



# Postgraduate Diploma

## HBOT in Oncology, Toxicology and Dysbaric Pathology



## Postgraduate Diploma HBOT in Oncology, Toxicology and Dysbaric Pathology

Course Modality: **Online**

Duration: **6 months**

Certificate: **TECH Technological University**

Teaching Hours: **450 h.**

Website: [www.techtute.com/pk/medicine/postgraduate-diploma/postgraduate-diploma-hbot-oncology-toxicology-dysbaric-pathology](http://www.techtute.com/pk/medicine/postgraduate-diploma/postgraduate-diploma-hbot-oncology-toxicology-dysbaric-pathology)

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# 01

# Introduction

Currently, there is a resurgence in the use of hyperbaric oxygenation treatment (HBOT) as an adjuvant tool in different medical specialties. This therapeutic system can achieve benefits in patients with oncological, toxicological and dysbaric pathologies, which is why it is important for healthcare professionals to specialize in this field.





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*Hyperbaric oxygenation is making a comeback within the different medical specialties”*

Although Hyperbaric Medicine is more than 200 years old, its multiple applications and indications are not known by many health professionals. Even so, the creation of new generation hyperbaric chambers, more accessible to use, cost and installation in public and private health institutions, has led different professionals to incorporate this tool in their daily practice.

The Postgraduate Diploma in HBOT in Oncology, Toxicology and Dysbaric Pathology will allow the health professional to delve into the use of these treatments. The program develops a solid and up-to-date education in hyperbaric oxygen therapy, which will allow the health professional to develop the necessary competencies and skills to identify and adequately solve different cases of pathologies or therapeutic practices for which hyperbaric oxygenation can be effective and efficient.

In the field of clinical oncology, HBOT has ample evidence in the recovery of radiolesions of different types. An exhaustive analysis of the published evidence in the different situations will be made, and the experience of the lecturers in the use of HBOT in different cases of radiotoxicity will be presented through clinical cases. The incorporation of HBOT in the adjuvant of palliative treatment in the oncology patient is also a strong point of this training, since this treatment could considerably improve the patient's quality of life.

On the other hand, the published evidence of HBOT in the treatment of poisoning with different gases, mainly carbon monoxide (COI), is presented, focusing on the inflammatory basis of COI and the relevance of rapid action in acute poisoning.

The incorporation of HBOT in different neurological sequelae is also being considered, due to its success with lower pressures in the symptomatic improvement of various neurological problems and in the recovery of late neurological syndrome, as well as its application in wounds and sequelae due to poisoning by corner spider and snake bites.

This **Postgraduate Diploma in HBOT in Dysbaric Oncology, Toxicology and Pathology** 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 Hyperbaric Medicine
- ♦ 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
- ♦ Latest developments in Hyperbaric Medicine
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Special emphasis on innovative methodologies in Hyperbaric Medicine.
- ♦ 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



*HBOT achieves improvements in patients with oncological, toxicological and dysbaric pathologies, so it is essential to expand knowledge in this area"*

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*This Postgraduate Diploma is the best investment you can make when selecting a refresher program, for two reasons: in addition to updating your knowledge of HBOT in Oncology, Toxicology and Dysbaric Pathology, you will obtain a qualification endorsed by TECH Technological University"*

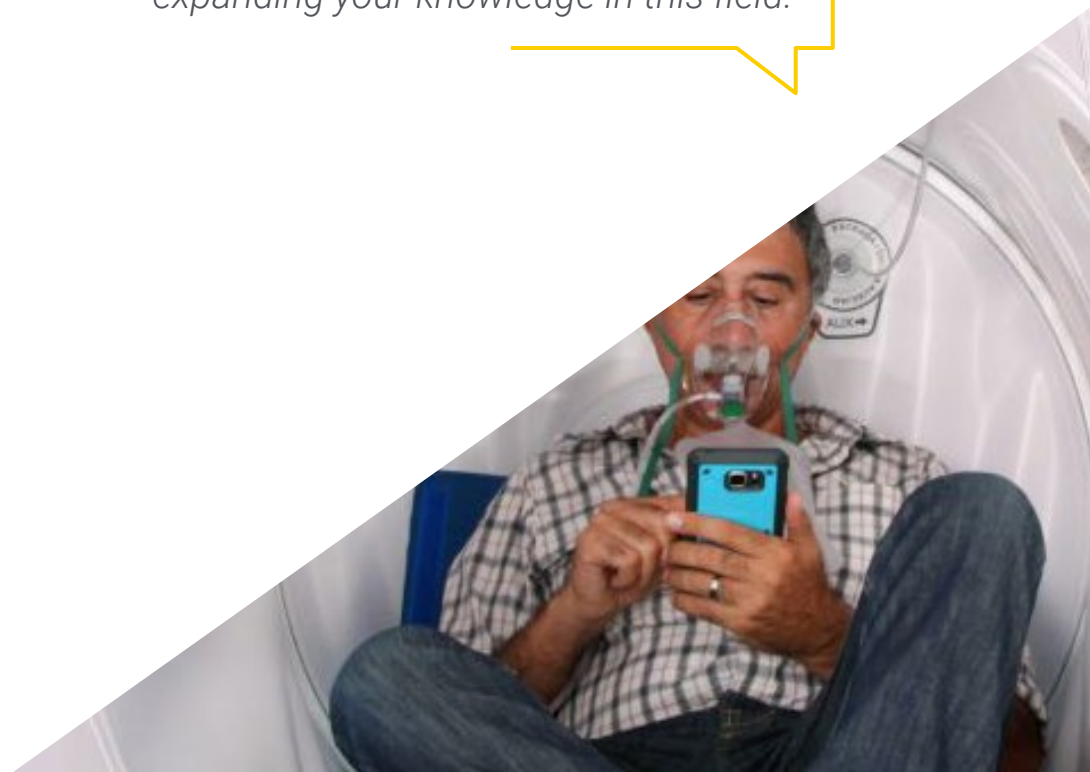
It includes in its teaching staff professionals belonging to the field of Hyperbaric Medicine, who bring to this program their work experience, in addition to recognized specialists from reference societies and prestigious universities.

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 education programmed to learn in real situations.

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

*This program comes with the best educational material, providing you with a contextual approach that will facilitate your learning.*

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



# 02 Objectives

The program in HBOT in Oncology, Toxicology and Dysbaric Pathology is aimed at educating in the fundamentals and applications of hyperbaric oxygenation treatment and exposing the scientific evidence in the different specialties in the field of health.







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*Take this program and specialize in the application of hyperbaric oxygen therapy in your treatments”*



## General Objectives

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- Promote the usefulness of hyperbaric oxygenation treatment in different medical specialties
- Enable health professionals on the foundations, mechanisms of action, indications, contraindications and applications of hyperbaric oxygen
- Delve into the plethora of evidence published and the recommendations and indications of the different scientific societies related to Hyperbaric Medicine
- Recognize the potential applications of hyperbaric oxygen in different clinical cases and the benefits that can be achieved with the treatment, as well as performing the indication and detection of the contraindications



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





## Specific Objectives

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### Module 1. HBOT in Oncology

- Describe the applications and experience in cases of clinical oncology
- Present the scientific evidence on the use of HBOT as a coadjuvant of oncological treatment
- Describe the effects of HBOT on the different radiotoxicities
- Get qualified in the oncological safety of HBOT (angiogenesis and tumor growth)
- Present the experimental evidence of the safety and efficiency of HBOT in oncologic pathology

### Module 2. HBOT in Toxicology

- Present the evidence and the application of HBOT in intoxication from gases
- Discuss the indication of HBOT in pressures lower than those described in the literature, considering the importance of speed in establishing HBOT in the case of carbon monoxide poisoning
- Present evidence on intoxication and injuries from venomous animal bites (Loxoscelism, snake bites)

### Module 3. HBOT in Dysbaric Pathology

- Present the scientific evidence on decompression sickness in divers
- Introduce the concept of dysbaric pathologies and Underwater Medicine
- Discuss the need for the volumetric effect of HBOT and the use of high-pressure chambers
- Describe the evidence of the effect of HBOT in iatrogenic embolism
- Introduce the concepts of work safety with high pressure chambers
- Present the requirements and regulations for the installation of the different hyperbaric chambers

03

# Course Management

The program's teaching staff includes leading experts in Hyperbaric Medicine who contribute their vast work experience to this educational 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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*We have the best medical and teaching staff. Our specialists will help you to be the best in this field of medicine”*

## Management



### Dr. Cannellotto, Mariana

- ♦ Specialist in Hyperbaric Medicine
- ♦ Medical Director from BioBarica - Hyperbaric Systems
- ♦ Clinical Physician at C.E.S.SRL
- ♦ President of Argentina Association of Hyperbaric Medicine and Research
- ♦ President of Ihmera



### Ms. Jordá Vargas, Liliana

- ♦ Clinical Biochemistry and Microbiology Expert
- ♦ Scientific Director from BioBarica - Hyperbaric Systems
- ♦ Microbiologist at CRAI Norte
- ♦ Bacteriologist at Vélez Sarsfield Hospital
- ♦ Scientific Director of AAMHEI and AEMHEI
- ♦ Degree in Biochemistry from the National University of Córdoba
- ♦ Biochemistry and Clinical Microbiology, University Institute CEMIC



## Professors

### Dr. Verdini, Fabrizio

- ◆ Clinical Doctor at BioBarica Hyperbaric Systems
- ◆ Director of Health Programs at Camp La Llanada
- ◆ General Practitioner at Doctor Armando Mata Sanchez Hospital
- ◆ Doctor of Medicine from the University of Carabobo
- ◆ Master's Degree in Hyperbaric Medicine from the CEU Cardenal Herrera University
- ◆ Master's Degree of Business Administration healthcare, Polytechnic University of Puerto Rico

### Dr. Ramallo, Rubén Leonardo

- ◆ Attending Physician Specialist in Medical Clinic at the General Hospital of Acute Diseases
- ◆ Physician in Hyperbaric Medicine. Biobarica - Hyperbaric Systems
- ◆ Medical Surgeon School of Medical Sciences, National University of Córdoba, Argentina
- ◆ Specialist in Internal Medicine. Residency in Internal Medicine, Córdoba Hospital
- ◆ Master's Degree in Psychoimmunoneuroendocrinology. Favaloro University
- ◆ Director of the AAMHEI Medical Clinic Commission

### Dr. Emilia Fraga, Pilar María

- ◆ Director of the Scientific and Clinical Research Division at Biobarica
- ◆ Food evaluator at the National Food Institute
- ◆ Professor of Anatomy and Physiology at ADEF
- ◆ Degree in Biochemistry from Arturo Jauretche National University

# 04

# Structure and Content

The structure of the content has been designed by the best professionals in the Hyperbaric Medicine sector, 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 teaching.







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*This Postgraduate Diploma in HBOT in Oncology, Toxicology and Dysbaric Pathology contains the most complete and up-to-date scientific program on the market"*

### Module 1. HBOT in Oncology

- 1.1. Hypoxia and Tumors
- 1.2. Tumoral Angiogenesis
- 1.3. Oncologic Safety of HBOT
- 1.4. HBOT and Radiosensitivity
- 1.5. HBOT and Chemotherapy
- 1.6. Osteoradionecrosis and Hyperbaric Oxygen
- 1.7. Radical Cystitis and Proctitis
- 1.8. Radio induced Skin Syndrome and HBOT
- 1.9. HBOT in Other Radio lesions
- 1.10. HBOT in Oncology Pain and Quality of Life

### Module 2. HBOT in Toxicology

- 2.1. Bibliographical Evidence in Relation to Dosage/ Speed of Using Hyperbaric Oxygen in Carbon Monoxide Poisoning
- 2.2. Inflammation in Carbon Monoxide Poisoning
- 2.3. Delayed Neurological Syndrome
- 2.4. Smoke Inhalation and Hyperbaric Oxygen
- 2.5. HBOT in Hydrogen Cyanide Poisoning
- 2.6. HBOT in Other Gases Poisoning
- 2.7. Hyperbaric Oxygen in Pollution and Tobacco
- 2.8. Hyperbaric Oxygen in Addiction Recovery
- 2.9. HBOT in Corner Spider Bite Injuries and Poisoning
- 2.10. HBOT in Snake Bite Injuries and Poisoning





### Module 3. HBOT in Dysbaric Pathology

- 3.1. Diving and Diving Medicine
  - 3.1.1. Physiological Reactions to Diving Conditions
  - 3.1.2. Deep Neurological Syndrome
- 3.2. Changes in Environmental Pressure
  - 3.2.1. Decompression Sickness
  - 3.2.2. Air Embolism
  - 3.2.3. Pathophysiology
  - 3.2.4. Symptoms and Signs
- 3.3. Treatment of Decompression Sickness
  - 3.3.1. Prevention of Dysbaric Accidents
  - 3.3.2. Decompression Table
- 3.4. Dysbaric Pathology and Evidence-Based Medicine
- 3.5. Dysbaric Osteonecrosis
- 3.6. HBOT in Postoperative Gas Embolism Iatrogenic Embolism
- 3.7. Hyperbaric Medicine in the Workplace
  - 3.7.1. Working in Compressed Air
  - 3.7.2. Medical Documents and Immersion Records
  - 3.7.3. Health Risks
- 3.8. Occupational Accident among Operators of High-Pressure Chambers: Medical Support and Treatment for Compressed Air Jobs
- 3.9. Fire: Assessment and Prevention with Hyperbaric Chambers with Risk of Combustion
- 3.10. Regulations and Requirements for the Installation of Different Types of Hyperbaric Chambers



*This program 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

This Postgraduate Diploma in HBOT in Oncology, Toxicology and Dysbaric Pathology 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 program and receive your university qualification without having to travel or fill out laborious paperwork”*

This **Postgraduate Diploma in HBOT in Oncology, Toxicology and Dysbaric Pathology** 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 certificate 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 HBOT in Oncology, Toxicology and Dysbaric Pathology**  
Official N° of Hours: **450 h.**



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

future

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university

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and Dysbaric Pathology

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