

# Prevalence and features of risk for malnutrition in patients prior to vascular surgery

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## Aim

We aimed to assess prevalence and features of malnutrition risk in patients prior to vascular surgery, using the Patient-Generated Subjective Global Assessment Short Form (PG-SGA SF), and to test how risk relates to co-variables, i.e. smoking, Body Mass Index (BMI), comorbidities, and type of scheduled surgery. Second, we aimed to compare the prevalence of risk for malnutrition between the PG-SGA SF and the Malnutrition Universal Screening Tool (MUST).

## Conclusion

Prior to vascular surgery, a substantial proportion of patients (24%) is at risk for malnutrition, which is mainly characterized by nutrition impact symptoms and limitations in activities and function. Patients who smoke are more likely to be at risk for malnutrition than non-smoking patients. BMI appeared to be not discriminative for risk. Prevalence of risk for malnutrition by PG-SGA SF is 3.5 times higher than by MUST.

## Background

Malnutrition is an important indicator for adverse post-operative outcomes.

Patients with vascular disease requiring surgery may be at risk for malnutrition, since specific disease-related symptoms possibly interfere with food intake.

Symptoms such as pain, cramps and fatigue, as well as walking impairment and limitation of activity are commonly reported among patients with vascular disease, and they are reported to contribute to nutritional risk in vascular surgery patients.

In clinical practice, malnutrition and risk factors may be overlooked or underestimated in vascular surgery patients, as these patients often are overweight or obese.

By definition, an important hallmark of malnutrition is decreased fat-free mass, which can also occur in overweight or obese patients, although this may not be evidently visible.

**Table 1. Agreement between PG-SGA SF<sup>a</sup> and MUST<sup>b</sup> (N=107)**

MUST → PG-SGA SF ↓	Low risk 0 points	Medium risk 1 point	High risk ≥ 2 points
Low risk 0-3 points	74	0	3
Medium risk 4-8 points	20	0	2
High risk ≥ 9 points	4	2	2

<sup>a</sup> Patient-Generated Subjective Global Assessment Short Form

<sup>b</sup> Malnutrition Universal Screening Tool

## Methods

- Risk for malnutrition was assessed by the Scored Patient-Generated Subjective Global Assessment<sup>®</sup> Short Form (PG-SGA SF) Dutch version 3.7 (FD Ottery, 2001, 2006, 2014).
- Medium risk by PG-SGA SF was defined as 4-8 points, and high risk as ≥9 points.
- Demographics, medical history and data on MUST were retrieved from the electronic hospital registry.
- Associations between risk for malnutrition and smoking status and BMI, were tested by Pearson Chi-Square and Mann Whitney U test.
- Fisher's exact was used to test difference in prevalence of risk between MUST and PG-SGA SF.

## Results

- 236 patients, 72% male, mean age 68.3 ± 11.1 years, median BMI was 25.5 (IQR: 23.1 to 29.0) kg/m<sup>2</sup>.
- Twenty-four percent of the patients were categorized as medium or high risk for malnutrition by PG-SGA SF.
- In these patients, domain scores were highest for nutrition impact symptoms (median 3.5; IQR: 2 to 5) and for activities and function (median 2; IQR: 1 to 3).
- Patients who smoke (28/87) were significantly more often at risk for malnutrition than non-smoking patients (29/147) (P=0.03).
- No differences in risk for malnutrition between patients with BMI <25 kg/m<sup>2</sup> (31/107) and BMI ≥25 kg/m<sup>2</sup> (26/126) were found (P=0.14).
- Malnutrition risk according to MUST was 8% (9/107) (Table 1).



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