessment, refer to the Evidence Based Practice Guidelines for the Nutritional Management of Malnutrition in Adult Patients across the Continuum of Care¹³.

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