



# Conducting a Nutritional Assessment

## The Importance of Early Diagnosis in Effective Nutrition Management

Nutritional assessment is typically defined as “a comprehensive approach to determining nutritional status using medical, nutritional, and medication histories; physical examination, anthropometric measurements and laboratory data.”<sup>1,2,3</sup>

Once nutritional risk screening has indicated the patient is at risk of malnutrition, a more in-depth evaluation of the causes of hospital malnutrition and the risk factors for nutrition and fluid deficiency should be conducted. Nutritional assessment is critical to fully understand the patient’s condition, thus allowing for the development of a specific nutrition care plan.

### Assessment Parameters: What Dietitians Should Look For

Relevant assessment parameters, which should be evaluated in detail, include anthropometric parameters, disease and treatment-related risk factors such as nausea, dehydration, diarrhea, acute infections; social and psycho-social risk factors such as depression and social isolation; and nutrition-related risk factors such as allergies and restrictive diets. Biochemical data are also a useful, objective, and readily available means to assess nutritional status and nutritional risk.

Biochemical parameters for the assessment of protein malnutrition include the measurement of:

- **Prealbumin (transthyretin) (TTR)**
  - Sensitivity: Very sensitive
  - Half-life: Short half-life of two days
  - Range: 20 to 40 mg/dl<sup>4</sup>
  - Interpretation: Indicative of malnutrition at an early stage, control of nutrition therapy
  
- **Retinolbinding protein (RBP)**

- Interpretation: Indicative of malnutrition at an early stage, control of nutrition therapy
- Range: 3 to 6 mg/dl<sup>4</sup>
- Half-life: Short half-life of 12 hours
- Sensitivity: Very sensitive

- **Transferrin**

- Sensitivity: Good indicator for visceral protein status when used with TTR and RBP plasma proteins
- Half-life: Medium half-life of eight days
- Range: 200 to 350 mg/dl<sup>4</sup>
- Interpretation: Decreased values are related to protein malnutrition

- **Albumin**

- Sensitivity: Long term, not very sensitive in malnutrition, low in acute stress, infections, surgery and polytrauma
- Half-life: Long half-life of 21 days
- Range: 3.5 to 5 g/dl<sup>4</sup>
- Interpretation: Decreases in cases of under-malnutrition due to a lack of nutrient intake

## Subjective Global Assessment

Subjective Global Assessment (SGA) is a nutritional non-invasive questionnaire that has been found to be highly predictive of nutrition associated complications. SGA considers alterations in body composition and changes in physiological function. SGA is performed considering the following factors:<sup>5,6</sup>

- Clinical considerations of disease-related effects such as the impact of surgery, treatment, medication etc.
- Physical signs of malnutrition, e.g. their physical and psychosocial state, loss of subcutaneous fat or muscle mass, breathlessness mobility, edema, poor wound healing, etc.
- Dietary aspects such as recent and past diet and fluid history, influencing factors, nutritional requirements.
- Anthropometric measurements, for example, body weight and composition (BMI, muscle mass, body water, fat and fat-free mass) as well as grip strength.
- Biochemical and hematological markers, for example, deviations from normal results regarding a full blood count, urea and electrolytes, liver and renal function tests.

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.

## Assessment of Food and Fluid Intake

Food intake as well as the ability to metabolize food can deteriorate during treatment or during a stay in a hospital or nursing home. Documentation of foods and fluid intake can be useful from admission to discharge. The data can be used to define the individual nutrition therapy plan by calculating the needed nutritional supplementation and needed fluid substitution of the patient.

## References

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