

# Postgraduate Certificate Pathophysiology of Diabetes





## Postgraduate Certificate Pathophysiology of Diabetes

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

Website: [www.techtute.com/us/medicine/postgraduate-certificate/pathophysiology-diabetes](http://www.techtute.com/us/medicine/postgraduate-certificate/pathophysiology-diabetes)

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01

# Introduction

Increase knowledge of the complex mechanisms of glycemia regulation; and improve knowledge of the fundamentals of the physiopathogenesis of type 1 and type 2 diabetes, with this intensive program taught by professionals in the sector.

A unique opportunity to learn about existing treatment approaches and the prevention of diabetes.



Diabetes

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*This training is the best option you can find to specialize in diabetes”*

Diabetes is a complex, chronic process that requires specific knowledge and skills for a comprehensive approach that goes beyond glycemic control.

This course in Pathophysiology of Diabetes presents a global and comprehensive view of the disease, which is useful for the proper management of patients with diabetes at any level of care.

This is a unique and innovative training program, based on an up-to-date description of the epidemiological situation of diabetes. This program provides an in-depth study of the complex pathophysiology of the disease, the integral evaluation of acute and chronic complications, from a specialized point of view, and its comprehensive treatment.

Its contents cover the most innovative aspects of diabetes, such as the implementation of technology to control and treat this disease, and the most innovative areas in the research of new therapeutic approaches. All this, without forgetting the crucial role of diabetes education for the control of the disease.

This program is unique in that it includes a broad view of the disease across all patient ages and special situations. It also delves into the social aspects of diabetic patients' lives that require specific knowledge so that they can be addressed.

A quality training experience with which you will be able to stand out in a highly competitive sector and improve your skills and knowledge in the field.

This **Postgraduate Certificate in Pathophysiology of Diabetes** 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 Pathophysiology of Diabetes
- ◆ 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



*Improve the quality of care for your patients with this innovative diabetes training program"*

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*This course is the best investment you can make when selecting a refresher program for two reasons: in addition to updating your knowledge of Diabetes, you will obtain a qualification endorsed by TECH Technological University"*

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 purpose, the professional will be assisted by an innovative Interactive Video System, developed by renowned and experienced experts in Pathophysiology of Diabetes.

*Take the step and join our team. You will find the best educational material to enhance your studies.*

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



# 02 Objectives

The Postgraduate Certificate in Pathophysiology of Diabetes is aimed at facilitating the medical professional's performance with the latest advances and most innovative treatments in the sector.







Abnahmezeit

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This is your opportunity to learn about the latest treatments in Diabetes”



## General Objectives

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- ◆ Act as a leading professional specialized in Diabetes
- ◆ Understand the complex mechanisms of blood glucose regulation and the underlying pathophysiology of type 1 and type 2 diabetes



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





## Specific Objectives

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- ◆ Increase the basic knowledge of glucose homeostasis
- ◆ Analyze the etiopathogenic mechanisms of type 1 diabetes
- ◆ Know what insulinitis is and how it occurs in type 1 diabetes
- ◆ Delve into the etiopathogenic mechanisms of type 2 diabetes that will serve as treatment targets
- ◆ Know the essential role of adipose tissue and its excess (obesity) in the onset of type 2 diabetes
- ◆ Acquire the knowledge and skills in measuring insulin resistance
- ◆ Study the mediating role of inflammation between obesity and diabetes
- ◆ Know the abnormalities in the regulation of gastrointestinal hormones in type 2 diabetes and what the incretin effect is
- ◆ Learn about a new avenue of research in the field of diabetes etiopathogenesis: intestinal microbiota
- ◆ Delve into new mechanisms involved in type 2 diabetes, such as the role of the central nervous system as an organ regulating body weight
- ◆ Learn about the natural history of type 2 diabetes
- ◆ Know how to prevent or delay the onset of type 1 and type 2 diabetes by acting on the etiopathogenic mechanisms involved

03

# Course Management

The program's teaching staff includes leading experts in Diabetes who contribute their vast work experience to this training program. Additionally, other recognized specialists participate in its design and preparation, which means that the program is developed in an interdisciplinary manner.





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

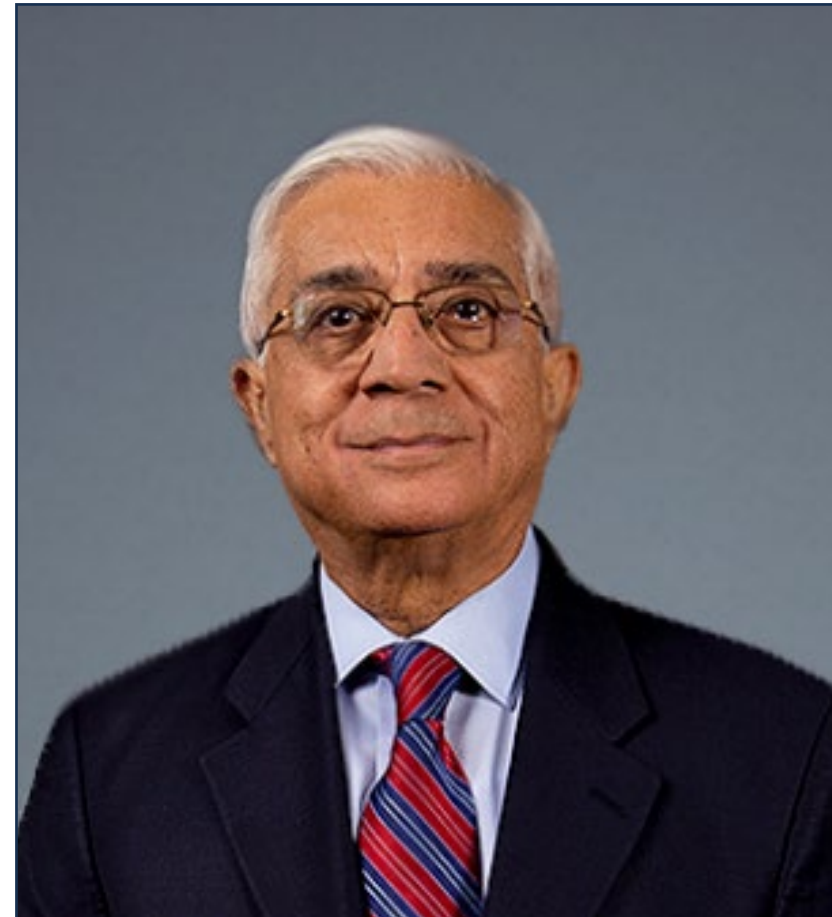
## International Guest Director

More than **four decades of experience** in **diabetes** research and clinical practice endorse the outstanding career of Dr. Om Ganda. He was part of one of the **most important trials in this field**, the 1993 DCCT, which demonstrated the importance of glucose control in the prevention of complications in type 1 diabetes. Likewise, his numerous contributions to this area have led to outstanding advances in optimal glucose control in patients with diabetes. In recent years he has directed his research focus to the study of the effects of Omega-3 fatty acids on cardiovascular health and the improvement of treatments for people with difficulties in maintaining a diet or exercising.

He has **more than 100 scientific publications** in the area of Diabetes, the most cited being those related to the development of a comprehensive care plan for Diabetes Mellitus (in collaboration with the American Society of Clinical Endocrinologists), the insulin resistance syndrome or the treatment of dyslipidemia and prevention of atherosclerosis.

His extensive experience has led him to direct, as medical director, the Lipid Clinic of the Joslin Diabetes Center, where he has also been **coordinator of the Endocrinology Consultation Service** and coordinator of the Clinical Diabetes and Metabolism conferences. He balances these responsibilities with his aforementioned work in the field of research, being an active part of the Joslin Research Laboratory.

He is also an Associate Professor of Medicine at Harvard Medical School, having served as a Clinical and Research Fellow at Harvard, Boston Veterans Administration Hospital and Peter Bent Brigham Hospital.



## Dr. Ganda, Om

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- Director of the Lipid Clinic - Joslin Diabetes Center, Boston
- Director of the Lipid Clinic at the Joslin Diabetes Center
- Coordinator of the Endocrine Consultation Service at Joslin Diabetes Center
- Researcher at the Joslin Research Laboratory
- Associate Professor of Medicine at Harvard Medical School
- M.D. from All India Institute of Medical Sciences
- Graduate in Medicine from S.M.S. Medical College of Rajasthan University
- Clinical Fellow in Endocrinology and Metabolism at Boston Veterans Administration Hospital and Tufts University School of Medicine
- Research Fellow at Harvard Medical School
- Research Fellow at Peter Bent Brigham Hospital
- Board Certified in the subspecialty of Endocrinology and Metabolism by the American Society of Internal Medicine



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

## Management



### Dr. Olga González Albarrán

- ◆ Degree in Medicine from the Autonomous University of Madrid
- ◆ PhD in Medicine from the University of Alcalá de Henares. Grade: Outstanding Cum Laude. Outstanding Award in her PhD
- ◆ Specialist in Endocrinology and Nutrition
- ◆ Head of Endocrinology and Diabetes at the Gregorio Marañón University Hospital in Madrid
- ◆ Associate Professor at the Complutense University of Madrid
- ◆ Master's Degree in Clinical Nutrition from the Autonomous University of Madrid
- ◆ Master's Degree in Cardiovascular Risk from McMaster University. Ontario. Canada
- ◆ Professional Master's Degree in Endocrinology Clinical Unit Management from the Meléndez Pelayo University

## Professors

### Dr. Chacín Coz, Juan Simón

- ◆ Degree in Medicine from the Central University of Venezuela (2001 - 2007)
- ◆ Specialist in Endocrinology and Nutrition
- ◆ Assistant Physician, Endocrinology Department, RJC University Hospital, Madrid

### Dr. Atencia Goñi, José

- ◆ Degree in Medicine from the University of Navarra
- ◆ Specialist in Endocrinology and Nutrition
- ◆ Assistant Physician of the Endocrinology Department of the Gregorio Marañón Hospital in Madrid

### Dr. López Guerra, Aurelio

- ◆ Degree in Medicine from the Autonomous University of Gran Canaria
- ◆ Specialist in Endocrinology and Nutrition
- ◆ Assistant Physician of the Endocrinology Department of the Gregorio Marañón Hospital in Madrid

### Dr. Sanz-Pastor, Alba Galdón

- ◆ Degree in Medicine from the Complutense University Madrid
- ◆ Specialist in Endocrinology and Nutrition
- ◆ Assistant Physician of the Endocrinology Department of the Gregorio Marañón Hospital in Madrid





**Dr. Weber, Bettina**

- ◆ Degree in Medicine from the Complutense University Madrid
- ◆ Specialist in Endocrinology and Nutrition
- ◆ Assistant Physician of the Endocrinology Department of the Gregorio Marañón Hospital in Madrid

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*Make the most of this opportunity to learn about the latest advances in this subject to apply it to your daily practice"*

# 04

## Structure and Content

The structure of the contents has been designed by leading professionals in Diabetes, with extensive experience and recognized prestige in the profession, backed by the volume of cases reviewed, studied and diagnosed, and with extensive knowledge of new technologies applied to diabetes.



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*This course contains the most complete and up-to-date scientific program on the market"*

## Module 1. Pathophysiology of Diabetes

- 1.1. Normal Anatomy and Physiology of Pancreatic Function. Glucose Homeostasis
- 1.2. Pathogenesis of Type 1 Diabetes
- 1.3. Pathogenesis of Type 2 Diabetes. Overview
- 1.4. Role of Adipose Tissue in Type 2 Diabetes. Concept of Insulin Resistance
- 1.5. Implications of Intestinal Hormones in the Pathophysiology of Diabetes: Incretin System. Intestinal Microbiota
- 1.6. Implications of the Kidney in the Pathophysiology of Diabetes
- 1.7. The Central Nervous System and the Pathophysiology of Diabetes
- 1.8. Diabetes and Genetics
- 1.9. Diabetes and Delay or Prevention of DM1
- 1.10. Diabetes and Delay or Prevention of DM2





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*This training will allow you to  
advance in your career comfortably”*

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. 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 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 Certificate in Pathophysiology of Diabetes guarantees you, in addition to the most rigorous and updated training, access to a Postgraduate Certificate issued by TECH Technological University.



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

This **Postgraduate Certificate in Pathophysiology of Diabetes** contains the most complete and updated scientific program on the market.

After the student has passed the evaluations, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** by tracked delivery\*.

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

Title: **Postgraduate Certificate in Pathophysiology of Diabetes.**

Official N° of hours: **150 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.



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



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