

EFAD

The European Federation of
the Associations of Dietitians

THE VOICE OF EUROPEAN DIETETICS

Sustainable Health Through the Life Span

**Nutrition as a Smart
Investment for Europe**





Sustainable Health
Through the Life Span:
*Nutrition as a Smart
Investment for Europe*

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Introduction

→ The European Federation of the Associations of Dietitians (EFAD) is the voice of 35,000 European dietitians in 29 European countries representing more than half the profession in Europe. Through its membership of 33 National Dietetic Associations and 38 Higher Education Institutes, EFAD aims to improve European nutritional health and reduce health inequalities among the populations its members represent. Using the European Dietetic Action Plan (EuDAP), EFAD is mapping the actions undertaken by dietetic associations across Europe.¹

Improving the health of adults and children is more critical now than ever before. Globally, we are experiencing a high prevalence of preventable nutrition-related diseases. From 1990 to 2015, risk of high Body Mass Index (a marker for overweight and obesity), high fasting glucose (a marker for insulin resistance and diabetes) and drug use, steadily rose – all metabolic risk factors that increase the risk of noncommunicable diseases (NCDs): diabetes, cardiovascular diseases, cancer, and chronic respiratory diseases. Today, NCDs are responsible for 71% of all deaths globally, and in the years to come, these nutrition-related diseases will account for as much as 80% of the disease burden.^{2,3} Tobacco use, alcohol consumption, physical inactivity and unhealthy diets all increase the risk of dying from an NCD.²

Of the six World Health Organization (WHO) regions, the European Region is most affected by NCDs. These conditions account for roughly 86% of deaths and 77% of the disease burden in the region.⁴ Exacerbating this issue is the evidence suggesting that up to one-fifth of health care spending in various European countries is wasteful and could be reallocated to better use.⁵

Fortunately, there is a dedicated, qualified and cost-effective health profession eager to collaborate with the medical community and other disciplines in this somber landscape, though external government support is needed. Dietitians are health professionals with a degree and specialised training in nutrition and dietetics recognised by a national authority.⁶ They are educated in nutrition science, health, counseling and behavioural change strategies. As health professionals, they give evidence-based advice about food and nutrition for the promotion

of health, prevention of disease and for the diagnosis, treatment and management of nutrition-related disorders. They work in health care, private practice, education, the workplace, research, food service, industry, multimedia, and European Union (EU) national and local governments.⁷ Dietitians' roles include: optimising health through the diet, empowering the public to make healthier choices, supervising the preparation and service of food, developing modified diets, participating in research, instructing students, educating individuals and groups on appropriate and sustainable dietary habits across the life span, impacting health and food policy, and collaborating with other health professionals for the greatest impact.⁸

The data show that dietetic interventions demonstrate statistically- and clinically-significant impacts on health outcomes.⁹ The purpose of this paper is to illustrate how the prevalence of NCDs in Europe, and the resulting societal and economic consequences, can be significantly reduced by dietitians due to their unique roles and documented impact. This impact can be further advanced through the implementation of the recommendations throughout this document. ●



* Dietitians have different roles, responsibilities and professional titles depending on their countries.

Nutrition economics: the case for dietitians

→ Europeans face many obstacles in accessing a dietitian for nutrition counsel, from out of pocket costs and time constraints to their individual readiness to change. In light of limited health care packages, budgets and policy pressures, the health care system risks not delivering care that would achieve optimal health outcomes. In light of this landscape, dietitians are prepared to demonstrate their added value as part of the health care team and within a patient's treatment plan to protect the health of the patients, clients and populations they serve.

It has been widely reported that optimal nutrition as part of a healthy lifestyle decreases the risk and development of diet-related diseases including obesity, diabetes and cardiovascular disease and thus can reduce health care costs.¹⁰ Further, several publications have highlighted that optimal nutrition – including medical nutrition – as part of a patient's total care, also has functional and clinical benefits, which again results in a reduction of health care costs.^{11,12}

While nutrition economic analyses are limited, several have been conducted to evaluate the

cost-benefit and cost-effectiveness of dietary treatments across various patient populations.

In one analysis, for every €1 spent on dietary counselling society gets a net €14 to €63 return.¹⁰ In the malnourished hospital patient population, which represents roughly 22% of all hospital patients, every €1 spent on dietetic therapy provides a benefit to society of

€3.08 - 22.60 in gastrointestinal or lung cancer patients, €2.40 - 4.50 in head and neck cancer patients, and €1.20 - 1.90 in malnourished elderly patients.¹⁰

The data show that dietetic treatment of patients with obesity and obesity-related diseases (such as diabetes, hypertension and hyperlipidaemia/



hypercholesterolaemia) creates social benefits of €0.4 - 1.9 billion over a period of 5 years. This means that for €1 spent on dietary counselling of these patients, society gets a net €14 - 63 in return, including €56 in terms of improved health, €3 net savings in total health care costs and €4 in terms of productivity gains.¹³ In other analyses evaluating the cost-effectiveness of dietetic interventions on a range of different diagnoses – including pressure ulcers, cancer, and Crohn's Disease – the majority conclude that the interventions are cost-effective, improve the efficiency of care in the health system, and provide an economic and health advantage to the patient.¹⁴

In addition to their specialised training and formal education, data show dietitians are more efficient and effective in nutritional counseling than other members of the health care team.¹⁵ Physicians indeed have reported that they lack the time and knowledge to provide patients with appropriate nutrition advice.¹² As the only specialist in nutrition within the health care team, dietitians are the professionals best suited to provide individualised, evidence-based nutrition care in close coordination with the broader medical team. And in light of the economic analyses to date, dietary treatment by dietitians is a cost-effective and often cost-saving investment. Hospitals, clinics, care homes, employers and insurance companies should include and/or maintain dietary treatment and management by a dietitian in their health care and insurance packages to help alleviate the burden of nutrition-related disorders and conditions. As one report stated, "treatment by the dietitian more than pays for itself."¹² ●

For every €1 spent on dietary counselling society gets a net €14 to €63 return.

Food as an essential part of the health care process

→ Dietitians understand that nutrition is the fundamental building block for the human frame and function, essential for optimal health and healthy ageing.^{16,17,18} Freedom from disease is supported by good nutrition as the body malfunctions over time without the correct building blocks.¹⁹ Dietitians support integrated health care where nutrition is an essential part of the entire care process. Despite the evidence, current health care still has a long way to go to incorporate nutrition specialists in the health care system.

It has been widely reported that optimal nutrition care can prevent disease, lower disease risk, reduce hospital stays and improve health outcomes, resulting in reduction of health care costs.^{20,21,22} Nutrition affects not just our waistlines, but the functions of our whole bodies – from impacting our gene expression, immune system, nervous system, microbiome, and even our mood.²³ A healthy diet can be preventative, anti-inflammatory, nourishing and healing.²⁴ In other words, nourishing food is the basic necessity of life.

In addition to approaching health care holistically through the integration of nutrition in the health care process, dietitians view individual diets holistically. Adapting diets for specific conditions and diseases following the most recent evidence is of great importance and added value for the patient and the multidisciplinary health care team, which only a dietitian is capable of providing. In certain regions, only licensed dietitians can provide nutrition care, including assessment, goal-setting, counseling and advice; this is a model for the profession globally.²⁵ Particularly as the profession is moving toward tailored, individually-adapted dietary counsel and personalised nutrition for prevention and as part of the overall treatment modality.²⁶ There is an opportunity for the broader health care system and public health community to recognise the value of this as well, and that a healthy dietary pattern as part of a healthy lifestyle is the key to health and treating illnesses throughout the life span.^{27,28}

Dietitians are the professionals that can model integrated health care to the broader health care team, as well as deliver this care

Dietitians call on political leaders across Europe to allocate resources to mandate coverage of dietitian services within each country's existing health care system.



via nutrition support to the public.^{29,30,31} Yet dietitians are not consistently represented in health care. This lack of integrated health care where nutrition is not a part of the whole health chain can lead to patients young and old not getting appropriate nutrition treatment and care, resulting in suboptimal health care and unnecessary high costs. Dietitians call on political leaders across Europe to allocate resources to mandate coverage of dietitian services within each country's existing health care system to avoid this outcome.³² ●

Improved health outcomes through diet

→ With food being an essential part of health, dietitians recognize that health and thus quality of life can be improved through the diet. Nutrition is critical in many diseases and health conditions in both adults and children: from burns,³³ eating disorders,³⁴ intellectual and developmental disabilities³⁵ and allergies³⁶ to infectious disease,³⁷ lung disease,³⁸ heart disease,³⁹ hypertension,⁴⁰ neurological disease,⁴¹ kidney disease⁴² and others. Dietitians work in community, academia, private practice and clinical environments to serve each of these patient populations and others to ultimately optimize health. There is an expanding body of evidence illuminating the dietitians' role and impact on each of these areas. While dietary treatment will vary depending on the health condition, in all cases dietitians utilize the nutrition care process to deliver individualised, evidence-based care that advances optimal nutritional intake. For brevity and the purposes of this publication, only a select few conditions will be described in detail where dietitians' nutrition interventions translate to especially impactful health outcomes. These conditions focus on gastroenterologic diseases (considering the foundational role the digestive system plays in processing food), malnutrition and obesity (key risk factors for NCDs), and two major NCDs (cancer and diabetes).

Gastrointestinal Disorders and Conditions

Disorders, diseases and conditions originating in the digestive tract and organs (esophagus, stomach, intestines, rectum, pancreas, gallbladder, bile ducts and liver) significantly impact food and nutrient digestion, absorption and elimination. While incidence and prevalence data on gastrointestinal disorders is extremely limited, we do know there have been increases in the incidence of most gastrointestinal disorders in Europe which carry significant repercussions for health care. Alarming, gastrointestinal cancer is the leading cause of cancer death in Europe; it is the most common cancer in men and the second most common in women after breast cancer.⁴³ With dietitians as the nutrition and diet experts working jointly with the multidisciplinary team, they are primely positioned to support the nutrition care process as it relates to the prevention, treatment and management of gastrointestinal conditions, which could in turn alleviate

the burden of the disease on both health care and the individuals affected. Some examples include functional dyspepsia,^{44,45} irritable bowel syndrome,^{46,47} gastroesophageal reflux disease, coeliac disease, food intolerances, Barrett's esophagus,^{48,49} ulcerative colitis, Crohn's disease,⁵⁰ non-alcoholic fatty liver disease⁵¹ and gastrointestinal cancers.⁵²

Diet changes and lifestyle adjustments are typical treatment modalities for the above gastrointestinal conditions. Evidence suggests that patients with certain gastrointestinal conditions who receive nutrition therapy by a dietitian have increased adherence to the prescribed diet and reduced gastrointestinal distress.⁵³ Beyond this patient care, dietitians produce evidence-based clinical guidelines on gastrointestinal disorders and health, participate in gastrointestinal research opportunities across Europe, support the educational development of dietitians and other professionals on gastroenterology, and share best practices and outcomes with colleagues. However, additional support is needed to ignite further progress. Firstly, governments and multilateral organisations need to finance nutrition research activities. Investing in research and prioritising a supportive research agenda to illuminate the current gaps could foreseeably reduce the burden of several gastrointestinal disorders over a number of years. Secondly and relatedly, research organisations and academic institutions should focus on collecting and analysing data to assess the mechanisms of the interactions between diet and other factors (e.g. gut microbiota, environmental factors, etc.) that affect several gastroenterology conditions. Finally, international dietetic organisations should ensure that research data is translated and appropriately conveyed to businesses and policymakers to inform policies and investments.

Malnutrition and Sarcopenia

Malnutrition is the state resulting from the lack of intake or uptake of nutrition required to maintain health and normal organ function that can lead to decreased lean body mass and body cell mass.⁵⁴ It occurs as a result of starvation, disease, advanced ageing, or a combination of all three, and is most prevalent in older adults

and cancer patients.⁵⁵ In older adults, malnutrition can result from suboptimal dietary intake caused by poor appetite, swallowing difficulty or discomfort, chewing problems, increased protein requirements and/or impaired nutrient bioavailability, which can be caused by malabsorption, diarrhea, or nausea and vomiting.⁵⁶ During disease, inflammation or increased metabolic rate increases nutritional requirements, which also contribute to malnutrition. Malnutrition can have lasting effects because it can lead to poor clinical outcomes including prolonged hospital stays, increased risk of postoperative complications, decreased response to medical therapy, increased frailty, lower quality of life, increased health care costs and increased mortality.^{57,58}

In adults older than 65 years of age, the risk of malnutrition varies significantly country by country, from 15.2% in Spain to 37.7% in Switzerland. However, an estimated 33 million people are at risk of malnutrition in Europe.⁵⁹ In fact, a declaration of the EU in 2011 asserted that the “costs of malnutrition in the EU are as much as double the economic costs of overweight and obesity.”^{60,61} Notwithstanding the increased prevalence and incidence of overweight and obesity since that declaration, the costs are higher still today.⁶²

In older adults, malnutrition can cause sarcopenia, a progressive skeletal muscle disorder leading to overall loss of muscle strength and mass. It often occurs as a result of the ageing process and is associated with an increased likelihood of falls, fractures, physical disability and mortality.⁶³ Sarcopenia affects 1 to 6% of European men and women 40 - 79 years old, and 3 to 6% of English men and women 85 years and older.⁶⁴

Dietitians often lead the dietary treatment that is critical in the prevention and treatment of malnutrition. To meet the increased nutritional requirements of malnutrition, use of oral nutritional supplements may be required in addition to the consumption of protein and energy-dense foods. Dietitians, as experts in human nutrition, are uniquely qualified to develop and implement strategies to prevent, identify and manage malnutrition. They advise patients on their specific needs and coordinate the monitoring of intake and nutritional status over time. The data show that early nutrition intervention by dietitians in malnutrition patients can reduce complication

rates, length of hospital stay, readmission rates, mortality and cost of care.⁶⁵ Outside of direct patient care, dietitians also play a key role in the development of policy and guidance, evidence-based food and nutrition management, and the nutrition education of caretakers as well as other health professionals and social care professionals.

In the prevention and management of malnutrition and sarcopenia in older adults specifically, the role of the dietitian within the total multidisciplinary management of a patient is broader and encompasses the following:⁶⁶

- » Initiating and coordinating nutritional screening programmes to identify the risk factors for malnutrition
- » Applying the nutrition and dietetic care process in all care settings (assessment, diagnosis, intervention, monitoring and evaluation)
- » Developing evidence-based standards, procedures, and protocols for the quality management of nutritional care
- » Advising on the development of national nutritional recommendations for food policy in acute and community settings
- » Contributing to the development of specialist nutritional modules in the training of health care professionals
- » Developing nutrition in gerontology, to maintain health and prevent disease
- » Developing geriatric nutritional science, by initiating and conducting research on nutrition in ageing
- » Providing healthy, safe, tasty and nutritious food

Looking ahead, in addition to continuing to provide essential care for this patient population, there are opportunities for dietitians to fill scientific gaps that would impact the entire medical community that interacts with malnourished patients. Dietitians call for investments in research to identify best practices in early

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malnutrition detection, screening, diagnosing and optimal intervention timing. Furthermore, strategies to proactively prevent malnutrition rather than reactively treat malnutrition are needed. As with most issues, multidisciplinary collaboration is the key to progress; EFAD sees opportunity to engage with other health professional groups, including the European Society for Clinical Nutrition and Metabolism (ESPEN) and the European Nutrition for Health Alliance (ENHA) to further this work.

Cancer

The WHO highlights that according to current evidence, between 30 - 50% of cancer deaths

could be prevented by modifying or avoiding key risk factors, including abstaining from tobacco products, reducing alcohol consumption, maintaining a healthy body weight, exercising regularly and addressing infection-related risk factors.⁶⁷ The continuum of cancer includes diagnosis, treatment, recovery, living with cancer and possibly recurrence of disease. Each stage is

associated with different needs and challenges for the patient, caregivers and clinicians. One of the most significant and common nutritional issues that can arise during cancer treatment is malnutrition.

It is widely acknowledged that nutrition and cancer are linked; diet can increase or decrease cancer risk as a result of the overall balance of the diet and negative factors resulting from a poor diet and excess body weight.⁶⁸ As a result, both cancer and the oncological therapies utilised for its treatment can have profound effects on an individual's nutritional status, thereby making nutrition an important component of care.^{69,70} Dietitians are the key professionals who are officially educated and certified to help both

the general public and cancer patients with optimal health outcomes. Oncology dietitians in particular have specialized knowledge and understanding of cancer, cancer treatments and their impact on a patient's nutrition status and quality of life. It is increasingly recognised that dietitians help improve clinical outcomes in people with certain cancers by influencing nutrition and thus improving functional capabilities and quality of life.^{71,72} For the public, dietitians translate the latest science into counsel and provide health and lifestyle recommendations to prevent and reduce the risk of cancer. In the health care setting, dietitians working in oncology have a vital role in ensuring that nutritional aspects of patient management are an integral component of multidisciplinary care and that all cancer patients receive the dietetic support they need before, during and after treatment, including palliative care.⁷³

Every individual with a diagnosis of cancer should have access to a dietitian who is specialised in oncology, and the European health care system needs to ensure this is a reality for all patients. The European Cancer Patients Coalition has developed *The Cancer Patient's Charter of Rights for Appropriate and Prompt Nutritional Support*,⁷⁴ which maintains that nutrition is a right for cancer patients; oncology dietitians strongly support this right. The oncology dietitian is not only the expert on nutrition, they are the most appropriate and well-equipped person to provide quality oncology nutrition care for cancer prevention, treatment and quality of life in lockstep with other providers in the total chain of care.

Diabetes

Diabetes mellitus is a chronic condition that occurs when there are raised levels of glucose in the blood because the body cannot produce any insulin (type 1 diabetes), or it cannot produce enough insulin or use insulin effectively (type 2 diabetes, which is more common). Diabetes affects more than 425 million people worldwide (approximately 60 million in Europe), with 352 million additional individuals with impaired glucose tolerance on the cusp of developing diabetes. Projections have global rates of diabetes increasing to 629 million people in 2045. This rise in the prevalence of diabetes worldwide is caused by a rise in obesity, as obesity is

Dietitians are also highly skilled educators and lifestyle coaches that support and empower individuals with diabetes to make healthy food choices.

the primary risk factor for developing type 2 diabetes. Globally, over 90% of patients with type 2 diabetes are overweight or obese. There is an urgency for greater action to improve diabetes outcomes and reduce the global burden of diabetes and obesity. The cost of diabetes alone is considerable, with disease-related health care expenditures costing upwards of €643 billion.^{75,76}

Dietary therapy and weight loss to improve existing insulin resistance are the cornerstones of type 2 diabetes management. Weight loss as a result of an optimized diet and healthy lifestyle to restore the effect of insulin can improve diabetes outcomes, reduce comorbidities and the use of medication, and enhance quality of life. As medication and nutrition can reinforce each other but can also counteract each other, close cooperation and communication with the physician is crucial. As trained professionals in weight and diet management, dietitians are also highly skilled educators and lifestyle coaches that support and empower individuals with diabetes to make healthy food choices, lead an active lifestyle and meet their personal and medical, short- and long-term goals. In diabetes care settings, dietitians work as trained diabetes educators within diabetes self-management education programs. They provide individualised therapy and nutrition counseling in both one-on-one and group-based settings with patients, taking into account personal and cultural beliefs, preferences, lifestyle and willingness and ability to change. They help improve quality of life by helping individuals with diabetes understand what they can eat and drink – in a language and format they can understand – in order to self-manage their diabetes and prevent complications. As an integral part of multidisciplinary management of diabetes, dietitians are the experts who can help individuals achieve their health goals by supporting them in nutrition intake in a holistic, total lifestyle modification approach. Dietitians do this work as part of and in close collaboration with the entire health care team to ensure optimal care of the patient.⁷⁷ The evidence is strong that nutrition therapy provided by dietitians is effective in improving weight status, glycemic control, and even reducing cardiovascular risk factors in patients with diabetes.^{78,79}

To optimally continue this important work, it is

highly critical to increase the number of clinical dietitians specialised in diabetes in the community (for diabetes prevention), in hospitals (for diabetes treatment), and in out-patient diabetic clinics (for diabetes management) to ensure there are adequate professionals to meet the rising need for care.

Obesity

Overweight and obesity is prevalent across Europe, with half of the adult population defined as overweight (having a Body Mass Index >25 kg/m²) in many countries. Secular trends over the past decade show a steady increase in overweight and obesity prevalence in most European regions due to an ageing population, inactive lifestyles, increased consumption of low-quality foods, genetic predisposition, environmental factors and biological factors (including stress and the use of obesity-promoting medication).⁸⁰ Of particular concern is the trajectory for Europe's younger generation with one in three primary school children being overweight.⁸¹

There are great disparities in overweight and obesity rates between countries and demographic groups.⁸² While obesity prevalence might be increasing slowly or even plateauing in high socioeconomic groups,⁸³ prevalence has increased fivefold among low socioeconomic groups. The socioeconomic gradient of obesity is also much stronger in women than in men and the difference between the sexes is more profound in countries with higher overall obesity prevalence.^{84,85,86} In women, twofold differences in



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obesity prevalence can be seen among those in the lowest versus the highest educational level in some countries.¹⁹ A study in 11 Organisation for Economic Cooperation and Development (OECD) countries showed that Europe had the largest inequalities of obesity in terms of sex.⁸² A consequence of rising obesity levels in all age and gender groups includes the greater chance of comorbidities (type 2 diabetes, sleep apnoea, hypertension, dyslipidaemia, cardiovascular disease and cancer) presenting at a younger age.⁸⁷

Dietitians take a holistic approach to obesity management. This improves quality of life and motivates patients to work on their health.

The increase in these comorbidities resulting from obesity can then lead to greater health care costs for society, reduced quality of life for individuals, and potentially even shortened life spans.⁸⁸

The WHO and other authorities agree that increases in obesity are more likely to be directly linked to changes in energy (calorie) intake rather

than decreases in energy expenditure. These increases in energy intake have been largely attributed to: less time available for food preparation, higher consumption of ultra-processed foods,^{89,90} larger portion sizes, higher consumption of high-fat and high-sugar foods, and abandonment of traditional eating patterns.^{91,92} In order to address this situation, the WHO Europe office has proposed a number of diet-related goals to be implemented by 2025 including product reformulation; reduction in salt, fat and sugar level in foods; the use of fiscal measures to promote healthy food choices and actions to promote higher mobility and physical activity.⁹³

Dietitians in communities across Europe support such efforts and play an important role in preventing and managing obesity.⁹⁴ Consistent evidence supports the cost-effectiveness, cost benefit and economic savings of nutrition therapy and interventions provided by a dietitian in overweight and obese adults; studies affirm that such care resulted in improved weight loss and improved quality of life. As part of an obesity

team in primary, secondary or tertiary health care, dietitians can serve as the central care provider for patients with obesity. Considering the fact that medical doctors face many patient demands in addressing several other diseases in a short visit time, this additional support and leadership from dietitians will most likely be welcomed. Because obesity is a multifactorial problem where personal and socio-economic factors converge, dietitians take a holistic approach to obesity management. This improves quality of life and motivates patients to work on their health. In addition to taking the role as central care provider in short- and long-term obesity management, dietitians:

- » Design and carry out preventive policies and concrete actions at every level: national, regional, community, workplace and personal
- » Take a role in guideline development for obesity guidelines at national and European levels
- » Diagnose groups and individuals who require treatment
- » Design and carry out treatment plans for groups and individuals
- » Deliver long term management in both weight loss and weight maintenance
- » Advise other health professionals on management and prevention options for groups and individuals
- » Link with organisations locally, nationally and throughout Europe to promote sustainable food production while promoting healthy body weight

In many countries, obesity management is not yet well organised and is costly as it is centered around obesity clinics. In contrast, dietitians propose early treatment of individuals with overweight but have not yet developed obesity. Additionally, dietitians call for obesity therapy that follows a stepped care approach, where treatment begins with the least intensive and intrusive intervention. Obesity management should begin in primary care, and when that option doesn't succeed, other options which tend to be more costly can be explored. Dietitians are the certified experts in diet and nutrition and deliver cost-effective interventions through direct or online counseling or blended care. As such, they are best suited to serve as the central care provider in obesity management. ●

Sustainable diets lead to a healthier population

→ According to the Food and Agriculture Organization (FAO), sustainable diets are “those diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources.”⁹⁵ Dietitians – due to their specialised training and expertise in food science, community needs, behavior change and human health promotion – are uniquely suited to lead the European population towards a more sustainable eating pattern. Dietitians have always played this important role; it is inherent to the profession. But investing in their capacity throughout Europe can have an even greater impact.

Current food consumption patterns are linked to the health status of populations and also to potentially deleterious environmental consequences. Regarding specific food choice, a recent report generally described a healthful diet with a low environmental impact as one comprised of a variety of primarily fresh and minimally-processed plant-based foods, sustainably-produced vegetable fats, small amounts of minimally processed animal foods, tap water as a primary beverage choice, and very little wasted food.^{96,97}

The United Nation’s 2030 Agenda and Sustainable Development Goals (SDGs)⁹⁸ and Declaration of Paris,⁹⁹ as well as the Special Report on Climate Change and Land by the Intergovernmental Panel on Climate Change (IPCC),¹⁰⁰ are some of the main references driving the vision and mission on sustainability globally. Although the United Nation’s 17 SDGs and their 169 targets are broader than food, they carry great relevance for food systems. In the SDG Index, the 27 member states of the EU are ranked among the Top 50 countries’ implementing the global SDGs.¹⁰¹ Still, while the EU has the highest score on average for SDG 1 (End poverty in all its forms everywhere), it has the lowest score on SDG 12 (Ensure sustainable consumption and production patterns) and SDG 14 (Conserve and sustainably use the oceans, seas and marine resources for sustainable development).

Clearly, for even the best-performing countries, additional progress is needed to move toward complete implementation of all 17 Sustainable Development Goals by 2030. A set of scenarios has been proposed to drive progress and spur action by European governments to continue leading the way on this work.¹⁰² A fundamental change of direction is necessitated to put global food systems on a sustainable course. To catalyse that change, various policies affecting food systems should be urgently reformed to address climate change, halt biodiversity loss, curb obesity, and make farming viable for the next generation. In Europe, five paradigm shifts should occur in parallel to build sustainable food systems:

1. Ensure access to land, water and healthy soils
2. Rebuild climate-resilient, healthy agro-ecosystems
3. Promote sufficient, safe, healthy and sustainable diets for all
4. Build fairer, shorter and cleaner supply chains
5. Put trade in the services of sustainable development

As the Collaborative Framework for Food Systems Transformation by the United Nations Environment Programme states, by changing the way our societies currently relate to and consume food, the governments can significantly impact health and environment. Local governments in particular can play a strategic role in promoting this change.¹⁰³ More specifically, the following key actions should be considered by policy makers and advocates:

- » **Formulate a food policy:** Regardless of the level of development in a country, a food policy must focus on consumer behaviour, and align with FAO’s recommendations to support citizens in eating better diets (i.e. diets that are more diversified, nutritious, less resource-intensive, and produce minimum waste) and to understanding the impact of their food consumption behaviour (on the environment, on their health, and on society as a whole)
- » **Leverage evidence-based tactics to address and solve barriers of affordability and access to healthy foods:** Governments could explore implementing interventions such as placing a food tax on unhealthy foods to incentivise the purchase

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of cheaper and healthier products, with funds raised earmarked for public health initiatives.¹⁰⁴ Regulation of food marketing addressed to children could also be a way to prevent unhealthy eating patterns and can contribute to reducing obesity rates¹⁰⁵

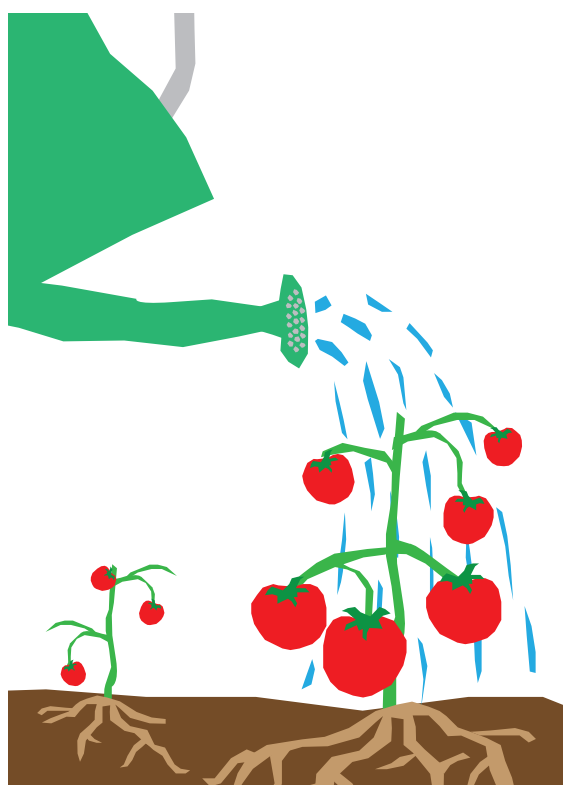
- » **Reduce food loss and waste across the food chain:** Globally, 25 – 35% of total food produced is lost or wasted which contributed to 8 – 10% of total anthropogenic greenhouse gas emissions from 2010 – 2016.¹⁰⁶ Efforts can be made by entities across the food supply chain – supermarkets, restaurants, families, workplaces and schools, for example – to make the greatest impact. Food manufacturers, retailers and restaurants can donate food surpluses to food banks or social supermarkets – retail initiatives that glean surplus food and sell it at a deeply discounted rate to those at risk of food insecurity.¹⁰⁷ Food producers and retailers can also sell "ugly" or imperfect food – that would otherwise be disposed of – at affordable prices
- » **Integrate sustainability in Food Based Dietary Guidelines (FBDGs):** Several governments have already integrated sustainability as a transversal topic, although at an inadequate level, in their FBDGs (Germany, Brazil, Sweden and Qatar);¹⁰⁸ other European countries can follow suit
- » **Make the food chain shorter:** In 2014, the top five retailers sold more than 60% of foods in the EU. Shortening the food chain can limit concentrations of power and unfair trading practices and support the livelihood of small farmers and producers. The food chain can be shortened by promoting street markets where local farmers can sell their products, integrating urban and per-urban farming initiatives into municipalities' strategic actions, and implementing a common food policy where governments provide income support to sustainable farms.¹⁰⁹ Additionally, educating consumers and elevating their food literacy can aid in creating demand and pressing policymakers. There are civil society movements that engage European citizens to address climate change, biodiversity loss, and promote sustainable food systems via policies and by defending small-scale, local food producers and rural communities¹¹⁰

- » **Invest in agri-technology:** Agri-technology investigates innovative actions in farming and fishing to improve yield, efficiency and profitability. Investments must be made in developing these technological advancements, as well as in the small farmers who must be incentivised to engage in the practical application of conservation agriculture methods to make farming viable for future generations
- » **Adopt healthy eating patterns across the lifecycle:** Access and coverage of care by a dietitian should be made available to consumers seeking support, as well as integration of dietitians' expert advice in food and public health policies
- » **Implement front-of-pack labeling to promote healthy choices and create awareness around sustainability:** Labels that highlight product qualities such as healthful or less healthful, appropriate portion sizes, organic, local or short supply chain, animal welfare, fair trade, etc., can guide consumers in making more informed purchasing decisions that support sustainability and health
- » **Boost use and adoption of the European Commission's Green Public Procurement (GPP) instrument:** The GPP is a powerful tool for procuring and serving healthy and sustainable food in catering services across different settings such as schools, universities, hospitals, etc. Food retailers and wholesalers can reduce greenhouse gases by promoting local products, improving access to organic products, reducing use of plastics, promoting bulk buying, and stocking eco-friendly and fair trade food stuffs, among other actions¹¹¹
- » **Stimulate a healthy food environment at the local level:** In some countries, local governments have started to define spatial policy around schools to stimulate "fast food-free zones," and some have restricted the sale of sweetened carbonated beverages and unhealthy snacks in schools – all to encourage healthier dietary habits among students.¹¹² Public transit areas like railway stations and bus terminals have also started to promote healthier snacks as well
- » **Invest in consumer research:** Behavioural research, living labs and participatory

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research involving consumers can glean valuable insights into the relationship between food and health, how consumers can adopt a healthier and more sustainable diet, and make the case for investments in innovative products that answer consumer demand for healthier and more sustainable foods

Although many actions are currently underway to lead us toward a healthier and more sustainable eating pattern, additional progress is needed. There is a robust evidence base for the public health community and government officials to integrate sustainability into national food-based dietary guidelines.¹¹³ Consumers need to feel empowered to take matters into their own hands and reduce food waste, adopt healthier diets and support businesses with sustainable practices, among other actions. They have the power to change food systems through their purchasing and lifestyle decisions, and dietitians are key agents in the community to help and lead them toward a healthier and more sustainable diet. But food producers, the private sector, and government entities must be engaged for true food system transformation. ●



→ Health promotion has been defined by the WHO as “the process of enabling people to increase control over and to improve their health.”¹¹⁴ The ability to have control over one’s health is essential for empowerment. Public health dietitians engaged in health promotion and disease prevention are educated in nutrition, dietetics, health, communication and behavioural strategies. They are trained to apply behaviour change theories and strategies in nutrition counseling and therapy to facilitate health- and food-related behaviours in groups and individuals.¹¹⁵ They understand the relationship between food and health throughout the life cycle and in the environment and communicate this relationship to healthcare providers, policy makers and the community. Dietitians implementing these behavioural change strategies have roles in government, academia, community settings, and private practice. They recognise that to improve the health of the whole population, action needs to go beyond individual choice and individual behaviour change and extend to multilevel policy, systems and environmental change. Systemic responses make individual behaviour change more likely to succeed, because it recognises that external factors influence health outcomes and may create health inequities.

With the social determinants of health in mind, dietitians are leading the way in modeling a more relational and holistic approach to food and eating. This approach recognises that eating for wellbeing has at least two components: an individual’s ability to meet their nutritional needs, and the acknowledgment that eating for wellbeing involves psychological and social dimensions. For example, an individual’s ability to nourish themselves may be impeded by access to tasty, culturally appropriate food, physical ability, or access to appropriate cooking or storage facilities. However, emotional and material circumstances, such as sense of self-worth and/or adverse life events, may also prevent someone from prioritising self-care to ultimately eat for wellbeing.

Health behaviour change requires interventions to improve motivation, abilities and opportunities. However, too great a focus on behaviour change could overlook or dismiss an individual’s own perceptions of what is important. Thus,

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empowerment can be viewed as both a means and an outcome of interventions. Empowerment-based interventions allow room for participants to influence the program or goal, visualise and reflect on one's practices/progress, and be actively involved throughout the intervention. Dietitians are well-positioned to motivate and educate and catalyse positive environmental change in support of healthy eating as the environments in which they already work are prime domains for interventions (e.g. food policy and foodservice). Through the application of efficacious and cost-effective interventions, dietitians are uniquely qualified to positively impact public health and health outcomes through both the empowerment of individuals and interventions that create an environment that supports individuals' healthy decision-making. ●



Strength in numbers: engaging other health care professionals

→ Living a healthy lifestyle and following a healthful dietary pattern are a requisite for healthy populations. A healthy population is important for the wellbeing and economic stability of communities, considering the healthcare costs and productivity and economic losses incurred by societies with ill and unhealthy populations.

At present, the prevalence of NCDs threaten global progress toward the 2030 Agenda for Sustainable Development and the goal of reducing premature deaths from NCDs by one-third. Perpetuating the challenge is the reality that poverty is closely tied to NCDs as vulnerable populations present with these metabolic risk factors that remain undiagnosed and untreated far more than individuals of higher social positions who have the means to seek treatment and care. The most effective and efficient way to curb NCDs is to reduce the risk factors associated with these diseases and focus on prevention. Screening for early detection and treating patients also improves outcomes.

Dietitians are trained health professionals in the field of nutrition and dietetics that practice in a variety of settings. Overall, their scope of work involves maintaining, reducing risk, or restoring health, as well as alleviating discomfort in palliative care.¹¹⁶ The aforementioned metabolic risk factors that increase the risk of NCDs (high blood pressure, overweight and obesity, high blood glucose levels, and high cholesterol levels) are all areas in which dietitians are expertly trained and could lend valuable support.

In light of the magnitude of lives affected by NCDs, involvement by sectors outside of health care is required, i.e. finance, transport, education, agriculture. Concurrently, collaboration among health professionals is key and other health professionals must first be well versed on the relationship between diet and lifestyle and disease and health. EFAD represents 35,000 European dietitians in the EU – far too modest a number in light of the 41 million deaths that occur from NCDs each year. To detect, screen and treat these diseases, dietitians call on other health professionals to be engaged in the effort. Some organisations are already working diligently to build bridges among health professionals and

Conclusions



medical students and incorporate nutrition in health care.¹⁷ Another viable approach is the training of other health professionals by dietitians, the food and nutrition experts. This train-the-trainer approach would enable other health professionals to learn when and how to screen for diet-related issues and know when to refer to a dietitian, thereby maximising reach and encouraging greater coordination and collaboration among the broader multidisciplinary health care team. ●

EFAD represents 35,000 European dietitians in the EU – far too modest a number in light of the 41 million deaths that occur from NCDs each year.

→ With NCDs accounting for over 80% of deaths and 70% of the disease burden in the WHO European region, policy leaders must be willing to explore different solutions to protect the health of the next generation of Europeans. Evidence shows that nutrition therapy and nutrition intervention provided by dietitians is effective and cost-saving and thus there is a significant value the profession brings to the effort toward optimal prevention and care. Food is an essential part of health and thus necessitates the incorporation of dietary and nutrition care into patients' overall treatment and management plans. Based on dietitians' specialized training and experience, they are best-equipped to provide this level of individualised and evidence-based nutrition care for a myriad of diseases and conditions, lead nutrition-based interventions, advocate for policies that improve the food environment, and educate and empower individuals to control their health.

Still, dietitians recognise that to move populations toward sustainable health from birth to advanced age, they cannot operate alone or in siloes. Additional support from and coordination with the multidisciplinary health care team is critical to reach the masses in the current health landscape. Dietitians can play a role in training other health professionals on the link between food, diet, nutrition and health to address some of these capacity limitations. Within health care and health insurance packages, it is critical to include dietary treatment or management by a dietitian to help alleviate the burdens of malnutrition and diseases. Dietitians need to be a part of all medical teams in the entire health care chain across the European continent for greatest impact. Other sectors outside of health care, from the food industry to the government, need to be engaged to realise that potential impact.

In addition to the contribution to the healthcare system, nutrition and dietetics must be integrated into society. In fact, while individual choice is a part of the equation, the environment plays a significant role in how successful individual behaviour change will be. Dietitians employ behaviour change strategies and empower individuals to make decisions to support a healthy and sustainable diet, but the environment must support that positive decision-making.

Dietitians can play a role in training other health professionals on the link between food, diet, nutrition and health to address some of these capacity limitations.

Multilevel policy, systems and environmental changes are required to achieve the desired outcomes of reduced NDCs.

In light of their specialised training, education, and cost-effectiveness, dietitians are the best equipped health professionals to support sustainable health through the life span, from providing long-term cost-savings due to diverted negative health outcomes, optimising health through the evidence-based dietary counsel, improving the food system through policy, empowering the public to make healthier choices, and collaborating with other health professionals to incorporate nutrition into health care.

Vytenis Andriukaitis, European Commissioner for Health and Food Safety stated that “Good health for all EU citizens must be the basis on which everything else, including our economies and security, must be built.” The 4th EU Health Programme 2021-2027 will focus on health promotion and disease prevention. With this important focus for the next decade, it is ever more urgent to utilise the cost-saving and effective profession of dietetics to achieve sustainable health through the life span. ●

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EFAD's mission

To support member associations in developing the role that dietitians have in reducing inequalities and improving nutritional health in Europe.

