

# Prevalence and characteristics of risk for malnutrition in patients with newly diagnosed head and neck cancer

Lies ter Beek<sup>1,2,3</sup>, Linda Bras<sup>4</sup>, Jan L.N. Roodenburg<sup>3</sup>, Faith D. Ottery<sup>1,5</sup>, Cees P. van der Schans<sup>1,6,7</sup>, György B. Halmos<sup>4</sup>, Harriët Jager-Wittenaar<sup>1,3</sup>

1. Hanze University of Applied Sciences, Research Group Healthy Ageing, Allied Health Care and Nursing, Groningen, The Netherlands
2. University of Groningen, University Medical Center Groningen, Department of Pulmonary Diseases and Tuberculosis, Center for Rehabilitation, Haren, Groningen, The Netherlands
3. University of Groningen, University Medical Center Groningen, Department of Maxillofacial Surgery, Groningen, The Netherlands
4. University of Groningen, University Medical Center Groningen, Department of Otorhinolaryngology, Head and Neck Surgery
5. Ottery & Associates LLC, Vernon Hills (Chicago), United States
6. University of Groningen, University Medical Center Groningen, Department of Rehabilitation Medicine, Groningen, The Netherlands
7. University of Groningen, University Medical Center Groningen, Health Psychology Research, Groningen, The Netherlands

## Aim

We aimed to assess prevalence and characteristics of malnutrition risk in patients with newly diagnosed head and neck cancer (HNC), using the Patient-Generated Subjective Global Assessment Short Form (PG-SGA SF).

## Conclusions

Our findings show that a substantial proportion of newly diagnosed head and neck cancer patients (37%) are at medium/high risk for malnutrition, which is mainly related to specific nutrition impact symptoms. These findings emphasize the importance of interdisciplinary symptom management and nutritional intervention in this patient population.

## Background

In clinical practice, risk for malnutrition may be overlooked. Nutritional screening programs aim to detect patients at risk for malnutrition and to identify malnourished patients. Commonly used screening instruments include two up to five parameters, such as unintentional weight loss, Body Mass Index (BMI), disease severity, and loss of appetite. Nevertheless, these instruments do not provide sufficient insight in treatable impediments underlying the risk for malnutrition, such as pain, nausea or limitations in activities and/or functioning. Prevalence of malnutrition in patients with HNC ranges from 15%-55%, as assessed by weight loss. However, knowledge on the prevalence of malnutrition using as multidimensional assessment is lacking.

Figure 1. PG-SGA Short Form

Table 1. Frequency of Nutrition Impact Symptoms

Nutrition Impact Symptoms	Risk for malnutrition		
	Low (≤3) n=139	Medium (4-8) n=61	High (≥9) n=26
No appetite	1	12	10
Nausea	-	1	2
Constipation	1	-	2
Mouth sores	1	21	8
Altered taste	1	2	3
Problems swallowing	7	17	16
Pain	6	24	13
Vomiting	-	1	1
Diarrhea	-	3	1
Dry mouth	4	8	2
Bothering smell	-	1	-
Early satiation	3	4	4
Fatigue	2	10	4
Other	3	5	4

## Methods

- Between August 2015 and January 2017, malnutrition risk was assessed by PG-SGA SF in 236 newly diagnosed HNC patients at the outpatient clinic.
- The PG-SGA SF includes four Boxes (Figure 1). Box 1 addresses history of weight loss; Box 2 changes in food intake; Box 3 nutrition impact symptoms; and Box 4 activities and function.
- 'Low risk' was defined as PG-SGA SF score of 0-3 points, 'medium risk' as 4-8 points, and 'high risk' as ≥9 points. PG-SGA SF score of ≥9 points indicates critical need for interventions.

## Results

- 25.8% (61/236) of the patients were at medium risk for malnutrition, and 11.0% (26/236) were at high risk.
- Frequency of nutrition impact symptoms is shown in Table 1.
- Mean weight loss in all patients was 1.3% in the last month and 2.9% in the last 6 months.
- In patients at medium or high malnutrition risk, median total point score was 2 (IQR: 0.0-5.75) and 7 (IQR: 5.0-9.0), respectively.
- In patients at medium/high risk, highest score was on Box 3 (median 4; IQR: 2.0-5.0), mainly due to pain in the mouth or throat area (76.7%; 66/86), difficulties with swallowing (38.3%; 33/86), and lack of appetite (25.6%; 22/86). In these patients, median scores on Box 1, 2 and 4 were 1.
- In patients with medium or high malnutrition risk, mean weight loss was 3.1% and 5.9%, respectively.



## Contact Details

Lies ter Beek  
l.ter.beek@pl.hanze.nl