

# Postgraduate Certificate Biostatistical Analysis for Nutritional Genomics





## Postgraduate Certificate Biostatistical Analysis for Nutritional Genomics

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

Website: [www.techtute.com/us/nutrition/postgraduate-certificate/biostatistical-analysis-nutritional-genomics](http://www.techtute.com/us/nutrition/postgraduate-certificate/biostatistical-analysis-nutritional-genomics)

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# 01

# Introduction

Biostatistical analyses play a fundamental role in Nutritional Genomics research. Take the step to get up to date in everything related to this field with the best professionals in the field. A training that will allow you to improve your daily practice with the help of the best teaching methodology.



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*Give your career a boost with this training in  
Biostatistical Analysis for Nutritional Genomics”*



The training program details everything a health professional needs to know about Biostatistical Analysis for Nutritional Genomics. 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 Nutritional Genomics.

Specifically, the Postgraduate Certificate analyzes the methodology used in human clinical studies and delves into the designs used mainly in nutritional epidemiology. In this way, the focus is placed on the critical points of statistical analysis of studies in large nutrition populations.

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

Being an online program, the student is not constrained by fixed schedules or the need to move to another physical location, but can access the contents at any time of the day, balancing their work or personal life with their academic life as they wish.

This **Biostatistical Analysis for Nutritional Genomics** 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 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 laboratory techniques for Nutritional Genomics.
- 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 Certificate is the best investment you can make in selecting a refresher program to update your knowledge in Biostatistical Analysis for Nutritional Genomics”*

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.

Its Multimedia Content, elaborated with the latest educational technology, will allow the professional a situated and contextual learning, that is to say, a simulated environment that will provide an immersive specialization programmed to train in real situations.

The design of this program focuses on problem-based learning, by means of which the professional must try to solve the different professional practice situations that arise throughout the academic program. For this purpose, the professional will be assisted by an innovative interactive video system developed by renowned and experienced experts in Biostatistical Analysis for Nutritional Genomics.

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

*This 100% online Postgraduate Certificate will allow you to combine your studies with your professional work while expanding your knowledge in this field.*



# 02 Objectives

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







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*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 of human population genetics.
- Acquire knowledge of Genomic 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 Genomic 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 Genomic and Precision Nutrition.
- Adapt personalized dietary and lifestyle habits according to genetic polymorphisms.
- Provide health professionals with all the updated knowledge in the field of Genomic 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

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- Acquire the necessary knowledge to correctly design experimental studies in the areas of Nutrigenomics and Nutrigenetics
- Delve into statistical models for clinical studies in humans



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

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.



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*Leading professionals in the field have come together to teach you the latest advances in Biostatistical Analysis for Nutritional Genomics”*



## 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

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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
- ♦ 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

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



Handwritten text on the notebook page:

บันทึกค่าใช้จ่าย-รายการประกอบต้นทุนการผลิต

รายการ	หน่วย	ราคา	จำนวน	รวม
ไข่ไก่ 1 กิโลกรัม	กิโลกรัม	8.50	1	8.50
ไข่แดง 1 กิโลกรัม	กิโลกรัม	12.00	1	12.00
ไข่ขาว 1 กิโลกรัม	กิโลกรัม	10.00	1	10.00
ไข่ไก่ 1 กิโลกรัม	กิโลกรัม	8.50	1	8.50
ไข่แดง 1 กิโลกรัม	กิโลกรัม	12.00	1	12.00
ไข่ขาว 1 กิโลกรัม	กิโลกรัม	10.00	1	10.00
ไข่ไก่ 1 กิโลกรัม	กิโลกรัม	8.50	1	8.50
ไข่แดง 1 กิโลกรัม	กิโลกรัม	12.00	1	12.00
ไข่ขาว 1 กิโลกรัม	กิโลกรัม	10.00	1	10.00

04

# Structure and Content

The structure of the contents has been designed by a team of professionals knowledgeable about the implications of specialization in daily practice, aware of the current relevance of training in Nutritional Genomics and Precision Nutrition, and 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 strive for excellence and for you to achieve it too”*

## Module 1. Biostatistics for Nutritional Genomics

- 1.1. Biostatistics
  - 1.1.1. Human Studies Methodology
  - 1.1.2. Introduction to Experimental Design
  - 1.1.3. Estudios clínicos
- 1.2. Statistical Aspects of a Protocol
  - 1.2.1. Introduction, Objectives, Description of Variables
  - 1.2.2. Quantitative Variables
  - 1.2.3. Qualitative Variables
- 1.3. Design of Clinical Studies in Humans, Methodological Guidelines
  - 1.3.1. Designs with 2 treatments 2x2
  - 1.3.2. Designs with 3 treatments 3x3
  - 1.3.3. Parallel, Cross-Over, Adaptive Design
  - 1.3.4. Sample Size Determination and Power Analysis
- 1.4. Evaluation of Treatment Effect
  - 1.4.1. For Parallel Design, for Repeated Measurements, for Cross-Over Design
  - 1.4.2. Randomization of the Order of Treatment Assignment
  - 1.4.3. Carry-Over Effect (Wash Out)
- 1.5. Descriptive Statistics, Hypothesis Testing, Risk Calculation
  - 1.5.1. Consort, Populations
  - 1.5.2. Study Populations
  - 1.5.3. Grupo control
  - 1.5.4. Subgroup Analysis Types of Studies
- 1.6. Statistical Errors
  - 1.6.1. Measurement Errors
  - 1.6.2. Random Error
  - 1.6.3. Systematic Error







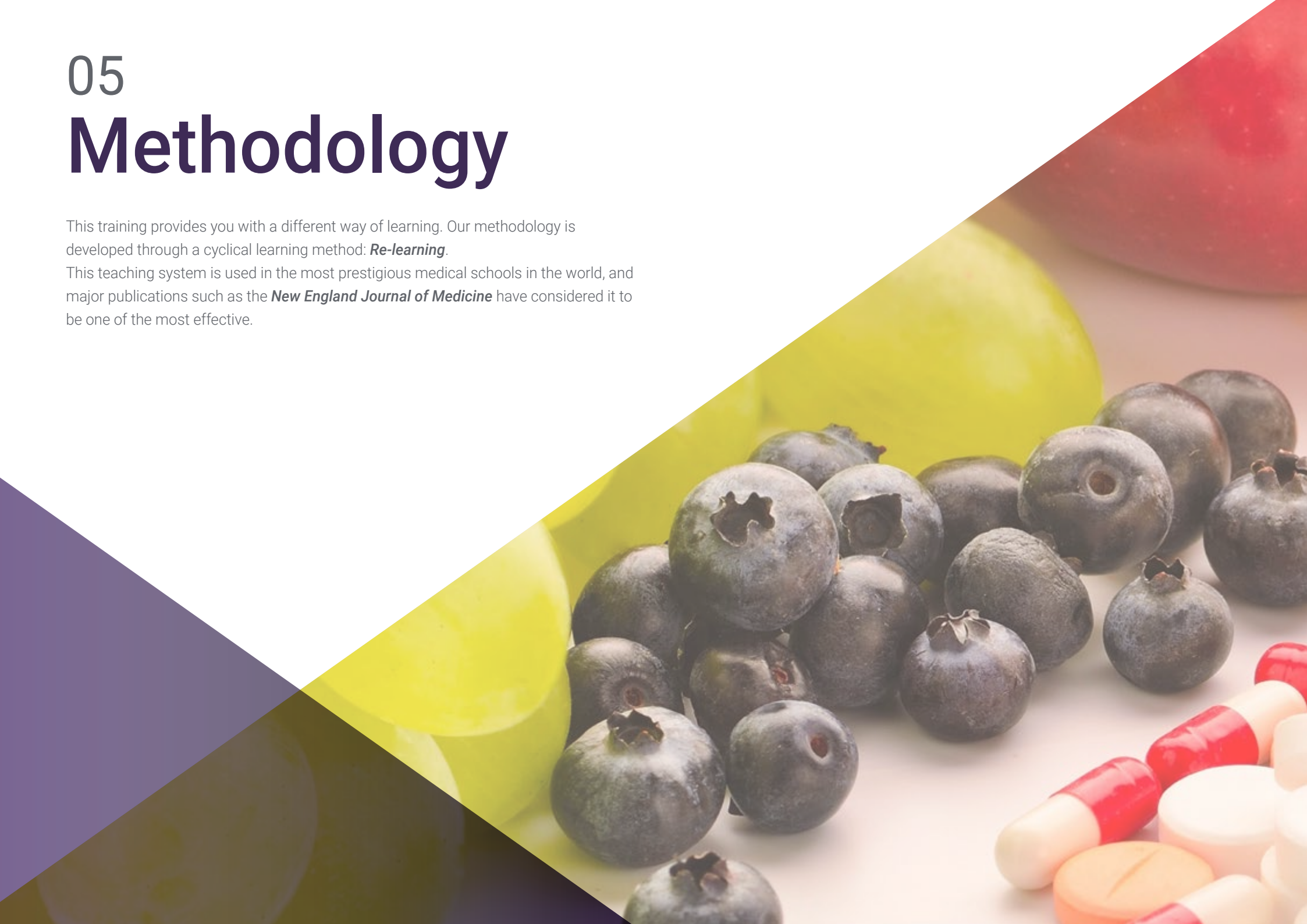
- 1.7. Statistical Bias
  - 1.7.1. Selection Bias
  - 1.7.2. Observation Bias
  - 1.7.3. Sesgo de asignación
- 1.8. Statistical Modeling
  - 1.8.1. Continuous Variable Models
  - 1.8.2. Categorical Variables Models
  - 1.8.3. Linear Mixed Models
  - 1.8.4. Missing data, Flow of Participants, Presentation of Results
  - 1.8.5. Adjustment for Baseline Values, Transformation of Response Variable: Differences Ratios, Logarithms, Carry-Over Evaluation
- 1.9. Statistical Modeling with Co-Variables
  - 1.9.1. ANCOVA
  - 1.9.2. Logistic Regression for Binary and Count Variables
  - 1.9.3. Multi-Variant Analysis
- 1.10. Statistical Programs
  - 1.10.1. The R
  - 1.10.2. SPSS

“ 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 is developed through a cyclical learning method: **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 educational program you will be presented with multiple simulated clinical cases based on real patients, in which you will have to investigate, establish hypotheses and, finally, resolve the situation. There is an abundance of 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.

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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. 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 program.



## 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.*



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.







**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 difficult future decisions.



**Quick Action Guides**

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



# 06 Certificate

In addition to the most rigorous and up-to-date training, the **Postgraduate Certificate in Biostatistical Analysis for Nutritional Genomics** guarantees access to a Postgraduate Certificate qualification issued by **TECH Global University**.



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*Successfully complete this training program and receive your university certificate without travel or laborious paperwork”*

This program will allow you to obtain your **Postgraduate Certificate in Biostatistical Analysis for Nutritional Genomics** 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.

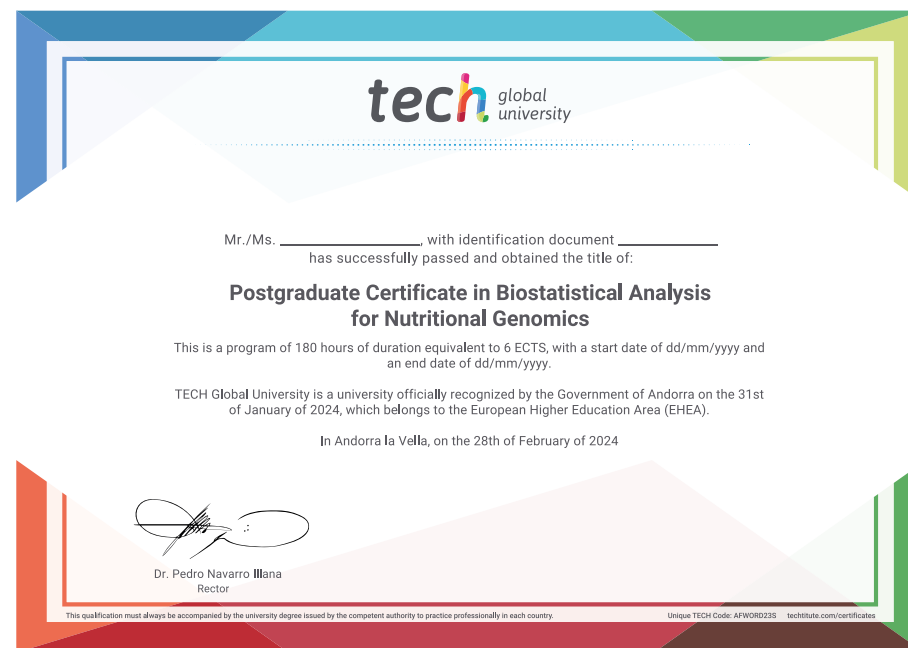
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Biostatistical Analysis for Nutritional Genomics**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



\*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH Global University 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

**tech** global  
university

personalized service innovation

knowledge present  
online training

development languages

virtual classroom

**Postgraduate Certificate**  
Biostatistical Analysis  
for Nutritional  
Genomics

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