LITTERATUROVERSIKT

OM

SYKDOMSRELATERT UNDERERNÆRING

Litteraturoversikten oppdateres av Lene Thoresen. Dersom det er publikasjoner som du mener bør være med kan de meldes inn til kompetansetjenesten på e-post nksu@ous-hf.no
# INNHOLD

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Stratton RG, C.J.; Elia, M. Disease-related malnutrition: An Evidence-Based Approach To Treatment CABI publishing; 2003


**FOREKOMST (ERNÆRINGSRISIKO ELLER UNDERERNÆRING)**


Boltong AG, et al. **Using a public hospital funding model to strengthen a case for improved nutritional care in a cancer setting.** Aust Health Rev. 2013. PMID: 23731960


SCREENING


Mini Nutritional Assessment er et kartleggingsverktøy som fører til vurderingene «Normal ernæringsstatus», «Risiko for undernæring» eller «Underernært».

Lenk til norsk oversettelse av MNA
http://www.mna-elderly.com/forms/MNA_norwegian.pdf

Veiledning for utfylling av MNA skjema for ernæringsvurdering
http://www.mna-elderly.com/forms/mna_guide_norwegian.pdf

Veiledningen har følgende vedlegg:
Vedlegg 1 • Tabell over Kroppsmasseindeks
Vedlegg 2 • Regne ut BMI for personer med amputasjon
Vedlegg 3 • Måle høyde ved hjelp av et Stadiometer
Vedlegg 4 • Måle Demispan
Vedlegg 5 • Måle Knehøyde
Vedlegg 6 • Måle Overarmens Omkrets (OO)
Vedlegg 7 • Måle Leggens Omkrets
17 referanser


**MUST**

Malnutrition Universal Screenings Tool er et verktøy som vurderer risikoen for underernæring og skårer pasientene i «Lav risiko», «Middels risiko» eller «Høy risiko» for underernæring.

Lenk til norsk oversettelse av MUST

Lenk til veiledning for utfylling av MUST
13 referanser


**MST**


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Marshall S, Young A, Isenring E The malnutrition screening tool in geriatric rehabilitation: A comparison of validity when completed by health professionals with and without malnutrition screening training has implications for practice. J Acad Nutr Diet, 2018;118:118-123


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**NRS-2002**
Nutrition Risk screening 2002


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**PG-SGA**
The Scored Patient-Generated Subjective Global Assessment


**Norsk oversettelse**
http://pt-global.org/?page_id=13


**SNAQ**

Short Nutritional Assessment Questionnaire (SNAQ) er ikke oversatt til norsk. Det finnes flere varianter av SNAQ for bruk på ulike nivåer av helsetjenestene og for ulike aldersgrupper.

Lenk til SNAQ verktøyene


**OUTCOME/EFFEKT AV SCREENING**


**EFFEKT AV ERNÆRINGSSTØTTE TIL DE SOM FANCES OPP VED SCREENING**


Schuetz P, Fehr R, Baechli V, et al. **Individualised nutritional support in medical inpatients at nutritional risk: a randomised clinical trial.** Lancet, Published online April 25, 2019 http://dx.doi.org/10.1016/S0140-6736(18)32776-4


**ERNÆRINGSINTERVENSJONER**


Nguyen HT, et al. (2020) **Effectiveness of Tailored Dietary Counseling in Treating Malnourished Outpatients with Chronic Obstructive Pulmonary Disease: A Randomized Controlled Trial.** J Acad Nutr Diet. 120(5): 778-791. PMID: 31786177


Tobberup R, Thoresen L, Falkmer U, Yilmaz MK, Solheim TS, Balstad TR. (2019). Effects of current parenteral nutrition treatment on health-related quality of life, physical function, nutritional status, survival and adverse events exclusively in patients...


Ortiz-Reyes LA, Castillo-Martinez L, Lupian-Angulo AI et al. **Increased efficacy and safety of enteral nutrition support with a protocol (ASNET) in noncritical patients: a randomized controlled trial.** J Acad Nutr Diet, 2018; 118: 52-60


Munk T, Tolstrup U, Beck AM, Holst M, Rasmussen HH, Hovhannisyan K, Thomsen T.


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Isenring EA, Bauer JD, Capra S. **Nutrition support using the American Dietetic Association medical nutrition therapy protocol for radiation oncology patients improves dietary intake compared with standard practice.** J Am Diet Assoc. 2007;107(3):404-412.


Stratton RG, C.J.; Elia, M. Disease-related malnutrition: An Evidence-Based Approach To Treatment CABI publishing; 2003.

Evidence for nutrition support
Meta-analysis of 27 RCT with 1710 patients (complications)
30 RCT with 3250 patients (mortality)
Complications 28% vs 46% (P<0.001)
Mortality 17% vs 24% (P<0.001)

OUTCOME


IMPLEMENTERING AV ERNÆRINGSSTRATEGIER/-PROGRAM


**BARRIERER OG SUKSESSFAKTORER**


Stamp N, Davis AM *Identifying barriers to implementing nutrition recommendation* Topics in Clin Nutr, 2013; 28:249-261


**Food and nutritional care in hospitals: How to prevent undernutrition.**
Strasbourg: Council of Europe Publishing; 2002

**KVALITETSINDIKATORER**


Thoresen L, Rothenberg E, Beck A M, Irtun Ø and on behalf of the Scandinavian Nutrition Group (SNG) *Doctors and nurses on wards with greater access to clinical dietitians have better focus on clinical nutrition.* Journal of Human Nutrition and Dietetics Volume 21, Issue 3, pages 239–247, June 2008

**KOMPETANSEBYGGING**


**KOSTNAD, NYTTE, KODING**


Sjors Verlaan, Andrea B. Maier, Jürgen M. Bauer, Ivan Bautmans, Kirsten Brandt, Lorenzo M. Donini, Marcello Maggio, Marion E.T. McMurdo, Tony Mets, Chris Seal, Sander L.J. Wijers, Cornel Sieber, Yves Boirie, Tommy Cederholm. Sufficient levels of 25-


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Boltong AG, et al. Using a public hospital funding model to strengthen a case for improved nutritional care in a cancer setting. Aust Health Rev. 2013. PMID: 23731960


Freijer K, Nuijten MJ, Schols JM. The budget impact of oral nutritional supplements for disease related malnutrition in elderly in the community setting Front Pharmacol 2012; 3; 78: 1-8


C.L. Funk, C.M. Ayton. Improving malnutrition documentation enhances reimbursement J Am Diet Assoc,1995;95,468–475

ESSEN GUIDELINES

Alle kan lastes ned fra http://www.espen.org/education/espen-guidelines

**ESPEN guideline on hospital nutrition.** Clinical Nutrition 40 (2021) 5684e5709

**ESPEN guideline: Clinical nutrition in surgery.** Clinical Nutrition 40 (2021) 4745-4761

**ESPEN practical guideline: Clinical nutrition in chronic intestinal failure.** Clinical Nutrition 40 (2021) 5196-5220


**ESPEN guideline on clinical nutrition in hospitalized patients with acute or chronic kidney disease.** Clinical Nutrition 40 (2021) 1644-1668

**ESPEN practical guideline: Clinical nutrition in liver disease.** Clinical Nutrition 39 (2020) 3533-3562

**ESPEN guideline on home parenteral nutrition.** Clinical Nutrition published online: 18 Apr 2020

**ESPEN expert statements and practical guidance for nutritional management of individuals with sars-cov-2 infection.** Clinical Nutrition published online: March 31, 2020


**ESPEN guideline on clinical nutrition in acute and chronic pancreatitis.** Clinical Nutrition published online: 22 Jan 2020

**ESPEN guideline on home enteral nutrition.** Clinical Nutrition 39 (2020) 5-22
ESPEN guideline on clinical nutrition in liver disease. Clinical Nutrition published online: 16 January 2019


ESPEN guideline clinical nutrition in neurology. Clinical Nutrition published online: 27 September, 2017

ESPEN guidelines on nutritional support for polymorbid internal medicine patients
Clinical Nutrition Published online: July 24, 2017

ESPEN expert group recommendations for action against cancer-related malnutrition
Clinical Nutrition 36 (2017) 1187e1196

ESPEN guideline: Clinical nutrition in surgery Clinical Nutrition 36 (2017) 623-650

ESPEN guideline: Clinical nutrition in inflammatory bowel disease Clinical Nutrition 36 (2017) 321-347

ESPEN guidelines on definitions and terminology of clinical nutrition Clinical Nutrition 36 (2017) 149-64

ESPEN guidelines on nutrition in cancer patients Clinical Nutrition 36 (2017) 11–48

Management of acute intestinal failure: A position paper from the European Society for Clinical Nutrition and Metabolism (ESPEN) Special Interest Group Clinical Nutrition 35 (2016), 6, 1209–1218


ESPEN guideline on ethical aspects of artificial nutrition and hydration Clinical Nutrition 35 (2016) 545-556


ESPEN endorsed recommendations: Protein intake and exercise for optimal muscle function with aging: Recommendations from the ESPEN Expert Group Clinical Nutrition 33 (2014) 929-936


ESPEN Guidelines for adult parenteral nutrition Clinical Nutrition 2009; 28:359-479

ESPEN Guidelines on adult enteral nutrition Clinical Nutrition 2006;25:177-360

ESPEN Guidelines on enteral nutrition — Percutaneous endoscopic gastrostomy (PEG) Clinical Nutrition 2005;24:848-861


ESPEN Guidelines for nutrition in liver disease and transplantation Clinical Nutrition 1997;16:43-55

UTVALGTE MEDISINSKE DIAGNOSER OG TILSTANDER

GRAVIDITET


GERIATRI


Jelena Pavlovic, Maja Racic, Nedeljka Ivkovic, Zaim Jatic (2019). Comparison of Nutritional Status Between Nursing Home Residents and Community Dwelling Older Adults: a Cross-Sectional


Wolters M et al. (2019) Prevalence of malnutrition using harmonized definitions in older adults from different settings e A MaNuEL study. Clinical Nutrition 38; 2389e2398


Mowe M, Bøhmer T, Kindt E. (1994). Reduced nutritional status in an elderly population (> 70 y) is probable before disease and possibly contributes to the development of disease. Am J Clin Nutr 59:317-24

DEMENS


DYSFAGI


KOLS


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Hodson M. **Integrating nutrition into pathways for patients with COPD.** Br J Community Nurs. 2016 Nov 2;21(11):548-552.


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KREFT


**KAKEKSI**

Lisa Martin, Maurizio Muscaritoli, Isabelle Bourdel-Marchasson et al (2021) **Diagnostic criteria for cancer cachexia: reduced food intake and inflammation predict weight loss and survival in an international, multi-cohort analysis.** Journal of Cachexia, Sarcopenia and Muscle (2021) Published online in Wiley Online Library (wileyonlinelibrary.com) DOI: 10.1002/jcsm.12756


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NYRESVIKT


AVANSE KREFTSYDOM


Hisham M Mehanna, Jamil Moledina, Jane Travis Refeeding syndrome: what it is, and how to prevent and treat it. BMJ 2008;336:1495-8


Ostrowska J et al. (2021) Hospital Malnutrition, Nutritional Risk Factors, and Elements of Nutritional Care in Europe: Comparison of Polish Results with All European Countries Participating in the nDay Survey. Nutrients, 13(1), 263; https://doi.org/10.3390/nu13010263


Navarro DA, Boaz M, Krause I, et al Improved meal presentation increases food intake and decreases readmission rate in hospitalized patients Clin Nutr (2016); 35:1153-1158


Frantal S, Pernicka E, Hiesmayr M, Schindler K, Bauer P. **Length bias correction in one-day cross-sectional assessments – The nutritionDay study.** Clin Nutr (2016); 35:522-527


**DIVERSE**


Kristin Halvorsen, Helene Kjøllesdal Eide, Kjersti Sortland and Kari Almendingen **Documentation and communication of nutritional care for elderly hospitalized patients: perspectives of nurses and undergraduate nurses in hospitals and nursing homes** BMC Nursing (2016) 15:70

Iversen Per O, Ha Lisa, Blomhoff Rune, Hauge Truls, Veierød Marit B. **Baseline oxidative defense and survival after 5-7 years among elderly stroke patients at nutritional risk: Follow-up of a randomized, nutritional intervention trial.** Clin Nutr 2014 Jul 25. Epub ahead of print. PMID:25108573

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Definisjoner og kriterier på underernæring

Cederholm et al 2015

Fact box:
Two alternative ways to diagnose malnutrition. Before diagnosis of malnutrition is considered it is mandatory to fulfil criteria for being “at risk” of malnutrition by any validated risk screening tool.

**Alternative 1:**
BMI <18.5 kg/m²

**Alternative 2:**
Weight loss (unintentional) > 10% indefinite of time, or >5% over the last 3 months combined with either
BMI <20 kg/m² if <70 years of age, or <22 kg/m² if 70 years of age or
FFMI <15 and 17 kg/m² in women and men, respectively.

Cederholm et al 2017
GLIM kriteriene

Moderat underernæring

Det kreves at minst et kriterium for etiologi og et kriterium for fenotype er oppfylt.

Etiologi

- Redusert matinntak eller opptak. < 50 % av energibehov > 1 uke eller enhver reduksjon i > 2 uker eller en kronisk magetarmtilstand som negativt påvirker fordøyelse eller absorpsjon
- Inflammasjon. Akutt sykdom, skade eller kronisk sykdom

Fenotype

- Vekttap 5 - 10 % i løpet av siste 6 måneder eller 10 - 20 % i mer enn 6 måneder
- BMI. < 20 hvis < 70 år, < 22 hvis >70 år
- Redusert muskelmasse. Mild til moderat underskudd.

Alvorlig underernæring

Det kreves at minst et kriterium for etiologi og et kriterium for fenotype er oppfylt.

Etiologi

- Redusert matinntak eller opptak. < 50 % av energibehov > 1 uke eller enhver reduksjon i > 2 uker eller en kronisk magetarmtilstand som negativt påvirker fordøyelse eller absorpsjon
- Inflammasjon. Akutt sykdom, skade eller kronisk sykdom

Fenotype

- Vekttap > 10 % i løpet av siste 6 måneder eller > 20 % i mer enn 6 måneder
- BMI. < 18.5 hvis < 70 år, < 20 hvis > 70 år
- Redusert muskelmasse. Alvorlig underskudd.