Postgraduate Diploma
Nutritional Genomics and Precision Nutrition. Laboratory, Biostatistics and Current Market

tech global university

Postgraduate Diploma
Nutritional Genomics and Precision
Nutrition. Laboratory, Biostatistics
and Current Market

» Modality: **online**
» Duration: **6 months**
» Certificate: **TECH Global University**
» Credits: **24 ECTS**
» Schedule: **at your own pace**
» Exams: **online**

Website: **www.techtitute.com/us/nutrition/postgraduate-diploma/postgraduate-diploma-nutritional-genomics-precision-nutrition-laboratory-biostatistics-current-market**

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01
Introduction

Nutrition experts have recently incorporated the advances that genetics has brought to this field. A development that will allow you to offer your patients a truly effective aid specifically targeted to their individual characteristics. Update your knowledge in Nutritional Genomics and Precision Nutrition with this comprehensive Postgraduate Diploma that focuses on laboratory, biostatistics and current market issues. A training that will allow you to improve your daily practice with the help of the best teaching methodology.

"

Nutritional Genomics and Precision Nutrition is a growing discipline that requires highly trained professionals in the field"

This Postgraduate Diploma details everything a health professional needs to know about Nutritional Genomics and Precision Nutrition, taking into account aspects related to the Laboratory, Biostatistics and Current Market. Thus, the material is organized in such a way as to advance knowledge without leaving doubts or gaps in information. It is the best training on the market, because it offers the opportunity to learn online all the innovation in the field of genomic nutrition, including specific modules on laboratory techniques and statistics.

The program introduces the main and basic points of the human genome, genetic variation and the studies that have been carried out in the field, introducing their designs and their main importance so that the student can follow the following modules. In this regard, the main studies worldwide where Nutritional Genomic analyses have been performed and results have been published in the field are included.

Laboratory techniques used in the field of Nutritional Genomics and Precision Nutrition are also shown, so the basics will be presented so that the student will be able to recognize and appreciate them once in a laboratory.

And the methodology used in human clinical studies is analyzed, delving into the designs used mainly in nutritional epidemiology. For this purpose, we show how to perform statistical analysis of studies in large nutrition populations.

Finally, the key aspects for the application of nutritional genomics in society, such as legal and ethical aspects, are presented and analyzed. Analyzing DTCs, the role of the healthcare professional in the new genomic and big data era, reflecting and analyzing cases from the past, present and anticipating future market developments in the field of Nutritional Genomics are key aspects of this training.

This Postgraduate Diploma has the innovation of including practical sections on the current state of the market that offer a realistic, practical and up-to-date view for the healthcare professional who needs a 360º vision of the subject. The practical topics help to obtain the necessary critical capacity and deep knowledge of the subject matter for the student to use and apply it in their clinical practice.

This Postgraduate Diploma provides students with specific tools and skills to successfully develop their professional activity related to Nutritional Genomics and Precision Nutrition.

This **Postgraduate Diploma in Nutritional Genomics and Precision Nutrition. Laboratory, Biostatistics and Current Market** contains the most complete and up-to-date scientific program on the market. The most important features of the program include:

- The development of case studies presented by experts in Genomic and Precision Nutrition.
- The graphic, schematic, and eminently practical contents with which they are created contain information that is indispensable for professional practice.
- Practical exercises where the self-assessment process can be carried out to improve learning.
- Special emphasis on innovative methodologies in genomic 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.

Get trained in the broad field of Nutritional Genomics and offer specialized treatments to your patients"

This Postgraduate Diploma is the best investment you can make in selecting a refresher program to update your knowledge in Nutritional Genomics and Precision Nutrition. Laboratory, Biostatistics and Current Market"

The Postgraduate Diploma allows training in simulated environments, which provide immersive learning programmed to train for real situations.

This 100% online Postgraduate Diploma will allow you to combine your studies with your professional work while increasing your knowledge in this field.
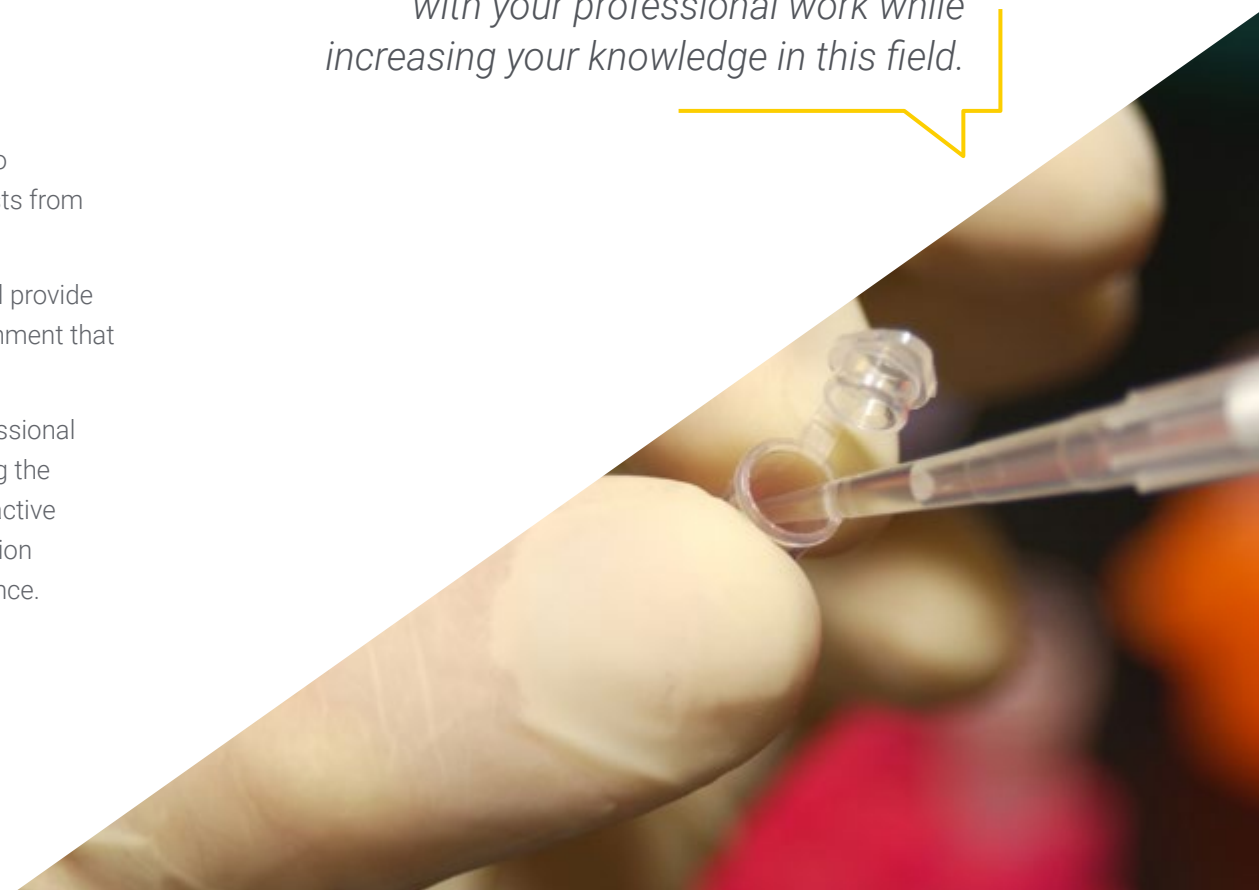
Its teaching staff includes professionals belonging to the field of nutrition, who contribute their work experience to this training, as well as renowned specialists from reference societies and prestigious universities.

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 immersive training programmed to train 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, the professional will be assisted by a innovative interactive video system made by recognized experts in Nutritional Genomics and Precision Nutrition. Laboratory, Biostatistics and Current Market, and with great experience.

02
Objectives

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

This refresher program will generate a sense of confidence in the performance of your daily practice, which will help you grow personally and professionally"

General Objectives

- Acquire theoretical knowledge on 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 up-to-date 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. Introduction to Genomic and Precision Nutrition
- Present definitions necessary to follow the thread of the following modules.
- Explain relevant points of human DNA, nutritional epidemiology, scientific method
- Analyze key studies in Genomic Nutrition.

Module 2. Laboratory Techniques for Nutritional Genomics
- Understand the techniques used in Nutritional Genomics studies.
- Acquire the latest advances in Bioinformatics and Biomedical techniques.

Module 3. Biostatistics for Genomic Nutrition
- Acquire the necessary knowledge to correctly design experimental studies in the areas of Nutrigenomics and Nutrigenetics.
- Delve in statistical models for clinical studies in humans.

Module 4. Current Market State
- Present and Analyze Key Aspects for the Application of Nutritional Genomics in Society.
- Reflect and Analyze Past and Present Cases and Anticipate Future Market Developments in the Field of Nutritional Genomics.

03

Course Management

The program's faculty includes leading experts in Nutritional Genomics and Precision Nutrition, who bring their work experience to this training. Additionally, other recognized experts participate in its design and preparation, completing the program in an interdisciplinary manner.

Leading professionals in the field have come together to teach you the latest advances in Nutritional Genomics and Precision Nutrition. Laboratory, Biostatistics and Current Market"

Management

Dr. Konstantinidou, Valentini

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

Professors

Anglada, Roger
- Graduate in Multimedia. Polytechnic University of Catalonia.
- Senior Technician in Analysis and Control. Narcís Monturiol HSI, 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 recognise the implications that training has on daily practice, who are aware of the relevance of current training in Nutritional Genomics and Precision Nutrition, and are committed to quality teaching using new educational technologies.

We have the most complete and up-to-date scientific program on the market. We strive for excellence and for you to achieve it too"

Module 1. Introduction to Genomic and Precision Nutrition

1.1.   Human Genome

    1.1.1.   DNA discovery

    1.1.2.   Year 2001

    1.1.3.   Human Genome Project

1.2.   Variations of Interest in Nutrition

    1.2.1.   Genomic Variations and the Search for Disease Genes.

    1.2.2.   Environment vs. Genetic Factor and Heritability

    1.2.3.   Differences between SNPs, Mutations and CNVs.

1.3. The Genome of Rare and Complex Diseases

    1.3.1.   Examples of Rare Diseases

    1.3.2.   Examples of Complex Diseases

    1.3.3.   Genotype and Phenotype

1.4. Precision Medicine

    1.4.1.   Influence of Genetics and Environmental Factors in Complex Diseases

    1.4.2.   Need for Precision The problem of Missing Heritability Concept of Interaction

1.5.   Precision Nutrition vs. Community Nutrition

    1.5.1.   The Principles of Nutritional Epidemiology

    1.5.2.   Current Bases of Nutritional Research

    1.5.3.   Experimental Designs in Precision Nutrition

1.6. Levels of Scientific Evidence

    1.6.1. Epidemiological Pyramid

    1.6.2. Regulation

    1.6.3. Official Guides

1.7. Consortia and Major Studies in Human Nutrition and Genomic Nutrition

    1.7.1 Precision4Health Project

    1.7.2. Framingham

    1.7.3. PREDIMED.

    1.7.4. CORDIOPREV

1.8.   Current European Studies

    1.8.1.   PREDIMED Plus

    1.8.2.   NU-AGE

    1.8.3.   FOOD4me.

    1.8.4.   EPIC

Module 2. Laboratory Techniques for Nutritional Genomics

Module 3. Biostatistics for Genomic Nutrition

3.1. Biostatistics
- 3.1.1. Human Studies Methodology
- 3.1.2. Introduction to Experimental Design
- 3.1.3. Estudios clínicos

3.2. Statistical Aspects of a Protocol
- 3.2.1. Introduction, Objectives, Description of Variables
- 3.2.2. Quantitative Variables
- 3.2.3. Qualitative Variables

3.3. Design of Clinical Studies in Humans, Methodological Guidelines
- 3.3.1. Designs with 2 treatments 2x2
- 3.3.2. Designs with 3 treatments 3x3
- 3.3.3. Parallel, Cross-Over, Adaptive Design
- 3.3.4. Sample Size Determination and Power Analysis

3.4. Evaluation of Treatment Effect
- 3.4.1. For Parallel Design, for Repeated Measurements, for Cross-Over Design
- 3.4.2. Randomization of the Order of Treatment Assignment
- 3.4.3. Carry-Over Effect (Wash Out)

3.5. Descriptive Statistics, Hypothesis Testing, Risk Calculation
- 3.5.1. Consort, Populations
- 3.5.2. Study Populations
- 3.5.3. Grupo control
- 3.5.4. Subgroup Analysis Types of Studies

3.6. Statistical Errors
- 3.6.1. Measurement Errors
- 3.6.2. Random Error
- 3.6.3. Systematic Error

3.7. Statistical Bias
- 3.7.1. Selection Bias
- 3.7.2. Observation Bias
- 3.7.3. Sesgo de asignación

3.8. Statistical Modeling
- 3.8.1. Continuous Variable Models
- 3.8.2. Categorical Variables Models
- 3.8.3. Linear Mixed Models
- 3.8.4. Missing Data, Flow of Participants, Presentation of Results
- 3.8.5 Adjustment for Baseline Values, Transformation of Response Variable: Differences, Ratios, Logarithms, Carry-Over Evaluation

3.9. Statistical Modeling with Co-Variables
- 3.9.1. ANCOVA
- 3.9.2. Logistic Regression for Binary and Count Variables
- 3.9.3. Multi-Variant Analysis

3.10. Statistical Programs
- 3.10.1. The R
- 3.10.2. SPSS

Module 4. Current Market State

4.1.   Legal Aspects
4.2.   Ethical Aspects
4.3.   DTC (Direct-to-consumer) Tests
    4.3.1.   Pros and Cons
    4.3.2.   Myths of Early DTCs
4.4.   Quality Criteria for a Nutrigenetic Test
    4.4.1.   SNP Selection
    4.4.2.   Interpretation of Results
    4.4.2.   Laboratory Accreditations
4.5.   Health Professionals
    4.5.1.   Training Needs
    4.5.2.   Criteria of Professionals Applying Genomic Nutrition
4.6.   Nutrigenomics in the Media
4.7.   Integration of Evidence for Personalized Nutritional Counseling
4.8.   Critical Analysis of the Current Situation
4.9.   Discussion Work
4.10.   Conclusions, use of Genomic and Precision Nutrition as Prevention

A unique, key and decisive training experience to boost your professional development"

05
Methodology

This training provides you with a different way of learning. Our methodology uses a cyclical learning approach: *Re-learning*.
This teaching system is used 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.
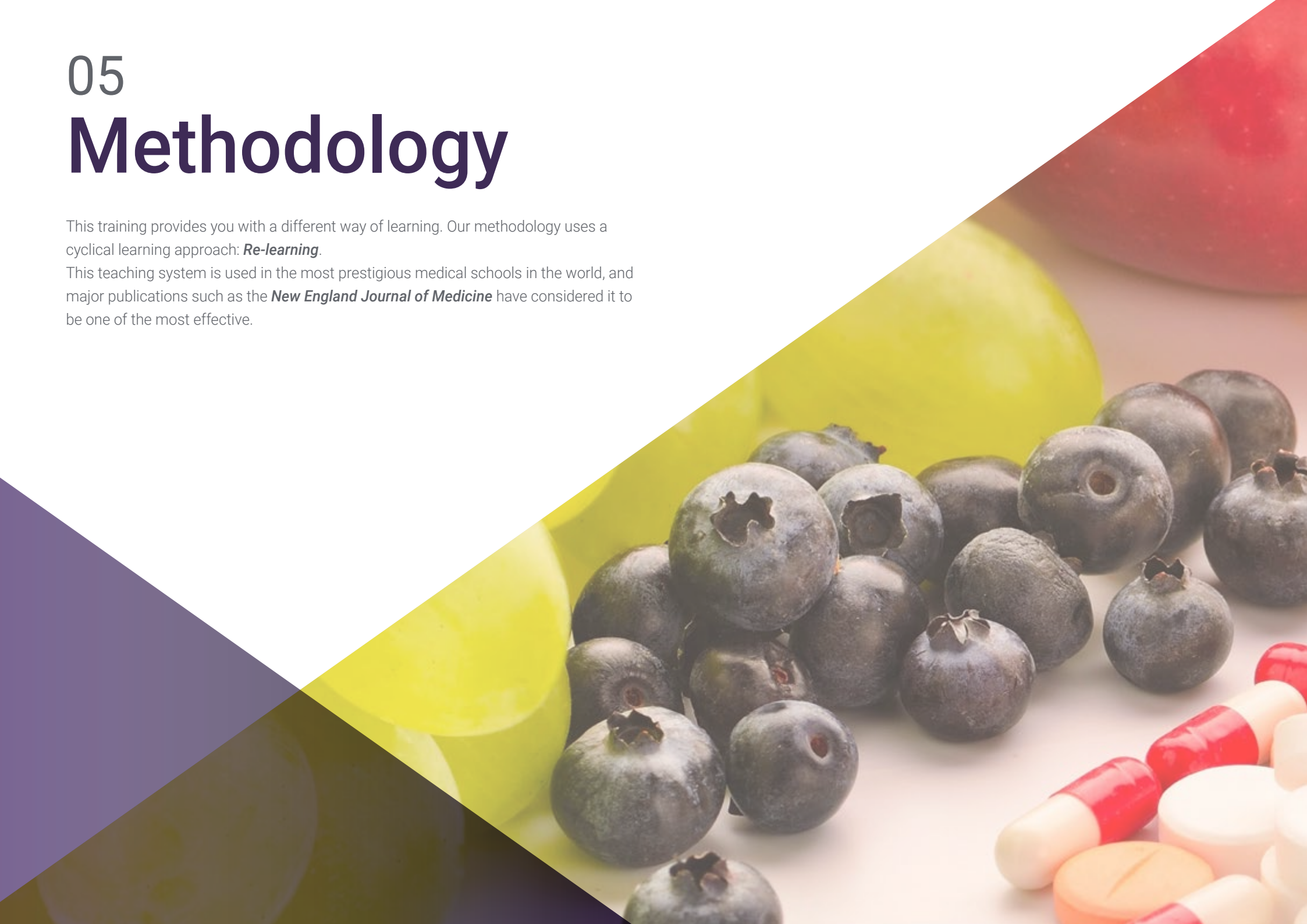
Discover Re-learning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH we use the Case Method

In a given clinical situation, what would you do? Throughout the program you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is abundant scientific evidence on the effectiveness of the method. Nutritionists learn better, faster, and more sustainably over time.

With TECH, nutritionists can experience a way of learning that is shaking the foundations of traditional universities around the world.

According to Dr. Gérvas, 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 potential 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 of professional nutritional 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. Nutritionists who follow this method not only grasp concepts, but also develop their mental capacity by evaluating real situations and applying their knowledge.

2. The learning is solidly focused on practical skills that allow the nutritionist to better integrate the knowledge into clinical practice.

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.

Re-Learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

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.

The nutritionist 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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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

With this methodology we have have trained more than 45,000 nutritionists with unprecedented success, in all clinical specialties regardless of the workload. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

Re-learning will allow you to learn with less effort and better performance, involving you more in your training, 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 (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

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

In this program you will have access to the best educational material, prepared with you 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 really specific and precise.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.

Nutrition Techniques and Procedures on Video

We introduce you to the latest techniques, the latest educational advances, and the forefront of current nutritional procedures and techniques. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.

Interactive Summaries

We present 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, international guides. in our virtual library you will have access to everything you need to complete your training.

20%

15%

15%

3%

20%

17%

3%

7%

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 & Re-testing

We periodically evaluate and re-evaluate your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your goals.

Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an expert strengthens knowledge and memory, and generates confidence in our future difficult decisions.

Quick Action Guides

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning.

Certificate

This Postgraduate Diploma in Nutritional Genomics and Precision Nutrition. Laboratory, Biostatistics and Current Market guarantees you, in addition to the most rigorous and up-to-date training, access to a Postgraduate Diploma qualification issued by TECH Global University.

Successfully complete this training and receive your university diploma without travel or laborious paperwork"

This program will allow you to obtain your **Postgraduate Diploma in Nutritional Genomics and Precision Nutrition. Laboratory, Biostatistics and Current Marke** 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 Nutritional Genomics and Precision Nutrition. Laboratory, Biostatistics and Current Marke**

Modality: **online**

Duration: **6 months**

Accreditation: **24 ECTS**

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Mr./Ms. _____, with identification document _____ has successfully passed and obtained the title of:

Postgraduate Diploma in Nutritional Genomics and Precision Nutrition. Laboratory, Biostatistics and Current Marke

This is a program of 600 hours of duration equivalent to 24 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country.   Unique TECH Code: AFWORD23S   techtitute.com/certificates

*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.

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