



# HEALTHCARE NUTRITION COUNCIL

Improving outcomes through awareness and action

## Healthcare Nutrition Council Expanded Definition: Malnutrition and Related Terminology

### HNC Accepted Definition of Malnutrition:

As there is no universally accepted definition of “malnutrition,” and since malnutrition can have different meanings in different contexts, the Healthcare Nutrition Council (HNC) has adopted the following definition of malnutrition:

*Malnutrition is an acute, subacute or chronic state of nutrition, in which varying degrees of over nutrition or undernutrition with or without inflammatory activity have led to a change in body composition and diminished function due to alterations in substrate availability.<sup>i</sup> Malnutrition has also been defined as a state of nutrition in which a deficiency, excess, or imbalance of energy, protein, and other nutrients cause measurable adverse effects on body function and clinical outcomes.<sup>ii</sup> There are three common types of malnutrition diagnoses for adults in clinical practice settings: (1) starvation-related malnutrition; (2) chronic disease-related malnutrition; and (3) acute disease or injury-related malnutrition.<sup>iii</sup>*

*Chronic disease-related malnutrition, acute disease or injury related malnutrition can occur and/or be exacerbated in a healthcare institution or a community setting. We refer to all of these forms of non-starvation related malnutrition generically as disease-related malnutrition, a multifactorial, individualist metabolic state which may have different etiologies that indicate patient specific interventions. Disease-related malnutrition can have similar distinct nutrient requirements altered across all spectrums of body mass index, ranging from under to overweight individuals.*

### Definition of Nutrients:

Nutrients are defined as “chemical substances found in foods that are necessary for human life and growth, maintenance, and repair of body tissues. It is now commonly accepted that proteins, fats, carbohydrates, vitamins, minerals, and water are the major nutritional constituents of foods.”<sup>iv</sup> Nutrients are generally understood to include substances like proteins, carbohydrates, fats, vitamins, and minerals. Nutrients are split into two categories: macronutrients and micronutrients.

Macronutrients are nutrients that are required by the body in relatively large amounts as compared to other nutrients, and can be metabolized to produce energy. Examples of macronutrients include carbohydrates, proteins, and fats.<sup>v</sup>

Micronutrients are nutrients present and required in the body at very low levels compared to macronutrients. Micronutrients may include certain vitamins and naturally occurring elements.<sup>vi</sup>

### Food Insecurity and Malnutrition:

The U.S. Department of Agriculture’s (USDA) Economic Research Service (ERS) defines food insecurity as a condition that often results in people or populations becoming malnourished, and “a household-level economic and social condition of limited or uncertain access to adequate food.”<sup>vii</sup> USDA further defines two kinds of food insecurity:

1. *Low food security (food insecurity without hunger): Reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake.*
2. *Very low food security (food insecurity with hunger): Reports of multiple indications of disrupted eating patterns and reduced food intake.<sup>viii</sup>*

Malnutrition can occur as a result of either form of food insecurity, and understanding the similarities and differences between each is critical to identifying the signs and diagnosis of malnutrition. A common misconception is that malnutrition can occur only in instances of very low food security where there is a



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deficit of calories available to an individual. However, malnutrition is also quite common in situations where calories are available, but the poor nutritional value and lack of variety of foods can result in undernutrition. It is often possible for someone to be overweight or obese, consuming an excess of their required daily caloric intake, and for that individual to still be malnourished.<sup>ix</sup>

Nutritional status, and by consequence malnutrition, is often influenced by a variety of social determinants of health (SDH). According to the World Health Organization (WHO), SDHs are “the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies and political systems.”<sup>x</sup> In many cases SDHs will have a drastic impact on the availability and quality of foods, how those foods can be prepared and consumed, and what foods will be commonly consumed as staple parts of the diet. As a result, SDHs shape a population’s nutritional status and may result in certain populations, such as the elderly, disabled, and the poorest segments of society, becoming malnourished.

Furthermore, malnutrition is commonly associated with and may complicate a variety of diseases and injuries, such as cancer, stroke, chronic obstructive pulmonary disease, and other malabsorption disorders that impair an individual’s ability to ingest or absorb nutrients, and can cause increased energy needs or require an individual to adhere to significant dietary restrictions. As a result, malnutrition is estimated to occur in approximately three percent of adults’ hospital inpatient stays in the United States and is associated with increased morbidity, mortality, and health care costs.<sup>xi</sup>

## **Malnutrition and At-Risk Populations:**

Given the implications of SDH and the impact of certain diseases and injuries on nutritional status, a variety of populations are at much higher risk to become malnourished. Understanding those populations that may be at greatest risk of being malnourished is critical. These populations include:

- The elderly;
- Individuals with multiple and/or chronic disease;
- Individuals subject to multiple hospitalizations;
- Obese individuals;
- Rural and urban poor; and
- Children.

While addressing all forms of malnutrition will increase overall population health, HNC focuses its work on populations that are malnourished or at risk of becoming malnourished as a result of a disease or injury that may or may not produce an inflammatory response, but has led to changes in body composition and diminished function requiring macronutrient, substrate and micronutrient alterations associated with medical conditions.

The common misconception that all malnutrition is a result of the absence of calories has hampered efforts to diagnose and treat malnutrition in populations that generally have access to food. Implementation of policies and clinical practices that address patient populations who are malnourished as a result of disease or injury, but may still have access to or even be able to ingest food to meet energy needs, is critically important. For these populations, simply making additional calories available (e.g., feeding them more) may not have any beneficial impact on their nutritional status and may, in some cases, be detrimental.

Research shows that malnutrition-related hospital stays have a much higher risk of death, compared to patient stays not identified as malnourished, and therefore, it is vital to address disease-related malnutrition with condition-specific nutrition interventions.<sup>xii</sup> Malnourished patients are also likely to spend a longer period of time in the hospital and are much more likely to be readmitted following discharge than patients who are not malnourished.<sup>xiii</sup> As a result, malnutrition has negative consequences for patient



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outcomes, quality of life, and healthcare costs. Because detecting malnutrition can be done easily and inexpensively by screening and assessing patients in a timely manner, it is critically important that disease-related malnutrition be addressed by policymakers. The first step towards addressing this complex condition is addressing common misconceptions about malnutrition.

## The Relationship of Malnutrition to ICD-10 Codes:

The most fundamental step that can be taken to increase diagnosis and treatment rates for disease-related malnutrition is ensuring that healthcare providers are empowered to order enteral and parenteral nutrition products, and are reimbursed for care provided to treat malnutrition.

To this end, the WHO has included a variety of codes in the International Classification of Disease (ICD) 10<sup>th</sup> revision that address nutrient deficiencies. The relevant ICD-10 codes are found in Section E00-E89, "Endocrine, nutritional and metabolic diseases." The database includes a variety of codes related to malnutrition (E40-E46) and other nutritional deficiencies (E50-E64).

Ensuring that clinicians are aware that these codes exist, and are appropriately diagnosing and assigning codes for reimbursement, are some of the first steps towards increasing treatment of disease-related malnutrition.

## About HNC:

The Healthcare Nutrition Council (HNC) is an organization representing the manufacturers of enteral nutrition formulas, parenteral nutrition solutions, supplies and equipment. HNC member companies are Abbott Nutrition, B. Braun Medical, Nestlé Health Science, and Nutricia North America. HNC is committed to improving health by advancing policies that address and raise awareness of nutrition and its impact on patient outcomes and healthcare costs. This includes promoting nutritional screenings, diagnoses, assessments and appropriate and timely nutrition clinical interventions while protecting patients' access to enteral and parenteral nutrition products and services throughout the continuum of care. For more information on HNC, please visit <https://healthcarenutrition.org>.

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<sup>i</sup> American Society for Parenteral and Enteral Nutrition (ASPEN) Board of Directors and Clinical Practice Committee. Definition of Terms, Style, and Conventions Used in ASPEN Board of Directors–Approved Documents. May 2018. Retrieved from [https://www.nutritioncare.org/uploadedFiles/Documents/Guidelines\\_and\\_Clinical\\_Resources/ASPEN%20Definition%20of%20Terms,%20Style,%20and%20Conventions%20Used%20in%20ASPEN%20Board%20of%20Directors%E2%80%93Approved%20Documents.pdf](https://www.nutritioncare.org/uploadedFiles/Documents/Guidelines_and_Clinical_Resources/ASPEN%20Definition%20of%20Terms,%20Style,%20and%20Conventions%20Used%20in%20ASPEN%20Board%20of%20Directors%E2%80%93Approved%20Documents.pdf).

<sup>ii</sup> Royal College of Physicians of London. (2002). *Nutrition and Patients: A Doctor's Responsibility*. Salisbury, Wiltshire, Great Britain: Sarum ColourView Group.

<sup>iii</sup> *Ibid.*

<sup>iv</sup> Stipanuk, M.A. and Marie Caudill. (2012). *Biochemical, Physiological, and Molecular Aspects of Human Nutrition: 3<sup>rd</sup> Edition*. St. Louis, Missouri: Saunders, an imprint of Elsevier Inc.

<sup>v</sup> American Society for Parenteral and Enteral Nutrition (ASPEN) Board of Directors and Clinical Practice Committee. Definition of Terms, Style, and Conventions Used in ASPEN Board of Directors–Approved Documents. May 2018. Retrieved from [https://www.nutritioncare.org/uploadedFiles/Documents/Guidelines\\_and\\_Clinical\\_Resources/ASPEN%20Definition%20of%20Terms,%20Style,%20and%20Conventions%20Used%20in%20ASPEN%20Board%20of%20Directors%E2%80%93Approved%20Documents.pdf](https://www.nutritioncare.org/uploadedFiles/Documents/Guidelines_and_Clinical_Resources/ASPEN%20Definition%20of%20Terms,%20Style,%20and%20Conventions%20Used%20in%20ASPEN%20Board%20of%20Directors%E2%80%93Approved%20Documents.pdf).

<sup>vi</sup> *Ibid.*

<sup>vii</sup> U.S. Department of Agriculture Economic Research Service. Definitions of Food Security. 2019. Retrieved from <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx>.

<sup>viii</sup> *Ibid.*

<sup>ix</sup> Via, M. The Malnutrition of Obesity: Micronutrient Deficiencies That Promote Diabetes. *ISRN Endocrinol.* 2012; 2012: 103472.

<sup>x</sup> World Health Organization. Social Determinants of Health. 2019. Retrieved from [http://www.who.int/social\\_determinants/en/](http://www.who.int/social_determinants/en/).

<sup>xi</sup> Corkins MR; Guenter P; DiMaria-Ghalili RA; Jensen GL; Malone A; Miller S; Patel V; Plogsted S; and Resnick HE. Malnutrition diagnoses in hospitalized patients: United States, 2010. *Journal of Parenteral and Enteral Nutrition.* 2014; 38(2): 186-95.

<sup>xii</sup> Weiss AJ; Fingar KR; Barrett ML; Elixhauser A; Steiner CA; Guenter P; and Brown MH. Characteristics of Hospital Stays Involving Malnutrition, 2013: Statistical Brief #210. *HCUP Statistical Briefs.* 2016. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK396064/>.

<sup>xiii</sup> *Ibid.*