

Postgraduate Certificate Molecular Neuroimaging in Dementias



Postgraduate Certificate Molecular Neuroimaging in Dementias

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

Website: www.techtute.com/us/medicine/postgraduate-certificate/molecular-neuroimaging-dementias

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01

Introduction

Molecular Neuroimaging techniques have proven to be the most accurate in the diagnosis of dementias in determining the objective involvement of brain areas in situations of cognitive impairment, both subjective and objective. Having in-depth knowledge of how they work and their indications for application, as well as how to interpret the results, is an invaluable resource for the medical professional in this area of work.





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A Postgraduate Certificate designed to allow you to combine this specialization with your daily life as smoothly as possible"

Patients with forms of dementia gradually lose more and more of their abilities. For this reason, it's necessary to provide them with more personalized and multidisciplinary care, with professionals who are able to adapt to any situation and who have the most up to date knowledge in this field. By integrating the vision of specialists in neurology, geriatrics, psychiatry, neuro-radiology, nuclear medicine and neuropathology we are able to offer specialization, which is both complete and enriching.

Basic concepts will be taught in an advancing educational structure by leading professionals, in both functional and structural imaging biomarkers as well as in neuropathology, including genetic counseling and neuropsychology. We never miss the opportunity to specialize students to be able to deal with the diagnostic process and the management of people who suffer from rapidly progressive dementia in its different forms. In addition, the student will be presented with real situations within which they need to make clinical and diagnostic decisions which are all the more complex due to their differential diagnosis and their therapeutic approach.

The theoretical contents will be reinforced by clinical-practical cases, educational videos, online tutorials, as well as support material, always based on the latest information in the field.

This Postgraduate Certificate in Molecular Neuroimaging in Dementias is an educational project that promises to specialize high-quality professionals. A program devised by professionals specialized in each specific field who encounter new challenges every day.

After completing this Postgraduate Certificate, the student will have sufficient knowledge to approach the management of people with dementia. From the first moment, they will know everything that comes with this type of disease, from its diagnosis, treatment and possible adverse effects to the importance of communication with the family members. So don't hesitate any longer and become a true professional through the latest 100% online. At the same time, this program includes a comprehensive Masterclass, led by an International Guest Director with extensive experience in the management of different types of Dementias and patients.

This **Postgraduate Certificate in Molecular Neuroimaging in Dementias** contains the most complete and up-to-date educational program on the market. The most important features of the program include:

- Practical case studies presented by experts in dementia.
- 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.
- The latest information on treatment for dementia patients.
- Practical exercises where self-assessment can be used to improve learning.
- A special emphasis on innovative methodologies in the field of Dementia.
- 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



This program will provide an exclusive Masterclass, given by a renowned International Guest Director, with the most important innovations for the treatment of Dementias"

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With this Postgraduate Certificate, you will be able to update your knowledge and obtain a qualification endorsed by TECH Global University”

The audiovisual content of this Postgraduate Certificate will allow you to advance quickly, incorporating the content into your clinical practice immediately.

This 100% online Postgraduate Certificate will allow you to benefit from the fastest and easiest way to study on the educational market.

The teaching staff includes professionals from the engineering sector, who bring their experience to this specialization program, as well as renowned specialists from leading 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 created by renowned and experienced experts in dementia with extensive experience.



02

Objectives

The Postgraduate Certificate in Molecular Neuroimaging in Dementias is designed to facilitate the performance of the healthcare professional with the latest advances and most innovative procedures in the sector.



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A qualitative leap of the highest level in your specialization that you can study wherever and whenever you want"



General Objectives

- ♦ Gain in-depth knowledge of dementia, how to diagnose it and how to treat it
- ♦ Identify the risk factors and the possibility of prevention
- ♦ Enter the very versatile and extremely difficult field of dementia diseases
- ♦ Learn how to detect the early symptoms that could be a sign of this disease
- ♦ Explore clinical, motor, cognitive, dysautonomia and neuropsychiatric symptoms
- ♦ Know the different clinical presentations of the disease, some of which are first seen in a psychiatric consultation or in the form of neuromuscular or movement disorders before being associated with a type of dementia
- ♦ Learn the particularities for examining the signs and symptoms, both cognitive and behavioral, as well as understanding the therapeutic approach
- ♦ Train the students in the knowledge of the different assessment tools and cognitive rehabilitation used in various dementias
- ♦ Understanding genetically conditioned dementias and their inheritance patterns
- ♦ Know the different neuroimaging equipment and radiotracers available to evaluate the specific processes involved in neurodegenerative conditions with dementia
- ♦ Provide knowledge on the different imaging techniques used in the evaluation of patients with cognitive impairment, both structural studies with CT or MRI, and functional studies that can be performed with MRI or Perfusion and Diffusion studies, as well as functional MRI studies
- ♦ Know the indications and usefulness of each technique in the different causes of dementia
- ♦ Delve into the study of Alzheimer's disease, with emphasis on early diagnosis, as well as on imaging markers that allow assessment of progression and possible response to treatment
- ♦ Interpret the most important lesions which characterize the different neurodegenerative pathologies
- ♦ Know the main categories of rapidly progressive dementia syndromes, the most prevalent diseases in each one of these categories and the diagnostic algorithm to follow
- ♦ Learn to consider important aspects when assessing older people with cognitive deterioration or dementia, taking into account both the impact of neurodegeneration as well as the clinical evolution of people suffering from this condition



Specific Objectives

- ◆ Understand the basic diagnostic-therapeutic approach to the systemic processes which affect older people with dementia, geriatric syndromes and the approach to other comorbid pathologies in these patients
- ◆ Obtain adequate training to be able to deal with the complex interaction of other common
- ◆ Interpret PET and SPECT images in dementia and Alzheimer's disease and the suitability of their use
- ◆ Introduce the results in diagnosis clinical situations in elderly patients with neurodegeneration

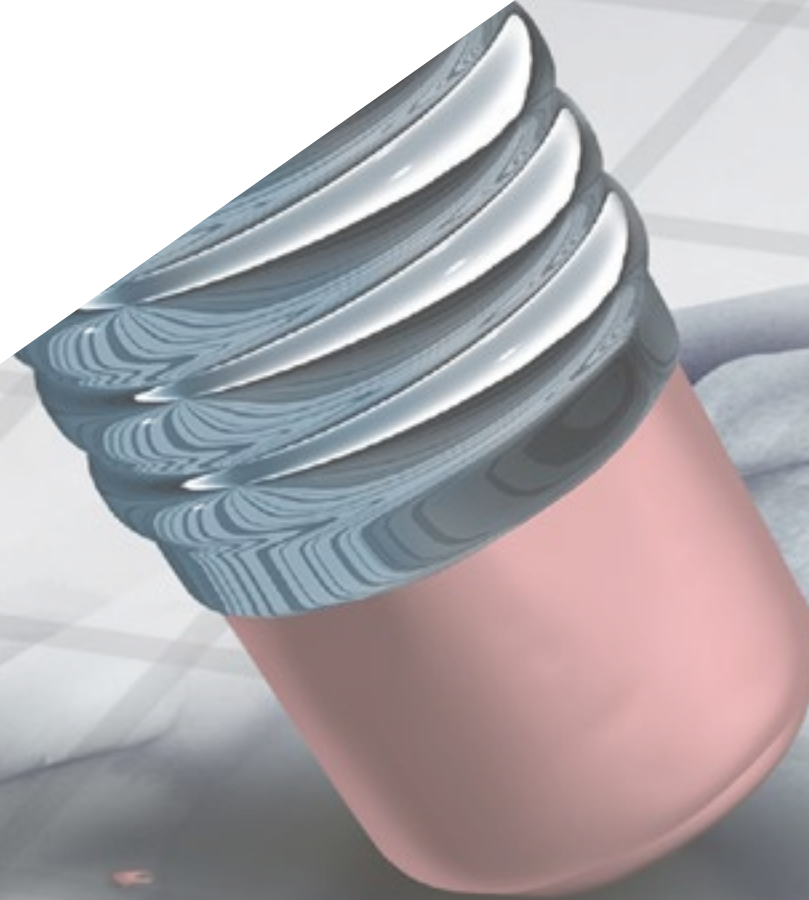
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An opportunity created for professionals who are looking for an intensive and effective course with which to take a significant step in their profession”

03

Course Management

The program's teaching staff includes leading experts in Dementia who contribute their expertise to this specialization. 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 treating people with dementia”

International Guest Director

Internationally recognized for his contributions to Neurology, Dr. Richard Levy has extensively investigated the histology of Dementias and other brain pathologies. In particular, he has led multiple clinical trials at the Institute of Memory and Alzheimer's Disease (IM2A), associated with the Salpêtrière Hospital, which have provided innovative results to understand many of the conditions related to the human nervous system.

His areas of expertise, in addition to Neurodegenerative Diseases, include Electrophysiology and executive functions. In the latter field, he has several analyses on frontal lobe capabilities in decision making and action planning. From the beginning of his career, in the laboratory of the renowned Professor Yves Agid, he conducted pioneering research on the anatomy of the Basal Ganglia. In this way, he has stood out for his innovative skills in the study of cognition and behavior, and was chosen for a postdoctoral stay in this field at Yale University.

Also, thanks to his cutting-edge knowledge, he has achieved prominent roles as the Director of the FRONTlab Research Team at the Brain and Spinal Cord Institute. From that scientific group he has also examined behavioral disorders targeting Apathy and Disinhibition. In parallel, he has numerous articles, published in high impact journals, widely cited by other experts.

In addition to his research work, Dr. Levy also has a prominent career in the clinical setting. His work as Director of the Department of Neurology at the Saint-Antoine University Hospital, or as head of the specialized unit at the Salpêtrière Hospital, is evidence of this. In both institutions he collaborates with the care of patients with medical problems where the boundaries between Neurosciences and Psychiatry are blurred.



Dr. Levy, Richard

- Director of FRONTlab at the Brain Institute of the Salpêtrière Hospital, Paris, France
- Head of the Institute of Memory and Alzheimer's Disease (IM2A), associated with the Salpêtrière Hospital
- Director of the Department of Neurology, Saint-Antoine University Hospital, Paris, France
- Academician at the Sorbonne University
- Doctorate in Medical Sciences from the Sorbonne University
- Research stay at Yale University, United States

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Thanks to TECH, you will be able to learn with the best professionals in the world”

Management



Dr. Manzano Palomo, María del Sagrario

- ◆ Specialist Physician of the Neurology Service in the Cognitive Pathology Unit of the Infanta Leonor University Hospital
- ◆ Coordinator of the Behavioral Neurology and Dementias Group of the Spanish Society of Neurology.
- ◆ Reviewer of the Journal of Neurology Spanish Society of Neurology
- ◆ Associate Professor of Medicine at the Complutense University of Madrid
- ◆ Doctorate in Medicine from the University of Alcalá
- ◆ Degree in Medicine from the Complutense University of Madrid
- ◆ PhD credits in Neurosciences from the Complutense University of Madrid
- ◆ Diploma of Advanced Studies from the Complutense University of Madrid
- ◆ MIR Program, Specialty of Neurology at the Hospital Clínico San Carlos
- ◆ Member of: Neurogeriatrics Group of the Spanish Society of Neurology and Rotating Committee of the Journal Alzheimer's, Reality and Dementia Research



Professors

Dr. Arbizu Lostao, Javier

- ◆ Nuclear Medicine Specialist and Expert in Dementias
- ◆ Director of the Nuclear Medicine Service of the University Clinic of Navarra
- ◆ Head of the PET and SPECT Imaging Area in Neurology, Neuro-oncology and Endocrinology of the Nuclear Medicine Service of the University Clinic of Navarra
- ◆ Responsible for the Area of Theragnosis of the Nuclear Medicine Service of the University Clinic of Navarra
- ◆ Researcher in Nuclear Medicine
- ◆ Author of hundreds of scientific articles published in specialized journals
- ◆ PhD in Medicine and Surgery from the Universidad de Navarra

04

Structure and Content

The structure of the content has been designed by the best professionals in the 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 Certificate in Molecular Neuroimaging in Dementias contains the most complete and up-to-date scientific program on the market"

Module 1. Molecular Neuroimaging in Dementias

- 1.1. Introduction
- 1.2. Methodological Aspects
 - 1.2.1. Equipment: SPECT and PET
 - 1.2.2. Molecular Processes and Radiopharmaceuticals
 - 1.2.3.1. Neuronal Activity
 - 1.2.3.2. Dopaminergic Activity
 - 1.2.3.3. Amyloid Deposition
 - 1.2.3.4. Tau Deposition
 - 1.2.3.5. Neuroinflammation
 - 1.2.3. Image Analysis
 - 1.2.3.1. Visual Analysis
 - 1.2.3.2. Comparison with a Database of Normality in Surface Projections (SSP)
 - 1.2.3.3. Voxel-based Image Analysis
- 1.3. Neuroimaging Alzheimer's Disease
 - 1.3.1. Mild Cognitive Impairment and Dementia
 - 1.3.2. Atypical Forms
- 1.4. Neuroimaging of Frontotemporal Dementias
 - 1.4.1. Behavioral Variant FTD
 - 1.4.2. Primary Aphasias
 - 1.4.3. Others
- 1.5. Neuroimaging of Dementias with Parkinsonism
 - 1.5.1. Dementia with Lewy bodies
 - 1.5.2. Progressive Supranuclear Palsy
 - 1.5.3. Corticobasal Degeneration
- 1.6. Diagnostic Algorithms
 - 1.6.1. Diagnostic Algorithm in Alzheimer's Disease
 - 1.6.2. Diagnostic Algorithm in FTD and Dementia with Parkinsonism
- 1.7. Practical Cases





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

05

Methodology

This 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 assess 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 Harvard 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 prepared with unprecedented success in all clinical specialties regardless of surgical load. Our educational 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 adapted in 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 assess and re-assess 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 Molecular Neuroimaging in Dementias in addition to the most accurate and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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*Successfully complete this program
and receive your university qualification
without having to travel or fill out
laborious paperwork”*

This program will allow you to obtain a **Postgraduate Certificate in Molecular Neuroimaging in Dementias** 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 Molecular Neuroimaging in Dementias**

ECTS: **6**

Official Number of Hours: **150 hours**.



*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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