

## Nutritional Risk Screening (NRS 2002)

Bron: Kondrup, J., Rasmussen, H. H., Hamberg, O., Stanga, Z., & ad hoc ESPEN Working Group (2003). Nutritional Risk Screening (NRS 2002): a new method based on an analysis of controlled clinical trials. *Clinical Nutrition*. 22 (3): 321-336 <http://www.espenblog.com>

Table I Initial Screening			
1	Is BMI < 20.5 ?	Yes	No
2	Has the patient lost weight within the last 3 months?		
3	Has the patient had a reduced dietary intake in the last week?		
4	Is the patient severely ill? (e.g. intensive therapy)		
Yes: If the answer is 'Yes' to any question, the Screening in Table 2 is performed.			
No: If the answer is 'No' to all questions, the patient is re-screened at weekly intervals. If the patient e.g. is scheduled for a major operation, a preventive nutritional care plan is considered to avoid the associated risk status.			

Tabel: Final screening			
Impaired nutritional status		Severity of disease (= increase in requirements)	
Absent Score 0	Normal nutritional status	Absent Score 0	Normal nutritional requirements
Mild Score 1	Wt loss > 5% in 3 mths or Food intake below 50-75% of normal requirement in preceeding week	Mild Score 1	Hip fracture* Chronic patients, in particular with acute complications: cirrhosis*, COPD*. Chronic hemodialysis, diabetes, oncology
Moderate Score 2	Wt loss > 5% in 2 mths or BMI 18.5 – 20.5 + impaired general condition or Food intake 25-60% of normal requirement in preceeding week	Moderate Score 2	Major abdominal surgery* Stroke* Severe pneumonia, hematologic malignancy
Severe Score 3	Wt loss > 5% in 1 mth (>15% in 3 mths) or BMI > 18.5 + impaired general condition or Food intake 0-25% of normal requirement in preceeding week	Severe Score 3	Head injury* Bone marrow transplantation* Intensive care patients (APACHE>10).
Score:	+	Score:	=Total Score
Age	if ≥ 70 years: add 1 to total score above =age-adjusted total score		
<p>Score ≥ 3: the patient is nutritionally at-risk and a nutritional care plan is initiated</p> <p>Score &lt; 3: weekly rescreening of the patient. If the patient e.g. is scheduled for a major operation, a preventive nutritional care plan is considered to avoid the associated risk status.</p>			

NRS-2002 is based on an interpretation of available randomized clinical trials.

\*indicates that a trial directly supports the categorization of patients with that diagnosis. Diagnoses shown in italics are based on the prototypes given below. Nutritional risk is defined by the present nutritional status and risk of impairment of present status, due to increased requirements caused by stress metabolism of the clinical condition.

**A nutritional care plan is indicated in all patients who are:**

(1) severely undernourished (score=3), or (2) severely ill (score=3), or (3) moderately undernourished + mildly ill (score 2 +1), or (4) mildly undernourished + moderately ill (score 1 + 2).

**Prototypes for severity of disease:**

**Score=1:** a patient with chronic disease, admitted to hospital due to complications. The patient is weak but out of bed regularly. Protein requirement is increased, but can be covered by oral diet or supplements in most cases.

**Score=2:** a patient confined to bed due to illness, e.g. following major abdominal surgery. Protein requirement is substantially increased, but can be covered, although artificial feeding is required in many cases.

**Score=3:** a patient in intensive care with assisted ventilation etc. Protein requirement is increased and cannot be covered even by artificial feeding.

Protein breakdown and nitrogen loss can be significantly attenuated.

Nutritional Risk Screening 2002 (NRS 2002) Nederlandstalig

Bron: FOD Volksgezondheid Veiligheid van de voedselketen en Leefmilieu (2008). *Advies van de Wetenschappelijke Expertengroep Ondervoeding van het Nationaal Voedings -en Gezondheidsplan voor België: Screening op ondervoeding en evaluatie van de voedingstoestand (Nutritional Assessment)*. Opgehaald 16 februari 2009 van [https://portal.health.fgov.be/pls/portal/docs/PAGE/INTERNET\\_PG/HOMEPAGE\\_MENU/MIJNGEZONDHEID1\\_MENU/PRODUITSDECONSOMMATION1\\_MENU/ALIMENTATION1\\_MENU/BELGIQUE1\\_MENU/DENUTRITIONDANSLESHOPITAUXMAISONSD E\\_HIDE/DENUTRITIONDANSLESHOPITAUXMAISONSD E\\_DOCS/NVGP-B%20SCREEN%20808.PDF](https://portal.health.fgov.be/pls/portal/docs/PAGE/INTERNET_PG/HOMEPAGE_MENU/MIJNGEZONDHEID1_MENU/PRODUITSDECONSOMMATION1_MENU/ALIMENTATION1_MENU/BELGIQUE1_MENU/DENUTRITIONDANSLESHOPITAUXMAISONSD E_HIDE/DENUTRITIONDANSLESHOPITAUXMAISONSD E_DOCS/NVGP-B%20SCREEN%20808.PDF)

<b>Tabel 1: initiële Screening</b>			
1	BMI > 20.5?	Ja	Nee
2	Gewichtsverlies tijdens de laatste 3 maanden?		
3	Verminderde voedselafname tijdens de afgelopen week?		
4	Is patiënt ernstig ziek? (b.v. intensieve therapie)		
Ja: indien ja geantwoord wordt op een of meerder vragen doe dan de screening in Tabel 2			
Nee: Indien neen geantwoord wordt op elke vraag, screen de patiënt elke week. Wanneer een zware week gepland is, overweeg een preventief voedingsplan om de hieraan verbonden risico's op te vangen.			

Tabel 2: evaluatie van het voedingsrisico					
Mate van ondervoeding			Ernst van de aandoening (toename behoeften)		
Afwezig	Score 0	Normale voedingstoestand	Afwezig	Score 0	Normale behoeften
Mild	Score 1	Gewichtsverlies > 5% in 3 maanden of inname < 50-75% van de behoefte tijdens afgelopen week	Mild	Score 1	Heupfractuur – chronische patiënten, in het bijzonder bij acute complicaties: cirrose, COPD, chronische dialyse, diabetes, oncologie
Matig	Score 2	Gewichtsverlies > 5% in 2 maanden of BMI 18.5-20.5 + gestoorde algemene toestand of voedselinname 25-60% van normale behoefte tijdens afgelopen week	Matig	Score 2	Zware abdominale chirurgie, CVA, ernstige pneumonie, hematologische maligniteiten
Ernstig	Score 3	Gewichtsverlies > 5% in 1 maand (>15% in 3 maanden) of BMI < 18.5+ gestoorde algemene toestand of voedselinname 0-25% van normale behoefte tijdens de afgelopen week	Ernstig	Score 3	Hoofdletsels, beenmergtransplantatie, intensieve zorgen (APACHE >10)
Score: +			Score: =totale score		
Leeftijd: indien 70 jaar of ouder: tel 1 bij de totale score			= leeftijd gecorrigeerde score		

Score 3 of hoger: de patiënt is een risicopatiënt en een voedingsplan is noodzakelijk.

Score < 3: wekelijks screenen. Wanneer een zware ingreep gepland is, een preventief voedingsplan overwegen om de hieraan verbonden risico's op te vangen.

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