National Primary Care Collaboration Agreement on Malnutrition

Translation of the Dutch 'Landelijke Eerstelijns Samenwerkings Afspraak Ondervoeding'.

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Introduction

The National Primary Care Collaboration Agreement (Landelijke Eerstelijns Samenwerkings Afspraak, LESA) on Malnutrition was drafted by a working group of the Dutch College of General Practitioners (Nederlands Huisartsen Genootschap, NHG), Dutch Nurses' Association (Verpleegkundigen & Verzorgenden Nederland, V&VN) and the Dutch Dietetic Association (Nederlandse Vereniging van Diëtisten, NVD). The agreement is designed to achieve better primary care for adults with or at risk of malnutrition by creating closer cooperation between GPs, nurses and dietitians. This requires tasks and responsibilities regarding detection, diagnosis, treatment and support to be divided. The goal is to have the most suitable care provider(s) provide the right care at the right time and to safeguard continuity of care for the patient.

The LESA provides guidelines for cooperation between GPs, dietitians and nurses for the early detection, diagnosing and provision of care to adult patients with or at risk of malnutrition in primary care. The differences in tasks and responsibilities between these professional groups are taken into account. Furthermore, this LESA can be used as a model for cooperation with and between other (professional) groups (for example speech therapists, dentists, physiotherapists, occupational therapists) with regard to malnourished patients.
The overall LESA guidelines are designed to be defined further on a regional level and to be used for developing working agreements. Care for specific groups, such as immigrants and patients with anorexia nervosa, may require specific changes.
The LESA is based on existing guidelines[1,2] and scientific data. Where this is lacking, the working group formulated recommendations based on consensus.

Background and definitions

This LESA focuses on malnutrition in adults with a chronic disease or a lack of self care. These individuals are often elderly and patients before or after surgery.

Patient input

Primary care providers always determine treatment in consultation with the patient and any informal carers. They take the patient's specific circumstances into account. This is not mentioned explicitly in all parts of the LESA for practical reasons. Care providers acknowledge the patient's own responsibility and tailor the treatment to fit.

Care provider considerations

This LESA makes recommendations for cooperation and suggestions for working agreements between GPs, dietitians and nurses. The goal is to have most suitable care provider(s) provide the patient with the right care at the right time and to safeguard continuity of care. The care provider's personal insights remain important, however. In certain concrete situations, well-argumented deviation from the LESA may be justified.

Core points

- GPs, dietitians and nurses defined this LESA following national consultation in order to provide better care for patients with or at risk of malnutrition. The LESA contains a list of areas for attention for making regional working agreements.
- Malnutrition increases the risks of complications from medical treatments and increases mortality.
- Malnutrition is present in one in five patients with home care and in nursing homes.
- In case of unintended weight loss, people of normal weight, or even those who are overweight, may be malnourished.
- Oedema masks the weight loss.
- Detecting malnutrition is primarily a task for nurses and carers in home care and care homes.
- The GP refers all patients with malnutrition to a dietitian.

The LESA uses the term patient, while dietitians and nurses often refer to clients. Where this LESA uses patient, feel free to interpret this as client.
Malnutrition leads to slower recovery after – and more complications of – medical treatments, and above all to higher mortality. In primary care, malnutrition can lead to an increased risk of admission to a hospital, care or nursing home, more frequent visits to the GP, increased medication use and a decrease in quality of life.

The National Prevalence Survey of Care Problems 2009 found that one fifth of patients living at home and receiving home care are malnourished, and that over two fifths are at risk of malnutrition. In care homes, over a quarter of patients are malnourished and half of the patients are at risk of malnutrition. There is insufficient data on the prevalence of malnutrition in general practice.[3]

The *BMI* (*Body Mass Index*, in kg/m^2) is body weight (in kilograms) divided by height (in meters) squared.
Malnutrition is a state of nutrition in which an imbalance of energy, protein and other nutrients has negative effects on body composition and functioning. This is mostly due to a clinically relevant decrease in muscle mass. Adults suffer from malnutrition at a BMI of under 18.5 or in the event of unintended weight loss of more than 5% in the past month, or more than 10% in the past six months. This means that patients may suffer from malnutrition independently of initial body weight.
Different cut-off values apply for elderly (> 65 years) and COPD patients.[4,5] See also *table* 1.
There is no literature available on cut-off values for different ethnic groups/(non-Caucasians).
Risk of malnutrition develops in the event of unintended weight loss of between 5 and 10% in the past half year, but also in people who have not or hardly eaten in the past three days, or people who have not eaten normally in over a week.
Acute loss of nutrients due to vomiting or diarrhoea may lead to swift worsening of nutritional status, particularly in the event of increased energy demands due to illness (such as COPD, congestive heart failure) or fever.

Starting points

GPs (this refers to general practice facilities; the GP, the GP's assistant, practice nurse and practice support staff) provide continuous, contextual general medical care. They observe and diagnose (risk of) malnutrition in patients within this framework. They map backgrounds, such as limitations to food intake, increased energetic demands, polypharmacy and the skills of informal carers. They record patients' nutritional problems in the electronic medical record, including relevant data such as height, weight, weight loss and the treatment plan created together with the patient. Patients with malnutrition are referred to the dietitian.

Table 1: Terms and criteria used

Weight loss refers to unintended weight loss. At least one of the following criteria is present:

Term	Criteria		
	Adults until the age of 65	Elderly	COPD patients
Malnutrition	› 5% weight loss in the past month › 10% weight loss in the past half year BMI ‹ 18.5	› 5% weight loss in the past month › 10% weight loss in the past half year BMI ‹ 20	› 5% weight loss in the past month › 10% weight loss in the past half year BMI ‹ 21
Risk of malnutrition	weight loss between 5 and 10% in the past half year Not or hardly having eaten in 3 days Less than normal food intake for 1 week	weight loss between 5 and 10% in the past half year Not or hardly having eaten in 3 days Less than normal food intake for 1 week	weight loss between 5 and 10% in the past half year Not or hardly having eaten in 3 days Less than normal food intake for 1 week

(Community) nurses provide care in the home setting and in care homes, working together with carers. They take a broad nursing history, encompassing all aspects of nursing and caring. They have an observational role within this context. If malnutrition is suspected, they determine whether or not (a risk of) malnutrition is present using a validated screening instrument. In the event of malnutrition, they refer the patient to the GP and/or the dietitian, depending on the local situation. For patients at risk of malnutrition, they provide recommendations in accordance with available protocols and consult the dietitian. If necessary, they refer patients to the GP. The nurses and carers monitor fluid and food intake and weight during the care period.

Dietitians make a dietetic diagnosis – taking into account medical history – and determine individual nutritional needs. They subsequently draft a nutrition intervention together with the patient, evaluate the treatment and support the patient and any informal carers. They also look at physical activity in order to prevent loss of muscle mass.

Methods

Indications

Physical limitation, decreasing mobility and many medicines (such as antidepressants, antipsychotics and antidiabetics)[2] have a negative effect on food intake, nutritional requirements and digestion. People close to the patient usually note the first signs of potential malnutrition, and bring them to the attention of the GP or nurse.

GPs and nurses must remain vigilant for malnutrition in:

- Vulnerable elderly patients at home, in care homes or in residential care.
- Patients with multiple illnesses, chronic conditions or using multiple medications.
- Patients with physical limitations.
- Patients with poorly fitted dentures, difficulties with chewing or swallowing.
- Patients (particularly older and seriously ill patients) recently discharged from the hospital.
- Patients with psychosocial difficulties and neglect.
- Patients with alcohol or drug abuse.

The chronic diseases that are particularly important include: COPD, CVA, decubitus, dementia, depression, heart failure, inflammatory bowel disease, malignancy and rheumatoid arthritis.

In all of these cases, inquiring after unintended weight loss and watching for signs of malnutrition is recommended. Hollow cheeks, decreased muscle mass or strength, apathetic responses or a lack of interest in the environment may indicate malnutrition. However, these symptoms only occur at advanced stages of malnutrition. Malnutrition may also be present in the event of unintended weight loss in people with normal weight or who are even overweight.

An aid to help determine the presence or risk of malnutrition in primary care is the screening instrument validated in 2009, the SNAQ^{65+} (Short Nutritional Assessment Questionnaire for people over the age of 65 years).[6] It is practical and uses weight loss, upper arm circumference and loss of appetite and mobility as indicators.

Another, more well-established validated screening instrument designed for elderly patients in care and nursing homes is the SNAQ^{RC} (Short Nutritional Assessment Questionnaire for Residential Care).[7]

Diagnosis

The GP takes a history. He inquires after unintended weight loss in the past month and the past six months, about medication use and limitations to food intake, as well as additional complaints such as vomiting or diarrhoea. He checks for comorbidity and symptoms that may indicate a specific cause, and orders further tests based on this.

He performs a physical examination, measures height and weight, calculates the BMI and determines the percentage of weight loss. The GP must consider that oedema can mask weight loss. The added value of laboratory investigations is limited. The diagnosis is made using the criteria listed in *table* 1.

The dietitian investigates nutritional status, energy and protein requirements, eating behaviour and nutrition-related complaints, expectations, motivation, care demands and psychosocial data.

Nutritional status and energy and protein requirements are determined in a structured fashion, related to the level of activity. The dietitian uses multiple parameters for this, including height, weight, BMI, weight loss and body composition.

Treatment and support

The GP supports the patient at *risk of malnutrition* himself, providing general recommendations for healthy protein and energy-rich diet and snacks (see also the paragraph on Raising awareness). Diet foods can be prescribed to supplement diet. However, it will often be desirable to consult the dietitian (see also paragraph Referrals and coordination and *table* 2).

The GP refers patients with *malnutrition* to the dietitian, even if further diagnostic investigations by a specialist are necessary or desirable. The GP starts by giving the advice listed above.

The dietitian drafts a nutrition intervention together with the patient. This contains both the set amounts of energy and protein as well as information about the practical implementation of the nutrition interven-

tion. Depending on the severity of the malnutrition, the possibilities with regard to food intake and the expected duration of the nutritional problems, a choice is made between energy and protein-enriched diet, vitamin and mineral supplements, additional liquid nutrition or complete liquid/tube feeding.[8] The nutrition intervention is evaluated at agreed-upon intervals.
In the event of severe weight loss and low food intake in the past week, the risk of refeeding syndrome is taken into account when initiating dietary treatment.[9] This condition is a serious metabolic complication characterised by hypophosphataemia, hypokalaemia, hypomagnesaemia, hypocalcaemia and thiamine deficiency, and requires referral to secondary care.

An important role for nurses in the treatment process is monitoring food intake and body weight. Additionally, they provide support in the implementation of the nutrition intervention, particularly if tube feeding is prescribed. They follow protocols and guidelines recognised by the profession.[10]

Raising awareness
Patients are generally unaware of the consequences of malnutrition. They need to be made aware of the need for adequate nutrition and exercise during periods of ill health. Raising awareness is of great importance for prevention and (motivation to follow) treatment.

The GP gives general advice and tips for protein and energy-rich diets, using the NHG patient letter on malnutrition (see *www.nhg.org/english*). This contains nutritional recommendations and information on (the risk of) malnutrition, consequences and prevention thereof. In short, the tips are:
multiple small meals (five to six) each day, extra cheese or meat on bread, whole milk or yoghurt, protein and energy-rich snacks.

The nurse provides information on preventing and detecting malnutrition. She explains what malnutrition is, and what the consequences can be. In the event of a risk of malnutrition, the nurse draws the patient's attention to the importance of a good nutritional status, supported by a patient letter containing nutritional recommendations on energy and protein-rich diet and snacks.[1]

The dietitian drafts a personalised nutrition intervention. This contains both the agreements on energy and protein requirements as well as information on possible variations. The dietitian, GP and involved nurses determine who receives a copy of this nutrition intervention on a regional level.

Referral and coordination

GPs refer all patients with malnutrition to a dietitian. They do this with a concretely phrased question and by providing relevant information. This includes: findings from the medical history and examination relating to nutritional problems, any previous or already initiated nutritional treatment, relevant medication, comorbidity, prognosis and background information (such as social aspects).

The nurse refers malnourished patients to the GP and/or the dietitian, depending on the local situation. She provides screening information and other nutritional data. The GP informs the nurse of the treatment policy selected.
In some care homes or home care institutions, referral to the dietitian is governed by protocol. This may mean the dietitian affiliated with the care home is brought in without first consulting the GP. In these cases, the GP is informed of the referral.

Coordination and (return) referrals
The dietitian consults with the GP if:
- The goal of the nutritional intervention is unclear
- There is a risk of refeeding syndrome
- The expected recovery stagnates
- The previously defined treatment goals are not achieved

The dietitian refers the patient back to the GP for further diagnosis and treatment if the patient develops additional disease symptoms.
The dietitian also consults the nurse involved with the nutrition intervention if expected recovery stagnates or if previously defined treatment goals are not met.
If the patient was not referred by the GP, the dietitian will check whether she can request relevant medical information from the GP. She also asks for permission to inform the GP on the findings of her investigations and on treatment progress.
As a minimum, the dietitian communicates with the GP at the beginning and the end of the nutrition intervention. Furthermore, she consults with the nurse involved in the nutrition intervention.

The nurse consults with the dietitian if the implementation of the nutrition intervention is problematic or treatment goals are not met. She consults with the GP if additional disease symptoms present or if recovery stagnates.
If tube feeding is indicated, coordination takes place between GP, nurse and dietitian regarding starting, decreasing or stopping tube feeding. The dietitian determines the amount and type of tube feeding and the administration schedule.

Table 2: Treatment, referral and consultation

Care provider	Risk of malnutrition	Malnutrition
GP	General advice and tips for protein and energy-rich diet and snacks (NHG patient letter). Consultation with the dietitian if treatment goal not met.	Referral to dietitian and concurrent general advice on protein and energy-rich diet and snacks. Consultation with dietitian if recovery stagnates.
Dietitian	Individual nutrition intervention. Consultation with the GP if recovery stagnates. Referral to the GP in the event of additional disease symptoms.	Individual nutrition intervention. Consult the GP in the event of: - Risk of refeeding syndrome - Stagnating recovery Referral to the GP in the event of additional disease symptoms.
Nurse	General advice on protein and energy-rich diet and snacks. Consult the GP in the event of: - additional disease symptoms - stagnating recovery Consult the dietitian in the event of stagnating recovery.	Referral to GP and/or dietitian. Implementation of the nutrition intervention and consult with dietitian in the event of problems. Consult the GP in the event of: - additional disease symptoms - stagnating recovery

Areas of attention for regional discussion

The recommendations in this LESA can be used to make working agreements on availability, timeframes for consultation, handovers of information and cooperation on local or regional levels.

The points listed below can provide additional concrete steps:

- Make a social map of regional and local initiatives.
- Make agreements on the method and content of information exchange for referral and coordination: by letter/fax/e-mail/phone, what information, at what moments, for whom.
- Make agreements on detection, weighing and referral policy.
- Coordinate policy, methods and responsibilities, making sure they correspond with existing transmural agreements.
- Make agreements on who gives patients and their relatives' information, including timing and content.
- Make agreements on the procedure for requesting dietary foods as well as any extensions or attributes.
- Coordinate agreements on tube feeding with each other and existing transmural agreements.
- Make agreements on the timeframe and content of (interim) evaluation and reporting on the treatment:
- Agree on what is understood to be an abnormal course and when patients are referred back.
- Agree on what is understood to be stagnating recovery, and who is contacted.
- Agree on which concomitant disease symptoms require referring to the GP.
- Agree on who maintains overall control, who is the contact point for the patient and family, and who stays in touch with informal carers.
- Make agreements about changing or terminating treatment plans.
- Regularly evaluate the agreements made.
- Consult the toolkit at *www.stuurgroepondervoeding.nl* for practical information.

Realisation

In January 2009, a working group of GPs, dietitians and nurses appointed by the NHG, the NVD and V&VN started.

The following individuals took part on behalf of the NHG: Professor J.J. van Binsbergen (chairman), GP/nutritional expert, special professor of Nutrition and Family Medicine; Dr C.A.M. van Wayenburg, GP and epidemiologist; P.A.J.S. Mensink, GP; and Dr J.A. Vriezen, senior scientific advisor.

The following individuals took part on behalf of the NVD: S. Kattemölle-van den Berg, dietitian; and T.A. Remijnse-Meester, policy advisor.

The following individuals took part on behalf of the V&VN: M.A.T. de Bont, policy advisor; A.H.B. Liefaard, nurse; and Dr J.M.M. Meijers, researcher.

In October 2009, a draft version was submitted for comment to a sampling of 50 GPs (NHG members) and 25 selected members of the NVD and 13 of the V&VN.

Comments were received from 14 GPs, 14 dietitians and 9 nurses.

Furthermore, comments were obtained from a number of referees, namely: Dr M.A. van Bokhorst-de van der Schueren, nutritional scientist; Dr ir. L.I. Bouman, nutritional communication researcher; Professor C.P.G.M. de Groot, professor of human nutrition; J. Horman, dietitian; I. van Putten, business advisor, care; and C. Koolhaas, Policy advisor for the DutchAssociation for Speech Therapy and Phoniatry.

Mention as a referee does not imply the referee underwrites each detail on a content level.

The draft text was defined on an administrative level by the NHG, V&VN and the NVD in March 2010.

Coordination was handled by P.A.J.S. Mensink, NHG scientific advisor; M.A.T. de Bont, V&VN policy advisor; and T.A. Remijnse-Meester, NVD policy advisor.

Dr J.A. Vriezen, senior scientific advisor for the NHG was involved in realising this LESA as project leader.

Subsidy was obtained for the creation of this LESA via the Malnutrition Steering Group.

Notes

Note 1
Malnutrition Steering Group. Guideline for screening and treatment of malnutrition (2009). *www.stuurgroepondervoeding.nl*/index.php?id=170. Consulted February 2010.

Note 2
Van Staveren WA, Jessen CMF, Van der Zeeuw AE, Van Essen RJ, Schols JMGA, Van der Linden WJFM, *et al.* Multidisciplinary Guideline on Responsible fluid and dietary provision for patients with a nursing home indication. Arcares (2001).

This guideline is also used in nursing homes. *www.btsg.nl*/downloads/richtlijnen/richtlijn%20vocht%20en%20voeding.pdf. Consulted October 2009 Kondrup J, Allison SP, Elia M, Vellas B, Plauth M. ESPEN Guidelines for Nutrition Screening 2002. Clin Nutr 2003;22:415-21.

Note 3
Van Wayenburg CA, Van de Laar FA, Van Weel C, Van Staveren WA, Van Binsbergen, JJ. Nutritional deficiency in general practice: a systematic review. Eur J Clin Nutr 2005;59:suppl 1:S81-S88.

Note 4
Elderly individuals are malnourished at a BMI < 20. Volkert D, Berner YN, Berry E, Cederholm T, Coti Bertrand P, Milne A, et al. ESPEN Guidelines on enteral nutrition: geriatrics. Clin Nutr 2006;25:330-60.

Note 5
Patients with COPD are malnourished at a BMI < 21. NHG Guideline COPD (2007), *www.nhg.org*. NVALT Guideline Nutrition and COPD (2002), *www.nvalt.nl*/p_copd_astma_allergie?wid=752&func=viewSubmission&sid=7224&pageId=5.

Note 6
The SNAQ^{65+} is a simple instrument for indicating malnutrition in elderly patients in primary and home care in a validated manner. The instrument consists of sections on unintended weight loss (4 kg or more in the last 6 months), upper arm circumference (less than 25 cm), decreased appetite and functionality, and is linked to a multidisciplinary nutrition intervention. For clients under the age of 65, the recommendation is to use BMI (less than 18.5 kg/m2) and the percentage of unintended weight loss (at least 10% in the last 6 months) to determine nutritional status. More information is available from *www.stuurgroepondervoeding.nl*/index.php?id=147.

Note 7
The SNAQ^{RC} is a screening instrument validated for patients admitted to a care home. It combines questions about unintended weight loss with determination of the BMI. The website of the Malnutrition Steering Group contains more information, *www.stuurgroepondervoeding.nl*/index.php?id=147.

Note 8
Weijs PJM, Kruizenga HM, Van Dijk AE, Van der Meij BS, Langius JA, Knol DL, *et al.* Validation of predictive equations for resting energy expenditure in adult outpatients and inpatients. Clin Nutr 2007;27:150-7.

Note 9
Restarting food intake can lead to refeeding syndrome, a severe metabolic complication characterised by disrupted water and salt balance. This mostly occurs in patients with a BMI of less than 17 kg/m2 who have not eaten for at least 7 days. The increase in insulin levels leads to more glucose being absorbed into the cell, along with phosphate, magnesium and potassium, lowering the concentration of these electrolytes in the blood. This requires blood testing. A vitamin B1 deficiency develops, requiring supplements. Stanga Z, Brunner A, Leuenberger M, Grimble RF, Shenkin A, Allison SP, et al. Nutrition in clinical Practice the refeeding syndrome: illustrative cases and guidelines for prevention and treatment. Eur J Clin Nutr 2008;62:687-94.

Note 10
Van Reeuwijk-Werkhorst J, Quak ABWM, Vos HEF. Guideline for home treatment with tube feeding and parenteral nutrition. Requirements for organisation, care process and aids (2003). *www.tno.nl*/downloads/KvL-PZ-Richtlijnen_voeding_februari_2003.pdf.
NVD (Dutch Dietetic Association). Doctor's guide to dietetics. Nutrients administered artificially (2004). *www.artsenwijzer.info/html/nl/16_voedingsstoffen_kunstm/index.html.*