

# Advanced Master's Degree Clinical Nutrition in Medicine





## Advanced Master's Degree Clinical Nutrition in Medicine

- » Modality: online
- » Duration: 2 years
- » Certificate: TECH Global University
- » Accreditation: 120 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/advanced-master-degree/advanced-master-degree-clinical-nutrition-medicine](http://www.techtute.com/us/medicine/advanced-master-degree/advanced-master-degree-clinical-nutrition-medicine)

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# 01

# Introduction

Clinical Nutrition, as an integral discipline in medicine, has significant benefits that encompass the prevention and treatment of disease. By focusing on patient-specific nutrition, this practice seeks to optimize health and wellness through personalized diets and nutritional therapies. From managing chronic conditions, such as Diabetes and cardiovascular disease, to supporting postoperative recovery and enhancing the immune system, Nutrition the immune system, Clinical Nutrition is a fundamental pillar in the integral care of the patient. In response to this need, TECH has created this program of the highest quality, with a broad and complete course, and a faculty of the highest scientific and teaching level.





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*Thanks to this 100% online Advanced Master's Degree, you will acquire the necessary tools to adequately evaluate the nutritional status of your patients, design personalized dietary plans and monitor their progress”*

Clinical Nutrition is fundamental in medical practice, recognizing its ability to positively influence the health and well-being of patients. By integrating knowledge about the relationship between food and health, medical professionals can design personalized interventions that address specific medical conditions, promoting recovery, preventing disease and improving quality of life.

In this context, TECH has developed this comprehensive Advanced Master's Degree, which will cover a variety of topics fundamental to understanding the interaction between food and human health. Therefore, physicians will analyze in depth the principles of Nutrition, from the biochemistry of nutrients to specific dietary recommendations for various medical conditions.

In addition, patients' nutritional status will be assessed and personalized dietary plans will be designed. In fact, graduates will use nutritional assessment tools and methods, and interpret the results to determine individual dietary needs. This includes the application of specific nutritional strategies to address medical conditions such as Diabetes, Obesity, Cardiovascular Disease and many others.

Finally, professionals will be prepared to work collaboratively within multidisciplinary health care teams. In this way, effective communication with other healthcare professionals will be emphasized, ensuring a comprehensive approach to patient treatment. In addition, students will be equipped with the skills necessary to provide quality care and lead health promotion and disease prevention initiatives.

This Advanced Master's Degree, available online, will offer students the flexibility to participate from anywhere and at their convenience. It will also rely on the innovative Relearning methodology, which is pioneering in TECH and provides a unique learning experience. In addition, students will have access to exclusive and complementary Masterclasses, given by experts in Clinical Nutrition, Genomic Nutrition and Intestinal Microbiota.

This **Advanced Master's Degree in Clinical Nutrition in Medicine** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The development of case studies presented by experts in Clinical Nutrition in Medicine
- ♦ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Special emphasis on innovative methodologies in Clinical Nutrition in Medicine
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ The availability of access to the contents from any fixed or portable device with an Internet connection



*You will enjoy an exclusive set of additional Masterclasses, led by internationally renowned experts. Access this specialized content to enrich your professional practice now!*

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*You will implement Clinical Nutrition as a fundamental pillar in the comprehensive care of your patients, promoting healthy eating habits and preventive medical care”*

It includes in its teaching staff professionals belonging to the field of Clinical Nutrition, who pour into this program the experience of their work, as well as recognized specialists from reference societies and prestigious universities

Its multimedia content, elaborated with the latest educational technology, will enable contextual learning, ie, a simulated environment that will provide an immersive study programmed to specialize in real-life situations

This program is designed around Problem-Based Learning, whereby the student must try to solve the different professional practice situations that arise throughout the program For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts

*You will develop leadership and management skills, necessary to lead multidisciplinary teams and promote the integration of Nutrition in medical practice.*

*Bet on TECH! You will delve into how different nutrients impact physiology and organ function, as well as the scientific basis behind therapeutic diets.*



# 02 Objectives

The objectives of this Advanced Master's Degree will include the acquisition of advanced knowledge on the physiology and metabolism of nutrients, the ability to assess the nutritional status of patients and to design therapeutic feeding plans, tailored to their individual needs. In addition, physicians will update their clinical and communication skills, to work as a team with other health professionals and provide a comprehensive approach in the treatment and prevention of diseases through Nutrition.







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*The main objective of this Advanced Master's Degree will be to keep you up to date to improve patients' quality of life and contribute to the advancement of medical practice through Clinical Nutrition”*



## General Objectives

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- ♦ Update the nutritionist's knowledge on new trends in human nutrition, in both health and pathological situations
- ♦ Promote work strategies based on the practical knowledge of the new trends in nutrition and their application to child and adult pathologies
- ♦ Acquire theoretical knowledge of human population genetics
- ♦ Know Genomic and Precision Nutrition in order to be able to apply them in clinical practice, including their trajectory and the key studies that contributed to their development
- ♦ Know in which pathologies and conditions of human life Genomic and Precision Nutrition can be applied
- ♦ Evaluate the individual response to Nutrition and dietary patterns in order to promote health and disease prevention
- ♦ Analyze new concepts and future trends in the field of Genomic and Precision Nutrition
- ♦ Tailor personalized dietary and lifestyle habits according to genetic polymorphisms
- ♦ Offer a complete and wide vision of the current situation in the area of Human Microbiota, in its broadest sense
- ♦ Argue how the Microbiota and its interaction with many non-digestive pathologies of an autoimmune nature, or its relationship with the deregulation of the immune system and the prevention of diseases, are currently being given a privileged position
- ♦ Promote work strategies based on the integral approach of the patient as a reference model, not only focusing on the symptomatology of the specific pathology, but also on its interaction with the microbiota and how it may be influencing it
- ♦ Incorporate advanced and innovative knowledge in food and nutrition into clinical practice
- ♦ Revise the fundamental aspects of healthy eating, with a current approach aimed at risk prevention
- ♦ Delve into the correct management of daily nutrition
- ♦ Examine the most common syndromes and symptoms related to nutritional problems



*The multidisciplinary approach of this Advanced Master's Degree will allow you to be updated in the use of Nutrition as a tool in the treatment and prevention of diseases and pathologies"*



## Specific Objectives

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### Module 1. New Developments in Food

- ♦ Review the basics of a balanced diet in the different stages of the life cycle, as well as in exercise
- ♦ Assess and calculate nutritional requirements in health and disease at any stage of the life cycle
- ♦ Review the new dietary guidelines, nutritional objectives, and recommended dietary allowances (RDA)
- ♦ Manage food databases and composition tables
- ♦ Acquire skills in reading and understanding new food labeling methods
- ♦ Update the drug-nutrient interaction and its implication in the patient's treatment
- ♦ Incorporate the possibilities of phytotherapy as an adjuvant treatment in clinical practice

### Module 2. Current Trends in Nutrition

- ♦ Review the new dietary guidelines, nutritional objectives, and recommended dietary allowances (RDA)
- ♦ Explain the proper reading of new food labeling
- ♦ Incorporate phytotherapy as a coadjuvant treatment in clinical practice
- ♦ Identify and classify foods, food products, and food ingredients
- ♦ Review current trends in premature infant nutrition
- ♦ Explain the latest evidence on food allergies and intolerances

### Module 3. Nutrigenetics I

- ♦ Acquire the latest knowledge on population genetics
- ♦ Understand how the basis for the interaction between genetic variability and diet is generated
- ♦ Introducing the advanced Circadian Control System and Central and Peripheral Clocks

### Module 4. Nutrigenetics II Key Polymorphisms

- ♦ Present the key polymorphisms to date related to human Nutrition and metabolic processes that the health practitioner needs to learn
- ♦ Analyze the key studies that support these polymorphisms and the debate, where it exists

### Module 5. Nutrigenetics III

- ♦ Present the key polymorphisms to date related to complex diseases that depend on nutritional habits
- ♦ Introduce new advanced concepts in nutrigenetic research

### Module 6. Nutrigenomics

- ♦ Deepen in the differences between nutrigenetics and nutrigenomics
- ♦ Present and analyze genes related to metabolic processes affected by Nutrition

### Module 7. Metabolomics-Proteomics

- ♦ Know the principles of metabolomics and proteomics
- ♦ Delve into the Microbiota as a tool for preventive and personalized nutrition

### **Module 8. Laboratory Techniques for Nutritional Genomics**

- ♦ Understand the techniques used in Nutritional Genomics studies
- ♦ Acquire the latest advances in omics and bioinformatics techniques

### **Module 9. Epigenetics**

- ♦ Explore the fundamentals of the relationship between epigenetics and nutrition
- ♦ Present and analyze how MicroRNAs are involved in Nutritional Genomics

### **Module 10. The Relationship between Intolerances/Allergies and the Microbiota**

- ♦ Know how a negative modulation in the microbiota can favor the appearance of food intolerances and allergies
- ♦ Delve into Microbiota changes in patients with food exclusion diets such as gluten

### **Module 11. Nutrition in Overweight, Obesity and their Comorbidities**

- ♦ Adequately assess the clinical case, interpretation of causes of overweight and obesity, comorbidities and risks
- ♦ Calculate and individually prescribe the different models of hypocaloric diets
- ♦ Plan consultations and multidisciplinary team in obesity

### **Module 12. Nutrition in Digestive Tract Pathologies**

- ♦ Know the different oral alterations, as well as the Esophagogastric Alterations
- ♦ Address nutrition in post-surgical syndromes
- ♦ Study common food allergies and intolerances with gastrointestinal impact

### **Module 13. Nutrition in Endocrine-Metabolic Diseases**

- ♦ Explore the etiology, nutrigenetics and nutrigenomics of obesity
- ♦ Delve into the advances in Diabetes Mellitus and hypertension
- ♦ Know the most effective endoscopic and surgical treatments for endocrine-metabolic diseases
- ♦ Update knowledge on dieting and obesity

### **Module 14. Nutrition in Nervous System Pathologies**

- ♦ Update on the scientific evidence of the relationship between nervous system pathologies and nutrition
- ♦ Assess the patient's needs and difficulties, in addition to an adequate assessment of the nutritional status
- ♦ Learn the main psychological aspects of patients with alterations of behavioral disorders

### **Module 15. Nutrition in Kidney Diseases**

- ♦ Explore glomerular conditions and tubulopathies
- ♦ In-depth study of chronic renal insufficiencies
- ♦ Investigate the underlying pathophysiological mechanisms of Kidney Diseases
- ♦ Develop and implement strategies for prevention and early management of Chronic Renal Failure

### **Module 16. Nutrition in Special Situations**

- ♦ Explore nutrition in the context of Metabolic Stress
- ♦ Broaden knowledge regarding the treatment of oncology patients
- ♦ Know the role of Nutrition in immune-mediated diseases

**Module 17. Clinical Nutrition and Hospital Dietetics**

- ♦ Delve into the management of hospital Nutrition units
- ♦ Distinguish the different basal and therapeutic diets used in hospital settings
- ♦ Study the interaction between drugs and nutrients

**Module 18. Artificial Nutrition in Adults**

- ♦ Distinguish enteral and parenteral nutrition with their main characteristics
- ♦ Know the advances in home artificial Nutrition
- ♦ Improve the nutritional status and quality of life of patients through different types of Nutrition
- ♦ Establish updated protocols for the prescription and follow-up of Nutrition
- ♦ Optimize nutritional care for patients

**Module 19. Physiology of Infant Nutrition**

- ♦ Update the drug-nutrient interaction and its implication in the patient's treatment
- ♦ Identify the relationship between nutrition and immune status
- ♦ Define the fundamentals of nutrigenetics and nutrigenomics
- ♦ Review the psychological bases and biopsychosocial factors that affect human eating behavior
- ♦ Explain the relationship of physiology and Nutrition in the different stages of infant development
- ♦ Describe the main malabsorption syndromes and how they are treated

**Module 20. Artificial Nutrition in Pediatrics**

- ♦ Perform nutritional assessment in Pediatrics
- ♦ Reflect on the role of human milk as a functional food
- ♦ Describe new formulas used in infant feeding
- ♦ Incorporate the different techniques and products of basic and advanced nutritional support related to pediatric nutrition into clinical practice
- ♦ Evaluate and monitor the supervision of children on nutritional support

**Module 21. Infant Malnutrition**

- ♦ Predict patients' nutritional risk
- ♦ Early detection and assessment of quantitative and qualitative deviations from the nutritional balance due to excess or deficiency
- ♦ Identify children at nutritional risk who are eligible for specific support
- ♦ Identify children suffering from malnutrition
- ♦ Describe the correct nutritional support for a malnourished child
- ♦ Classify the different types of malnutrition and their impact on the developing organism
- ♦ Identify the appropriate nutritional therapy for pediatric patients with chronic pulmonary pathology

### Module 22. Childhood Nutrition and Pathologies

- ♦ Analyze the implications of nutrition in the growth process and in the prevention and treatment of different childhood pathologies
- ♦ Explain current trends in the nutrition of infants with delayed intrauterine growth and the implication of nutrition on metabolic diseases
- ♦ Reflect on the etiology, repercussions, and treatment of childhood obesity
- ♦ Explain the nutritional treatment of the most common deficiency diseases in our environment
- ♦ Define the role that fats play in children's diets
- ♦ Assess the psychological and physiological aspects involved in eating disorders in young children
- ♦ Review the pathogenesis and update the treatment of inborn errors of metabolism
- ♦ Identify exclusion foods in the diets of children with celiac disease
- ♦ Identify dietary factors related to bone metabolism
- ♦ Explain managing children with gastroesophageal reflux
- ♦ Describe the main malabsorption syndromes and how they are treated





### Module 23. Childhood Nutrition and Pathologies

- ◆ Identify the repercussion that a pregnant and lactating mother's nutrition has on the intrauterine growth and evolution of new-borns and infants
- ◆ Describe the nutritional requirements in the different periods of childhood
- ◆ Calculate child and adolescent athlete dietary needs and risks
- ◆ Reflect on new trends and models in infant feeding
- ◆ Reflect and identify risk factors in school and adolescent nutrition
- ◆ Identify eating behavior disorders
- ◆ Explain the treatment of dyslipidemias and the role that nutrition plays in their genesis and treatment
- ◆ Manage diabetic children's diet
- ◆ Assess the nutritional support of children with cancer in different situations
- ◆ Reflect on the role of nutrition in autistic children
- ◆ Review the rationale for dietary support of acute diarrhea
- ◆ Describe the management of nutritional support in inflammatory diseases
- ◆ Reflect on the relationship between constipation and infant nutrition
- ◆ Define the dietary management of children with nephropathy
- ◆ Review the dietary management of oral cavity pathologies in children
- ◆ Explain the implications that nutrition can have in the treatment of liver diseases

### Module 24. Sports Nutrition

- ◆ Evaluate and prescribe physical activity as a factor involved in nutritional status
- ◆ Study the latest developments in exercise physiology
- ◆ Emphasize the importance of good hydration in all sports disciplines
- ◆ Treat common eating disorders in sports such as vigorexia, orthorexia or anorexia

### **Module 25. Assessment of Nutritional Status and Calculation of Personalized Nutritional Plans, Recommendations and Monitoring**

- ♦ Adequate assessment of the clinical case, interpretation of causes and risks
- ♦ Personalized calculation of nutritional plans taking into account all individual variables
- ♦ Draw up nutritional plans and models in order to provide comprehensive and practical recommendations

### **Module 26. Nutritional Consultation**

- ♦ Review the psychological bases and biopsychosocial factors that affect human eating behavior
- ♦ Acquire teamwork skills as a unit in which professionals and other personnel related to the diagnostic evaluation and treatment of Dietetics and Nutrition are structured in a uni or multidisciplinary and interdisciplinary way
- ♦ Know the basics of marketing, market research and clients that a nutritional practice should manage
- ♦ Delve into the techniques of interviewing and dietary counseling for the patient

### **Module 27. Probiotics, Prebiotics, Microbiota, and Health**

- ♦ Delve into probiotics, their definition, history, mechanisms of action
- ♦ Delve into Prebiotics, their definition, types of Prebiotics and mechanisms of action
- ♦ Know the clinical applications of probiotics and prebiotics in Gastroenterology
- ♦ Know the Clinical Applications of Endocrinology and Cardiovascular Disorders
- ♦ Understand the clinical applications of probiotics and prebiotics in Urology
- ♦ Understand the clinical applications of probiotics and prebiotics in Gynecology





- ◆ Know the clinical applications of Probiotics and prebiotics in Immunology: Autoimmunity, Pneumology, Dermatology, Vaccines
- ◆ Know the clinical applications of probiotics and prebiotics in nutritional diseases
- ◆ Know the clinical applications of probiotics and prebiotics in neurological diseases, mental health, and elderly
- ◆ Understand the clinical applications of Probiotics and Prebiotics in critically ill cancer patients
- ◆ Understand the use of dairy products as a natural source of Probiotics and Prebiotics
- ◆ Delve into the safety and legislation in the use of Probiotics

#### **Module 28. Nutrition for Health, Equity and Sustainability**

- ◆ Analyze the scientific evidence regarding the impact of food on the environment
- ◆ Learn about current legislation in the food industry and consumption
- ◆ Assess the health effects derived from the current food model and the consumption of ultra-processed food

# 03 Skills

This university program will provide professionals with a set of core competencies, enabling them to effectively address nutritional challenges in the medical setting. These competencies will include the ability to assess and diagnose the nutritional status of patients, interpret laboratory data related to Nutrition, and design personalized meal plans that are tailored to individual needs and specific medical conditions. In addition, graduates will handle specialized technologies and tools for the monitoring and evaluation of patients' nutritional progress.





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*You will keep up to date on the relationship between Nutrition and various diseases, contributing to the prevention and treatment of medical conditions through evidence-based approaches and clinical practice”*

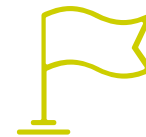


## General Skills

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- ◆ Possess and understand knowledge that provides a basis or opportunity to be original when developing and/or applying ideas, often in a research context
- ◆ Know how to apply acquired knowledge and problem-solving skills in new or unfamiliar environments within broader contexts
- ◆ Integrate knowledge and face the complexity of making judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities linked to the application of student knowledge and judgments
- ◆ Acquire study skills that will enable further study in a largely self-directed or autonomous manner
- ◆ Conduct individual reflective work on new nutrigenetics and Precision Nutrition data
- ◆ Study and evaluate current controversial issues on this subject
- ◆ Evaluate and use commercially available Nutritional Genomics and Precision Nutrition tools in their clinical practice
- ◆ Perform comprehensive nutritional assessments that take into account the psychological, social and pathological aspects of the patient
- ◆ Adapt dietary plans to the most recent advances in Diet Therapy
- ◆ Apply diets and Dietary Therapy planning to the field of prevention, clinic and education





## Specific Skills

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- ◆ Design a dietary plan of phytotherapy as an adjuvant treatment
- ◆ Interpret all data in the nutritional assessment of the patient
- ◆ Develop food hygiene practices based on current legislation
- ◆ Design dietary treatment for oral cavity pathologies in adults with special attention to sensory disorders and mucositis
- ◆ Indicate treatment for managing patients with swallowing problems
- ◆ Determine the role of the intestinal microbiota and its implications in diseases
- ◆ Apply the different techniques and products of basic and advanced nutritional support related to patient nutrition
- ◆ Distinguish dietary management of patients with debilitating neuromuscular pathology and cerebrovascular accidents
- ◆ Analyze the importance of nutrition in childhood growth processes
- ◆ Determine how to calculate the dietary needs and risks of child and adolescent athletes
- ◆ Design an assessment and monitoring plan for children with nutritional support
- ◆ Analyze the differences between probiotic and prebiotic foods and their application in the infant stage
- ◆ Develop correct nutritional support for malnourished children
- ◆ Address the psychological and physiological aspects involved in eating disorders in young children
- ◆ Determine the correct dietary management of diabetic and oncological children at different stages of the disease

- ♦ Determine the calculation of the nutritional needs and risks of children and adolescent athletes in order to guarantee adequate growth and development
- ♦ Design an evaluation and monitoring plan for children on nutritional support to determine their adequacy
- ♦ Analyze the differences between probiotic and prebiotic foods in order to determine their application in the infant stage
- ♦ Develop a correct nutritional support for the malnourished child in order to reverse this situation and avoid later complications
- ♦ Address the psychological and physiological aspects involved in eating disorders in young children
- ♦ Apply critical, logical and scientific thinking to nutritional recommendations
- ♦ Acquire the latest advances in nutritional research
- ♦ Integrate knowledge and deal with the complexity of data, evaluate relevant literature to incorporate scientific advances into their own professional field
- ♦ Deepen in the analysis of different types of studies in genetic epidemiology in order to be able to perform an adequate interpretation of the articles published in this field
- ♦ Update and broaden the knowledge of students with special qualification and interest in Probiotic Therapy, Prebiotic Therapy and the latest advances in this field
- ♦ Detect the patient's nutritional risks and needs from a holistic point of view





- Perform dietary planning and assess psychological and quality of life aspects with adapted dietary recommendations
- Plan nutritional treatment based on scientific evidence in pathologies of the digestive system
- Apply dietary measures to improve symptoms and quality of life
- Create a flexible and personalized nutritional plan according to the patient's own demands

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*You will gain competencies in effective communication, both with patients and with other healthcare professionals, working in multidisciplinary teams and focusing on treatment and prevention of diseases”*

# 04

# Course Management

The teaching staff behind this Advanced Master's Degree is composed of highly qualified and experienced experts in the fields of Nutrition and Medicine. In fact, these professionals have solid academic specialization and extensive practical experience in the clinical setting, which allows them to transmit up-to-date and relevant knowledge to the graduates. In addition to their academic and clinical expertise, these mentors are committed to research in Nutrition and Medicine, therefore contributing to the advancement of the field and ensuring that students are exposed to the latest scientific trends and findings.







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*Thanks to their dedication and expertise, the faculty of the Advanced Master's Degree in Clinical Nutrition in Medicine will equip you to meet nutritional challenges in the medical setting with rigor and excellence”*

## International Guest Director

Lara Al-Dandachi is one of the few registered dietitians in California, and the rest of the United States, to hold a triple certification in Diabetes Care specialty CDES, Advanced Diabetes Management BC-ADM and in Obesity with Subspecialty Weight Management (CSOWM). Her work as a clinical nutritionist has led her to lead projects such as UCLA Health's Gonda Diabetes Prevention Program, which has received special recognition from the Center for Disease Control and Prevention (CDC) and has allowed her to work with multiple cohorts.

In addition, she coordinates the Obesity Reduction Program (PRO) as Director of Nutrition. From that group, she is in charge of developing and updating the professional curriculum for overweight education in adults and adolescents, as well as training new dietitians. In all of these settings, she counsels her patients on how to improve their lifestyle by incorporating healthy eating habits, increased physical activity and the fundamentals of Integrative Medicine.

At the same time, Al-Dandachi continually seeks to stay at the forefront of clinical research in Nutrition. She has attended the Harvard Blackburn Course in Obesity Medicine twice. In those participations, she has received the Certificate of Training in Pediatric and Adult Obesity through the Commission on Dietetic Registration (CDR), the accrediting agency of the American Academy of Nutrition and Dietetics.

Also, her mastery of this healthcare field allows her to provide personalized care to patients with rare conditions such as latent Autoimmune Diabetes in adulthood. She has also worked in her Public Health internship as a volunteer, collaborating with underprivileged populations in initiatives for HIV education and prevention, the Head Start program , among others.



## Ms. Al-Dandachi, Lara

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- ♦ Nutrition Director of the Obesity Reduction Program at UCLA Health, California, United States
- ♦ Clinical Dietitian with CareMore Health Plan
- ♦ Director of Nutrition at Hollywood Presbyterian Medical Center
- ♦ Clinical Dietitian at Sodexo Health Care Services
- ♦ Clinical Dietitian at Beverly Hospital
- ♦ Master's Degree in Public Health at Loma Linda University
- ♦ Bachelor of Science in Nutrition Science and Dietetics at the American University of Beirut

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## International Guest Director

Dr Caroline Stokes is a specialist in Psychology and Nutrition, with a PhD and a qualification in Medical Nutrition. After a distinguished career in this field, she leads the Food and Health Research at the Humboldt University of Berlin. This team collaborates with the Department of Molecular Toxicology at the German Institute of Human Nutrition Potsdam-Rehbrücke. Previously, she has worked at the Medical School of Saarland University in Germany, the Cambridge Medical Research Council and the UK National Health Service.

One of her goals is to find out more about the fundamental role that Nutrition plays in improving the overall health of the population. To this end, she has focused on elucidating the effects of fat-soluble vitamins

of fat-soluble vitamins such as A, D, E and K, the Amino Acid Methionine, lipids such as omega-3 fatty acids and probiotics in both the prevention and treatment of diseases, particularly those related to hepatology, neuropsychiatry and aging.

Her other lines of research have focused on plant-based diets for the prevention and treatment of diseases, including liver and psychiatric diseases. She has also studied the spectrum of vitamin D metabolites in health and disease. She has also participated in projects to analyze new sources of vitamin D in plants and to compare the luminal and mucosal microbiome.

In addition, Dr Caroline Stokes has published a long list of scientific papers. Some of her areas of expertise are Weight Loss, Microbiota and Probiotics, among others.

The outstanding results of her research and her constant commitment to her work have led to her winning the National Health Service Journal Award for the Nutrition and Mental Health Program in the UK.



## Dr Stokes, Caroline

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- ♦ Head of the Food and Health Research Group at the Humboldt University of Berlin, Germany
- ♦ Researcher at the German Institute of Human Nutrition, Potsdam-Rehbruecke, Germany
- ♦ Professor of Food and Health at the Humboldt University of Berlin
- ♦ Scientist in Clinical Nutrition at the University of Saarland
- ♦ Nutrition Consultant at Pfizer
- ♦ PhD in Nutrition at the University of Saarland
- ♦ Postgraduate Diploma in Dietetics at King's College London, University of London
- ♦ Master's Degree in Human Nutrition from the University of Sheffield



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## International Guest Director

Dr Sumantra Ray is an internationally recognized specialist in Nutrition and his main areas of interest are Nutrition Education in Health Systems and Cardiovascular Disease Prevention. With his outstanding experience in this health field, he has served as a consultant on special assignment for the Nutrition Directorate of the World Health Organization Headquarters in Geneva. He has also worked as Director of Research in Food Security, Health and Society in the Faculty of Humanities and Social Sciences at the University of Cambridge.

For his constant commitment to the dissemination of healthy eating habits, he has received the Josephine Lansdell Award from the British Medical Association. Specifically, this recognition highlighted his contributions related to nutrition and Cardiovascular Prevention. Also, as an international expert, he has participated in a program of work on Food, Nutrition and Education in India, led by Cambridge University and funded by the UK Global Challenges Research Fund.

Dr Sumantra Ray's studies are worldwide references, focusing on global food security, as it is a fundamental aspect for the development of societies. In addition, his leadership skills have been demonstrated as a Senior Clinical Scientist at the Medical Research Council, focusing on Nutrition and Vascular Health studies. In this position, he directed an experimental medicine facility dedicated to Human Nutrition studies.

Throughout his career, he has authored more than 200 scientific publications and has written the Oxford Handbook of Clinical and Health Research, aimed at strengthening the basic research skills of health care personnel worldwide. In this regard, he has shared his scientific findings in numerous lectures and conferences, in which he has participated in different countries.



## Dr Ray, Sumantra

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- ♦ Executive Director and Founder at NNEdPro Global Nutrition and Health Center, Cambridge, UK
- ♦ Director of Research in Food Security, Health and Society at the Faculty of Humanities and Social Sciences, Cambridge University
- ♦ Co-Founder and President of the BMJ Scientific Journal Nutrition, Prevention and Health
- ♦ Presidential Advisor to the School of Advanced Studies in Food and Nutrition from the University of Parma
- ♦ Vice President of the Conference of Medical Academic Representatives of the BMA
- ♦ Consultant on special assignment to the Nutrition Directorate of the World Health Organization Headquarters in Geneva
- ♦ Honorary International Dean of the Cordia Colleges in India
- ♦ Senior Clinical Scientist with the Medical Research Council
- ♦ Degree in Medicine

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*Thanks to TECH you will be able to learn with the best professionals in the world"*

## International Guest Director

Harry Sokol, MD is internationally recognized in the field of Gastroenterology for his research on Intestinal Microbiota. With more than 2 decades of experience, he has established himself as a true scientific authority thanks to his numerous studies on the role of microorganisms in the human body and their impact on chronic inflammatory bowel diseases. In particular, his work has revolutionized medical understanding of this organ, often referred to as the “second brain”.

Among Dr Sokol's contributions, he and his team have opened a new line of advances on the bacterium *Faecalibacterium prausnitzii*. In turn, these studies have led to crucial discoveries about its anti-inflammatory effects, opening the door to revolutionary treatments.

In addition, the expert is distinguished by his commitment to the dissemination of knowledge, whether by teaching academic programs at the Sorbonne University or by publishing works such as the comic book *The Extraordinary Powers of the Belly*. His scientific publications appear continuously in world-renowned journals and he is invited to specialized congresses. At the same time, he carries out his clinical work at the Saint-Antoine Hospital (AP-HP/University Hospital Federation IMPEC/Sorbonne University), one of the most renowned hospitals in Europe.

In addition, Dr Sokol began his medical studies at the Paris Cité University, showing early on a strong interest in health research. A chance meeting with the eminent Professor Philippe Marteau led him to Gastroenterology and the enigmas of the Intestinal Microbiota. Throughout his career, he also broadened his horizons by specializing in the United States, at Harvard University, where he shared experiences with leading scientists. Upon his return to France, he founded his own team where he investigates Fecal Transplantation, offering state-of-the-art therapeutic innovations.





## Dr Sokol, Harry

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- Director of Microbiota, Gut and Inflammation at Sorbonne University, Paris, France
- Specialist Physician at the Gastroenterology Department of the Saint-Antoine Hospital (AP-HP), Paris, France
- Group Leader at the Institut Micalis (INRA)
- Coordinator of the Center of Microbiome Medicine of Paris FHU
- Founder of the pharmaceutical company Exeliom Biosciences (Nextbiotix)
- President of the Fecal Microbiota Transplantation Group
- Medical Specialist in different hospitals in Paris
- PhD in Microbiology at the Université Paris-Sud
- Postdoctoral stay at the Massachusetts General Hospital, Harvard University Medical School
- Degree in Medicine, Hepatology and Gastroenterology at Université Paris Cité



*Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"*

## Guest Directors



### Dr Sánchez Romero, María Isabel

- ♦ Area Specialist in the Microbiology Department of the Puerta de Hierro Majadahonda University Hospital, Madrid
- ♦ PhD in Medicine and Surgery by the University of Salamanca
- ♦ Medical Specialist in Clinical Microbiology and Parasitology
- ♦ Member of the Spanish Society of Infectious Diseases and Clinical Microbiology
- ♦ Technical Secretary of the Madrid Society of Clinical Microbiology



### Dr Portero Azorín, María Francisca

- ♦ Acting Head of the Microbiology Service at the Puerta de Hierro Majadahonda University Hospital
- ♦ Specialist in Microbiology and Clinical Parasitology at the Puerta de Hierro University Hospital
- ♦ Doctorate in Medicine from the Autonomous University Madrid
- ♦ Postgraduate in Clinical Management by Gaspar Casal Foundation
- ♦ Research stay at the Presbyterian Hospital of Pittsburg through a FISS scholarship



### **Dr Alarcón Caveró, Teresa**

- ♦ Biologist Specialist in Microbiology, Princesa University Hospital
- ♦ Head of Group 52 of the Research Institute of the La Princesa Hospital
- ♦ Degree in Biological Sciences with a major in Fundamental Biology from the Complutense University of Madrid
- ♦ Master's Degree in Medical Microbiology from the Complutense University of Madrid



### **Dr Muñoz Algarra, María**

- ♦ Head of Patient Safety at the Microbiology Department of the Puerta de Hierro Majadahonda University Hospital
- ♦ Area Specialist in the Microbiology Department of the Puerta de Hierro Majadahonda University Hospital, Madrid
- ♦ Collaborator Department of Preventive Medicine and Public Health and Microbiology Autonomous University of Madrid
- ♦ Doctorate in Pharmacy from the Complutense University of Madrid



### Dr López Dosil, Marcos

- ♦ Area Specialist in Microbiology and Parasitology at San Carlos Clinical University Hospital
- ♦ Specialist Physician of the Microbiology and Parasitology Department of the Hospital de Móstoles
- ♦ Master's Degree in Infectious Diseases and Antimicrobial Treatment from CEU Cardinal Herrera University
- ♦ Master's Degree in Tropical and Health Medicine from the Autonomous University of Madrid
- ♦ Expert in Tropical Medicine from the Autonomous University Madrid



### Mr Anel Pedroche, Jorge

- ♦ Facultative Area Specialist Microbiology Department, Puerta de Hierro University Hospital, Majadahonda, Spain
- ♦ Degree in Pharmacy from the Complutense University of Madrid
- ♦ Course in Interactive Sessions on Hospital Antibiotherapy by MSD
- ♦ Updating course on infection in hematologic patients by Puerta del Hierro Hospital
- ♦ Attendance at the XXII Congress of the Spanish Society of Infectious Diseases and Clinical Microbiology

## Management



### Dr Montoya Álvarez, Teresa

- ♦ Head of the Endocrinology and Nutrition Service of the Infanta Elena University Hospital
- ♦ Head of Volunteering at the Garrigou Foundation
- ♦ Graduate in Medicine and Surgery from the University of Navarra
- ♦ Master's Degree in Obesity and its Comorbidities: Prevention, Diagnosis and Integral Treatment at the Rey Juan Carlos University Hospital
- ♦ Course in Bariatric Antecedents of Surgery Patient Emergencies: Key References for the Attending Physician
- ♦ Member of: Institute for Health Research Foundation Jiménez Díaz, Health Commission of FEAPS Madrid and Trisomy 21 Research Society



### Dr Auni3n Lavarías, María Eugenia

- ♦ Pharmacist Clinical Nutrition Expert
- ♦ Author of the reference book in the field of Clinical Nutrition, *Dietary Management of Overweight in the Pharmacy Office* (Editorial Médica Panamericana)
- ♦ Pharmacist with extensive experience in the public and private sector
- ♦ Head Pharmacist
- ♦ Assistant Pharmacist Pharmacy Chain British Health and Beauty Retailers Boots UK Oxford Street Central London
- ♦ Bachelor's Degree in Food Science and Technology University of Valencia
- ♦ Direction of the Dermocosmetic University Course Pharmacy Office



### Ms Fernández Montalvo, María Ángeles

- ♦ Head of Naintmed- Integrative Nutrition and Medicine
- ♦ Director of the Master's Degree in Human Microbiota at CEU University
- ♦ Parapharmacy Manager, Nutrition and Natural Medicine professional at Natural Life Parapharmacy
- ♦ Degree in Biochemistry from the University of Valencia
- ♦ Diploma in Natural and Orthomolecular Medicine
- ♦ Postgraduate in Food, Nutrition and Cancer: prevention and treatment
- ♦ Master's Degree in Integrative Medicine from CEU University
- ♦ Specialist Degree in Nutrition, Dietetics and Diet Therapy
- ♦ Expert in Vegetarian, Clinical, and Sports Nutrition
- ♦ Expert in the current use of Nutricosmetics and Nutraceuticals in general



### Dr Vázquez Martínez, Clotilde

- ♦ Corporate Head in the University Hospital Endocrinology and Nutrition Departments, Fundación Jiménez Díaz
- ♦ Head of the Endocrinology and Nutrition Service at Ramón y Cajal University Hospital
- ♦ Head of the Endocrinology and Nutrition Service at Severo Ochoa University Hospital
- ♦ President of The Society of Endocrinology, Nutrition, and Diabetes of the Community of Madrid SENDIMAD ()
- ♦ Coordinator Therapeutic Education Group Group of the Spanish Society of Diabetes
- ♦ Doctor of the Faculty of Medicine of the Autonomous University of Madrid
- ♦ Degree in Medicine and Surgery from the Faculty of Medicine of the University of Valencia
- ♦ Specialist in Endocrinology and Nutrition via Medical Residency by the University Hospital Fundación Jimenez Díaz
- ♦ Abraham García Almansa Clinical Nutrition Lifetime Achievement Award
- ♦ Recognized among the 100 best Doctors in Spain according to Forbes list
- ♦ Castilla - La Mancha Diabetes Foundation (FUCAMDI) Diabetes and Nutrition Lifetime Achievement Award



### Dr Sánchez Jiménez, Álvaro

- ♦ Specialist in Nutrition and Endocrinology at Jiménez Díaz Foundation University Hospital
- ♦ Nutritionist at Medicadiet
- ♦ Clinical Nutritionist specialized in Prevention and Treatment of Obesity, Diabetes and their Comorbidities
- ♦ Nutritionist in the Predimed Plus Study
- ♦ Nutritionist at Eroski
- ♦ Nutritionist at Axis Clinic
- ♦ Professor of the Master's Degree in Obesity and Comorbidities at the Rey Juan Carlos University
- ♦ Professor at the Course of Excellence in Obesity at the University Hospital Fundación Jimenez Díaz
- ♦ Graduate in Human Nutrition and Dietetics from the Complutense University of Madrid
- ♦ Nutrition and Food for the Elderly by the Complutense University of Madrid
- ♦ Nutrition and Sports for Professionals by the Fundación Tripartita
- ♦ Refresher Course on Practical Diabetes Type 1 and 2 for Health Professionals





### Dr Konstantinidou, Valentini

- ◆ Dietitian-Nutritionist Specialist in Nutrigenetics and Nutrigenomics
- ◆ Founder of DNANutricoach
- ◆ Creator of the Food Coaching method to change eating habits
- ◆ Lecturer in Nutrigenetics
- ◆ PhD in Biomedicine
- ◆ Dietitian- Nutritionist
- ◆ Food Technologist
- ◆ Accredited Life Coach of the British body IPAC&M
- ◆ Member of: American Society for Nutrition

## Professors

### Mr Anglada, Roger

- ◆ Research Support Technician at the Genomics Service of UPF
- ◆ Senior Research Support Technician at the Genomics Service of Pompeu Fabra University
- ◆ Senior Technician in Analysis and Control Narcís Monturiol HSI, Barcelona
- ◆ Co-author of Different scientific publications
- ◆ Graduate in Multimedia, Catalunya Open University

### Ms López Martínez, Rocío

- ◆ Physician in the area of Immunology at the Vall d'Hebron Hospital
- ◆ Internal Biologist in Immunology at Central University Hospital of Asturias
- ◆ Master in Biostatistics and Bioinformatics, Universidad Oberta of Catalunya

### Ms Bueno García, Eva

- ◆ Predoctoral researcher in Immunosenescence at the Immunology Service of the Central University Hospital of Asturias (HUCA)
- ◆ Degree in Biology from the University of Oviedo
- ◆ Master's Degree in Biomedicine and Molecular Oncology from the University of Oviedo
- ◆ Molecular biology and immunology courses

### Ms Manso del Real, Paula

- ♦ Nursing Supervisor of the Dialysis Unit of the Íñigo Álvarez de Toledo Renal Foundation
- ♦ Nephrology Nurse at the Nephrology Unit of the Jiménez Díaz Foundation University Hospital
- ♦ Diploma in Nursing at the Francisco de Vitoria University
- ♦ Degree in International Cooperation and Health Promotion at the Francisco de Vitoria University
- ♦ Degree in International Cooperation and Health Promotion at the Francisco de Vitoria University
- ♦ Master's Degree in Hemodialysis for Nursing at the Complutense University of Madrid

### Dr Alonso Arias, Rebeca

- ♦ Director of the Immunosenescence research group of the HUCA Immunology Service
- ♦ Specialist Immunology Physician at the Central University Hospital of Asturias
- ♦ Numerous publications in international scientific journals
- ♦ Research work on the association between the microbiota and the immune system
- ♦ 1st National Award for Research in Sports Medicine, 2 occasions

### Dr García Santamarina, Sarela

- ♦ Group Leader at the Institute of Chemical and Biological Technology of the New University of Lisbon
- ♦ Marie Curie EIPD Postdoctoral Researcher for: *Effects of Drugs on Intestinal Flora*, at the European Molecular Biology Laboratory (EMBL) in Heidelberg, Germany
- ♦ Postdoctoral Researcher for: *Mechanisms of Copper Homeostasis in the Interaction between the Fungal Pathogen Cryptococcus Neoformans and the Host*, Duke University USA
- ♦ PhD in Biomedicine Research from the Pompeu Fabra University of Barcelona
- ♦ Degree in Chemistry with a major in Organic Chemistry, University of Santiago of Compostela
- ♦ Master's Degree in Molecular Biology of Infectious Diseases from the London School of Hygiene & Tropical Medicine in London
- ♦ Master's Degree in Biochemistry and Molecular Biology, Autonomous University of Barcelona

**Dr Uberos, José**

- ♦ Head of section in the Neonatology area of the San Cecilio Clinical Hospital of Granada
- ♦ Specialist in Pediatrics and Child Care
- ♦ Associate Professor of Pediatrics, University of Granada
- ♦ Vocal Bioethics Research Committee of the Province of Granada (Spain)
- ♦ Coeditor of the Signs and Symptoms Journal
- ♦ Professor Antonio Galdo Award Society of Pediatrics of Eastern Andalucía
- ♦ Editor of the Journal of the Pediatric Society of Eastern Andalusia (Bol SPAO)
- ♦ Doctor of Medicine and Surgery
- ♦ Degree in Medicine from the University of Santiago de Compostela
- ♦ Member of the Board of the Pediatric Society of Eastern Andalusia

**Dr Verdú López, Patricia**

- ♦ Medical Specialist in Allergology at the Beata María Ana Hospital of Hermanas Hospitalarias
- ♦ Physician specializing in Allergology at Inmunomet Health and Integral Wellness Center
- ♦ Research physician in Allergology at San Carlos Hospital
- ♦ Specialist in Allergology at the University Hospital Dr Negrín in Las Palmas of Gran Canaria
- ♦ Degree in Medicine from the University of Oviedo
- ♦ Master's Degree in Aesthetics and Antiaging Medicine at Complutense La University of Madrid

**Ms Rodríguez Fernández, Carolina**

- ♦ Biotechnology Researcher at Adknoma Health Research
- ♦ Master in Clinical Trials Monitoring by ESAME Pharmaceutical Business School
- ♦ Master's Degree in Food Biotechnology from the University of Oviedo
- ♦ University Expert in Digital Teaching in Medicine and Health by CEU Cardenal Herrera University

**Dr Gonzalez Rodríguez, Silvia Pilar**

- ♦ Deputy Medical Director, Research Coordinator and Clinical Chief of the Menopause and Osteoporosis Unit at Gabinete Médico Velázquez
- ♦ Specialist in Gynecology and Obstetrics at HM Gabinete Velázquez
- ♦ Medical Expert at Bypass Comunicación en Salud, SL
- ♦ Key Opinion Leader of several international pharmaceutical laboratories
- ♦ Doctor in Medicine and Surgery from the University of Alcalá de Henares, specializing in Gynecology
- ♦ Specialist in Mastology by the Autonomous University of Madrid
- ♦ Master's Degree in Sexual Orientation and Therapy from the Sexological Society of Madrid
- ♦ Master's Degree in Climacteric and Menopause from the International Menopause Society
- ♦ Postgraduate Diploma in Epidemiology and New Applied Technologies from the UNED (Spanish Distance Learning University)
- ♦ University Diploma in Research Methodology from the Foundation for the Training of the Medical Association and the National School of Health of the Carlos III Health Institute

#### **Dr Rioseras de Bustos, Beatriz**

- ♦ Microbiologist and renowned researcher
- ♦ Resident in immunology at HUCA
- ♦ Member of the Biotechnology of Nutraceuticals and Bioactive Compounds Research Group (Bionuc) of the University of Oviedo
- ♦ Member of the Microbiology Area of the Department of Functional Biology
- ♦ Residency in the Southern Denmark University
- ♦ Doctorate in Microbiology from the University of Oviedo
- ♦ Master's Degree in Research in Neuroscience by the University of Oviedo

#### **Dr Lombó Burgos, Felipe**

- ♦ PhD in Biology
- ♦ Head of the BIONUC Research Group, University of Oviedo
- ♦ Former Director of the Research Support Area of the AEI Project
- ♦ Member of the Microbiology Area of the University of Oviedo
- ♦ Co-author of the research *Biocidal nanoporous membranes with inhibitory activity of biofilm formation at critical points in the production process of the dairy industry*
- ♦ Head of the study on 100% natural acorn-fed ham against inflammatory bowel diseases
- ♦ Speaker III Congress of Industrial Microbiology and Microbial Biotechnology

#### **Dr Álvarez García, Verónica**

- ♦ Assistant Physician of the Digestive Area at the Río Hortega University Hospital
- ♦ Specialist in Digestive System at the Central Hospital of Asturias
- ♦ Speaker at the XLVII Congress SCLECARTO
- ♦ Degree in Medicine and Surgery
- ♦ Digestive System Specialist

#### **Dr Gabaldon Estevani, Toni**

- ♦ IRB and BSC senior group leader
- ♦ Co-founder and Scientific Advisor (CSO) of Microomics SL
- ♦ ICREA Research Professor and Group Leader of the Comparative Genomics Laboratory
- ♦ Doctor of Medical Sciences, Radboud University Nijmegen
- ♦ Corresponding Member of the Royal National Academy of Pharmacy of Spain
- ♦ Member of the Spanish Young Academy

#### **Dr Modroño Móstoles, Naiara**

- ♦ Doctor Specialist in Pediatric Endocrinology and Nutrition at the University Hospital Fundación Jimenez Diaz
- ♦ Doctor Specialist in Endocrinology the Infanta Elena University Hospital
- ♦ Doctor Specialist in Endocrinology at the University Hospital of Getafe
- ♦ Author of various articles published in scientific journals
- ♦ Postgraduate Certificate in Treatment of Diabetes Mellitus Type 2 at the Autonomous University of Barcelona

**Dr Fernández Madera, Juan Jesus**

- ♦ Allergologist at HUCA
- ♦ Former Head of the Allergology Unit, Monte Naranco Hospital, Oviedo
- ♦ Allergology Service, Central University Hospital of Asturias
- ♦ Member of: Board of Directors of Alergonorte, Scientific Committee of Rhinoconjunctivitis of the SEAC and Advisory Committee of Medicinatvcom

**Dr Méndez García, Celia**

- ♦ Biomedical Researcher at Novartis Laboratories in Boston, USA
- ♦ Doctorate in Microbiology from the University of Oviedo
- ♦ Member of the North American Society for Microbiology

**Dr Narbona López, Eduardo**

- ♦ Speciality Neonatal Unit, San Cecilio University Hospital
- ♦ Advisor to the Department of Pediatrics, University of Granada
- ♦ Member of: Pediatric Society of Western Andalusia and Extremadura, Andalusian Association of Primary Care Pediatrics

**Dr López Vázquez, Antonio**

- ♦ Area Specialist in Immunology, Central University Hospital of Asturias, Spain
- ♦ Collaborator of the Carlos III Health Institute
- ♦ Advisor of Aspen Medical
- ♦ Doctor of Medicine, University of Oviedo

**Dr Losa Domínguez, Fernando**

- ♦ Gynecologist at the Sagrada Familia Clinic of HM Hospitals
- ♦ Doctor in private practice in Obstetrics and Gynecology in Barcelona
- ♦ Expert in Gynecoesthetics by the Autonomous University of Barcelona
- ♦ Member of: Spanish Association for the Study of Menopause, Spanish Society of Phytotherapeutic Gynecology, Spanish Society of Obstetrics and Gynecology and Board of the Menopause Section of the Catalan Society of Obstetrics and Gynecology

**Dr López López, Aranzazu**

- ♦ Specialist in Biological Sciences Researcher
- ♦ Researcher at Fisabio Foundation
- ♦ Assistant Researcher at the University of the Balearic Islands
- ♦ PhD in Biological Sciences from the University of the Balearic Islands

**Dr Suárez Rodríguez, Marta**

- ♦ Gynecologist specialized in Senology and Breast Pathology
- ♦ Researcher and University Professor
- ♦ PhD in Medicine and Surgery from the Complutense University of Madrid
- ♦ Degree in Medicine and Surgery from the Complutense University of Madrid
- ♦ Master's Degree in Senology and Breast Pathology from the Autonomous University of Barcelona

### Mr Martínez Martínez, Alberto

- ♦ Clinical Nutritionist of Endocrinology and Nutrition Department of the university Rey Juan Carlos Hospital
- ♦ Dietitian responsible for the menu of children with food allergy Gastronomic
- ♦ Dietician- Clinical Nutritionist at the University Hospital Antonio
- ♦ Degree in Human Nutrition and Dietetics Fluminense Federal University
- ♦ Graduate in Human Nutrition and Dietetics at the University of Valencia
- ♦ Master's Degree in Agri-environmental and Agri-food Sciences Autonomous University of Madrid

### Dr Fernández Menéndez, Amanda

- ♦ Doctor Specialist in Pediatric Endocrinology and Nutrition at the University Hospital Fundación Jimenez Diaz
- ♦ Specialist in Pediatrics, Centro de Salud Doctor Castroviejo( SERMAS)
- ♦ Attending physician specializing in Pediatric Endocrinology and Nutrition at La Paz University Hospital
- ♦ International Cooperation in Health and Development in India (development of health projects in the field)
- ♦ Degree in Medicine and Surgery from the Autonomous University of Madrid
- ♦ Master's Degree in Obesity and its Comorbidities: Prevention, Diagnosis and Integral Treatment at the University Rey Juan Carlos
- ♦ Expert in Clinical Bioethics from the Complutense University

### Dr Núñez Sanz, Ana

- ♦ Dietician and nutritionist, expert in pregnancy, breastfeeding and infancy
- ♦ López-Nava Obesity Nutritionist
- ♦ Nutritionist at Medicadiet
- ♦ *Freelance* Dietitian and nutritionist
- ♦ Dietitian and nutritionist at Menudiet SL
- ♦ Contributor on food and nutrition in Castilla La Mancha Television
- ♦ Promoter of talks and workshops on healthy eating for kindergartens, schools and companies
- ♦ Graduate in Human Nutrition and Dietetics at the Complutense University of Madrid
- ♦ Master's Degree in Nutrition and Health at the Open Official of Catalonia

### Dr González Toledo, Beatriz María

- ♦ Nephrology Nurse Unit of the Fundación Jiménez Díaz Hospital
- ♦ Nurse Director of Dialysis at the Íñigo Álvarez de Toledo Renal Foundation
- ♦ Master's Degree in Hemodialysis for Nurses at the Complutense University of Madrid
- ♦ Master's Degree in Nutrition and Health at the Open University of Catalonia
- ♦ University Expert in Peritoneal Dialysis for Nursing at Cardenal Herrera University
- ♦ Graduate in Nursing from the Autonomous University of Madrid

**Dr Prieto Moreno, Ana**

- ◆ Nutritionist in the Department of Endocrinology and Nutrition at University Hospital Fundación Jiménez
- ◆ Nutritionist at the General Hospital of Villalba
- ◆ Nutritionist at the Infanta Elena University Hospital
- ◆ Nutritionist in the Superior Sports Council
- ◆ Nutritionist at the WWF
- ◆ Nutritionist at Medicadiet
- ◆ Nutritionist at anitas Sociedad Anónima de Seguros
- ◆ Nutritionist at La Paz University Hospital
- ◆ Nutritionist at Fundación Mapfre
- ◆ Nutritionist at Copernal Publishing
- ◆ Nutritionist at Revista Diabetes
- ◆ Master's Degree in Obesity and its Comorbidities, Prevention Strategies, Diagnosis and Integral Treatment at the University of Alcalá
- ◆ Master's Degree in Physical Anthropology, Human Evolution and Biodiversity at the Complutense University of Madrid
- ◆ Degree in Human Nutrition and Dietetics at the Autonomous University of Madrid

**Dr Gutiérrez Pernia, Belén**

- ◆ Obesity Nutritionist at Medicadiet
- ◆ López-Nava Obesity Nutritionist Madrid
- ◆ Dietitian and Nutritionist in Research Projects of Predimed Plus
- ◆ Grade in Human Nutrition and Dietetics from the Autonomous University of Madrid
- ◆ Master's Degree in Clinical Nutrition and Endocrinology at the Institute of Nutrition and Health Sciences

**Ms Yela Salguero, Clara**

- ◆ Dietitian Coordination of Clinical Trials
- ◆ Dietician at the Jiménez Díaz Foundation Hospital
- ◆ Clinical Trials Coordinator at the Ramón y Cajal Hospital
- ◆ Dietitian at the Severo Ochoa Hospital, in Leganés
- ◆ Dietitian in the Integral Obesity Treatment Unit at the San José Hospital in Madrid
- ◆ Diploma in Human Nutrition and Dietetics at Alfonso X El Sabio University
- ◆ Degree in Food Science and Technology at the Complutense University of Madrid

### **Dr Sanz Martínez, Enrique**

- ♦ Clinical Nutritionist at the University Hospital General de Villalba and Rey Juan Carlos University Hospital
- ♦ Dietitian in the project PLUS researcher in the Health Research Institute of the Jiménez Díaz Foundation
- ♦ Researcher and collaborator in the NUTRICOVID study
- ♦ Researcher and collaborator in the cross-sectional prospective OBESTIGMA study
- ♦ Graduate in Human Nutrition and Dietetics at the Complutense University of Madrid
- ♦ Master's Degree in Clinical Nutrition at the Catholic University of San Antonio in Murcia
- ♦ Master's Degree in Obesity and its Comorbidities: Prevention, Diagnosis and Integral Treatment at the University Rey Juan Carlos

### **Dr Hoyas Rodríguez, Irene**

- ♦ Specialist in Endocrinology and Nutrition
- ♦ Specialist in Endocrinology and Nutrition at the Fundación Jiménez Díaz and Infanta Elena Hospitals
- ♦ Specialist in Endocrinology and Nutrition at the Beata María Ana Hospital
- ♦ Specialist in Endocrinology at the University Hospital 12 de Octubre
- ♦ Degree in Medicine from the Complutense University of Madrid
- ♦ Postgraduate course in Treatment of Diabetes Mellitus Type 2 at the Autonomous University of Barcelona

### **Ms López Escudero, Leticia**

- ♦ Nutritionist at Diet Clinic
- ♦ Dietician and clinical nutritionist at the Jiménez Díaz Foundation University Hospital
- ♦ Dietician and Clinical Nutritionist at the University Hospital Infanta Elena
- ♦ Professor in graduate studies Degree in Human Nutrition and Dietetics
- ♦ Graduate in Human Nutrition and Dietetics at the Complutense University of Madrid
- ♦ Master's Degree in Obesity and its Comorbidities: Prevention, Diagnosis and Integral Treatment at the University Rey Juan Carlos
- ♦ Master's Degree in Nutrition in Physical Activity and Sport, Open University of Catalunya (UOC)

### **Dr Alcarria Águila, María del Mar**

- ♦ Clinical Nutritionist at Medicadiet
- ♦ Clinical Obesity Nutritionist López-Nava
- ♦ Dietitian and Nutritionist in Predimed-Plus
- ♦ Grade in Human Nutrition and Dietetics from the Complutense University of Madrid
- ♦ Master's Degree in Sports Nutrition and Training from the Institute of Nutrition and Health Sciences (ICNS)

### **Dr Miguélez González, María**

- ♦ Attending Physician of Endocrinology and Nutrition at the University Hospital Jiménez Díaz Foundation of Madrid
- ♦ Degree in Medicine from the University of Valladolid
- ♦ Teaching collaborator in seminars given to students at the Complutense University of Madrid
- ♦ Professor of the Master Expert in Obesity and Metabolic Complications, endorsed by SEEDO





### **Ms Labeira Candel, Paula**

- ◆ Clinical nutritionist in the Bariatric Endoscopy Unit at HM Hospitales
- ◆ Sports and clinical nutritionist at the Clinical Institute of Overweight and Obesity
- ◆ Nutritionist Sports and Clinical at Medicadiet, Slimming & Nutrition
- ◆ Sports Nutritionist at the CF TrivalValderas de Alcorcón
- ◆ Food and water quality analyst in the Andalusian Health Service
- ◆ Diploma in Human Nutrition and Dietetics at the Pablo Olavide University of Seville
- ◆ Bachelor 's Degree in Food Science and Technology
- ◆ Diploma in Human Nutrition and Dietetics
- ◆ Master's Degree in Sports Training and Nutrition at the European University of Madrid

“

*Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"*

# 05

# Structure and Content

This academic program will provide physicians with a thorough and comprehensive understanding of the relationship between Nutrition and Health. In fact, this content will include fundamental aspects of physiology and nutrient metabolism, as well as the assessment of nutritional status and the identification of dietary imbalances. In addition, professionals will analyze the nutritional implications in the context of various diseases, from metabolic disorders to Cardiovascular Diseases and Cancer, designing therapeutic food plans adapted to the individual needs of patients.





“

*You will address issues related to nutrition in different stages of life, Sports Nutrition, Diet Therapy and Health promotion through food”*

## Module 1. New Developments in Food

- 1.1. Molecular Foundations of Nutrition
- 1.2. Update on Food Composition
- 1.3. Food Composition Tables and Nutritional Databases
- 1.4. Phytochemicals and Non-Nutritive Compounds
- 1.5. New Food
  - 1.5.1. Functional Nutrients and Bioactive Compounds
  - 1.5.2. Probiotics, Prebiotics, and Symbiotics
  - 1.5.3. Quality and Design
- 1.6. Organic Food
- 1.7. Transgenic Foods
- 1.8. Water as a Nutrient
- 1.9. Food Safety
  - 1.9.1. Physical, Chemical, and Microbiological Hazards
- 1.10. Phytotherapy Applied to Nutritional Pathologies

## Module 2. Current Trends in Nutrition

- 2.1. Nutrigenetics.
- 2.2. Nutrigenomics
  - 2.2.1. Fundamentals
  - 2.2.2. Methods
- 2.3. Immunonutrition
  - 2.3.1. Nutrition-Immunity Interactions
  - 2.3.2. Antioxidants and Immune Function
- 2.4. Physiological Regulation of Feeding. Appetite and Satiety
- 2.5. Psychology and Nutrition
- 2.6. Nutrition and the Circadian System. Timing is the Key
- 2.7. Update on Nutritional Objectives and Recommended Intakes
- 2.8. New Evidence on the Mediterranean Diet



### Module 3. Nutrigenetics I

- 3.1. Nutrigenetics Authorities and Organizations
  - 3.1.1. NUGO
  - 3.1.2. ISNN
  - 3.1.3. Evaluation Committees
- 3.2. GWAS I Studies
  - 3.2.1. Population Genetics - Design and Use
  - 3.2.2. Hardy-Weinberg Law
  - 3.2.3. Linkage Imbalance
- 3.3. GWAS II
  - 3.3.1. Allelic and Genotypic Frequencies
  - 3.3.2. Gene-Disease Association Studies
  - 3.3.3. Association Models ( Dominant, Recessive, Co-dominant)
  - 3.3.4. Genetic Scores
- 3.4. The Discovery of Nutrition-Related SNPs
  - 3.4.1. Key Studies-Design
  - 3.4.2. Main Results
- 3.5. The Discovery of SNPs Associated with Nutrition-Related Diseases (Diet-Depended)
  - 3.5.1. Cardiovascular Diseases
  - 3.5.2. Diabetes Mellitus Type II
  - 3.5.3. Metabolic Syndrome
- 3.6. Main Obesity-Related GWAS
  - 3.6.1. Strengths and Weaknesses
  - 3.6.2. The FTO Example
- 3.7. Circadian Control of Intake
  - 3.7.1. Gut-Brain Axis
  - 3.7.2. Molecular and Neurological Basis of the Brain-Gut Connection
- 3.8. Chronobiology and Nutrition
  - 3.8.1. Central Clock
  - 3.8.2. Peripheral Clocks
  - 3.8.3. Circadian Rhythm Hormones
  - 3.8.4. Intake Control (Leptin and Ghrelin)

- 3.9. SNPs Related to Circadian Rhythms
  - 3.9.1. Regulatory Mechanisms of Satiety
  - 3.9.2. Hormones and Intake Control
  - 3.9.3. Possible Pathways Involved

### Module 4. Nutrigenetics II Key Polymorphisms

- 4.1. Obesity-Related SNPs
  - 4.1.1. The Tale of the Obese Monkey
  - 4.1.2. Appetite Hormones
  - 4.1.3. Thermogenesis
- 4.2. Vitamin-Related SNPs
  - 4.2.1. Vitamin D
  - 4.2.2. B Complex Vitamins
  - 4.2.3. Vitamin E
- 4.3. Exercise-Related SNPs
  - 4.3.1. Strength vs. Competition
  - 4.3.2. Sports Performance
  - 4.3.3. Injury Prevention/Recovery
- 4.4. Oxidative Stress/Detoxification-related SNPs
  - 4.4.1. Genes Encoding Enzymes
  - 4.4.2. Anti-Inflammatory Processes
  - 4.4.3. Phase I+II of Detoxification
- 4.5. SNP related to Addictions
  - 4.5.1. Caffeine
  - 4.5.2. Alcohol
  - 4.5.3. Salt
- 4.7. SNP Related to Flavor
  - 4.7.1. Sweet Taste
  - 4.7.2. Salty Taste
  - 4.7.3. Bitter Taste
  - 4.7.4. Acid Taste

- 4.8. SNP vs. Allergies vs. Intolerances
  - 4.8.1. Lactose
  - 4.8.2. Gluten
  - 4.8.3. Fructose
- 4.9. PESA Study

### Module 5. Nutrigenetics III

- 5.1. SNPs Predisposing to Complex Nutrition-Related Diseases -- Genetic Risk Scores (GRS)
- 5.2. Type II Diabetes
- 5.3. Hypertension
- 5.4. Arteriosclerosis
- 5.5. Hyperlipidemia
- 5.6. Cancer
- 5.7. The Exposome Concept
- 5.8. Metabolic Flexibility Concept
- 5.9. Current Studies-Challenges for the Future

### Module 6. Nutrigenomics

- 6.1. Differences and Similarities with Nutrigenetics
- 6.2. Bioactive Components of Diet on Gene Expression
- 6.3. The Effect of Micro and Macronutrients on Gene Expression
- 6.4. The Effect of Dietary Patterns on Gene Expression
  - 6.4.1. The Mediterranean Diet Example
- 6.5. Main Studies in Gene Expression
- 6.6. Genes Related to Inflammation
- 6.7. Genes Related to Insulin Sensitivity
- 6.8. Genes related to Lipid Metabolism and Adipose Tissue Differentiation
- 6.9. Genes Related to Arteriosclerosis
- 6.10. Genes Related to the Myoskeletal System

### Module 7. Metabolomics-Proteomics

- 7.1. Proteomics
  - 7.1.1. Principles of Proteomics
  - 7.1.2. The Flow of Proteomics Analysis
- 7.2. Metabolomics
  - 7.2.1. Principles of Metabolomics
  - 7.2.2. Targeted Metabolomics
  - 7.2.3. Non-Targeted Metabolomics
- 7.3. The Microbiome/Microbiota
  - 7.3.1. Microbiome Data
  - 7.3.2. Human Microbiota Composition
  - 7.3.3. Enterotypes and Diet
- 7.4. Main Metabolomic Profiles
  - 7.4.1. Application to Disease Diagnosis
  - 7.4.2. Microbiota and Metabolic Syndrome
  - 7.4.3. Microbiota and Cardiovascular Diseases Effect of the Oral and Intestinal Microbiota
- 7.5. Microbiota and Neurodegenerative Diseases
  - 7.5.1. Alzheimer's Disease
  - 7.5.2. Parkinson's Disease
  - 7.5.3. ALS
- 7.6. Microbiota and Neuropsychiatric Diseases
  - 7.6.1. Schizophrenia
  - 7.6.2. Anxiety, Depression, Autism
- 7.7. Microbiota and Obesity
  - 7.7.1. Enterotypes
  - 7.7.2. Current Studies and State of Knowledge



## Module 8. Epigenetics

- 8.1. History of Epigenetics. The Way I Feed Myself, a Legacy for my Grandchildren
- 8.2. Epigenetics vs. Epigenomics
- 8.3. Methylation
  - 8.3.1. Examples of Folate and Choline, Genistein
  - 8.3.2. Examples of Zinc, Selenium, Vitamin A, Protein Restriction
- 8.4. Histone Modification
  - 8.4.1. Examples of Butyrate, Isothiocyanates, Folate and Choline
  - 8.4.2. Examples of Retinoic Acid, Protein Restriction
- 8.5. MicroRNA
  - 8.5.1. Biogenesis of MicroRNAs in Humans
  - 8.5.2. Mechanisms of Action-Regulating Processes
- 8.6. Nutrimiromics
  - 8.6.1. Diet-Modulated MicroRNAs
  - 8.6.2. MicroRNAs involved in Metabolism
- 8.7. Role of MicroRNAs in Diseases
  - 8.7.1. MicroRNA in Tumorigenesis
  - 8.7.2. MicroRNAs in Obesity, Diabetes and Cardiovascular Diseases
- 8.8. Gene Variants that Generate or Destroy Binding Sites for MicroRNAs
  - 8.8.1. Main Studies
  - 8.8.2. Results in Human Diseases
- 8.9. MicroRNA Detection and Purification Methods
  - 8.9.1. Circulating MicroRNAs
  - 8.9.2. Basic Methods Used

## Module 9. Laboratory Techniques for Nutritional Genomics

- 9.1. Molecular Biology Laboratory
  - 9.1.1. Basic Instructions
  - 9.1.2. Basic Material
  - 9.1.3. Accreditations Required in the U.S.
- 9.2. DNA Extraction
  - 9.2.1. From Saliva
  - 9.2.2. From Blood
  - 9.2.3. From Other Fabrics
- 9.3. Real-Time PCR
  - 9.3.1. Introduction - History of the Method
  - 9.3.2. Basic Protocols Used
  - 9.3.3. Most Used Equipment
- 9.4. Sequencing
  - 9.4.1. Introduction - History of the Method
  - 9.4.2. Basic Protocols Used
  - 9.4.3. Most Used Equipment
- 9.5. High-Throughput
  - 9.5.1. Introduction - History of the Method
  - 9.5.2. Examples of Human Studies
- 9.6. Gene Expression - Genomics - Transcriptomics
  - 9.6.1. Introduction - History of the Method
  - 9.6.2. Microarrays
  - 9.6.3. Microfluidic Cards
  - 9.6.4. Examples of Human Studies
- 9.7. Omics Technologies and their Biomarkers
  - 9.7.1. Epigenomics
  - 9.7.2. Proteomics
  - 9.7.3. Metabolomics
  - 9.7.4. Metagenomics
- 9.8. Bioinformatics Analysis
  - 9.8.1. Pre- and Post-Informatics Bioinformatics Programs and Tools
  - 9.8.2. GO Terms, Clustering of DNA Microarrays Data
  - 9.8.3. Functional Enrichment, GEPAS, Babelomics







## Module 10. The Relationship between Intolerances/Allergies and the Microbiota

- 10.1. Microbiota Changes in Patients on Food Exclusion Diets
  - 10.1.1. Eosinophilic Esophagitis (EoE)
- 10.2. Changes in the Microbiota in Patients with Food Exclusion Diets: Intolerance to Dairy Products (Lactose, Milk Proteins: Caseins, Albumins, Others)
  - 10.2.1. Lactose Intolerance
  - 10.2.2. Intolerant to Milk Proteins: Caseins, Albumins, etc.
  - 10.2.3. People Allergic to Milk
- 10.3. Alteration and Recovery of the Intestinal Microbiota in Patients with Gluten Intolerance and Celiac Disease
  - 10.3.1. Alteration of the Intestinal Microbiota in Patients with Gluten Intolerance
  - 10.3.2. Alteration of the Intestinal Microbiota in Celiac Patients
  - 10.3.3. Role of Probiotics and Prebiotics in the Recovery of the Microbiota in Gluten Intolerant and Celiacs
- 10.4. Microbiota and Biogenic Amines
- 10.5. Current Lines of Research

## Module 11. Nutrition in Overweight, Obesity and their Comorbidities

- 11.1. Pathophysiology of Obesity
  - 11.1.1. Precision Diagnosis
  - 11.1.2. Analysis of Underlying Causes
- 11.2. Phenotypic Diagnosis
  - 11.2.1. Body Composition and Calorimetry and Impact on Personalized Treatment
- 11.3. Treatment Target and Hypocaloric Diet Models
- 11.4. Prescription of Physical Exercise in Overweight and Obesity
- 11.5. Psychology Associated with Weight Loss Nutrition: Psychonutrition
- 11.6. Comorbidities Associated with Obesity
  - 11.6.1. Nutritional Management in Metabolic Syndrome
  - 11.6.2. Insulin Resistance
  - 11.6.3. Type 2 Diabetes and Diabetes
- 11.7. Cardiovascular Risk and Nutritional Adaptations in Hypertension, Dyslipidemias and Atherosclerosis

- 11.8. Digestive Pathologies Associated with Obesity and Dysbiosis
- 11.9. Pharmacological Treatment in Obesity and Drug-Nutrient Interactions and Adaptation of the Nutritional Plan
- 11.10. Bariatric and Endoscopic Surgery
  - 11.10.1. Nutritional Adaptations

## Module 12. Nutrition in Digestive Tract Pathologies

- 12.1. Nutrition in Oral Disorders
  - 12.1.1. Taste
  - 12.1.2. Salivation
  - 12.1.3. Mucositis
- 12.2. Nutrition in Esophagogastric Disorders
  - 12.2.1. Gastroesophageal Reflux
  - 12.2.2. Gastric Ulcers
  - 12.2.3. Dysphagia
- 12.3. Nutrition in Post-Surgical Syndromes
  - 12.3.1. Gastric Surgery
  - 12.3.2. Small Intestine
- 12.4. Nutrition in Bowel Function Disorders
  - 12.4.1. Constipation
  - 12.4.2. Diarrhea
- 12.5. Nutrition in Malabsorption Syndromes
- 12.6. Nutrition in Colonic Pathology
  - 12.6.1. Irritable Bowel
  - 12.6.2. Diverticulosis
- 12.7. Nutrition in Inflammatory Bowel Disease (IBD)
- 12.8. Most Frequent Food Allergies and Intolerances with Gastrointestinal Effects
- 12.9. Nutrition in Liver Diseases
  - 12.9.1. Portal Hypertension
  - 12.9.2. Hepatic Encephalopathy
  - 12.9.3. Liver Transplant
- 12.10. Nutrition in Biliary Diseases. Biliary Lithiasis
- 12.11. Nutrition in Pancreatic Diseases
  - 12.11.1. Acute Pancreatitis
  - 12.11.2. Chronic Pancreatitis

## Module 13. Nutrition in Endocrine-Metabolic Diseases

- 13.1. Dyslipidemia and Arteriosclerosis
- 13.2. Diabetes Mellitus
- 13.3. Hypertension and Cardiovascular Disease
- 13.4. Obesity
  - 13.4.1. Etiology. Nutrigenetics and Nutrigenomics
  - 13.4.2. Pathophysiology of Obesity
  - 13.4.3. Diagnosis of the Disease and its Comorbidities
  - 13.4.4. Multidisciplinary Team in Obesity Treatment
  - 13.4.5. Dietary Treatment. Therapeutic Possibilities
  - 13.4.6. Pharmacological Treatment. New Drugs
  - 13.4.7. Psychological Treatment
    - 13.4.7.1. Intervention Models
    - 13.4.7.2. Treatment of Associated Eating Disorders
  - 13.4.8. Surgical Treatments
    - 13.4.8.1. Indications
    - 13.4.8.2. Techniques
    - 13.4.8.3. Complications
    - 13.4.8.4. Dietary Management
    - 13.4.8.5. Metabolic Surgery
  - 13.4.9. Endoscopic Treatments
    - 13.4.9.1. Indications
    - 13.4.9.2. Techniques
    - 13.4.9.3. Complications
    - 13.4.9.4. Patient Dietary Management
  - 13.4.10. Physical Activity in Obesity
    - 13.4.10.1. Assessment of the Patient's Functional Capacity and Activity
    - 13.4.10.2. Activity-based Prevention Strategies
    - 13.4.10.3. Intervention in the Treatment of the Disease and Associated Pathologies
  - 13.4.11. Update on Diet and Obesity Studies
  - 13.4.12. International Intervention Strategies for Obesity Control and Prevention

## Module 14. Nutrition in Nervous System Pathologies

- 14.1. Nutrition in the Prevention of Cognitive Impairment, Dementia and Alzheimer's Disease
- 14.2. Nutrition and Psychoaffective Pathologies
  - 14.2.1. Depression
  - 14.2.2. Bipolar Disorder
- 14.3. Pathologies with Altered Eating Behavior
  - 14.3.1. Schizophrenia
  - 14.3.2. Borderline Personality Disorder
- 14.4. Eating Disorders
  - 14.4.1. Anorexia
  - 14.4.2. Bulimia
  - 14.4.3. BED
- 14.5. Nutrition in Degenerative Pathologies
  - 14.5.1. Multiple Sclerosis
  - 14.5.2. Amyotrophic Lateral Sclerosis
  - 14.5.3. Muscular Dystrophies
- 14.6. Nutrition in Pathologies with Uncontrolled Movement
  - 14.6.1. Parkinson's Disease
  - 14.6.2. Huntington's Disease
- 14.7. Nutrition in Epilepsy
- 14.8. Nutrition in Neuralgias
  - 14.8.1. Chronic Pain
- 14.9. Nutrition in Severe Neurological Injuries
- 14.10. Toxics, Bioactive Compounds, Intestinal Microbiota and their Relationship to Nervous System Diseases

## Module 15. Nutrition in Kidney Diseases

- 15.1. Glomerular Disorders and Tubulopathies
- 15.2. Predialysis Chronic Renal Failure
- 15.3. Chronic Renal Insufficiency and Dialysis
- 15.4. Gout and Hyperuricemia

## Module 16. Nutrition in Special Situations

- 16.1. Nutrition in Metabolic Stress Situations
  - 16.1.1. Sepsis
  - 16.1.2. Polytrauma
  - 16.1.3. Burns.
  - 16.1.4. Transplant Recipient
- 16.2. Oncology Patient Nutrition
  - 16.2.1. Surgical Treatment
  - 16.2.2. Chemotherapy Treatment
  - 16.2.3. Radiotherapy Treatment
  - 16.2.4. Bone Marrow Transplant
- 16.3. Immune Diseases
  - 16.3.1. Acquired Immunodeficiency Syndrome

## Module 17. Clinical Nutrition and Hospital Dietetics

- 17.1. Management of Hospital Nutrition Units
  - 17.1.1. Nutrition in the Hospital Setting
  - 17.1.2. Food Safety in Hospitals
  - 17.1.3. Hospital Kitchen Organization
  - 17.1.4. Planning and Managing Hospital Diets. Dietary Code
- 17.2. Hospital Basal Diets
  - 17.2.1. Basal Diet in Adults
  - 17.2.2. Pediatric Basal Diet
  - 17.2.3. Ovo-Lacto-Vegetarian and Vegan Diet
  - 17.2.4. Diet Adapted to Cultural
- 17.3. Therapeutic Hospital Diets
  - 17.3.1. Unification of Diets and Personalized Menus
- 17.4. Bi-Directional Drug-Nutrient Interaction

## Module 18. Artificial Nutrition in Adults

- 18.1. Enteral Nutrition
- 18.2. Parenteral Nutrition
- 18.3. Artificial Nutrition at Home
- 18.4. Adapted Oral Nutrition

## Module 19. Physiology of Infant Nutrition

- 19.1. Influence of Nutrition on Growth and Development
- 19.2. Nutritional Requirements in the Different Periods of Childhood
- 19.3. Nutritional Assessment in Children
- 19.4. Physical Activity Evaluation and Recommendations
- 19.5. Nutrition During Pregnancy and its Impact on the New-born
- 19.6. Current Trends in the Premature New-Born Nutrition
- 19.7. Nutrition in Lactating Women and its Impact on the Infant
- 19.8. Nutrition of New-Borns with Intrauterine Growth Delay
- 19.9. Breastfeeding
  - 19.9.1. Human Milk as a Functional Food
  - 19.9.2. Process of Milk Synthesis and Secretion
  - 19.9.3. Reasons for it to be Encouraged
- 19.10. Human Milk Banks
  - 19.10.1. Milk Bank Operation and Indications
- 19.11. Concept and Characteristics of the Formulas Used in Infant Feeding
- 19.12. The Move to a Diversified Diet. Complementary Feeding During the First Year of Life
- 19.13. Feeding 1–3-Year-Old Children
- 19.14. Feeding During the Stable Growth Phase. Schoolchild Nutrition
- 19.15. Adolescent Nutrition. Nutritional Risk Factors
- 19.16. Child and Adolescent Athlete Nutrition
- 19.17. Other Dietary Patterns for Children and Adolescents. Cultural, Social, and Religious Influences on Childhood Nutrition
- 19.18. Prevention of Childhood Nutritional Diseases. Objectives and Guidelines

## Module 20. Artificial Nutrition in Pediatrics

- 20.1. Concept of Nutritional Therapy in Pediatrics
  - 20.1.1. Evaluation of Patients in Need of Nutritional Support
  - 20.1.2. Indications
- 20.2. General Information about Enteral and Parenteral Nutrition
  - 20.2.1. Enteral Pediatric Nutrition
  - 20.2.2. Parenteral Pediatric Nutrition
- 20.3. Dietary Products Used for Sick Children or Children with Special Needs
- 20.4. Implementing and Monitoring Patients with Nutritional Support
  - 20.4.1. Critical Patients
  - 20.4.2. Patients with Neurological Pathologies
- 20.5. Artificial Nutrition at Home
- 20.6. Nutritional Supplements to Support the Conventional Diet
- 20.7. Probiotics and Prebiotics in Infant Feeding

## Module 21. Infant Malnutrition.

- 21.1. Childhood Malnutrition and Undernutrition
  - 21.1.1. Psychosocial Aspects
  - 21.1.2. Pediatric Assessment
  - 21.1.3. Treatment and Monitoring
- 21.2. Nutritional Anemias
  - 21.2.1. Other Nutritional Anemias in Childhood
- 21.3. Vitamin and Trace Element Deficiencies
  - 21.3.1. Vitamins
  - 21.3.2. Trace Elements
  - 21.3.3. Detection and Treatment
- 21.4. Fats in Infant Diets
  - 21.4.1. Essential Fatty Acids
- 21.5. Childhood Obesity.
  - 21.5.1. Prevention
  - 21.5.2. Impact of Childhood Obesity
  - 21.5.3. Nutritional Treatment

**Module 22. Childhood Nutrition and Pathologies**

- 22.1. Nutrition of Children with Oral Pathologies
  - 22.1.1. Major Childhood oral pathologies
  - 22.1.2. Repercussions of These Alterations on the Child's Nutrition
  - 22.1.3. Mechanisms to Avoid Related Malnutrition
- 22.2. Nutrition of Infants and Children with Gastroesophageal Reflux
  - 22.2.1. Repercussions of These Alterations on the Child's Nutrition
  - 22.2.2. Mechanisms to Avoid Related Malnutrition
- 22.3. Nutrition in Acute Diarrhea Situation
  - 22.3.1. Repercussions of These Alterations on the Child's Nutrition
  - 22.3.2. Mechanisms to Avoid Related Malnutrition
- 22.4. Nutrition in Children with Celiac Disease
  - 22.4.1. Repercussions of These Alterations on the Child's Nutrition
  - 22.4.2. Mechanisms to Avoid Related Malnutrition
- 22.5. Nutrition of the Child with Inflammatory Bowel Disease
  - 22.5.1. Repercussions of These Alterations on the Child's Nutrition
  - 22.5.2. Mechanisms to Avoid Related Malnutrition
- 22.6. Nutrition in the Child with Malabsorptive/Digestive Syndrome
  - 22.6.1. Repercussions of These Alterations on the Child's Nutrition
  - 22.6.2. Mechanisms to Avoid Related Malnutrition
- 22.7. Nutrition in Children with Constipation
  - 22.7.1. Nutritional Mechanisms to Prevent Constipation
  - 22.7.2. Nutritional Approaches for Treating Constipation
- 22.8. Nutrition in Children with Liver Disease
  - 22.8.1. Repercussions of These Alterations on the Child's Nutrition
  - 22.8.2. Mechanisms to Avoid Related Malnutrition
  - 22.8.3. Special Diets

**Module 23. Childhood Nutrition and Pathologies**

- 23.1. Feeding Difficulties and Disorders in Children
  - 23.1.1. Physiological Aspects
  - 23.1.2. Psychological Aspects
- 23.2. Eating Disorders
  - 23.2.1. Anorexia
  - 23.2.2. Bulimia
  - 23.2.3. Others
- 23.3. Inborn Errors of Metabolism
  - 23.3.1. Principles for Dietary Treatment
- 23.4. Nutrition in Dyslipidemia
  - 23.4.1. Nutritional Mechanisms to Prevent Dyslipidemias
  - 23.4.2. Nutritional Mechanisms to Treat Dyslipidemias
- 23.5. Nutrition in the Diabetic Child
  - 23.5.1. Repercussions of Diabetes in the Nutrition of the Child
  - 23.5.2. Mechanisms to Avoid Related Malnutrition.
- 23.6. Nutrition in Autistic Children
  - 23.6.1. Repercussions of These Alterations on the Child's Nutrition
  - 23.6.2. Mechanisms to Avoid Related Malnutrition
- 23.7. Nutrition in Children with Cancer
  - 23.7.1. Repercussions of Disease and Treatments in the Child's Nutrition
  - 23.7.2. Mechanisms to Avoid Related Malnutrition
- 23.8. Nutrition in Children with Chronic Pulmonary Pathology
  - 23.8.1. Repercussions of These Alterations on the Child's Nutrition
  - 23.8.2. Mechanisms to Avoid Related Malnutrition
- 23.9. Nutrition in Children with Nephropathy
  - 23.9.1. Repercussions of These Alterations on the Child's Nutrition
  - 23.9.2. Mechanisms to Avoid Related Malnutrition
  - 23.9.3. Special Diets
- 23.10. Nutrition of the Child with Food Allergy and/or Intolerance
  - 23.10.1. Special Diets
- 23.11. Childhood Nutrition and Bone Pathology
  - 23.11.1. Mechanisms for Good Bone Health in Childhood

## Module 24. Sports Nutrition

- 24.1. Physiology of Exercise
- 24.2. Physiological Adaptation to Different Types of Exercise
- 24.3. Metabolic Adaptation to Exercise. Regulation and Control
- 24.4. Assessing Athletes' Energy Needs and Nutritional Status
- 24.5. Assessing Athletes' Physical Ability
- 24.6. Nutrition in the Different Phases of Sports Practice
  - 24.6.1. Pre-Competition
  - 24.6.2. During
  - 24.6.3. Post-Competition
- 24.7. Hydration
  - 24.7.1. Regulation and Needs
  - 24.7.2. Types of Beverages
- 24.8. Dietary Planning Adapted to Different Sports
- 24.9. Ergogenic Aids
- 24.10. Nutrition in Sports Injury Recovery
- 24.11. Psychological Disorders Related to Practicing Sport
  - 24.11.1. Eating Disorders: Vigorexia, Orthorexia, Anorexia
  - 24.11.2. Fatigue Caused by Overtraining
  - 24.11.3. The Female Athlete Triad
- 24.12. The Role of the Coach in Sports Performance

## Module 25. Assessment of Nutritional Status and Calculation of Personalized Nutritional Plans, Recommendations and Monitoring

- 25.1. Medical History and Background
  - 25.1.1. Individual Variables Affecting Nutritional Plan Response.
- 25.2. Anthropometry and Body Composition
- 25.3. Assessment of Eating Habits
  - 25.3.1 Nutritional Assessment of Food Consumption
- 25.4. Interdisciplinary Team and Therapeutic Circuits
- 25.5. Calculation of Energy Intake
- 25.6. Calculation of Recommended Macro- and Micronutrient Intakes
- 25.7. Quantity and Frequency of Food Consumption Recommendations
  - 25.7.1 Feeding Models
  - 25.7.2 Planning
  - 25.7.3 Distribution of Daily Feedings
- 25.8. Diet Planning Models
  - 25.8.1. Weekly Menus
  - 25.8.2. Daily Intake
  - 25.8.3. Methodology by Food Exchanges
- 25.9. Hospital Nutrition
  - 25.9.1. Dietary Models
  - 25.9.2. Decision Algorithms
- 25.10. Educational
  - 25.10.1. Psychological Aspects
  - 25.10.2. Maintenance of Feeding Habits
  - 25.10.3. Discharge Recommendations

**Module 26. Nutritional Consultation**

- 26.1. How to Carry Out a Nutritional Consultation
  - 26.1.1. Analysis of the Market and Competition
  - 26.1.2. Clients
  - 26.1.3. Marketing. Social Networks
- 26.2. Psychology and Nutrition
  - 26.2.1. Psychosocial Factors Affecting Eating Behavior
  - 26.2.2. Interview Techniques
  - 26.2.3. Dietary Advice
  - 26.2.4. Stress Control
  - 26.2.5. Child and Adult Nutrition Education

**Module 27. Probiotics, Prebiotics, Microbiota, and Health**

- 27.1. Probiotics
- 27.2. Prebiotics
- 27.3. Clinical Applications of Probiotics and Prebiotics in Gastroenterology
- 27.4. Clinical Applications of Endocrinology and Cardiovascular Disorders
- 27.5. Clinical Applications of Probiotics and Prebiotics in Urology
- 27.6. Clinical Applications of Probiotics and Prebiotics in Gynecology
- 27.7. Clinical Applications of Probiotics and Prebiotics in Immunology
- 27.8. Clinical Applications of Probiotics and Prebiotics in Nutritional Diseases
- 27.9. Clinical Applications of Probiotics and Prebiotics in Neurological Diseases
- 27.10. Clinical Applications of Probiotics and Prebiotics in Critically Ill Patients
- 27.11. Dairy Products as a Natural Source of Probiotics and Prebiotics

**Module 28. Nutrition for Health, Equity and Sustainability**

- 28.1. Sustainable Nutrition, Food Variables Influencing the Ecological Footprint.
  - 28.1.1. Carbon Footprint
  - 28.1.2. Water Footprint
- 28.2. Food Waste as an Individual Problem and as a Problem Associated with the Food Industry
- 28.3. Biodiversity Loss at Different Levels and its Impact on Human Health: Microbiota
- 28.4. Toxics and Xenobiotics in Food and their Effects on Health
- 28.5. Current Food Legislation
  - 28.5.1. Labeling, Additives and Regulatory Proposals in Marketing and Advertising
- 28.6. Nutrition and Endocrine Disruptors
- 28.7. The Global Obesity and Malnutrition Epidemic, Associated with Inequity: "A Planet of Fat and Hungry People".
- 28.8. Feeding in Childhood and Youth and Habits Acquisition in Adulthood
  - 28.8.1. Ultraprocessed Foods and Beverages other than Water: A Population Problem
- 28.9. Food Industry, Marketing, Advertising, Social Networks and their Influence on Food Choice
- 28.10. Healthy, Sustainable and Non-Toxic Food Recommendations: Policy



*The contents of this Advanced Master's Degree in Clinical Nutrition in Medicine will provide you with the knowledge and skills necessary to address nutritional challenges in the medical setting in a comprehensive and effective manner"*

06

# Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.





“

*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.*



According to Dr. Gervas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

“

*Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”*

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



## Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

*Professionals will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.*



At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

*Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.



This program offers the best educational material, prepared with professionals in mind:



### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



### Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



### Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

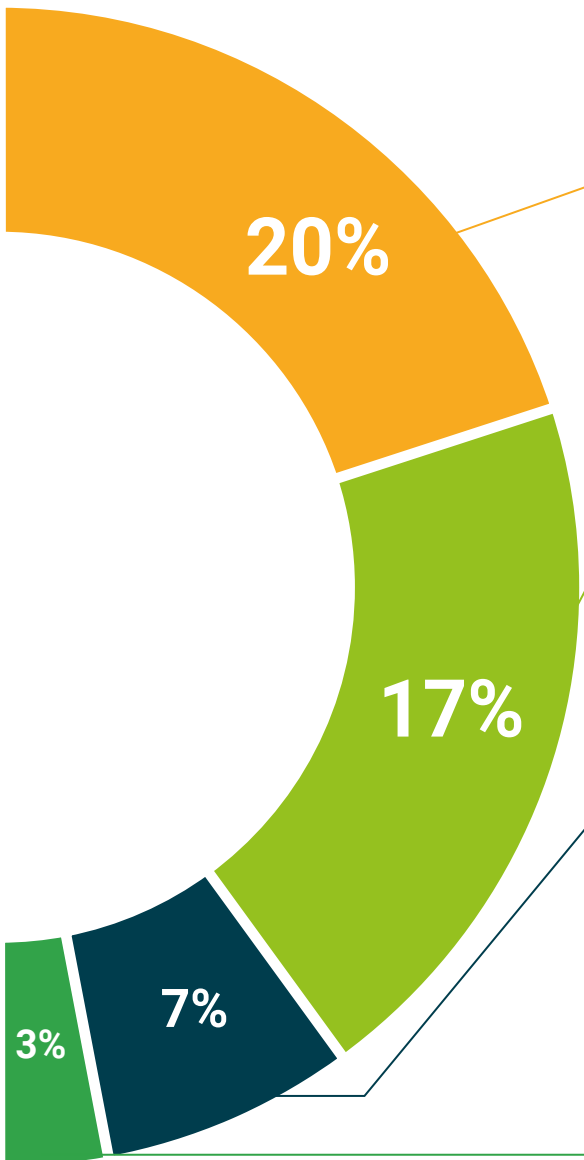
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





**Expert-Led Case Studies and Case Analysis**

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



**Testing & Retesting**

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



**Classes**

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



**Quick Action Guides**

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



# 07 Certificate

The Advanced Master's Degree in Clinical Nutrition In Medicine guarantees students, in addition to the most rigorous and up-to-date education, access to an Advanced Master's Degree issued by TECH Global University





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*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”*

This private qualification will allow you to obtain a **Advanced Master's Degree in Clinical Nutrition in Medicine** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra (*official bulletin*). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Advanced Master's Degree in Clinical Nutrition in Medicine**

Modality: **Online**

Duration: **2 years**

Accreditation: **120 ECTS**



\*Apostille Convention In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost



Advanced Master's  
Degree  
Clinical Nutrition in Medicine

- » Modality: online
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- » Exams: online

# Advanced Master's Degree Clinical Nutrition in Medicine

