

Postgraduate Diploma Nutrigenetics





Postgraduate Diploma Nutrigenetics

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-nutrigenetics

Index

01

Introduction

p. 4

02

Objectives

p. 8

03

Course Management

p. 12

04

Structure and Content

p. 18

05

Methodology

p. 22

06

Certificate

p. 30

01

Introduction

Nutrigenetics is a discipline that's in constant evolution, since the continuous research in this field establishes the innovative benefits found in different foods for people with a certain genetic make-up. These discoveries facilitate the work of doctors in the prevention of different pathologies, so these professionals are obliged to incorporate these advances in their work methodology in order to keep up to date. For this reason, TECH has created this program, which will enable the student to learn about the most recent advances in polymorphisms related to obesity or the development of hypertension and to be at the forefront of this sector. In a 100% online way, they will acquire this learning without depending on uncomfortable pre-established schedules.





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This program will allow you to identify, according to the latest scientific evidence, the SNPs that are related to the development of hypertension in order to draw up dietary recommendations aimed at its prevention in various types of patients"

In the area of Medicine, Nutrigenetics has become a relevant tool to favor the prevention of diseases and to guarantee the optimal health of the patient. Through updated research, the ability to discern which foods are the most appropriate or which should be avoided for those people with a genetic predisposition to suffer pathologies such as hypertension or diabetes is obtained, therefore ensuring the well-being of each person. In this way, given the wide benefit provided by this discipline, it is essential for doctors to master it, as it significantly facilitates their work in anticipating diseases or optimizing their recovery.

In view of this situation, TECH has promoted the creation of this Postgraduate Diploma, which will allow the medical professional to deeply manage the latest evidence on the SNP that favor the emergence of various pathologies in people with a genetic predisposition to suffer them, therefore enriching their health performance. During 6 months of intensive learning, they will analyze how single nucleotide polymorphisms drive obesity in different types of people or they will assimilate the dietary guidelines to reduce Cholesterol through food. They will also delve into the latest research aimed at looking at the influence of SNPs on cancer.

Thanks to the 100% online mode in which this program is developed, students will have the opportunity to develop their own study schedules to achieve a completely effective learning. In the same way, this program is taught by the best experts in Nutritional Genomics and Precision Nutrition, so all the knowledge that they will assimilate will be applicable in their professional experiences.

This **Postgraduate Diploma in Nutrigenetics** contains the most complete and up-to-date scientific program on the market. The most important features include:

- The development of practical cases presented by experts in Nutritional Genomics and Precision Nutrition
- 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
- The practical exercises where the self-evaluation process can be carried out to improve learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection



Delve, through this Postgraduate Diploma, into recent research focused on analyzing the impact of SNPs in the development of cancer"

“

Incorporate the most advanced knowledge in Nutrigenetics to your daily practice through this Postgraduate Diploma"

The program's teaching staff includes professionals from the sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive training programmed to train in real situations.

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

Under the guidance of the best experts in this field, you will assimilate the best skills in Nutrigenetics to position yourself as a first level professional in this area.

Through the Relearning system of this program, you will have the possibility to learn at your own pace, without obstacles or time constraints.



02

Objectives

The design of this Postgraduate Diploma has been carried out with the intention of facilitating the updating and expansion of knowledge in the area of Nutrigenetics by the physician, so that they can apply the most innovative postulates in the discipline in their daily work. In this way, they will master the analysis of SNPs related to different types of diseases or healthy habits, among many other issues of great relevance in this specialty.



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Identify key polymorphisms related to human nutrition and metabolic processes thanks to this TECH program”



General Objectives

- ♦ Acquire theoretical knowledge of human population genetics
- ♦ Acquire knowledge of Nutritional Genomics and Precision Nutrition to be able to apply it in clinical practice
- ♦ Learn about the trajectory of this innovative field and the key studies that contributed to its development
- ♦ Know in which pathologies and conditions of human life Nutritional Genomics and Precision Nutrition can be applied
- ♦ Be able to assess individual response to nutrition and dietary patterns in order to promote health and disease prevention
- ♦ Understand how nutrition influences gene expression in humans
- ♦ Learn about new concepts and future trends in the field of Nutritional Genomics and Precision Nutrition
- ♦ Adapt personalized dietary and lifestyle habits according to genetic polymorphisms
- ♦ Provide health professionals with all the up-to-date knowledge in the field of Nutritional Genomics and Precision Nutrition in order to know how to apply it in their professional activity
- ♦ Put all the updated knowledge in perspective. Where we are now and where we are headed so that the student can appreciate the ethical, economic and scientific implications in the field





Specific Objectives

Module 1. 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 2. Nutrigenetics II Key Polymorphisms

- ♦ Present the Key Polymorphisms to date related to Human Nutrition and Metabolic Processes that the Professional needs to know about
- ♦ Analyze the key studies supporting these polymorphisms and the debate, where it exists
- ♦ Analyze the SNPs related to the development of addictions
- ♦ Detect SNPs linked to the development of various intolerances

Module 3. Nutrigenetics III

- ♦ Present the Key Polymorphisms to date related to Complex Diseases that depend on Nutritional Habits
- ♦ Introduce new leading concepts in Nutrigenetics research
- ♦ Delve into the development of hypertension due to poor nutrition
- ♦ Establish a nutritional plan to address Arteriosclerosis

03

Course Management

Thanks to TECH's tireless commitment to guarantee the excellent quality of its programs, this program has a teaching team composed of the best professionals in the area of Genetic and Precision Nutrition. These experts are in charge of elaborating all the didactic materials that the student will have access to throughout this academic period. For this reason, all the knowledge they will provide them with will be constantly updated.





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This Postgraduate Diploma is taught by experts in Nutrigenetics with an extensive experience in this field, in order to provide you with the knowledge with greater applicability in your professional life"

International Guest Director

Dr. Caroline Stokes is a specialist in **Psychology** and **Nutrition**, with a doctorate and a habilitation in **Medical Nutrition**. After a distinguished career in this field, she leads the **Food and Health Research** group 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, he 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 discover more about the fundamental role that **Nutrition** plays in improving the overall health of the population. To this end, he has focused on elucidating the effects of fat-soluble vitamins such as **A, D, E and K**, the **amino acid methionine**, lipids such as **omega-3 fatty acids** and **probiotics** for 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. He 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 her to win the **National Health Service Journal Award for the Nutrition and Mental Health Program** in the UK.



Dr. Stokes, Caroline

- ♦ 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
- ♦ 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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Thanks to TECH, you will be able to learn with the best professionals in the world”

Management



Dr. Konstantinidou, Valentini

- ♦ Dietitian-Nutritionist Specialist in Nutrigenetics and Nutrigenomics
- ♦ Founder of DNANutricoach
- ♦ Creator of the Food Coaching method to change eating habits
- ♦ Professor in Nutrigenetics
- ♦ Doctorate 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

Dr. García Santamarina, Sarela

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

04

Structure and Content

The syllabus of this academic program is made up of 3 modules through which students will increase their knowledge in the field of Nutrigenetics to update their professional performance. The didactic resources available to the doctor throughout this Postgraduate Diploma are present in a large number of textual and multimedia supports. With this, and through a 100% online methodology, they will obtain an effective learning with accessibility 24 hours a day.





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Characterized by its 100% online methodology, this program will allow you to obtain an effective learning without the need to move from your own home”

Module 1. Nutrigenetics I

- 1.1. Nutrigenetics Authorities and Organizations
 - 1.1.1. NUGO
 - 1.1.2. ISNN
 - 1.1.3. Evaluation Committees
- 1.2. GWAS I Studies
 - 1.2.1. Population Genetics. The Design and Use
 - 1.2.2. Hardy-Weinberg Law
 - 1.2.3. Linkage Imbalance
- 1.3. GWAS II
 - 1.3.1. Allelic and Genotypic Frequencies
 - 1.3.2. Gene-Disease Association Studies
 - 1.3.3. Association Models (Dominant, Recessive, Co-dominant)
 - 1.3.4. Genetic Scores
- 1.4. The Discovery of Nutrition-Related SNPs
 - 1.4.1. Key Studies-Design
 - 1.4.2. Main Results
- 1.5. The Discovery of SNPs Associated with Nutrition-Related Diseases (*Diet-Depended*)
 - 1.5.1. Cardiovascular Diseases
 - 1.5.2. Diabetes Mellitus Type II
 - 1.5.3. Metabolic Syndrome
- 1.6. Main Obesity-Related GWAS
 - 1.6.1. Strengths and Weaknesses
 - 1.6.2. The FTO Example
- 1.7. Circadian Control of Intake
 - 1.7.1. Gut-Brain Axis
 - 1.7.2. Molecular and Neurological Basis of the Brain-Gut Connection
- 1.8. Chronobiology and Nutrition
 - 1.8.1. Central Clock
 - 1.8.2. Peripheral Clocks
 - 1.8.3. Circadian Rhythm Hormones
 - 1.8.4. Intake Control (Leptin and Ghrelin)

- 1.9. SNPs Related to Circadian Rhythms
 - 1.9.1. Regulatory Mechanisms of Satiety
 - 1.9.2. Hormones and Intake Control
 - 1.9.3. Possible Pathways Involved

Module 2. Nutrigenetics II Key Polymorphisms

- 2.1. Obesity-Related SNPs
 - 2.1.1. The Tale of the Obese Monkey
 - 2.1.2. Appetite Hormones
 - 2.1.3. Thermogenesis
- 2.2. Vitamin-Related SNPs
 - 2.2.1. Vitamin D
 - 2.2.2. B Complex Vitamins
 - 2.2.3. Vitamin E
- 2.3. Exercise-Related SNPs
 - 2.3.1. Strength vs. Competition
 - 2.3.2. Sports Performance
 - 2.3.3. Injury Prevention/Recovery
- 2.4. Oxidative Stress/Detoxification-related SNPs
 - 2.4.1. Genes Encoding Enzymes
 - 2.4.2. Anti-Inflammatory Processes
 - 2.4.3. Phase I+II of Detoxification
- 2.5. SNP related to Addictions
 - 2.5.1. Caffeine
 - 2.5.2. Alcohol
 - 2.5.3. Salt
- 2.6. SNP related to Flavor
 - 2.6.1. Sweet Taste
 - 2.6.2. Salty Taste
 - 2.6.3. Bitter Taste
 - 2.6.4. Acid Taste



- 2.7. SNP vs. Allergies vs. Intolerances
 - 2.7.1. Lactose
 - 2.7.2. Gluten
 - 2.7.3. Fructose
- 2.8. PESA Study

Module 3. Nutrigenetics III

- 3.1. SNPs Predisposing to Complex Nutrition-Related Diseases - Genetic Risk Scores (GRS)
- 3.2. Type II Diabetes
- 3.3. Hypertension
- 3.4. Arteriosclerosis
- 3.5. Hyperlipidemia
- 3.6. Cancer
- 3.7. The Exposome Concept
- 3.8. Metabolic Flexibility Concept
- 3.9. Current Studies: Challenges for the Future

“Enjoy complete learning resources accessible in formats such as video or self-assessment tests to optimize your learning in a short period of time”

05

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.



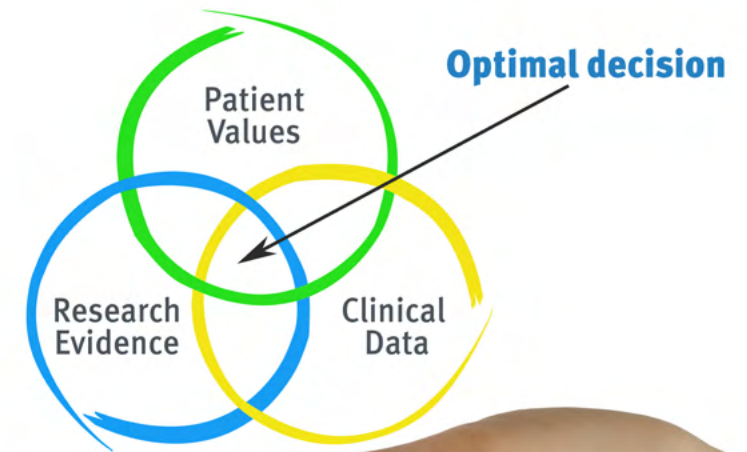
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Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

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.

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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.



06 Certificate

The Postgraduate Diploma in Nutrigenetics guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.





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

This program will allow you to obtain your **Postgraduate Diploma in Nutrigenetics** 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.

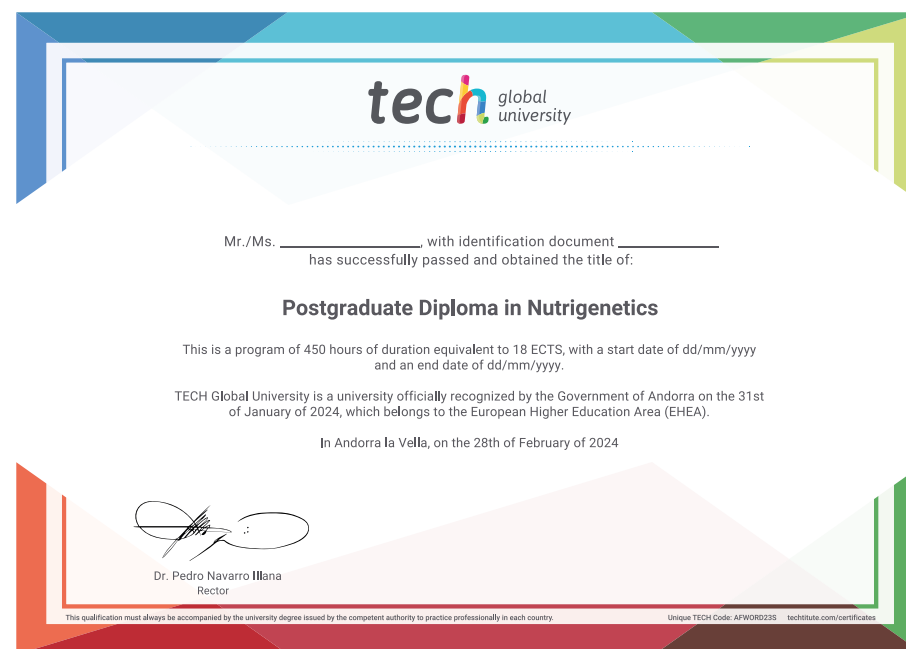
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Nutrigenetics**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**





Postgraduate Diploma Nutrigenetics

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Postgraduate Diploma

Nutrigenetics