



Curriculum

Introduction Course in Clinical Psychoneuroimmunology



Module 1

Nutrigenomics and Nutrigenetics

Content

This module begins with a brief introduction to clinical psychoneuroimmunology in general, unravelling the mysteries of how the mind, body and immune system are intertwined. Two fundamental issues in human health are explored: The impact of nutrition and malnutrition and how these challenges have created a genome and epigenome during the evolutionary process of Homo sapiens.

We will then delve into the exciting world of the impact of diet, exercise and rhythms on our overall health. We will discover how these elements shape our identity, affect our wellbeing and influence our behaviour. We will also explore the secrets of nutrigenomics and nutrigenetics, revealing how our food choices, exercise habits and lifestyle can directly influence the expression of our genes.

Culture has changed our context and modern life has a noticeable impact on our health by altering the communication between the biological systems that make up our bodies. Physiology and health depend on this communication between systems, so we begin this journey by exploring the different forms of communication through neuromessengers, cytokines and hormones.

Learning objectives

Student will:

- Learn clinical PNI as a science.
- Learn about the connection between different organs through hormones, neurotransmitters and cytokines.
- Understand PNI and begin to apply this knowledge to themselves and their area of expertise.

Module 2

Nutrition as medicine

Content

Nutrition is one of the most important parts of what medicine should be. It has been used as medicine for thousands of years to increase your stamina, improve your health and raise your IQ. Nutrition is a universal intervention, just like sleep or exercise, and is essential for restoring health. This module discusses the effects of different types of food and nutrients, as well as the effects of the frequency, timing and rhythm of meals. It also discusses optimal times to eat, with a particular focus on intermittent fasting. It uncovers the causes of diseases related to poor diet, understands how the intestinal barrier works, its permeability, the importance of keeping it intact to prevent endotoxaemia, and looks at how the environment influences the expression of our genes.

Learning objectives

Student will:

- Understand which eating rhythms are most conducive to health and how to use different strategies, such as intermittent fasting, to induce a ketogenic state.
- Learn what parameters to measure to assess the metabolic impact of their interventions.
- Learn about the “state of the art” in micro- and macronutrients as well as nutrients and anti-nutrients and their impact on human health.

Module 3

Enzymes, hormones

Content

Metabolism is the basic system of life, so this module focuses on deepening our understanding of enzyme function and how we can manipulate it. We will explore catalysts and the factors that limit their efficiency, considering both the influence of chemistry, such as pH and cofactors, as well as physics, temperature, light and magnetic fields, on their functionality.

Energy distribution drives evolution and this process is facilitated by enzymes. In this module we will explore the vital importance of enzyme activity and how we can positively enhance it through exercise, diet and behavioural changes. B vitamins are essential for the development of life and act as cofactors for 31% of our enzymes. They are essential for energy production, metabolism and therefore the maintenance of life itself.

Learning objectives

Student will:

- Understand how enzymes and hormones work.
- Understand how exercise, diet and behavioural changes can influence enzyme function.
- Know that: Everything is connected through neural and humoral pathways.

Module 4

Neurotransmitters and systemic medicine

Content

This module focuses on the study of the human connectome, deepening our understanding of neuro-messengers and cytokines. Neuroimmunological communication, both at the neuronal and humoral level, is essential for maintaining homeostatic flexibility. We will also explore other messengers produced by specific tissues, such as adipokines, myokines and hepatokines. In humans, everything is interconnected and this interconnectedness is the basis of our amazing ability to adapt to contextual changes and interact with the environment.

What role do neurotransmitters play in communication between the brain, immune system, society and genes? How does stress affect the immune system? Throughout this module we will explore how we can influence neurotransmitter function through exercise, diet, exposure to cold and behavioural changes depending on the emotions we are experiencing. We will also look at the importance of a holistic approach for people with multiple symptoms. We will look at the control of the autonomic nervous system and the importance of intermittent living. We will also discuss the need for an integrative global medicine that considers pandemics, people and their interactions. All of this knowledge will be applied as therapeutic strategies in clinical practice.

Learning objectives

Student will:

- Understanding how neurological and immune transmitters work.
- Know how to influence transmitter function through exercise, diet and behavioural changes.
- Begin to approach their clients or patients using systemic strategies.

Module 5

Systems medicine and quantum physics

Content

Systems medicine is emerging as a crucial element in the approach to people with chronic diseases. We are not only chemistry, we are also physics. In this module, we will explore the deep connection between quantum physics and systems medicine. The human being can be understood, from an energetic perspective, as a highly efficient, biological entity.

Therefore, we cannot overlook the fundamental role of the mitochondria as basic organelles for the maintenance and production of energy. Humans strive for maximum energy efficiency.

Although quantum physics is still in its infancy in the biological domain, we will recognise its vital role in important biological processes. We will discuss the foundations of life and Homo sapiens, highlighting their relevance to contemporary science and its evolution. We will also consider the concept of Intermittent Living as an integral approach to the treatment of biological systems.

Learning objectives

Student will:

- Learn basic concepts of quantum physics applied to biology.
- Be able to conduct a deep learning session on the topic of systems medicine.
- Be able to apply concepts and ways of thinking that are based on systems medicine to people who suffer from chronic diseases.

Module 6

It's all about energy

Content

In this last module, we will dive into the topic of energy, as restoring its distribution is the primary goal for those suffering from chronic diseases and for maintaining general health. We will learn about the complex process of decision making, always based on communication between the brain and the immune system, both of which play a crucial role in our health. Decision making is based on metabolic assessment and analysis; the decision to move or not to move, to eat or not to eat, all these decisions depend on energy levels and the various processes of energy production.

Everything revolves around energy: evolution itself is centred on it. In medicine, the distribution of energy within and between organisms is one of the most fundamental laws. You will learn how to regulate this distribution of energy. We will look at the changes in energy distribution that occur during the stress response and how biorhythmic activity regulates this process.

Learning objectives

Student will:

- Learn that addressing energy distribution and restoring energy levels is the first step.
- Learn how to apply initial energy recovery strategies.
- Be able to apply these concepts in their daily practice.

"This course will provide you with a fundamental overview of the complex mechanisms and interrelationships of all body systems. You will explore the application of biochemistry, physiology, biology and anatomy in the context of clinical PNI"



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