



International Conference

optimal
nutritional care
for all

MALNUTRITION: FROM AWARENESS TOWARDS CONTROL

A NUTRITIONAL CARE POLICY SUMMIT

Turin 6 & 7 June 2024



Empowering Health through Knowledge: Implementing Successful Nutrition Education

Moderators:

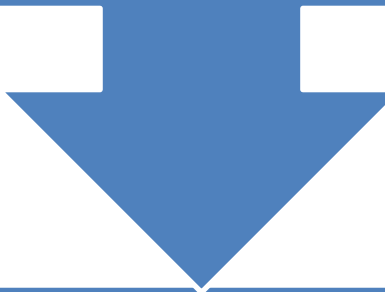
Cristina Cuerda¹ & Maurizio Muscaritoli²
ESPEN NEMS coordinators

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Improve nutrition education



Improve health
(general population and patients)

Malnutrition from awareness towards control



Malnutrition from awareness towards control

Key words

Why

Who

How



Why

- Nutrition-related disorders are very prevalent in the general population and in the different healthcare settings
- Nutrition education is underrepresented in the medical (and HCPs') curriculum
- Improving nutrition education in HCPs is necessary to prevent, identify and correctly treat all the spectrum of nutrition-related disorders



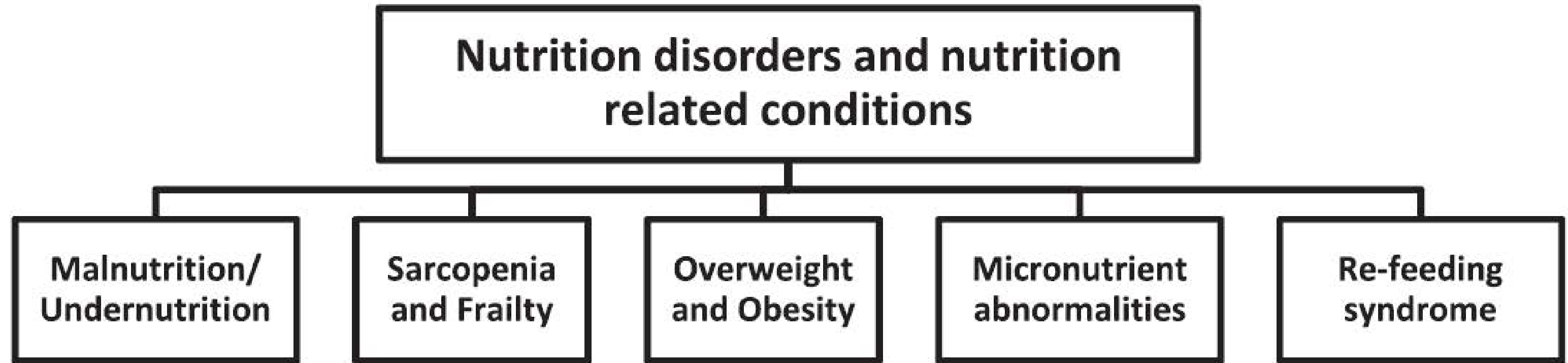


Fig. 1. Overview of nutrition disorders and nutrition-related conditions.

Cederholm T, et al. Clinical Nutrition 36 (2017) 49-64

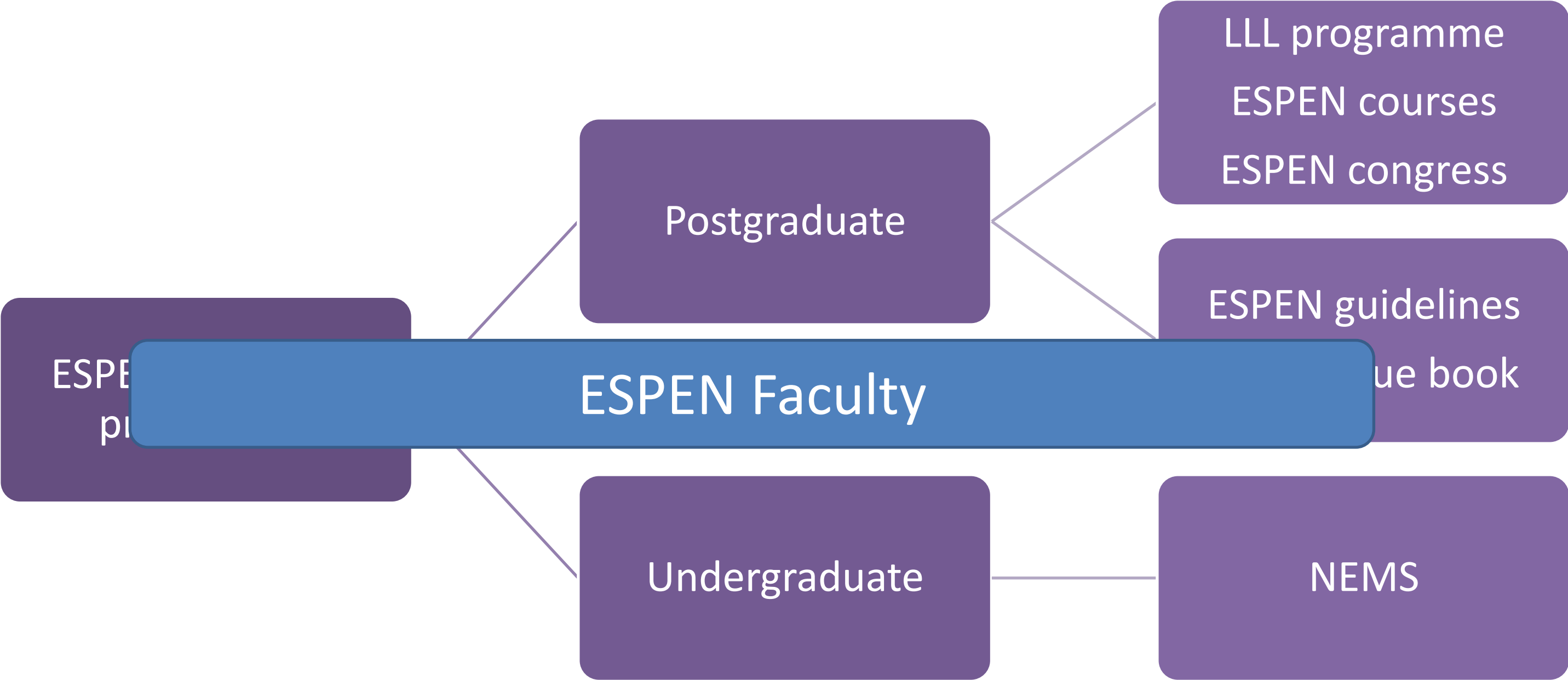


Who

- University faculty (but we can start much earlier from the kindergarten-primary-secondary school)
- Scientific societies → ESPEN NEMS Project
- Students → EMSA
- National governments → MoH, Ministry of Education
- European Union → European Commission



Malnutrition from awareness towards control



Malnutrition from awareness towards control



Aims

1

Create awareness of the importance of Nutrition Education in Medical Schools and for all the health-care professionals

2

Promote the implementation of obligatory training on Nutrition Education during the pregraduate period

3

Provide tools and materials for the implementation of Nutrition Education in Medical Schools

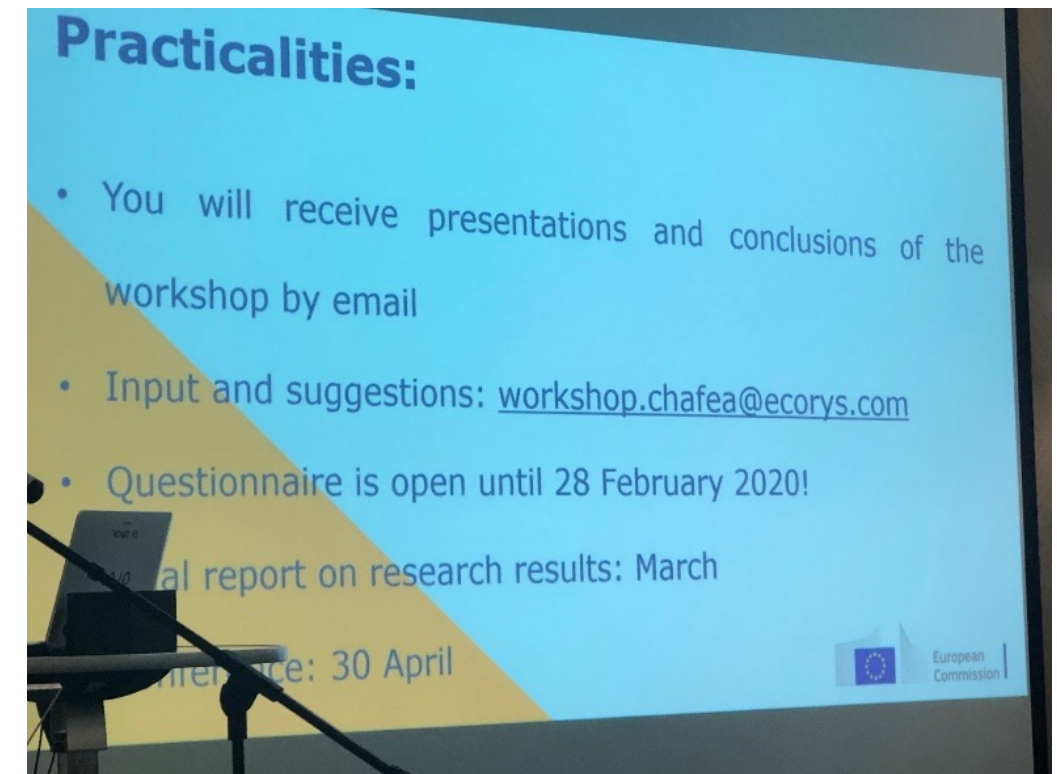


European Commission (EC)

- Collaboration with the EU in a project aimed to review the current education of health professionals with regard to health promotion and disease prevention.
 - The first workshop was held in Luxemburg 13th February 2020, with the attendance of Maurizio Muscaritoli representing ESPEN NEMS project.
 - International Conference 'Promoting Healthy Lifestyles in Europe - from education to practice' organised virtually at the 24th September 2020.
 - ESPEN is now a partner of this project.
- **Update:**
 - The European Commission eventually opened a website on the Health Policy Platform to facilitate the emergent network on health promotion, lifestyle medicine and professional education in the EU. The website is title “Health promotion and lifestyle medicine healthcare professional education in the EU”. <https://webgate.ec.europa.eu/hpf/>



International Conference Turin 6 & 7 June 2024



How

- Collaboration between ESPEN and European Medical Schools
- Prepare educational materials for the universities covering the minimum curriculum in the field of human nutrition
- Collaboration as experts in the field of nutrition in our respective medical schools



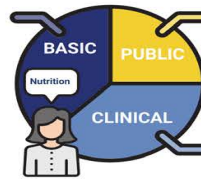
NEMS MANIFESTO



Nutrition education is necessary in the **training of healthcare professionals**, including medical students and it should be **MANDATORY in all Medical Schools**



Medical students need an **evidence - based nutrition education** to understand the importance of nutrition in health and disease



During the **medical training** at the University, students should receive **mandatory** information about **human nutrition** in its three different domains, including **basic nutrition, applied or public health nutrition and clinical nutrition**



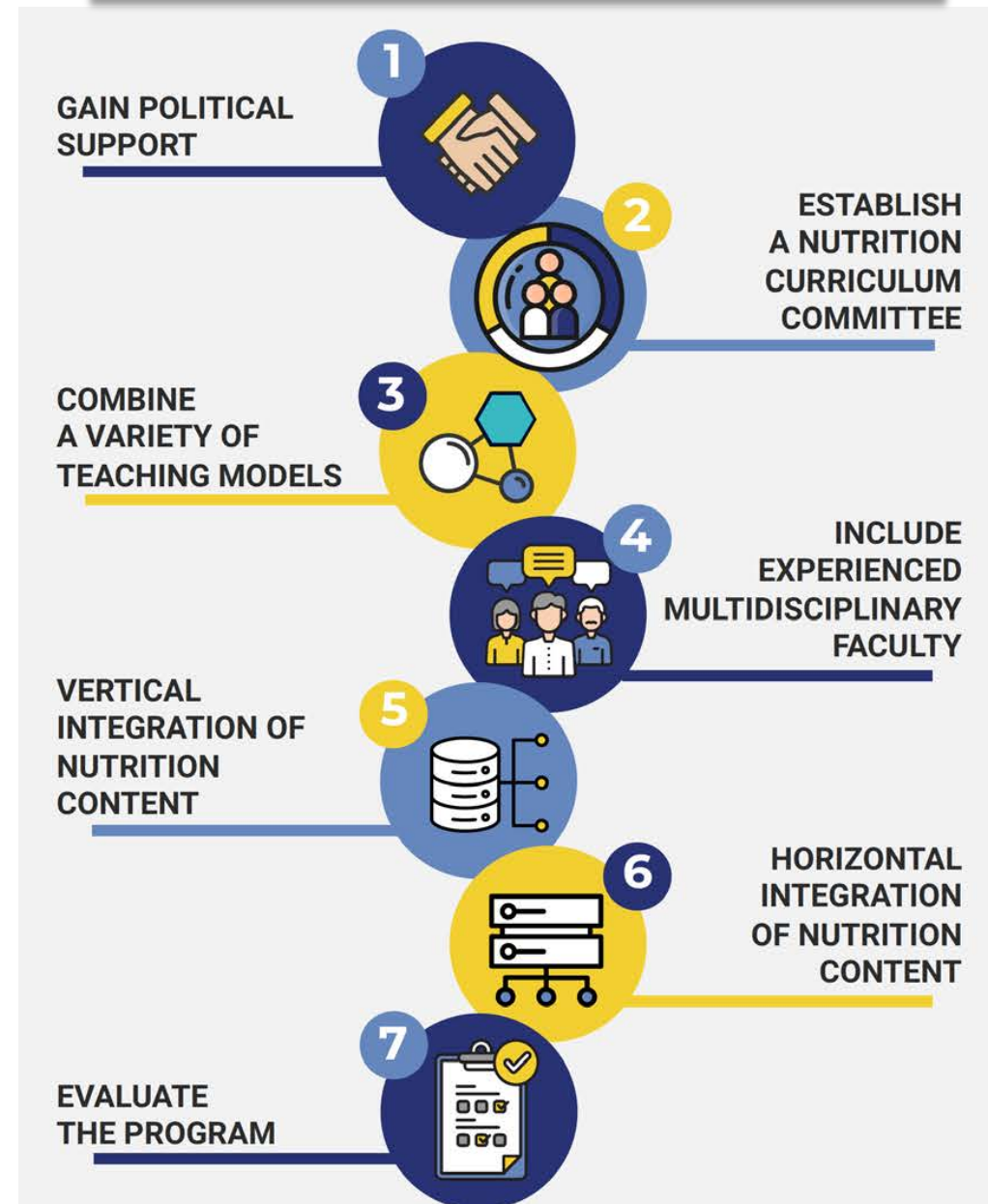
The way to organize these themes in the curriculum will depend on each University, taking into consideration individual center characteristics (**models of teaching, availability of teachers, time and credits**)



Combine **vertical or horizontal integration of traditional classes, seminars and/or clinical practice sessions** also including **novel teaching tools, internet resources and e-learning**



KEY FACTORS FOR IMPLEMENTATION



INTEGRATION OF NEMS BETWEEN UNIVERSITIES AND ESPEN

NEMS helps universities



- provide human nutrition education efficiently and more extensively
- Include NEMS in their different models of teaching (parallel, integrated, case-solving based)



Universities help NEMS



- give knowledge, solutions and innovation,
- support collaboration between curriculum key Faculty and ESPEN
- Ensure that future doctors achieve the proposed learning objectives



Brussels 2018

Meetings with representatives of different European Medical Schools



Nice 2020



Clinical Nutrition 36 (2017) 915–916



Contents lists available at ScienceDirect

Clinical Nutrition

journal homepage: <http://www.elsevier.com/locate/clnu>



Editorial

Clinical nutrition education in medical schools: Results of an ESPEN survey



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journal homepage: <http://www.elsevier.com/locate/clnu>



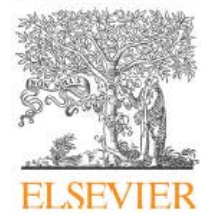
Original article

Nutrition education in medical schools (NEMS) project: Joining ESPEN and university point of view



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Clinical Nutrition 42 (2023) 54–59



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Clinical Nutrition

journal homepage: <http://www.elsevier.com/locate/clnu>



ESPEN Endorsed Recommendation

Nutrition education in medical schools (NEMS). An ESPEN position paper[☆]

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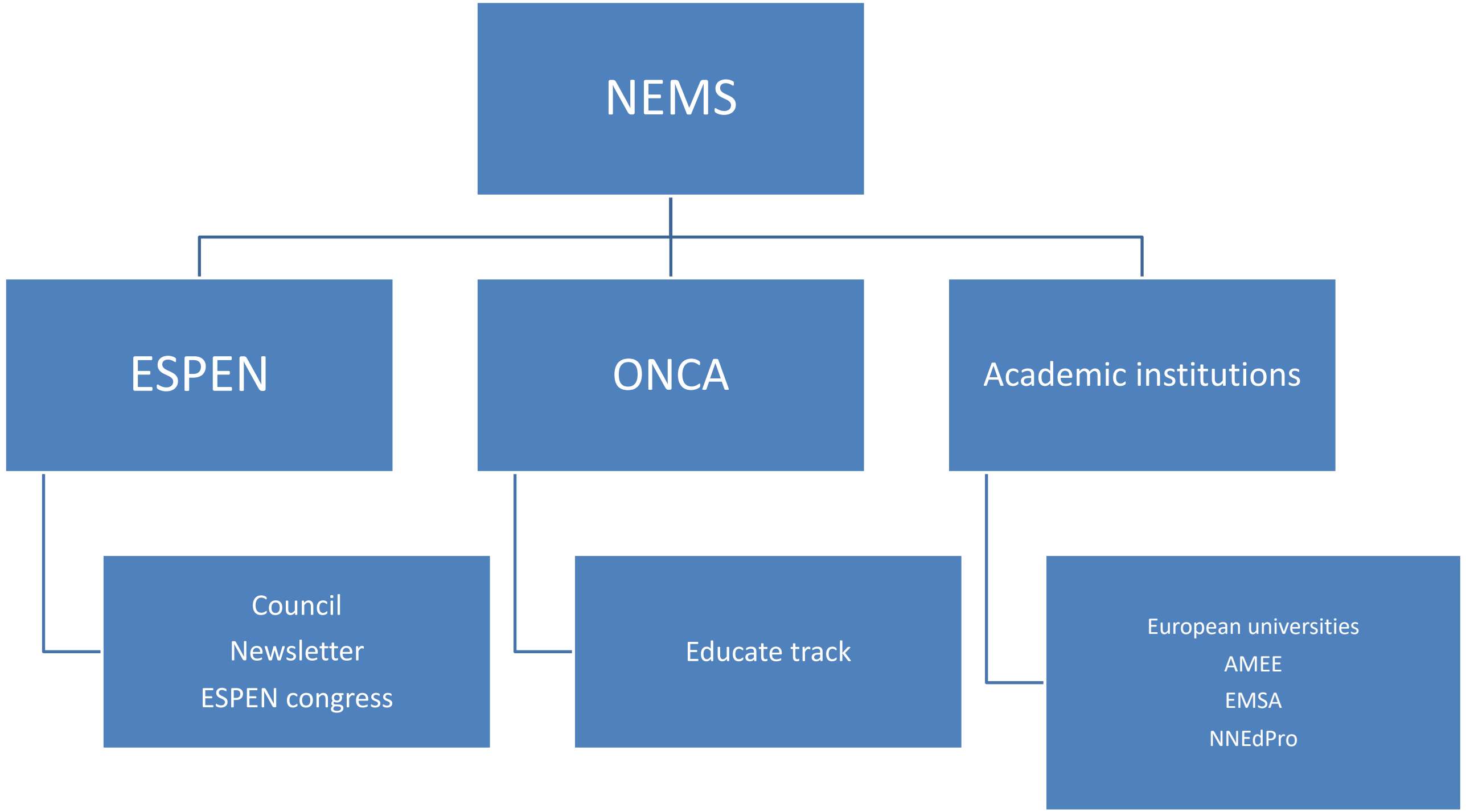


Editorial

Nutrition education in medical schools (NEMS) project: Promoting clinical nutrition in medical schools – Perspectives from different actors



Malnutrition from awareness towards control



Malnutrition from awareness towards control

Vienna Declaration's 5 PRINCIPLES INTO ACTIONS

ESPEN ACTION PLAN

ESPEN commitments in implementing nutritional care after Vienna Declaration

5 PRINCIPLES

- 1** Public health policy must make the fulfillment of the right to nutritional care a fundamental axis in the fight against disease-related malnutrition (DRM)
- 2** Clinical nutrition education and research is a fundamental axis of the respect and the fulfillment of the right to nutritional care
- 3** Ethical principles and values in clinical nutrition including justice and equity in nutritional care access are the basis for the right to nutritional care.
- 4** Nutritional care requires an institutional culture that follows ethical principles and values and an interdisciplinary approach.
- 5** Patient empowerment is a key enabler to necessary action to optimize nutritional care.

ESPEN ACTIONS

- Preparation of a ESPEN Policy brief
- Research promotion and new NEMS educational material
- Update of ESPEN ethics guidance material
- Promotion of DRM screening and diagnosis, new interdisciplinary nDay activities
- Nutritional care inclusion in patient Charter and bill of Rights

Read the full document at www.espen.org





ESPEN NEMS

NEMS EDUCATIONAL SLIDE KIT

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The project



Learning objectives identified by NEMS

According to the ESPEN proposal, at the end of the Medical School, the future doctors should be able to:

- Recognise the importance of nutrition for the **promotion of health**, and the **prevention and treatment of disease**
- Know the **basic scientific principles of human nutrition**
- Understand **nutrition-related problems** in individuals and the community
- Provide **general dietary advice** to general population and patients
- Identify patients at **risk of malnutrition or malnourished** and know how to treat them and when to refer to a specialist in clinical nutrition



Bearing in mind that **we don't aim to create Clinical Nutrition specialists!**



Domains of Human Nutrition as defined by NEMS

The domains of Nutrition Education are:

- 1) **Basic nutrition** constitutes the bricks on which the student will build his/her nutrition knowledge (can be taught in subjects such as biochemistry, physiology, etc.)
- 2) **Applied / Public Health Nutrition** refers to the nutrition recommendations to the general population and the promotion of health and prevention of the most prevalent diseases (can be taught in subjects as epidemiology, preventive medicine, etc).
- 3) **Clinical Nutrition** refers to the nutrition concepts that apply to patients with different diseases (can be included in different subjects as Endocrinology, Geriatrics, Internal Medicine, Gastroenterology, Oncology, Surgery, Nephrology, etc).



1) BN - Learning objectives for each topic

BN-1 Macronutrients, micronutrients and dietary fibre	<ul style="list-style-type: none">- To distinguish macronutrients, micronutrients and fibers, understand their nutritional value and metabolic function- To recognize the consequences deriving from the deficiency of one or more of them
BN-2 Physiology of water, minerals and acid-base balance	<ul style="list-style-type: none">- To understand the principles of acid-base balance, dehydration and malabsorption- To remember the physiology of water in the human body- To recognize the importance of minerals and their deficiency
BN-3 Intermediate metabolism (adaptation to starvation, post-prandial status and stress)	<ul style="list-style-type: none">- To understand the metabolic differences between simple starvation, disease-related and stress-related malnutrition- To understand how a disease state may impair the physiological adaptation to starvation- To understand how a disease state may affect nutrients utilization
BN-4 Physiology of food intake, digestion and absorption	<ul style="list-style-type: none">- To understand the principles of physiology of food intake and digestion and absorption of nutrients
BN-5 Principles of energy balance and methods of measurement of energy expenditure	<ul style="list-style-type: none">- To understand the concept of energy balance- To understand the factors which influence energy expenditure (REE, TEE).- To know the methods for estimating and measuring energy expenditure
BN-6 Body composition and methods of measurement	<ul style="list-style-type: none">- To understand the concept of body composition and body compartments- To understand the purpose of measuring body composition- To know the body composition measurements methods



2) APHN - Learning objectives for each topic

APHN-1 Nutritional recommendations and dietary guidelines	<ul style="list-style-type: none"> - To know and to understand the role of scientific societies and health care institutions in the production and promotion of nutritional guidelines
APHN-2 Nutrition applied to different stages in life	<ul style="list-style-type: none"> - To know the different nutritional needs in different periods of life
APHN-3 Healthy lifestyle	<ul style="list-style-type: none"> - To know the principles of healthy lifestyle and healthy eating - To understand the role of healthy lifestyle and healthy eating in disease prevention
APHN-4 Nutritional prevention of cardiovascular disease and cancer	<ul style="list-style-type: none"> - To understand the role of unhealthy diet in the risk of non-communicable diseases (NCDs) such as metabolic syndrome, CVD and cancer - The concept of ultra-processed foods
APHN-5 Prevention of malnutrition (undernutrition and obesity)	<ul style="list-style-type: none"> - To know the social factors associated with non-disease-related malnutrition - To know the social and medical factors associated with overweight and obesity - To know the principles of prevention of undernutrition and obesity
APHN-6 Food labelling	<ul style="list-style-type: none"> - To know how to interpret and present information about the food product - To understand how to identify ingredients, quality and nutritional value, additives, dyes and sweeteners



3) CN - Learning objectives for each topic

CN-1 Nutritional requirements	<ul style="list-style-type: none"> - To know the nutritional needs of healthy subjects in terms of calories, macro and micronutrients needed
CN-2 Nutritional screening and assessment	<ul style="list-style-type: none"> - To understand the differences of nutritional screening and assessment - To understand how to carry out nutritional screening and assessment - To know the main screening and assessment methods - To understand the purpose of nutritional assessment
CN-3 Diagnosis of malnutrition (types, severity)	<ul style="list-style-type: none"> - To know how to define malnutrition - To distinguish the causes of malnutrition - To introduce GLIM criteria and other diagnostic methods - To assess the severity of malnutrition
CN-4 Dietary advice: general recommendations in different diseases and the risks of exclusion diets	<ul style="list-style-type: none"> - To know the role of nutritional counseling and dietary prescription in different clinical conditions (e.g. hypertension, dyslipidemia, diabetes, CKD, etc.) - To know blood chemistry indicators of optimal nutritional interventions - To know the risks of exclusion diets (vegetarian, vegans, others...)
CN-5 Introduction to enteral nutrition	<ul style="list-style-type: none"> - To know composition, indications, contraindications and side effects of oral nutritional supplements (ONS) and enteral nutrition
CN-6 Introduction to parenteral nutrition	<ul style="list-style-type: none"> - To know composition, indications, contraindications and side effects of parenteral nutrition - To know the infectious complications of parenteral nutrition
CN-7 Ethics in medical nutritional treatment	<ul style="list-style-type: none"> - To know the ethical and legal aspects of medical nutrition treatment - To know the principles of self determination - To know the principles of medical nutrition treatment in terminal ill patients - To know the communication issues with patients and caregivers about risks and benefits of medical nutrition treatments at the end of life
CN-8 Drug-nutrient interactions	<ul style="list-style-type: none"> - To know and to understand how medications can decrease appetite or change nutrient absorption, metabolism or excretion and vice versa
CN-9 Food allergy and intolerances	<ul style="list-style-type: none"> - To know the differences between food allergy and intolerances - To know the mechanisms of food allergies - To recognize fake news in food allergies and intolerances



TRASLATING THEORY INTO PRACTICE:



The ESPEN NEMS Educational Slide Kit Task Force





ESPEN NEMS

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**How does the the «product»
look like?**





ESPEN NEMS

Macronutrients, Micronutrients
and Dietary Fibre

Veeradej Pisprasert

Carbohydrate (CHO)

Class of compounds with formula $C_n(H_2O)_n$

Classification

- Simple CHO
 - Monosaccharides: glucose, galactose, fructose
 - Disaccharides: maltose, sucrose, lactose
- Complex CHO
 - Oligosaccharides
 - Polysaccharides e.g. starch, glycogen

Main function: energy provision (4 kcal/g)

Common dietary sources

- Grain: rice, wheat, oats, barley, rye, maize
- Starchy vegetables: yam, potato, corn, cassava
- Legumes: soybeans, dried peas, ..
- Fruits
- Sugar





ESPEN NEMS

Food Labelling

Renuka Jayatissa

Nutrition facts in the food label

The food label breaks down the amounts of **calories, carbs, fat, fiber, protein, and vitamins** per serving of the food, making it easier to compare the nutrition of similar products.

Food labelling provide information on **nutrition facts**:

1. **Serving size**: All nutrient information on this label are for a 2/3-cup serving.
2. This package has **8 servings**: If the whole thing is eaten, you consume 8 times the amounts of nutrients shown on the label.
3. **Total Carbohydrate**: shows types of carbs in the food, including sugar and fiber.
4. **Fiber, vitamins, and minerals**: shows amount and % daily value
5. It guides the **healthy eating and disease specific eating**: amount and % daily values of calories, saturated fat, sodium, added sugar and trans fat.



Health and nutrient claims need prior approval.

Nutrition Facts	
8 servings per container	← 2
Serving size 2/3 cup (55g)	
Amount per serving	
Calories 230	
% Daily Value*	
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.



ESPEN NEMS

Nutritional
Requirements

Osman Abbasoglu

How and why diseases modify nutritional requirements? The example of critically-ill patients

Response to injury
(Acute diseases, trauma, surgery, sepsis)



Increased release of:

- ACTH/cortisol
- Proinflammatory cytokines (IL-1, TNF α)



- Protein breakdown
- Increased endogenous energy production

Hypocaloric nutrition (not exceeding 70% of estimated energy)
in the early phase of acute illness


1.3 g/kg/day protein

NEMS NUMBERS

3 Domains of Nutrition




21 Topics addressed



174 Slides prepared




20 NEMS Task Force members



2 Coordinators of the TF




1 Graphical optimizer



3 Reviewers of the slides



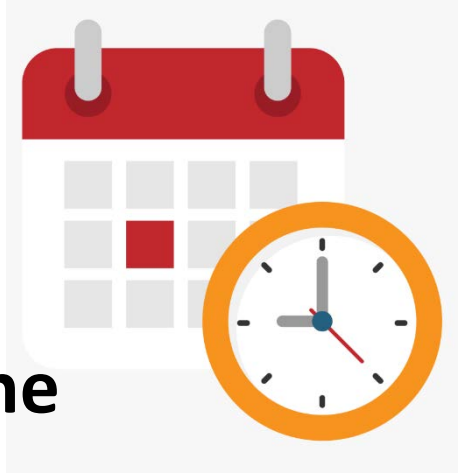
4 Online meetings



+ 300 Emails



31/1/24 Slides uploaded on the ESPEN website



Let's go NEMS!

Thank you

Malnutrition from awareness towards control

