



K H A R R A Z I A N  
I N S T I T U T E

## **Kharrazian Institute – Course Syllabus Neuroinflammation Clinical Strategies and Treatment Applications**

**Course Title:** Neuroinflammation Clinical Strategies and Treatment Applications

**General Schedule:** May 18 – 19 from 9 am – 5:30 pm

**Instructor:** Datis Kharrazian, PhD, DHSc, DC, MS, MMSc, DACNB, DACBN, FACN

**Location:**

Hilton Garden Inn Carlsbad Beach, 6450 Carlsbad Blvd., Carlsbad, CA

**Course Description**

This course will provide an extensive literature review of microglia, neuroimmunity, and current diseases that involve an underlying neuroinflammatory pathophysiology. An evidence-based model incorporating diet, nutrition, and lifestyle medicine will be presented. Clinical applications to glial priming, laboratory tests, patient history, and physical examination will be presented in detail.

**Learning Objectives:**

1. Understand the role of glial cells in brain function
2. Review the basic concepts of neuroimmunology
3. Review the scientific literature for nutrients, dietary approaches, and lifestyle factors that impact neuroinflammation
4. Understand the clinical concepts of glial priming
5. Learn how to identify neuroinflammation from patient history
6. Learn examination and laboratory findings found with neuroinflammation
7. Learn how to identify neuroinflammation with MRI and other imaging studies

## Neuroinflammation – Live Course Schedule

### Day 1 – May 18, 2019

#### **9 am – 10:30 am: Introduction to neuroinflammation and neuroinflammatory diseases**

- Basic concepts of neuroinflammation
- Diseases that involve neuroinflammatory pathophysiology
- Clinical presentations of subtle neuroinflammatory reactions

#### **10:30 am – 11 am: Break**

#### **11 am – 12:30 pm: Glial cell functions**

- Glial neuron networks
- Glial pruning
- Protective and inflammatory roles of microglia
- The role of astroglial cells and the blood-brain barrier

#### **12:30 pm – 1:30 pm: Lunch**

#### **1:30 pm – 3 pm: Neuroimmunology review**

- Antigen presentation in the brain
- The role of peripheral signaling agents in activation of brain glial cells
- The role of glial cell priming

#### **3 pm – 3:30 pm: Break**

#### **3:30 pm – 4:30 pm: Literature review of nutrition, dietary and lifestyle treatment strategies for neuroinflammation**

- Literature review of nutrients, flavonoids, and botanicals in the management of neuroinflammation
- Literature review of various diets in the management of neuroinflammation
- Literature review of lifestyle factors in the management of neuroinflammation

#### **4:30 pm – 5 pm: Break**

#### **5 pm – 5:15 pm: Review of Day 1**

#### **5:15 pm – 5:30 pm: Questions**

**Additional assignment:** 1.5 hours at-home reading research paper and online exam questions

## **Day 2 – May 19, 2019**

### **9 am –10:30 am: How to clinically evaluate neuroinflammation**

- Medical history findings with neuroinflammation
- Examination findings with neuroinflammation
- Laboratory findings with neuroinflammation
- Imaging findings with neuroinflammation

### **10:30 am – 11 am: Break**

### **11 am - 12:30 pm: Key concepts of glial priming**

### **12:30 pm – 1:30 pm: Lunch**

### **1:30 pm – 3 pm: Functional medicine model to address neuroinflammation**

- Systems biology approach to neuroinflammation
- Blood glucose stability
- Gut-brain interactions
- Antecedents and triggers

### **3 pm – 3:30 pm: Break**

### **3:30 pm – 4:30 pm: Neuroinflammatory clinical cases**

- Three case studies
- Clinical principals learned from case studies

### **4:30 pm – 5 pm: Break**

### **5 pm – 5:15 pm: Review of Day 1**

### **5:15 pm – 5:30 pm: Questions**

**Additional assignment:** 1.5 hours at-home reading research paper and online exam questions