

Postgraduate Diploma Nutrigenetics





Postgraduate Diploma Nutrigenetics

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/pharmacy/postgraduate-diploma/postgraduate-diploma-nutrigenetics

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01

Introduction

Individuals' genetic variance can influence their metabolism and the way the body acquires nutrients. Having pharmacists who specialize in this field can help patients get better advice and adapt their diets to benefit their body. Get up to date with the best program on the current educational scene and offer specific treatments for each situation.



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Patients need pharmacists specialized in Nutrigenetics who are able to advise them on their diet”

This Postgraduate Diploma covers everything a health professional needs to know about Nutritional Genomics and Precision Nutrition, taking into account aspects related to Nutrigenetics. Therefore, the material is organized in the best possible way, allowing the professional to acquire all the knowledge needed, without leaving them with any doubts or information gaps. It is the best specialization on the market, because it offers the opportunity to learn all the innovations in the field of Nutritional Genomics, 100% online.

This Postgraduate Diploma in Nutrigenetics introduces the student to this aspect, the foundations, the interaction between genetic variability and diet, and how population genetics is being applied in the field of nutrition.

In addition, the key polymorphisms that exist to date related to nutrition and human metabolic processes are presented, as well as those related to complex and chronic diseases associated with nutrition and dietary habits, such as type II diabetes, hypertension, cancer, hyperlipidemia and arteriosclerosis.

The main SNPs (Single Nucleotide Polymorphisms) that the professional will be able to use in their clinical practice are also analyzed in depth and the key studies that give scientific support to these SNPs are discussed, presenting how this tool could prevent both the onset and recurrence of these diseases, laying the foundations for a Genomic and preventive Nutrition.

As it is an online Postgraduate Diploma, the student is not restricted by fixed schedules or the need to move to another physical location, but can access the content at any time of the day, balancing their work or personal life with their academic life.

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

- ◆ The development of case studies presented by experts in Nutritional Genomics and Precision Nutrition
- ◆ The graphic, schematic and eminently practical contents of the course are designed to provide all the essential information required for professional practice
- ◆ Practical exercises where self-assessment can be used to improve learning
- ◆ Special emphasis on innovative methodologies in Nutritional Genomics and Precision Nutrition, focusing on aspects such as Laboratory, Biostatistics and the Current Market
- ◆ 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



Pharmacists trained in the latest developments in Nutrigenetics will be able to provide more personalized care to their patients"

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This Postgraduate Diploma is the best investment you can make when selecting a refresher program to update your knowledge in Nutrigenetics”

This Postgraduate Diploma offers learning in simulated environments, which provides an immersive learning experience designed to prepare for real-life situations

We offer you a quality and 100% online program with which you can study wherever and whenever you want

Its teaching staff includes professionals belonging to the field of nutrition, who contribute their work experience to this program, as well as renowned specialists from reference societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive program designed to learn in real situations.

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



02

Objectives

The main objective of the program is the development of theoretical and practical learning, so that the nutrition professional can master the study of Nutrigenetics in a practical and rigorous way.



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Our goal is to help you succeed in your profession and to stand out in your field"



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 to which pathologies and conditions of human life Nutritional Genomics and Precision Nutrition can be applied
- ◆ Be able to assess individual responses to nutrition and dietary patterns in order to promote health and disease prevention
- ◆ Learn 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 up-to-date knowledge into 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
- ◆ Introduce the advanced circadian control system and central and peripheral clocks

Module 2. Nutrigenetics II - Key Polymorphisms

- ◆ Present the key polymorphisms that are related to human nutrition and metabolic processes that the professional needs to know about
- ◆ Analyze the key studies that support these polymorphisms and the debate, where it exists

Module 3. Nutrigenetics III

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



Take the step and join one of the largest online universities in the world"

03

Course Management

The program includes leading experts in Nutritional Genomics and Precision Nutrition in its teaching staff, who contribute the experience of their work to this specialization program. Additionally, other recognized experts participate in its design and preparation, completing the program in an interdisciplinary manner.





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Leading professionals in the field have come together to teach you the latest advances in Nutrigenetics”

Management



Dr. Konstantinidou, Valentini

- PhD in Biomedicine
- Lecturer in Nutrigenetics
- Founder of DNANUTRICOACH®
- Dietitian- Nutritionist
- Food Technologist

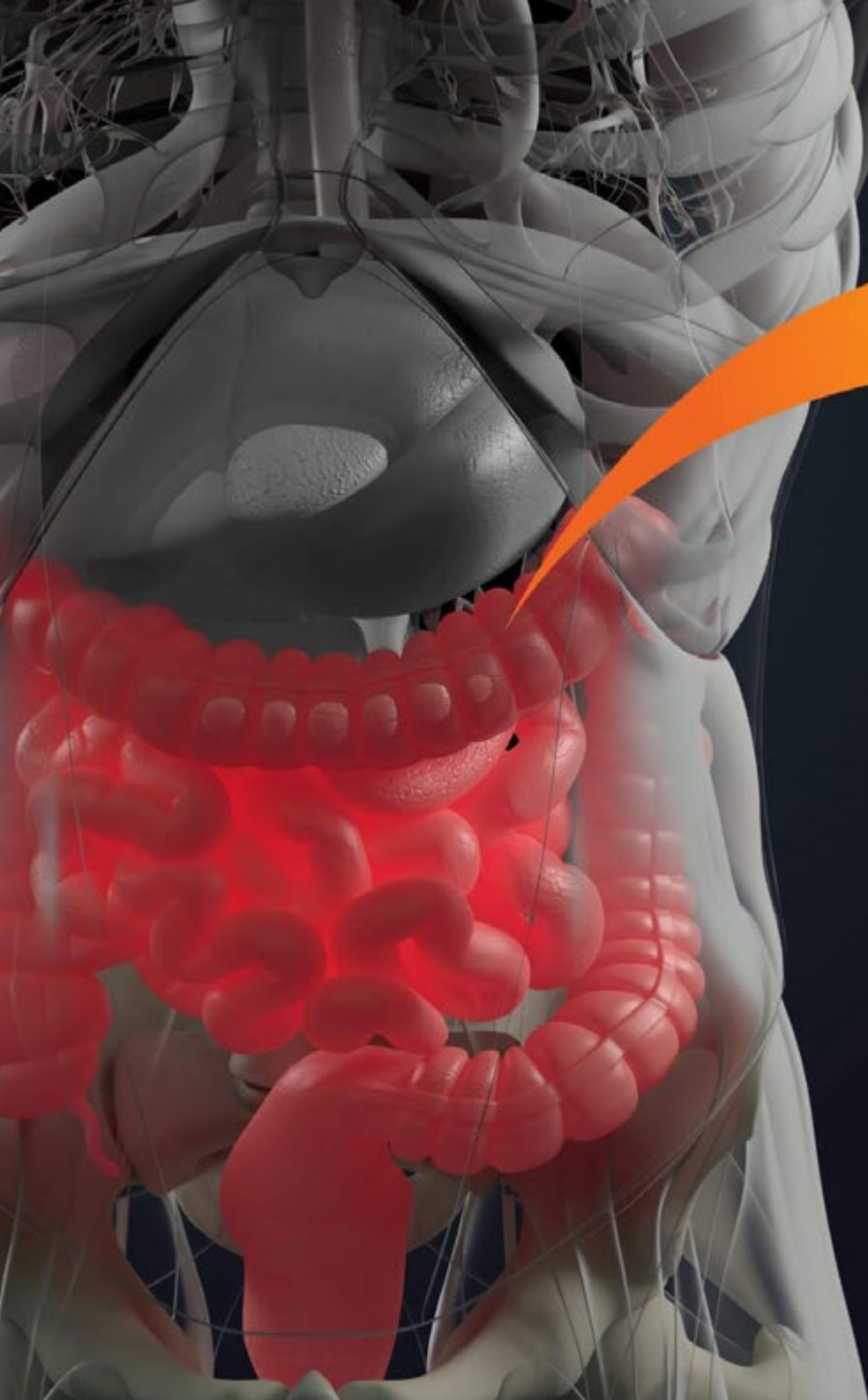
Professors

Dr. García Santamarina, Sarela

- ♦ PhD in Biomedical Research, Pompeu Fabra University, Barcelona, Spain, 2008-2013.
- ♦ Master's Degree in Molecular Biology of Infectious Diseases, London School of Hygiene & Tropical Medicine, London, UK, 2006-2007
- ♦ Master's Degree in Biochemistry and Molecular Biology, Autonomous University of Barcelona, Spain, 2003-2004
- ♦ Degree in Chemistry, Major in Organic Chemistry, University of Santiago de Compostela, Spain, 1996-2001
- ♦ Postdoctoral Researcher EIPOD Marie Curie. Mentoring: Dr. Athanasios Typas, Dr. Peer Bork, and Dr. Kiran Patil. Project: "Effects of drugs on intestinal flora". European Molecular Biology Laboratory (EMBL), Heidelberg, Germany. Since 2018

Mr. Anglada, Roger

- ♦ Graduate in Multimedia, Catalunya Open University (Universitat Oberta de Catalunya)
- ♦ Senior Technician in Analysis and Control, Narcís Monturiol Institute of Secondary Education, Barcelona
- ♦ Senior research support technician at the Genomics Service of the Pompeu Fabra University where he is responsible for the equipment and devices for sequencing and real-time PCR, providing support to users from different centers both in the design and interpretation of the results
- ♦ Co-author of several scientific publications since 2002. He combines his work with lectures and teaching both at Pompeu Fabra University and in different programs and courses



04

Structure and Content

The structure of the contents has been designed by a team of professionals who know about the implications of education in daily practice, are aware of the current relevance of Nutritional Genomics and Precision Nutrition renovation and who are committed to quality teaching through new educational technologies.





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We have the most complete and up-to-date scientific program on the market. We seek educational excellence to offer the best knowledge to our students"

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 - 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 Story 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. Phases I+II of Detoxification

- 2.5. SNP related to Addictions
 - 2.5.1. Caffeine
 - 2.5.2. Alcohol
 - 2.5.3. Salt
- 5.6. 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



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A unique, key and decisive educational experience to boost your professional development”

05

Methodology

This program offers 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 be confronted with multiple simulated clinical cases based on real patients, in which they will have to investigate, establish hypotheses and ultimately, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Pharmacists learn better, more quickly 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, attempting to recreate the actual conditions in a pharmacist'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. Pharmacists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their 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 Harvard case method with the best 100% online teaching methodology available: Relearning.

Our 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, which represent a real revolution with respect to simply studying and analyzing cases.



Pharmacists will learn through real cases and by solving 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 115.000 pharmacists have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. This pedagogical methodology is developed in a highly demanding environment, with a university student body with a high socioeconomic profile and an average age of 43.5 years.

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 created specifically for the course by specialist pharmacists who will be teaching the course, so that the didactic development is highly specific and accurate.

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.



Video Techniques and Procedures

TECH introduces students to the latest techniques, to the latest educational advances, to the forefront of current pharmaceutical care procedures. All of this, first hand, and explained and detailed with precision to contribute to assimilation and a better understanding. And best of all, you can watch them as many times as you want.



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 unique multimedia content presentation training system 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, we will present you with real case developments in which the expert will guide you through 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 termed Learning from an Expert strengthens knowledge and recall capacity, and generates confidence in the face of difficult decisions in the future.



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 Technological University.



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*Successfully complete this specialization
and receive your certificate without travel or
laborious paperwork”*

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

After the student has passed the assessments, they will receive their corresponding Postgraduate Diploma issued by **TECH Technological University** via tracked delivery*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Nutrigenetics**

Official N° of hours: **450 h.**



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

future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present quality
development language
classroom



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