Degree in Human Nutrition Sciences

<u>INTEGRATED COURSE</u>: PRACTICAL ASPECTS IN GENERAL AND SPECIALIST MEDICINE

ECTS: 14
Coordinating Lecturer: Prof.ssa Paragliola Rosa Maria
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MODULE: Endocrinology
ECTS: 5
SSD: MED/13
Teachers:
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MODULE: Practical Aspects of Nutrition in Cardiology
ECTS 2
SSD: MED/11
Teacher: Angela Beatrice Scardovi e-mail: angela.scardovi@unicamillus.org
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MODULE: Practical aspects of nutrition in internal medicine
ECTS: 5
SSD: MED/09
Teachers:
Infante Marco e-mail: marco.infante@unicamillus.org
Webpage: https://www.unicamillus.org/it/personnel/infante-marco/

Napoli Angela e-mail: angela.napoli@unicamillus.org
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MODULE: Practical aspects of nutrition in eating disorders
ECTS: 2
SSD: MED/25
Teacher: Stallone Tiziana e-mail: tiziana.stallone@unicamillus.org
Webpage: https://www.unicamillus.org/it/personnel/stallone-tiziana/

<u>FREQUENCY</u>
The attendance is not mandatory.

PREREQUISITES

Knowledge of the basic concepts of:

- anatomy of organs and systems
- human physiology
- pathophysiology of the endocrine system and the cardiovascular system
- nutritional biochemistry
- evaluation of nutritional status and body composition
- physiological nutrition and nutritional needs.

LEARNING OBJECTIVES

The integrated course "Practical Aspects in General and Specialist Medicine" is aimed to provide general knowledge on the anatomy and physiology of the cardiovascular and endocrine systems, as well as the basic notions of the principal diseases in Internal Medicine, Endocrinology, and Cardiology. The student will also know the molecular basis of the metabolic regulation of hunger and satiety and the psychoactive role of food, will be able to analyze the nutritional status in eating and nutrition disorders (DAN), and will know the principles for nutritional rehabilitation in restrictive eating disorders and compulsive.
The student will know the role of nutrition in pathological and physiological conditions (such as pregnancy, breastfeeding, and senescence). At the end of the course, the student will have acquired a detailed knowledge of nutrients and different food groups and will have learned the main risk factors for the principal diseases in Cardiology, Internal Medicine, and Endocrinology. In particular, the course will focus the role of nutrition in treating lipidic disorders, diabetes, and hypertension. The student will evaluate the main dietary patterns to prevent the principal pathologies and the synergy that these can have compared to other lifestyle corrections. He will understand the importance of teamwork in the treatment of DAN, he will be able to interpret the evaluation of body composition via impedance measurement and adipometry, and he will have acquired the basics of nutritional counseling in DAN.

LEARNING OUTCOMES

The student will be able to:
Know the main pathologies of the endocrine system
Know the diagnostic tools most used for the diagnosis and differential diagnosis in Endocrinology
Know the basis of therapeutic approaches to the main pituitary, thyroid, adrenal, gonadal, and phospho-calcium metabolism diseases
Know the role of nutrition in preventing and treating endocrine diseases
Relate dietary style to the genesis of many cardiovascular diseases, in particular atherosclerosis and its consequences, such as coronary heart disease and peripheral vascular diseases.
Personalize individual dietary patterns aimed at correcting the main risk factors
Concretely contribute to the treatment of atherosclerosis, arterial hypertension, heart failure and electrolyte alterations, a possible source of cardiac arrhythmias
know the nutrients, the food groups and the concept of functional foods.
know the critical tools for a proper assessment of nutritional status and eating habits of healthy subjects and patients with relevant disorders in the setting of Internal Medicine.
know the practical aspects of nutrition in different physiological contexts.
know the practical aspects of nutrition in different pathological contexts of Internal Medicine.
Achieve full understanding of the psychogenic role in eating and nutrition disorders.
Acquire the right predisposition for team work.
Recognize the different types of eaters (for reward, compulsive, hedonic, social) and have the basis for structuring a highly personalized nutritional plan.
Understand how to intervene in the primary and secondary prevention of DAN.
Understand the alterations in the nutritional status of DAN and know how to interpret body composition.

Ability to apply knowledge and understanding
The objective of the integrated course the development of analytical methodological capacity. For each individual module, the students will be able to apply the knowledge acquired to each specific situation and be able to identify clinical situations characterized by atypical presentations, proposing an adequate nutritional therapeutic procedure. The students will also have to develop their own learning skills, integrating the knowledges from textbooks with scientific papers, in order to consolidate and to expand their knowledges even independently.

Communication's skills
The integrated course promotes communication skills to improve students' individual abilities to argue with effectiveness and expressive precision. These skills will be achieved specifically in teacher-student interactions within different scenarios. Students will learn an adequate technical-scientific language and will develop communication skills that allow an effective relationship in different clinical contexts.

Autonomy of judgment
At the end of the course, the student will be able to make general assessments relating to the main topics treated during the lessons. They will be able to independently develop the logical reasoning and strategies aimed to apply the experimental method and to correctly analyze the experimental data. They will be able to interpretate the diagnostic tools used in the clinical practice of internal, endocrine-metabolic, cardiovascular, and eating disorders. The student will have developed the ability to integrate their scientific knowledge acquired by applying it to specific clinical situations, to formulate an appropriate assessment that guides the therapeutic decision-making process.

Learning ability
The student will have acquired skills and learning methods to improve their skills in internal medicine, endocrinology, cardiology and eating disorders, also through the consultation of scientific literature.

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COURSE SYLLABUS

Endocrinology
Food and eating behavior
General principles of endocrinology
Anatomy and physiology of the endocrine system
Regulation of hormone secretion and negative feedback
Pituitary disease (pituitary adenomas, hyperprolactinemia, GH-related disorders, disorders of pubertal development, hypopituitarism, diabetes insipidus)
Hypogonadism, amenorrhea
Thyroid diseases (thyroiditis, hypothyroidism, hyperthyroidism and thyrotoxicosis, thyroid nodules, thyroid cancer)
Iodine and thyroid
Adrenal disorders (Cushing's syndrome, Addison's disease, endocrine hypertension)
Disorders of calcium-phosphorus metabolism and osteoporosis
Hypovitaminosis D
Hyperandrogenism and polycystic ovary syndrome
Endocrine disruptors
Doping

Practical aspects of nutrition in cardiology
General notes on the cardiovascular system (Anatomy and physiology of the cardiovascular system)
The reasons why the heart and the cardiovascular system get sick.
Cardiovascular risk factors (arterial hypertension, diabetes mellitus, dyslipidemia) and risk calculation.
Arterial hypertension and low-sodium diet
The role of cholesterol in atherogenesis
The DASH, plant based and Mediterranean diet in the prevention of cardiovascular diseases
Coronary heart disease and its clinical manifestations (myocardial infarction, angina pectoris)
Electrolyte alterations and heart
Alcoholic substances and the heart
The importance of dietary style in the prevention of cardiovascular diseases
Physical exercise as prevention and treatment of cardiovascular diseases
Diabetes and cardiovascular diseases
Heart failure
Arrhythmias and cardiac arrest

Practical aspects of nutrition in internal medicine
Introduction to nutrients and foods: macronutrients and micronutrients, nutritional value and function of food, food classification and food groups, functional foods.
Assessment of the nutritional status : clinical and laboratory assessment of the nutritional status, anthropometric measurements, assessment of body composition and basal metabolic rate.
Dietary reference values of Nutrients and Energy for Italian population (LARN).
Assessment of eating habits, practical aspects for dietary planning.
Practical aspects of nutrition in different physiological and functional contexts : nutrition during pregnancy and lactation, nutrition in the elderly, nutrition for sports and exercise.
Practical aspects of nutrition in different pathological contexts : nutrition in cardiometabolic diseases (obesity, diabetes mellitus, dyslipidemias, hypertension, gout), nutrition in gestational diabetes mellitus, nutrition in gastrointestinal disorders (esophageal disorders, gastroesophageal reflux disease, stomach diseases, inflammatory bowel disease, liver

disease, biliary tract disease, disorders of the exocrine pancreas), nutrition in kidney disease, nutrition in lung disease, nutrition for patients with cancer.
Food intolerance and food allergy in adults. Vegetarian and vegan diets. Ketogenic diets.
Basic concepts of enteral and parenteral nutrition in Internal Medicine.

Practical aspects of eating and nutrition disorders (DNA)
DNA: diagnosis, incidence, etiology
DNA below threshold
The role of the nutritionist in DNA
Evaluation of nutritional status in DNA
Analysis of body composition in DNA: bioimpedance measurement and stratigraphy of the subcutaneous tissue
Nutritional rehabilitation in anorexia nervosa, bulimia nervosa and binge eating disorder
Nutritional counseling in anorexia nervosa, bulimia nervosa and binge eating disorder
Food addiction, rewards system, and psychoactive role of food
DNA and personality structure
Discussion of clinical cases in DNA

TEACHING METHODS
Video lessons*
Interactive teaching
* Each video lesson is approximately 15 minutes.

EXAM
Written test

SUGGESTED TEXTBOOK AND BIBLIOGRAPHY
Endocrinology
- Material provided by teachers
- Manuale di Endocrinologia, A. Lenzi. Carocci Editore 2023

Practical aspects of nutrition in cardiology
- Janice L Raymond, and Kelly Morrow (2021). Krause and Mahan's Food and the Nutrition Care Process, 15th Edition. Philadelphia, Pa.; Edinburgh, Elsevier Saunders.
- Rivellese A, Annuzzi G, Capaldo B, Vaccaro O, Riccardi G – "Nutrizione Umana" - Ed. Idelson Gnocchi, 2017
- 2023 ESC Guidelines for the management of cardiovascular disease in patients with diabetes: Developed by the task force on the management of cardiovascular disease in patients with diabetes of the European Society of Cardiology (ESC) Nikolaus Marx, Massimo Federici, Katharina Schütt, Dirk Müller-Wieland, Ramzi A Ajjan, Manuel J Antunes, Ruxandra M Christodorescu, Carolyn Crawford, Emanuele Di Angelantonio, Björn Eliasson ...
  European Heart Journal, Volume 44, Issue 39, 14 October 2023, Pages 4043–4140
- 2023 ESC Guidelines for the management of acute coronary syndromes: Developed by the task force on the management of acute coronary syndromes of the European Society of Cardiology (ESC) Robert A Byrne, Xavier Rossello, J J Coughlan, Emanuele Barbato, Colin Berry, Alaide Chieffo, Marc J Claeys, Gheorghe-Andrei Dan, Marc R Dweck, Mary Galbraith ...
  European Heart Journal, Volume 44, Issue 38, 7 October 2023, Pages 3720–3826
- 2023 Focused Update of the 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure: Developed by the task force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC) With the special contribution of the Heart Failure Association (HFA) of the ESC
  Theresa A McDonagh, Marco Metra, Marianna Adamo, Roy S Gardner, Andreas Baumbach, Michael

Böhm, Haran Burri, Javed Butler, Jelena Čelutkienė, Ovidiu Chioncel ...
European Heart Journal, Volume 44, Issue 37, 1 October 2023, Pages 3627–3639

- 2022 ESC Guidelines for the management of patients with ventricular arrhythmias and the prevention of sudden cardiac death: Developed by the task force for the management of patients with ventricular arrhythmias and the prevention of sudden cardiac death of the European Society of Cardiology (ESC) Endorsed by the Association for European Paediatric and Congenital Cardiology (AEPC)
  Katja Zeppenfeld, Jacob Tfelt-Hansen, Marta de Riva, Bo Gregers Winkel, Elijah R Behr, Nico A Blom, Philippe Charron, Domenico Corrado, Nikolaos Dagres, Christian de Chillou ...
  European Heart Journal, Volume 43, Issue 40, 21 October 2022, Pages 3997–4126
- 2021 ESC Guidelines on cardiovascular disease prevention in clinical practice: Developed by the Task Force for cardiovascular disease prevention in clinical practice with representatives of the European Society of Cardiology and 12 medical societies With the special contribution of the European Association of Preventive Cardiology (EAPC)
  Frank L J Visseren, François Mach, Yvo M Smulders, David Carballo, Konstantinos C Koskinas, Maria Bäck, Athanase Benetos, Alessandro Biffi, José-Manuel Boavida, Davide Capodanno …
  European Heart Journal, Volume 42, Issue 34, 7 September 2021, Pages 3227–3337
- 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure: Developed by the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC) With the special contribution of the Heart Failure Association (HFA) of the ESC
  Theresa A McDonagh, Marco Metra, Marianna Adamo, Roy S Gardner, Andreas Baumbach, Michael Böhm, Haran Burri, Javed Butler, Jelena Čelutkienė, Ovidiu Chioncel ...
  European Heart Journal, Volume 42, Issue 36, 21 September 2021, Pages 3599–3726
- 2020 ESC Guidelines on sports cardiology and exercise in patients with cardiovascular disease: The Task Force on sports cardiology and exercise in patients with cardiovascular disease of the European Society of Cardiology (ESC)
  Antonio Pelliccia, Sanjay Sharma, Sabiha Gati, Maria Bäck, Mats Börjesson, Stefano Caselli, Jean-Philippe Collet, Domenico Corrado, Jonathan A Drezner, Martin Halle ...
  European Heart Journal, Volume 42, Issue 1, 1 January 2021, Pages 17–96
- 2019 ESC/EAS Guidelines for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk: The Task Force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and European Atherosclerosis Society (EAS)
  François Mach, Colin Baigent, Alberico L Catapano, Konstantinos C Koskinas, Manuela Casula, Lina Badimon, M John Chapman, Guy G De Backer, Victoria Delgado, Brian A Ference ...
  European Heart Journal, Volume 41, Issue 1, 1 January 2020, Pages 111–188
- 2018 ESC/ESH Guidelines for the management of arterial hypertension: The Task Force for the management of arterial hypertension of the European Society of Cardiology (ESC) and the European Society of Hypertension (ESH)
  Bryan Williams, Giuseppe Mancia, Wilko Spiering, Enrico Agabiti Rosei, Michel Azizi, Michel Burnier, Denis L Clement, Antonio Coca, Giovanni de Simone, Anna Dominiczak ...
  European Heart Journal, Volume 39, Issue 33, 01 September 2018, Pages 3021–3104
- 2018 Fourth universal definition of myocardial infarction Kristian Thygesen, Joseph S Alpert, Allan S Jaffe, Bernard R Chaitman, Jeroen J Bax, David A Morrow, Harvey D White, ESC Scientific Document Group
  European Heart Journal, Volume 40, Issue 3, 14 January 2019, Pages 237–269

Practical aspects of nutrition in internal medicine
Recommended books

- Manuale di Nutrizione Applicata (a cura di Riccardi, Pacioni, Giacco, Rivellese ; Edizioni Idelson Gnocchi, V Edizione, 2020).
- Dietologia. Alimenti. Alimentazione nel sano e nel malato. Integratori alimentari (a cura di Zangara,

Zangara, Koprivec ; PICCIN, 2014).

Useful book

- Tabelle di composizione degli alimenti (Vitale & Giacco; Edizioni Idelson Gnocchi, Edizione 2020).

Practical aspects of eating and nutrition disorders (DNA)

- Lutter M, et al. J Nutr. 2009. PMID: 19176746
Homeostatic and hedonic signals interact in the regulation of food intake;
- Yu et al. Obes rev 2015 Mar;16(3):234-47. doi: 10.1111/obr.12246. Epub 2015 Jan 14
Metabolic vs. hedonic obesity: a conceptual distinction and its clinical implications;
- Morales and Berridge Physiol Behav. 2020 Dec 1;227:113152. doi: 10.1016/j.physbeh.2020.113152. Epub 2020 Aug 23
'Liking' and 'wanting' in eating and food reward: Brain mechanisms and clinical implications