Subjective Global Assessment (SGA)
Outline

• Why do we need to advance nutrition care in Canadian hospitals, and in the community?
  • results of the Nutrition Care in Canadian Hospitals study

• The CMTF response
  • Integrated Nutrition Pathway for Acute Care (INPAC), which includes SGA as one step

• What is SGA and how to do it
Prevalence of malnutrition at admission (based on SGA)
(Allard et al., JPEN 2015)

- Well Nourished (n=558) - 54.98%
- Moderate Malnutrition (n=341) - 33.60%
- Severe Malnutrition (n=116) - 11.43%
The hospital problem
(Allard et al., 2015; Keller et al., Clin Nutr 2014)

• Food intake $\leq 50\%$ and malnutrition are independent predictors of length of stay
• Detection of those who need treatment is ad hoc, missing 75% of malnourished patients
• Nutritional status deteriorates in hospital for 20%
• Most malnourished patients leave hospital with no improvement
• Malnutrition is costly in human and financial terms: stay 2-3 days longer than well nourished, and the cost is $2000 more for malnourished patient totalling $2B/year
Patient reported eating difficulties
(Keller et al., JHND 2015)

- Did not get help when needed: 42%
- Poor position for eating: 27%
- Interrupted by staff: 42%
- Disturbed at meals: 39%
- Avoiding food for tests: 35%
- Unable to reach meals: 20%
- Difficulty opening packages: 30%
- When missed food tray, not given food: 69%
Finding a solution...

• **Malnutrition...**
  - occurs in the community
  - is present in 1 of every 2 medical admissions → current resources need to be used differently
  - is perpetuated by hospital admission, iatrogenic

• **We need to work differently**
  - Hospitals need to change their culture to embrace the importance of food, and to treat food as an integral part of the patient’s care. **Food is medicine. Medicine heals**
  - The entire team has a role to play
  - Dietitian as specialist resource; positioned to triage patients
  - Connect patients better to community services – **better NUTRITION discharge planning**
  - Involve the patient and family in the monitoring and care process
The response:
The Integrated Nutrition Pathway for Acute Care (INPAC)

An evidence-informed algorithm for the detection, treatment and monitoring of malnutrition amongst medical and surgical patients.

• Developed by consensus from leading Canadian experts, clinicians and other stakeholders.

• This algorithm is a minimum standard and if a hospital or unit provides care above this minimum, they are encouraged to continue their high quality practice.
INPAC

Nutrition Screening at Admission
Admitting nurse completes the Canadian Nutrition Screening Tool (CNST):
1. Have you lost weight in the past 6 months WITHOUT TRYING to lose this weight?
2. Have you been eating less than usual FOR MORE THAN A WEEK?

NO RISK
("No" to one or both questions)
Well-nourished (SGA A)

Mild/moderate malnutrition (SGA B)

Subjective Global Assessment (SGA)
Completed by dietitian or designate

Severe malnutrition (SGA C)

Level A: Standard Nutrition Care

Level B: Advanced Nutrition Care

If food intake < 50%
Food Intake Improved
If food intake < 50% after 3 days

Level C: Specialized Nutrition Care

Post-Discharge Nutrition Care
Supporting documents

- My Meal Intake tool (M-MIT)
- Mealtime audit tool (MAT)
My Meal Intake form (M-MIT)

**MY MEAL INTAKE**

- **Patient Name:**
- **Room #:**
- **Date:**

This form helps us understand how you are eating. Please complete this form after you have finished this meal. If you need help, let us know.

1. List all drinks on your tray. This includes juice, tea/coffee, milk, drinks, supplements, etc.
2. Place an "X" in the circle to indicate how much you consumed of each beverage.
3. For the food on your tray, place an "X" in the circle to indicate how much you ate overall; this includes the main dish, side dishes, soup, bread, dessert.
4. List any food or beverages you are saving to eat at a later time.
5. Turn the page over and answer the remaining questions.

**What meal is this?**
- [ ] Breakfast
- [ ] Lunch
- [ ] Supper

**What and how much did you drink?**

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**How much of all the food on your tray did you eat?**

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Please list any items (food or beverages) being saved for later:

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**Canadian Nutrition Society**

**le Groupe de travail canadien sur la malnutrition**

**Le Groupe de travail canadien sur la malnutrition**

**Advancing Nutrition Care in Canada**

**Société canadienne de nutrition**
Mealtime Audit Tool (MAT)

MEALTIME AUDIT TOOL

Instructions

1. There are two parts to the audit:
   a. Part 1: General observations of the unit and descriptors of the mealtime being audited
   b. Part 2: Specific challenges or barriers to food intake experienced by selected patients

2. Auditor will arrive approximately 10 minutes before the anticipated meal start time to complete Part 1.

3. Auditor will try not to interrupt or alter the usual mealtime in any way.

4. After selected patients have completed their meals, auditor will ask questions (as shown in Part 2). Multiple copies of the second page with Part 2 may be used for a single meal.

5. If any questions are not applicable to an individual patient, auditor will note “NA.”

6. Item on meal selection is “NA” if there are no selective menus; this is not asked of patients.

7. Part 2: To obtain the score, auditor will count the total number of “NA” responses for each patient.

Part 1: General observations of unit mealtime activity

Date of audit: __________________________ Name of auditor: __________________________

Which meal: ☐ Breakfast ☐ Lunch ☐ Dinner

Time auditor arrived on unit (e.g., 12:00 p.m.): __________________________

Type/Unit (e.g., medical, surgical or name): __________________________

Number of beds filled: __________________________

Time meal truck arrived on floor: __________________________ Time tray distribution started: __________________________

Time tray distribution completed: __________________________ Time of truck removal: __________________________

Comment on the unit meal process for the meal and any delays/challenges that might influence the patients’ perceptions of the meal:

________________________________________________________

Canadian Nutrition Society (Société canadienne de nutrition)

Canadian Malnutrition Task Force (Le groupe de travail canadien sur la malnutrition)
# Canadian Nutrition Screening Tool (CNST)
*(Laporte et al., 2014)*

<table>
<thead>
<tr>
<th>Ask the patient the following questions</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Have you lost weight in the past 6 months WITHOUT TRYING to lose this weight? *</td>
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<tr>
<td>* If the patient reports a weight loss but gained it back, consider it as a NO weight loss.</td>
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<tr>
<td>Have you been eating less than usual FOR MORE THAN A WEEK?</td>
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Two “YES” answers indicates nutrition risk
Standard nutrition care for well nourished patients (A)

• Food intake (use My Meal Intake Form) is monitored at least twice a week.
  • Have patient complete form
  • Identifies intake and common barriers
  • Identify process for review

• Record weight at least once a week

• If food intake is < or = 50% on both meals then move to Advanced Nutrition Care
Advanced nutrition care for mildly/moderately malnourished (B)

• Level A: Standard Nutrition Care procedures are still provided to these patients.

• A variety of activities can be undertaken to improve intake, e.g. higher energy and protein food at and between meals,

• Small amounts of oral nutritional supplements (e.g. 60 mL) at each medication round to ensure that more calories and protein are consumed.

• Investigate key barriers that may have developed e.g. eating assistance, dysphagia
Advanced nutrition care strategies, continued

• Assess barriers to food intake...is the patient is getting their food preferences.
• Monitoring of food intake at minimum one meal per day.
• If overall food intake (meals, snacks, supplements) is <50% of what is provided for three days consecutively, a dietitian referral is made to deliver Level C: Specialized Nutrition Care.
Specialized nutrition care for severely malnourished (C)

- Start with a comprehensive assessment that may include additional physical examination, anthropometry, dietary, clinical and biochemical markers specific to the condition and patient population, as well as evaluation of swallowing function and eating capacity when required.

- Additional barriers to food intake may need to be investigated.....
Specialized nutrition care, continued...

• Treatments that are not provided as part of Level B: Advanced Nutrition Care are required to meet the nutrition needs of patients.

• Collaboration with the patient/family and health care team to improve intake is essential.
  • Involve nutrition support team as required

• Monitoring is individualized and may include biochemistry, frequent body weights, and anthropometry/body composition, detailed records of food and fluid intake.
Subjective global assessment
Some history of SGA... Baker et al. 1982 (59 surgical patients)

<table>
<thead>
<tr>
<th>Clinical judgment</th>
<th>VS</th>
<th>Objective measurements</th>
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</thead>
<tbody>
<tr>
<td>Routine history tracking</td>
<td>Weight loss, edema, vomiting, diarrhea, ↓ or unusual food intake, chronic illness</td>
<td>Hepatic proteins</td>
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<tr>
<td>Physical exam</td>
<td>Jaundice, cheilosis, glossitis, loss of subcutaneous fat, muscle wasting, edema</td>
<td>Anthropometric evaluation</td>
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<td>Creatinine-height index</td>
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<td>Cell mediated immunity</td>
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<td><strong>Clinical Course</strong></td>
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<td>Antibiotic use</td>
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<td>Length of stay</td>
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</table>
Some history of SGA... Baker et al. 1982

Clinical Assessment

• Validity
  ✓ Significant correlation (p<0.05) with all objective measurements (except TLC)
  ✓ Significant correlation with incidence of infection (p<0.005), use of antibiotics (p<0.005) and means number of days in the hospital (p<0.001)

• Inter-observer reproducibility
  ✓ 81% agreement between 2 independent examiners (CI 95%; kappa 0.72)
SGA validation

• Validated in different disease states
  • Preoperative Patients
  • Geriatrics
  • Chronic Renal Failure
  • Chronic Liver Disease/Transplant
  • Cancer
  • Cerebrovascular disease
SGA update 2016

• SGA form reviewed and updated
• Preamble: Understanding SGA updated with more detail about cachexia and sarcopenia
• Video reviewed and modified
  • https://cns-scn.ca/education/cmtf/cmtf-video
Update

Key Concepts:

• Wasting can be caused by malnutrition or cachexia (or both) or sarcopenia.
• SGA is a quick bedside tool to determine a person’s nutritional status. It distinguishes between those who have body wasting due to malnutrition or from cachexia where body wasting is due to disease. Is dietary intake the driver domain to explain change in body composition?
• Classification using SGA is a dynamic process and this classification can change, even in a relatively short period of time.
SGA form 2016

MEDICAL HISTORY

Patient name: ______________________  Date: ______/____/______

- Resolution of symptoms  - Persisting  - In change or worsened

*See page 2 SGA Rating for more description.
SGA guidance document
SGA form - details
Nutrient intake

• One of the fundamental aspects of the SGA is assessing the adequacy of nutrient intake, mainly energy and protein in relation to metabolic needs.

• Malnutrition results when there is an imbalance of nutrient intake and/or absorption in relation to metabolic expenditure.
Change in nutrient intake

• No change; adequate
• Inadequate; duration ________
  • Suboptimal solid food
  • Full fluids
  • Minimal intake, clear fluids
  • Starvation
• Dietary intake in past 2 weeks:
  • Adequate
  • Improved but not adequate
  • No improvement or inadequate
Weight

• Weight is an important component of the SGA. However, body weight or quantifying weight loss is often a guess as patients do not weigh themselves regularly.

• The power of SGA is that it is valid even if the actual weight is not available.

• The trajectory of weight change needs to be the focus of determining a turnaround to SGA A or continuation of a downward progression to SGA B/C
Weight change

• Loss in last 6 months
  • Absolute (kg)
  • Relative (%)
    • < 5% loss or weight stability
    • 5 – 10% without stabilization or increase
    • > 10% loss and ongoing
  • If not known, has there been a subjective loss of weight in the last 6 months?

• Change in last 2 weeks
  • Increased
  • No change
  • Decreased
Symptoms

• Any symptoms that affect dietary intake or suggest malabsorption of macronutrients are relevant to the interpretation of the SGA, e.g.
  • Fullness / early satiety
  • Nausea, vomiting
  • Swallowing problems
  • Constipation, diarrhea
  • etc.
Symptoms (affecting oral intake)

- Symptoms
  - Pain on eating
  - Anorexia
  - Nausea
  - Vomiting
  - Diarrhea
  - Others
- None
- Symptoms in past 2 weeks
  - Resolution of symptoms
  - Improving
  - No change or worsening
Functional capacity

- The presence of malnutrition may affect functional capacity particularly in those who are severely malnourished.

- Capacity needs to be considered in the overall context of the patient’s clinical condition. In many cases function may be impaired due to underlying illness. For example, an individual with a CVA would have reduced functional capacity due to paresis. This may affect the body composition assessment (i.e. atrophy due to disuse) but these changes may not be the result of underlying malnutrition due to inadequate food intake.
Functional capacity

• No dysfunction
• Reduce capacity; duration of change _____
  • Difficulty with ambulation/normal activities
  • Bed/chair ridden
• Symptoms in past two weeks
  • Improved
  • No change
  • Decreased
Metabolic requirement

• 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 demand than an individual with similar body composition with mild or moderate stress. An inability to meet those requirements would result in malnutrition.
Metabolic requirement

• High metabolic requirement
  • Yes (e.g. SIRS, severe inflammatory bowel disease, burns, head trauma and thyrotoxicosis)
  • No
Cachexia

• Cachexia is a multi-factorial syndrome defined by an ongoing loss of skeletal muscle mass (with or without fat mass) that is variably but incompletely treated by conventional nutrition support.

• The distinction between cachexia and malnutrition is made by making an overall evaluation as to whether the intake of nutrients and GI health (good appetite, absence of vomiting, etc.) permit adequate intake and absorption. Or is the intake of calories restricted sufficiently to partially or fully account for the loss of weight and wasting.
Cachexia

Is cachexia a contributing factor?

• Yes
• No
• Not sure?
Sarcopenia

• Sarcopenia is a preferential wasting of muscle mass due to a variety of mechanisms, which requires exercise and potentially nutrition for improvement. It is common in the elderly.

• How do you recognize this? If the medical history from the patient does not “match” the physical exam, i.e. eating well, no weight loss but patient looks wasted then consider sarcopenia as the cause of wasting (not malnutrition).
Physical assessment

• Loss of subcutaneous fat
  – Under the eyes
  – Triceps
  – Ribs, lower back, sides of trunk

• Muscle wasting
  – Temple
  – Clavicle
  – Shoulder
  – Scapula/ribs
  – Quadriceps
  – Interosseous muscle between thumb and forefinger

• Edema, ascites

• Are there other contributing factors? Wasting due to disuse; cachexia; sarcopenia
Loss of subcutaneous fat
Muscle wasting
Putting it all together – i.e. GLOBAL assessment

• SGA identifies the patient who is malnourished and who will benefit from nutrition therapy
• Considers the role of compromised nutritional intake and cachexia
• Considers the state of the gastrointestinal tract
• Independent of the ability to measure weight, height or calculate BMI
• Provides a complete clinical picture with no numerical weighting of the SGA indicators
Case 1: Mr. L.

- History
  - 29 year-old male
  - Admitted with 7 days of bloody diarrhea
  - No loss of weight in 6 months prior to assessment
  - No weight loss in the 2 weeks prior to assessment
  - Working until admission
  - Energy good
Mr. L.
Mr. L.
Mr. L.
Mr. L.
Mr. L.
Mr. L. summary

• SGA – A

• Physical
  • No muscle wasting
  • No loss of subcutaneous tissue
  • No edema or ascites

• No evidence of malnutrition
Case 2: Mr. N.

- History
  - 47 year old male with past history of alcohol abuse
  - Admitted with symptoms gastric outlet obstruction
  - Pancreatic mass under investigation
  - Nausea and vomiting improved with symptomatic therapy
  - Lost 8% of body weight
  - Able to ambulate
Mr. N.
Mr. N.
Mr. N.
Mr. N.
Mr. N.
Mr. N. summary

• SGA – B

• Physical
  • Shoulders “squared off”
  • Slight loss of subcutaneous tissue
  • No ascites/edema

– Moderately malnourished
– Nutrition therapy has started to alter outcome
– GI symptoms not resolved yet. If they were, i.e. gastric outlet obstruction resolved, then this patient would be classified as SGA A because the trajectory of his food intake is positive
Case 3: Mrs. H.

- History
  - 87 year old female
  - Past history of COPD on home oxygen, chronic bronchitis
  - Dysphagia for 4 months
  - Currently swallowing only liquids
  - Suspected colon carcinoma
  - Lost 15% of body weight over last year
  - Still losing weight in past 2 weeks
  - Weak – unable to do activities of daily living
Mrs. H.
Mrs. H.
Mrs. H.
Mrs. H.
Mrs. H.

- SGA – C

- Physical
  - Obvious muscle wasting
  - Obvious loss of subcutaneous fat
  - Trace ankle edema
  - Severely malnourished

- Nutrition therapy will alter outcome
- Impression influenced by degree of weight loss, persistence of GI symptoms and findings on physical examination
Questions?

Next up... a demonstration on how to do SGA