

**Instructor:** Benjamin Carson

**Course Title:** Healthcare and Healthy Lifestyles

**Course Description:**

Dr. Ben Carson is a patient advocate – he knows how difficult it can be for individuals to obtain information that is truly meaningful and important to them. In this enlightening presentation, Dr. Carson gets at the hard issues surrounding the medical field while sharing with audiences the warm and compassionate perspective that has made him a world-renowned surgeon. He draws upon his knowledge of interventional and preventive medicines to discuss improvements in personal health and how the passage of healthcare reform will potentially make life better for all Americans. He also shares his cancer struggle and insights on living a balanced, healthy life.

**Learning Objectives:**

- Wonders of the human brain and interesting facts  
Neurosurgical success stories  
Creating healthy minds in Children

**Course Outline:**

**Wonders of the human brain and interesting facts**

- Neuroplasticity
- Cells and make up of the brain
- Right and left brain and their functions

**Neurosurgical success stories**

- Operations of the brain
- How the brain heals

**Creating healthy minds in Children**

- Nutritional Value
- Positive thinking

**Summary**

- The future of healthcare
- Q and A

**Speaker Name:** Joseph Dituri

**Course Title:** Novel Method for Combination Therapies to Treat Traumatic Brain Injury

**Course Description:** An overview of a novel combinations of treatment modalities for traumatic brain injury (TBI) which addresses physical, physiological and psychological cures simultaneously for optimum results in the care of a TBI patient as well as subsequent post-traumatic stress disorder.

**Course Objectives:** Be able to identify current standard of care for TBI and identify the knowledge gaps and barriers when using the same. Understand the need to treat the entire person simultaneously for best effective care. Describe the measure of effectiveness as well as the power of pre and post testing to determine improvement of symptoms.

**Patient Outcome:**

- Improved social interaction
- Increased ability to deal with problems
- Reduced or eliminated dependency on drugs and return services
- Tools to deal with everyday triggers

**Course Outline:**

**0-15 min**

- Review current standard of care for TBI and identify the knowledge gaps and barriers when using the same.
- Current standard of care surrounding a poorly understood malady which cannot be physically seen in order to interpret the issues / problems.
- Issues surrounding CT scan, MRI with DTI as well as x ray – an image in a moment with little reference to change over time. Multiple exposures are needed to achieve a visual input over time. Need a better visual.
- “Diagnose and discharge”
- “A tincture of time”
- If left alone a TBI may heal but with greater harm for doing nothing

**15-30 Min**

- Understand the need to treat the entire person simultaneously for best effective care
- Understand how the present researchers came to this conclusion and why we are doing what we are doing.
- Review why and how simultaneous care is more effective than serial care
- Discuss capabilities and limitations of the failure of modern research techniques.
- Use the plant methodology.
- Discuss vegas cranial nerve involvement in TBI repair.

**30-45 Min**

- Describe the measure of effectiveness as well as the power of pre and post testing to determine improvement of symptoms.

- Discuss the nature and use of a brain scan using and Electro Encephalogram.
- Show data on multiple brain scans using and Electro Encephalogram an review measures of effectiveness including coherence and phase lag as well as z scores and absolute power on Delt, Gamma, Alpha and beta frequencies.

**45-60 min**

- Describe the measure of effectiveness as well as the power of pre and post testing to determine improvement of symptoms.
- Discuss and review current psychological and psychosocial tests which are paramount to successful determination of cure.
- Discuss and review the personal factors such as self-worth and family involvement as a measure of effectiveness.

**Instructor: Dr. Nita Farahany, 1 hr**

**Title: Your Brain at Work**

**Course Description:** Advances in neuroscience and artificial intelligence are converging to give us an affordable and soon-to-be widely available generation of consumer neurotech devices—a catchall term for gadgets that, with the help of dry electrodes, connect human brains to computers and the ever-more-sophisticated algorithms that analyze the brain-wave data.

These advances are being incorporated into the workplace to track everything from fatigue levels, mental wellbeing in employees to transforming wellness programs at work. What does this mean for the future of work? What are the best practices for integrating these advances responsibly into the workplace and society?

**Learning Objectives:**

- Participants will understand how the brain is affected physically and mentally.
- Participants will understand how the brain works and how the brain responds.
- Participants will understand the coming age of widespread neural interface technology
- Participants will become familiar with what these devices can do (and can't do)
- Participants will learn how these technologies are being integrated into the workplace
- Participants will learn best practices for ethical integration of neurotechnology into the workplaces, and the promises and perils

**Outline:**

**0-15 minutes: Introduction to the coming age of widespread neural interface**

- What is neural interface technology and what are the investments driving its adoption
- How Neurology of the brain is affected by these devices

**15- 30 Minutes: What can these devices do and not do?**

- What are the different ways that brain activity can be decoded
- What can be interpreted from brain activity, and what are its limitations?
- Reading brain patterns and Brain Waves

**30-45 Minutes: How is neural interface being integrated into the workplace?**

- How is neural interface being used already at work
- What is the future of cognitive ergonomics?
- Are “brain” workplace wellness programs promising or perilous?
- How does these tools affect the mental conditions of a patient.

**45-60 Minutes: What is the pathway forward for ethical integration of neurotechnology in the workplace, and society?**

- How are these transformational technologies best used in ways that respect the mental privacy, freedom of thought, and self-determination of employees?
- What are the risks and benefits and how do we balance them?

**Instructor:** Andy Galpin, PhD  
1 hour

**Course Title:** BioMolecular Athlete: Advanced Scientific Tools for Enhancing Human Performance

**Course Description:** This approach enables you to unravel the unique BioMolecular BluePrint and use it to engineer exact long-term solutions for athletic performance, recovery, sleep, focus, brain function, and physical health. Biomolecular tools are used to analyze what goes in your body and what comes out of your body. How you feel and perform.

**Course Outline:**

**What are BioMarkers?** 0-15 minutes

- Biological molecules found in the blood
- Signs of normal or abnormal processes in the body
- Diseases

**Four types of Biomarkers** 15-30 minutes

- Molecular
- Histologic
- Radiographic
- Physiologic

**Nutrition** 30-45 minutes

- Biomarkers to Optimize your health
- Supplements

**Recovery** 45-60 minutes

How sleep affects the body  
How technology affects the brain

**Speaker Name:** Erik Johnson

**Course Title:** The Next Call of Duty: How To Craft Your Treatment Approaches To Include Technology and Gaming

**Course Description:** In an outcome-based industry, it is always a challenge to find new and innovative ways to treat clients with intentional approaches while considering evidence-based practice. This session outlines how to effectively use emerging technologies available in therapeutic settings and how the use of video games and assistive technology can open an alternative world of play for people with disabilities.

**Course Objectives:**

- Objective 1: Describe current and emerging technologies available for use in therapeutic settings across the lifespan.
- Objective 2: Explore the benefits and barriers to using video games as a therapeutic medium.
- Objective 3: Explain how to use gaming in conjunction with other evidence-based rehabilitation approaches (eg., Biofeedback).
- Objective 4: Explore accessibility and inclusive design in technology.

**Course Outline:**

- 0-15 – Introduction to material and the purpose of the session
- 15-30 – Discuss the history of using technology therapeutically and set the foundation for treatment approaches.
- 30-45 – Explore current available tech and discuss the pros and cons as they relate to treatment
- 45-60 – Discuss bio-feedback and current strategies to objectively measure success
- 60-75 – Explore treatment options using video games as a medium for therapy (hands on demonstration)
- 75-90 – Discuss the history of accessible gaming to include controls and user interface
- 90-105 - Discuss accessibility in gaming including current strategies and future implications.
- 105-120 – Discuss the future of use of tech in the medical community and conclusion

**Course Instructor:** Anna Lembke, MD, Professor of Psychiatry at Stanford University

**Course Title:** “DOPAMINE NATION: A Neuroscience-Informed Approach to Compulsive Overconsumption in a Reward-Overloaded World”

**Course Description:** This is a time of unprecedented access to high-reward, high-dopamine stimuli: drugs, food, news, gambling, shopping, gaming, texting, Facebooking, Instagramming, YouTubing, tweeting . . . The increased numbers, variety, and potency are staggering. As such, we’ve all become vulnerable to compulsive overconsumption. Yet, it is possible to find contentment and connectedness by keeping dopamine in check.

In this talk, Professor Anna Lembke will provide a practical, science-informed approach to addressing compulsive overconsumption of everything from food to sex, to video games. Q&A will follow her presentation.

After participating in this workshop, participants will be able to:

**Course Outline:**

1. Describe the neuroscience of pleasure and pain and what happens in the brain as we become addicted – **0-15 Minutes**
  - a. Oxytocin
  - b. Serotonin
  - c. Norepinephrine
  - d. Endorphin
  - e. Dopamine
2. Explain homeostasis and how repeated exposure to drugs of all kinds tilts the hedonic set-point to the side of pain – **15-30 Minutes**
  - a. A self-regulating process to maintain stability in the face of changing conditions
3. Identify *dopamine fasting* as a practical, feasible, and effective way to reset reward pathways – **30-45 Minutes**
  - a. A resetting of reward pathways back to baseline levels of dopamine firing
  - b. A decrease in tolerance
  - c. The ability to take pleasure in more modest rewards
  - d. Renewed insight into the true impact of our drug on our lives
4. Review the science of hormesis: How intentionally engaging in pain/discomfort can improve mood and well-being – **45-60 Minutes**
  - a. The beneficial effects of mild to moderate toxins

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"Dopamine in Drug Abuse and Addiction: Results from Imaging Studies and Treatment Implications." *Molecular Psychiatry* 9, no. 6 (June 2004): 557–69. <https://doi.org/10.1038/sj.mp.4001507>.

Instructor: Dr. Lissa Rankin

1 hour

**Course Title:** Medical Conditions Related To Trauma & Nervous System Dysregulation

**Course Description:** Conventional medicine often fails to address the root causes underlying why the bodies of trauma survivors become vulnerable to disease or fail to respond to treatment. This course offers a brief overview of the link between trauma, chronic nervous system dysregulation, and medical illness, including a trauma-informed approach to addressing the root causes of disease as part of comprehensive medical treatment and psychotherapy.

**Learning Objectives:**

Review the scientific link between childhood trauma and adult-onset disease.

- Discuss Adverse Childhood Experiences (ACEs), developmental trauma, collective trauma, and generational trauma as it relates to medical conditions
- Understand the neurophysiology of chronic nervous system dysregulation as it applies to medical conditions
- Come away with simple tools, practices, and treatment options that can be incorporated into patient care to at least begin to touch upon root causes
- Briefly discuss Internal Family Systems (IFS) as adjuvant treatment for medical conditions
- Briefly review the 6 Steps To Healing Yourself from Mind Over Medicine

**Patient Outcomes:**

Help clinicians and patients look beyond the allopathic model to view disease from a more holistic, trauma-informed lens

- Assist patients in knowing how to work with a medical condition or physical symptom through a trauma-informed and IFS-informed lens
- Learn the treatments available to help regulate a chronically dysregulated nervous system

**Outline:**

0-15

Review the science linking childhood trauma to adult-onset disease.

Discuss ACEs and Kaiser/CDC study.

Review neurophysiology of chronic nervous system dysregulation and its impact on the body.

15-30

Discuss available trauma treatments to regulate the dysregulated nervous system as adjuvant treatment for trauma-related medical conditions.

Review Internal Family Systems (IFS) for medical conditions.

Briefly review the 6 Steps To Healing Yourself from Mind Over Medicine.

30-45

Experiential exercises to demonstrate some of these healing tools and practices

45-1 hour

Q&A

**Instructor name: Dr. Robert Rosenbaum**

1-hour lecture

**Course Title:** Don't misdiagnose hypermobile patient's upper cervical instability (CCI vs. AAI)

**Course Description:**

Attendees will be exposed to common findings in patients with atlanto-axial instability and craniocervical instability. These not-uncommon patients regularly present for care, and their diagnoses are not routinely identified. Attendees will learn how to avoid missing these clues. They will also learn the common symptom manifestations of these processes, exam findings to assist when ruling these in or out, and the proper studies to obtain. Lastly, the expected readings on these films and when to obtain neurosurgical consultation to avoid placing your patient at risk.

**Learning Objectives:**

- Be able to identify symptoms that might be an unstable upper cervical spine.
- Know the proper history to qualify the patient further.
- Learn exam findings that point to a hypermobile craniocervical junction.
- Be able to order the correct confirmatory studies.
- Know when to refer

**Patient outcomes:**

- Fewer missed diagnosis
- less disability due to more quickly and accurately treated patients
- less risk in your practice

Course outline:

- |  |               |
|--|---------------|
| <b>1. Introduction to the unstable upper cervical spine</b>    | 0-15 minutes  |
| --who suffers from it  |               |
| --when to be on the lookout                                    |               |
| --pertinent historical features                                |               |
| <b>2. What your patient is telling you can save their life</b> | 15-30 minutes |
| --CCI complaints   |               |
| --AAI complaints   |               |
| ---the difference  |               |
| <b>3. How to tell them apart on exam</b>                       | 30-45 minutes |
| --what should be present                                       |               |
| --what shouldn't be present                                    |               |
| --what to order  |               |
| <b>4. Conclusion</b>   | 45-60 minutes |
| --studies to order   |               |
| --expected results   |               |
| --what to do with them   |               |

**Instructor:** Professor David Sinclair AO, PhD

**Course Title:** The Science of Longevity 1-Hour

**Course Description:** A comprehensive review of the role aging plays in our overall health, including a discussion of longevity genes, the link between metabolism and aging, biological aging clocks, and adversity mimetic molecules. The hallmarks of Aging will be discussed, emphasizing the role of epigenetic noise as a reversible cause of Aging and age-related diseases.

**Learning Objections:**

- Participants will understand the categories of longevity genes.
- Participants will become familiar with how lifestyle changes affect longevity genes.
- Participants will comprehend how aging clocks work and why they are useful.
- Participants will learn the Information Theory of Aging and its implications for health & medicine.
- Participants will learn about aging reversal and the ability to rejuvenate tissues.

**Course Outline:**

<b>Introduction to Aging as a Medical Condition</b>	0-15 minutes
<ul style="list-style-type: none"><li>• What is Aging?</li><li>• Why does it Occur</li><li>• How do aging clocks work, and why are they useful?</li></ul>	
<b>Role of the epigenome in health and disease</b>	15-30 Minutes
<ul style="list-style-type: none"><li>• Epigenetic changes as a health component</li><li>• Why does the epigenome change?</li></ul>	
<b>Age Reversal</b>	30-45 minutes
<ul style="list-style-type: none"><li>• How can we reverse Aging</li><li>• Does age reversal cure disease?</li></ul>	
<b>Next steps</b>	45-60 Minutes
<ul style="list-style-type: none"><li>• Clinical development</li><li>• Societal implications</li></ul>	

**Instructor:** Leonard Wright

**2 hours**

**Course Title:**

Cognitive Adaptive Intelligence: Using Sensorimotor Systems to Enhance Rehab

Course Description: This course provides an overview of cognitive adaptive intelligence and its application in rehab, focusing on sports rehab. Participants will gain an understanding of the importance of sensorimotor systems in rehab and the benefits of integrating cognitive adaptive intelligence into rehab practices. The course will cover theoretical frameworks, design, and implementation of cognitive adaptive intelligence rehab systems, clinical applications, and future directions. Through case studies and discussions, participants will learn how to integrate cognitive adaptive intelligence into their sports rehab practice to improve patient outcomes. The course is suitable for chiropractors, physical therapists, athletic trainers, and other healthcare professionals interested in enhancing their rehab practice.

**Learning Objectives:**

1. Define cognitive adaptive intelligence and explain its relevance to sports rehab practice
2. Identify key sensorimotor systems and explain their role in sports rehab
3. Discuss the benefits and challenges of integrating cognitive adaptive intelligence into sports rehab practice
4. Evaluate and apply different assessments used in sports rehab practice
5. Develop and implement cognitive adaptive intelligence systems in sports rehab practice
6. Analyze and interpret case studies to inform evidence-based practice
7. Identify potential applications of cognitive adaptive intelligence to personalized medicine and health equity in sports rehab
8. Propose strategies for the future development and implementation of cognitive adaptive intelligence in sports rehab
9. Demonstrate effective communication and collaboration with other healthcare professionals to integrate cognitive adaptive intelligence into a comprehensive sports rehab program.

**Patient Outcomes:**

Improved Motor Function: By integrating cognitive adaptive intelligence systems into rehab, patients may experience improved motor function due to the enhanced neural pathways developed by sensorimotor systems.

2. Enhanced Recovery: Patients may experience faster recovery time when cognitive adaptive intelligence systems are incorporated into their rehab programs. These systems can facilitate quicker adaptation to changing demands, reducing the overall time needed for recovery.

3. Increased Adherence to Treatment: Cognitive adaptive intelligence systems can help patients stay engaged and motivated throughout their rehab programs, leading to increased adherence to treatment plans and, ultimately, better outcomes.

4. Reduced Risk of Injury: By training patients to be more aware of their movements and how they interact with their environment, cognitive adaptive intelligence systems can help reduce the risk of future injuries or re-injuries.

5. Improved Quality of Life: As patients experience improved motor function and reduced pain, they may also see improved overall quality of life. They may be able to participate in activities they were previously unable to and feel more confident in their ability to move without fear of pain or re-injury.

**Outline:**

- I. Introduction (0-15 minutes)
- Definition of cognitive adaptive intelligence
  - Importance of rehab in promoting recovery
  - Purpose of presentation
- II. Sensorimotor Systems in Rehab (15-30 minutes)
- Overview of sensorimotor systems
  - Importance of sensorimotor systems in rehab
  - Examples of sensorimotor systems used in rehab
- III. Cognitive Adaptive Intelligence in Rehab (30-45 minutes)
- Definition of cognitive adaptive intelligence in rehab
  - Benefits of using cognitive adaptive intelligence in rehab
  - Examples of cognitive adaptive intelligence in rehab
- IV. Cognitive Adaptive Intelligence Assessments in Rehab (45-60 minutes)
- Overview of CAI assessments in rehab
  - Importance of CAI assessments in developing treatment plans
  - Examples of CAI assessments used in rehab
  - Discussion of challenges and limitations in CAI assessments
- V. Implementation of Cognitive Adaptive Intelligence in Sports Rehab (60-75 minutes)
- Overview of clinical applications
  - Overview of the implementation process
  - Explanation of how to integrate cognitive adaptive intelligence into a rehab practice
  - Discussion of challenges and limitations
- VI. Case Studies (75-90 minutes)
- Description of case studies in rehab
  - Results of case studies
  - Discussion of implications
- VII. Conclusion (90-120 minutes)
- Summary of key points
  - Call to action
  - Final thoughts.