



Canadian
Malnutrition
Task Force™

le Groupe de
travail canadien
sur la malnutrition^{MC}

Advancing Nutrition Care in Canada / Améliorer les soins nutritionnels au Canada

Subjective Global Assessment (SGA) FAQs

1. Why should I choose SGA?

SGA is considered to be a gold standard for assessing malnutrition. Since its original description in pre-operative patients in 1982¹, this nutrition assessment tool has been validated in many different disease states including surgical patients, those with cancer, on renal dialysis and in the ICU.² The results of SGA have been found to be highly predictive of health outcomes related to nutritional status.³⁻⁵ SGA is a simple method that can be used at the bedside and only takes 10 minutes. Since it identifies persons who would benefit from nutrition, it can also be used to triage patients.

2. Functional capacity: How can I distinguish between functional decline related to nutrition vs. disease?

The presence of protein-calorie malnutrition may affect functional capacity particularly in those who are severely malnourished. Functional capacity also needs to be considered in the overall context of the patient's clinical condition. In many cases functional capacity may be impaired due to underlying illness. Look for conditions that would lead to reduced functional capacity which may not be the result of underlying malnutrition due to inadequate food or nutrient intake.

Examples include reduced functional ability due to paresis following a stroke; amputation; trauma; surgery, severe arthritis, etc. These changes may affect the body composition assessment (i.e., atrophy due to disuse), but they may not be the result of underlying malnutrition due to inadequate food or nutrient intake. These dysfunctions would not affect the SGA score because they are not related to malnutrition.

3. Metabolic Requirement: How do I determine who has a high metabolic demand?

Examples of diagnoses such as the systemic inflammatory response syndrome (SIRS), severe inflammatory bowel disease, burns and head trauma are associated with an increased metabolic requirement. For patients with a combination of acute conditions which on their own may not result in a higher metabolic demand, you will need to use your clinical judgment to assess the overall level of demand. In such instances, you may also want to get input from the medical staff.

When performing the SGA, the adequacy of nutrient intake should be assessed in relation to presence of metabolic stress. An individual with high metabolic stress would be expected to have higher energy, protein and potentially higher micronutrient demands than an individual of similar body composition with mild or minimal stress. An inability to meet these requirements would result in malnutrition.



4. Physical Examination: What are some tips when assessing fat stores?

When looking at the upper arm region, ask the patient to bend their arm. Roll the patient's skin in the areas above the biceps and below the triceps between your fingers. Do not include muscle in the pinch. If there is a large space between the fingers (at least an inch), there is a normal amount of fat. Some depth between the fingers, or skin fitting loosely over the deeper tissues is a sign of loss of body fat. If fingers meet when the skinfold is pinched, the subcutaneous fat loss is severe. When looking at the ribs and lower back, ask the patient to press their hands hard against a solid object and take a deep breath. Look for loose skin, loss of fullness, veins visible under the skin, indentation and bone protrusion. See table below from SGA Guidance document available [here](#)

SUBCUTANEOUS FAT

Physical examination	Normal	Mild/Moderate	Severe
Under the eyes	Slightly bulging area	Somewhat hollow look, Slightly dark circles,	Hollowed look, depression, dark circles
Triceps	Large space between fingers	Some depth to fat tissue, but not ample. Loose fitting skin.	Very little space between fingers, or fingers touch
Ribs, lower back, sides of trunk	Chest is full; ribs do not show. Slight to no protrusion of the iliac crest	Ribs obvious, but indentations are not marked. Iliac Crest somewhat prominent	Indentation between ribs very obvious. Iliac crest very prominent

5. Physical Examination: How do I assess fat and muscle stores on a patient who is obese?

Observing fat and muscle stores in an obese person can be challenging. For instance, you may still observe a large space when the skinfold is pinched but there is a significant loss of body fat. Subcutaneous fat loss is most obvious under the eyes. Also look for hollowing of the cheeks, loose skin and stretch marks in the skin. Ask the patient whether they have noticed whether their clothing is fitting more loosely. To determine whether the muscle stores are depleted, focus on bony areas and smaller muscle groups such as the temples, chest, deltoids, and scapula.

6. Physical Examination: How do I determine whether muscle wasting in seniors is due to malnutrition or is a normal part of aging?

SGA can be used to assess seniors over 65 years old. A common problem in elderly patients is the isolated loss of muscle strength such as difficulty in rising from a sitting position, which may indicate moderate or severe malnutrition, however, it should be distinguished from muscle disuse. By looking at the aggregate of information collected from the diet history, weight history, symptoms, functional capacity, in addition to the physical assessment, SGA is able to distinguish between muscle loss related to aging versus muscle loss related to malnutrition.

Consider the root cause/ etiology of the muscle mass loss, to determine whether muscle wasting is related to malnutrition or aging. For example, if the person is eating well but is experiencing muscle loss, it is likely due to aging. If the person has a loss of appetite, or is eating less than usual, is losing weight and has muscle/ fat loss, then a component of malnutrition is likely involved. In the case of malnutrition, improved intake should reverse weight loss/ promote weight stability, improve functional status, and improve muscle and fat stores.

When planning nutrition interventions to address malnutrition, always consider the patient's goals of care and expected benefit of interventions on the patient's quality of life. In a situation where dietary intake is somewhat reduced and some weight loss exists, but not to fully account

for the significant muscle wasting observed, a combination of both malnutrition and sarcopenia (see definition in Q9) may be present.

7. Physical Examination: What should I do if my patient can't sit up for the physical examination part of SGA?

Adapt the physical assessment accordingly. For example, a patient's back may not be easily viewed, but the ribs could be felt at the side. The rest of the patient's body could be viewed to provide enough information for determining the patient's nutritional status. Try to elevate the head of the patient's bed to the maximum that he/ she can tolerate to observe the patient's head, shoulders, chest, arms, sides of trunk, hands and legs.

8. Physical Examination: How do I assess edema/ascites?

Edema and ascites are rarely manifestations of severe malnutrition but more commonly due to the underlying disease. From a nutritional point of view, detecting fluid is relevant as this falsely increases body weight measurements. It is important for the clinician to refer to the usual body weight for interpretation of weight change and assessment of edema/ascites.

Edema generally becomes apparent when 3-4 litres fluid have accumulated.⁴ If you see pitting edema to the knees, this usually correlates with approximately a 10% increase in total body fluid. It is important to consider that in supine vs. upright patients, edema may centralize in the sacral area as opposed to the legs.

It is not essential to quantify the amount of weight contributed by the edema; the most important thing is to be aware that edema is/is not present and could impact the interpretation of the patient's weight and weight change.

See table below from SGA Guidance document on how to assess level of edema and ascites, available [here](#)

FLUID RETENTION

Physical examination	Normal	Mild/Moderate	Severe
Edema	None	Pitting edema of extremities / pitting to knees, possible sacral edema if bedridden	Pitting beyond knees, sacral edema if bedridden, may also have generalized edema
Ascites	Absent	Present (may only be present on imaging)	

9. Contributing Factors, Cachexia and Sarcopenia: How do I assess for this?

The assessment of muscle mass loss is an important part of the physical examination in SGA. In patients that have an underlying medical disorder, muscle loss may also result from cachexia and sarcopenia. The clinician must evaluate whether these losses are associated with inadequate nutritional intake or are due to other conditions such as cachexia or sarcopenia.⁵

Cachexia is a multi-factorial syndrome defined by an ongoing loss of skeletal muscle mass (with or without loss of fat mass) that is variably but incompletely treated by conventional nutritional support.⁶ For example, a patient with metastatic pancreatic cancer may, with the addition of nutrition supplements, be consuming sufficient calories to meet the metabolic

demand of the disease and their baseline nutritional requirements, but still have weight loss and evidence of significant muscle wasting. If their history indicates no malabsorption and sufficient intake, they would be classified as having cachexia. Frequently, in such clinical scenarios, nutrient intake may be moderately or severely compromised in which case the person would be classified as SGA B or C. However, if this patient is given full nutritional support that meets requirements and there is no significant improvement in weight and functional capacity, a subsequent evaluation could reclassify them as being cachexic.

Sarcopenia is a preferential wasting of muscle mass due to a variety of mechanisms, which requires exercise and potentially nutrition for improvement. Sarcopenia may be related to several different factors. For example, in the aged individual, muscle wasting may not be due to lack of nutrients but to a combination of disuse and muscle fibre atrophy, a condition called sarcopenia of aging. If oral intake is deemed appropriate for an elderly individual and there is no evidence of malabsorption but there is evidence of muscle wasting, this would be consistent with sarcopenia of aging.

You can make the distinction between **cachexia or sarcopenia** by making an overall evaluation as to whether the intake of nutrients, and gastrointestinal health (good appetite, absence of vomiting and diarrhea) result in adequate intake and absorption or are restricted sufficiently to partially or fully account for the loss of weight and wasting. Prior to giving the final rating, you must determine whether changes in body composition (muscle and fat) and body weight are largely related to the insufficient nutrition intake (malnutrition) or to cachexia/sarcopenia.

10. Practice: Can I do a SGA including the physical examination virtually?

Yes, the SGA and physical examination can be done virtually quite efficiently, however the following important points must be considered:

Before the physical examination session:

1. Choose the appropriate platform by assessing advantages/disadvantages. Video conferencing is the best as it allows visual examination but there are technological challenges for many patients.
2. Create a consent form that outlines why, how and what you will be doing with the patient, whether you will be recording the session. Include what the patient must do (loose fitting/comfortable shirt to allow examination of arms, ribs, lower back, trunk, shoulders and if possible, legs/feet). Tell them it will take about 30 minutes, but you could stop when they want to end the session.
3. Obtain informed consent from patient and inform them of the date and time of the session. Check with your institutional policies to see if verbal consent is adequate.
4. Check your equipment (computer with webcam, headset preferred for best audio, conferencing platform).
5. Try to do a quick test run with patient to ensure they have the right equipment (computer with webcam and speakers, lighting, internet access). You may need to ask the patient to get help from their family members.
6. Collect medical history/symptoms/functional capacity/factors from the medical chart.
7. Create a script for the SGA and physical exam for effective delivery on day of the session. There are some sample questions in the section below that you may use to create your own script.

During the examination:

1. Remind patient of the purpose of examination, confirm consent and get permission.
2. If you are recording the session, ask permission from the patient.
3. Ask the patient the questions on the SGA form i.e., nutrient intake, weight, symptoms, and functional capacity (check and see if responses differ from the medical chart)
4. Ask if the patient has noticed any changes in his/her weight and body including if clothing has felt looser than before.
5. For the physical examination, ask the patient to show their front and side views of these areas by moving close to their camera. Guide the patient on exactly what to show.
 - a. Face, eyes, temple
 - b. Upper body:
 - ask the patient to “Stand next to your chair and position yourself so your upper body is in full view of the camera. I am going to ask you to face the camera first, with your arms at your side. Next, I am going to ask you to turn to the side. I will also ask you to roll up your sleeves and lift up your shirt so that I may examine your upper body. Then I will ask you to show me your legs if possible.”
 - c. Triceps
 - ask the patient to roll up their sleeves so that upper arm is visible
 - ask patient “When you pinch behind your upper arm, do your fingers touch?”
 - d. Ribs, upper and lower back, sides of trunk
 - e. Shoulder
 - f. Clavicle
 - g. Hands
 - ask patient to press pads of forefinger and thumb
 - h. Legs for quadriceps observation.
 - i. Legs and feet for assessment of edema is likely not easy to do on a camera. Instead, you may ask the patient the following to help determine whether edema present and the degree
 - ask “Have you noticed any sock marks on your feet, ankles or calf?”
6. At the end of the session, thank the patient for their cooperation and follow up with any intervention/advice as per preferred communication channels.

Other important notes:

1. The virtual SGA will take longer than a face-to-face SGA. You may even need to break the session into more than one, depending upon the patient’s technical skills-fatigue-attention.
2. You may not be able to visualize all the body areas for the full physical examination. You will have to rely on the patients own assessment and your clinical judgment to complete the assessment for these sections.
3. You will need to modify the session for each patient and will figure out the best way to do a virtual SGA with more practice.

11. Practice: Can I use my clinical judgement when interpreting the scores for SGA?

Absolutely! As the name implies, the clinician makes a subjective assessment based on the information gathered from the medical history, physical examination and their assessment of other factors, to provide a global overview of the patient's risk for malnutrition. Give an overall rating based on your clinical experience and your perception of the patient's current status and whether he/she is improving or declining in status. The first SGA assessment you do is usually the most difficult. With practice, SGA becomes very routine, more accurate and takes minimal time.

12. Practice: Is diagnosing malnutrition within the scope of practice for Registered Dietitians?

Yes. All dietetic regulatory colleges in Canada state the assessment of malnutrition is within the scope of practice for dietitians. It is within scope for all dietitians to state a patient is malnourished based on the proper determination using SGA. All dietitians are expected to perform at their personal level of competence. As long as a dietitian has the knowledge, skills and judgment to use SGA, she/he can use SGA in their practice. The dietitian should communicate the results of the SGA assessment to the multidisciplinary team. It is usually the physician that enters the code for malnutrition in the medical chart.

13. Practice: After I determine that the patient is SGA B or C, should I continue with the full nutrition assessment immediately?

Yes, it is recommended for efficiency that you carry on with the full assessment since some of the questions that are asked for the SGA are the basis for a full nutrition assessment. Time should not be wasted for malnourished patients, the sooner that a nutrition care plan can be put in place for the patient, the better the outcome for the patient.

14. Practice: I don't have time to do SGA on every patient that is referred to me. What can I do?

Has your hospital or your unit implemented a malnutrition risk screening tool such as the Canadian Nutrition Screening Tool? If not, it is recommended that you start the process of implementing screening first. This will help identify patients at malnutrition risk consistently.

The Canadian Nutrition Screening Tool (CNST) is a tool that can be used in hospitals to identify patients at malnutrition risk. Patients who answer yes to both screening questions of the CNST are at malnutrition risk. However, being at risk does not mean that one is malnourished. To determine if a patient who is at risk is malnourished the next step would be to do a quick (5-10 minute) assessment of the patient's nutritional status using SGA. If the patient is well-nourished then you do not need to be involved in that patient's case for malnutrition. You and the nutrition team will develop a strategy for how to deal with patients who are SGA B and C. Refer to [INPAC Integrated Pathway for Nutrition Care](#) for more details on how to triage care for patients based on their SGA rating.

Having a consistent screening process in place, will standardize referrals to dietitians for malnutrition risk. It is important to have a consistent and reliable way to identify patients at risk on admission to hospital. Raising awareness with nurses and doctors will improve patient care.

A dietitian is a specialist resource and can't see every patient on most hospital units. Conducting SGA and teaching others about SGA will help identify patients who most need the expertise of a dietitian for advanced and specialized nutrition support. With awareness raising among nurses and doctors, this change in practice could lead to more appropriate referrals to the dietitian.

15. Practice: I am nervous to do the SGA on my own. Any advice?

The more you use SGA in your practice, the more confident you will become. Until you feel very confident with conducting SGA, buddy up with another dietitian, nurse or physician and do it together. If you and other staff are at the same level of competence, each of you completing the SGA on your own with patients and afterwards, privately discussing your ratings will help improve your confidence. It is important that you discuss why you gave the patient the rating that you did so that you can explain your conclusion.

16. How often should I conduct a SGA on my patient population?

In a clinical setting, nutrition assessment tools like SGA add merit to monitoring for small changes in nutritional status over time. While precise timelines for when to conduct SGA are not yet defined, it is general recommended that SGA routinely accompany the nutrition assessment for a diagnosis of malnutrition.

Classification using SGA is a dynamic process that can change, even in a relatively short period of time. This change is related to the patient's capacity to reach nutrition requirements, to gain weight and to improve functional capacity. Thus, the SGA classification can be modified by the clinician towards an improvement in status, even if there is still evidence of depleted fat reserves and muscle mass. Essentially the clinician needs to ask themselves if further interventions are required to improve the status of the patient.

Acknowledgements: These FAQs were created by the CMTF SGA Video Working Group 2021 with some content adapted from Nutrition Services, Alberta Health Services.

References

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