

Disease-related malnutrition: a time for action

KEY MESSAGES

- Disease-related malnutrition is an underdiagnosed, undertreated condition that affects 30–50% of inpatients.
- Disease-related malnutrition is common in patients with almost any disease; older adults and people with noncommunicable diseases are at particularly high risk.
- Nutrition therapy, including artificially administered nutrition for patients at nutritional risk, is a cost-effective intervention with both clinical and financial benefits.
- Nutritional care comprises screening, assessment, diagnosis, nutrition therapy and monitoring. Its aim is to assess, prevent and treat disease-related malnutrition with a strategy for optimal nutrition therapy. Nutritional care should be provided in primary care and for out- and inpatients.
- Guidelines and position papers of the European Society for Clinical Nutrition (ESPEN) provide clinical evidence to support a policy for implementation of nutritional care and to strengthen the education of health-care professionals in clinical nutrition.
- The policy recommendations for consideration by countries are to:
 - recognize disease related malnutrition as an important topic to address by policymakers and healthcare professionals;
 - implement nutritional care in primary care and in every outpatient and inpatient setting; and
 - strengthen the education in nutrition of health-care professionals.

BACKGROUND

DISEASE-RELATED MALNUTRITION

Disease-related malnutrition can be caused by almost any acute or chronic disease, including noncommunicable diseases (see Boxes 1 and 2). Unlike community malnutrition, which is due to socioeconomic factors, disease-related malnutrition is due to the inflammation that occurs in most diseases and to reduced food intake and assimilation commonly associated with disease (Fig. 1) (1). Thus, effective nutritional care goes beyond the provision of food orally and requires medical nutrition treatment, which can be administered orally or, if necessary, artificially, in a stepwise approach: malnutrition screening, diagnosis, assessment, nutrition administration and monitoring (2). Disease-related malnutrition negatively affects a person's quality of life and increases the risks for complications and mortality. It also prolongs hospital stays, thereby increasing costs. The provision of adequate nutritional care is critical to prevent and treat disease-related malnutrition and related conditions (3).

Box 1. Epidemiology of disease-related malnutrition

Disease related malnutrition affects:

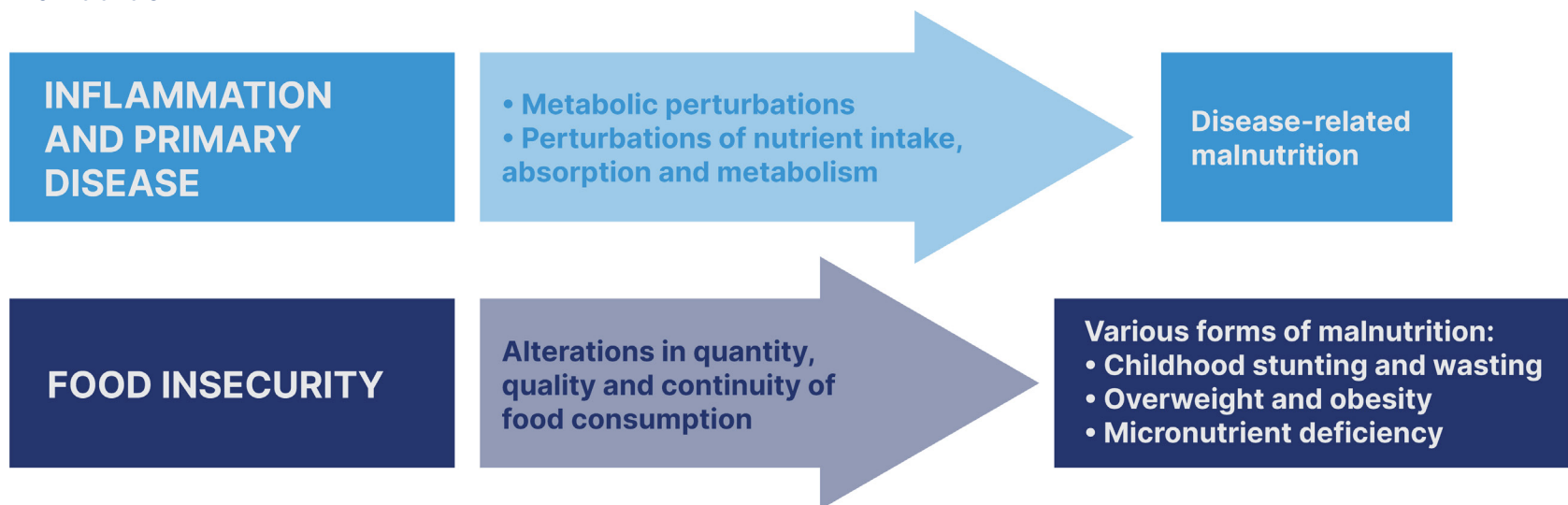
- 30–50% of inpatients
- 40% of cancer patients
- 30–70% of elderly patients
- 24% of inpatients with cardiovascular or pulmonary disease
- 38–78% of patients in intensive care

Box 2. Noncommunicable diseases (NCDs), ageing and malnutrition

NCDs cause nearly 90% of deaths and are responsible for 85% of years lived with disability in the WHO European Region. Malnutrition adds to this substantial burden in several ways:

- Undernutrition impairs child growth and development, which can increase the risk of developing NCDs later in life.
- Undernutrition enhances the risk of NCDs and their acute complications in adults.
- Individuals with NCDs are at high risk of developing disease-related malnutrition, with higher risks of comorbid conditions, hospitalization, prolonged hospitalization and slower recovery, poor quality of life and, ultimately, higher mortality rates and health costs.

Fig. 1. Pathways from disease to malnutrition and from inadequate access to food to various forms of malnutrition



Disease-related malnutrition is underdiagnosed and misdiagnosed. About 40% of inpatients lose weight unintentionally, and half do not eat well and are at risk of malnutrition. Nearly half of inpatients do not receive nutritional care, and only one third of patients who are unable to eat due to their condition receive oral nutritional supplements or artificial nutrition (4). Underdiagnosis of disease-related malnutrition and lack of nutritional care result in poor patient outcomes and to a higher economic burden than for nourished patients (5). When disease-related malnutrition is diagnosed, it is usually not adequately treated (4). Although it is increasingly clear that nutritional care can effectively prevent or treat malnutrition (6) and improve disease outcomes, access is still unacceptably limited for most patients.

This fact sheet on disease-related malnutrition is intended for national and regional policymakers for health care. It provides a concise overview of the actions recommended by ESPEN in guidelines and position papers to strengthen nutritional care for the prevention and management of disease-related malnutrition in primary care and for hospital outpatients and inpatients. It includes a recommendation that health-care professionals be trained in nutritional care.

IMPACTS OF DISEASE-RELATED MALNUTRITION



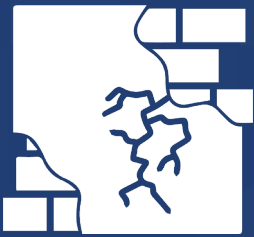
POORER OUTCOMES

International studies show that disease-related malnutrition affects 30–50% of hospitalized patients, and 1 in 10 patients with good nutritional status on admission become malnourished. Patients with disease-related malnutrition are 3.4 times more likely to die, stay 1.9 times longer in hospital and are 2.2 times more prone to comorbid conditions such as infections and ulcers (4).



HIGHER ECONOMIC BURDEN

Malnutrition results in a 30.13% increase in the average cost of hospitalization (5).



VULNERABLE POPULATION

Disease-related malnutrition is more prevalent in low-income countries, in older adults (see Boxes 1 and 3) and in patients with noncommunicable diseases, such as cancer, as well as those with acute diseases and complications, particularly surgical patients and those in intensive care (2).

Box 3. Prevalence in older adults

Disease-related malnutrition is highly prevalent in older adults. Older adults are vulnerable to malnutrition due to:

- a higher disease burden and poly-morbidity;
- age-related physiological decline and impairments; and
- reduced access to nutritious food, loneliness and cognitive decline.

RECOMMENDED ACTIONS

IMPLEMENT NUTRITIONAL CARE IN PRIMARY CARE AND IN ALL OUTPATIENT AND INPATIENT CARE

A strong nutritional care process is essential for adequate treatment of disease-related malnutrition. Nutritional care should be implemented systematically, in steps (7) (Fig. 2).

Fig. 2. Process of nutritional care



* See ESPEN GLIM Fact sheet <https://www.espen.org/images/files/ESPEN-Fact-Sheets/ESPEN-Fact-Sheet-GLIM.pdf> (11)

STRENGTHEN NUTRITION EDUCATION FOR HEALTH-CARE PROFESSIONALS

Education on nutrition is often neglected in medical schools and in post-graduate education of health-care professionals. A common reason is that credits are not given for this topic in medical curricula, indicating lack of awareness of the importance of nutrition-related disorders. ESPEN and several European medical schools have agreed on a minimum curriculum for nutrition education, which should be mandatory in medical schools, covering the three domains of human nutrition: basic, applied and clinical nutrition. The subjects could be taught in four models identified by ESPEN: vertical integration, horizontal integration, mandatory subject and elective subject. The models could be combined, according to the preferences of medical schools, credits in the curriculum and the availability of expertise (8).

RECOGNIZE DISEASE-RELATED MALNUTRITION AS A PRIORITY HEALTH ISSUE (BOX 4)

Malnutrition has been defined, classified and diagnosed according to body mass index (BMI), with a cut-off value of $\leq 18 \text{ kg/m}^2$. Disease-related malnutrition, however, can worsen clinical outcomes by changing muscle mass and causing rapid weight loss at any BMI, including the obesity range (9). The health burden of disease-related malnutrition is substantial for patients, families and health-care systems. Programmes for reducing the prevalence of disease-related malnutrition should be established for timely screening of the risk for disease-related malnutrition and diagnosis according to simple criteria, such as those outlined in the GLIM (10,11).

Box 4. Disease-related malnutrition

- Disease-related malnutrition is caused by the inflammatory processes and/or decreased nutrient intake or absorption associated with virtually any primary disease.
- Disease-related malnutrition induces nutritional and metabolic derangements that may impair the function of all body organs and tissues, including disability and frailty from loss of skeletal muscle mass and strength, impaired immune function, altered energy metabolism and basic organ functioning and psychological and psychic derangement.
- Disease-related malnutrition has a strong clinical impact due to patient complications, worse outcomes, higher mortality rates, longer hospital stays and recovery and poor quality of life, all of which add to the overall social and economic health burden.
- Screening for disease-related malnutrition and diagnostic frameworks such as GLIM allow simple diagnosis and classification of severity.
- Nutritional care is necessary and effective in prevention and treatment of disease-related malnutrition.
- Until now, programmes to reduce all forms of malnutrition have focused on social and economic determinants of malnutrition, and disease-related malnutrition and access of these patients to nutritional care have received much less attention.

CONCLUSION

The high prevalence of disease-related malnutrition and promotion of nutritional care for every patient require urgent attention by policy makers. Disease-related malnutrition should be considered as a priority topic for programmes and policies, including resource allocation from public health resources.

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* All references accessed 1st November 2023

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