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Program Syllabus

Title:
Defining the Future of Laser-based Care: Changing the Orthopedic and Neurological Treatment Paradigm

Program Date: December 8th and 9th, 2023
Total CE hours: 12 hours

Instructor(s):

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Course Overview:
Overall Course Description: As doctors of chiropractic, we are providers who facilitate wellness and lifestyle changes to bring about patient recovery and restoration of health by incorporating low-level laser therapy. Low-level laser is a modality that has become contemporary in its capacity to enhance patient recovery from pain and function by enhancing the photochemical properties of cellular function. The photochemistry upregulation that occurs while using low-level laser therapy has the potential to regenerate tissue, enhance neural circuits, reduce pain, and enhance orthopedic and biomechanical factors. Applying a low-level laser to a patient can be life-changing in many clinical scenarios by optimizing systems physiology. This course will give attendees a comprehensive overview of enhancing patient recovery by stacking new low-level laser therapy (LLLT) principles and modalities for optimal health. This available modality demonstrates patient safety and FDA evaluation and has a promising current and future impact on how manual therapists, nutritionists, and medical providers offer and combine therapeutic services.

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Program goals / Educational objectives relevant to the seminar:

1. Differentiate and review the various classes of low-level lasers, and outline the therapeutic effects of each as appropriate dosages obtained through calculating joules.
2. Discuss the Low-Level Laser Therapy wavelengths, the metabolic targets of various wavelengths, and the integration of wavelengths into health restoration.
3. Devise strategies for obtaining biochemical markers paramount to healthy physiology, and create a plan of action for both clinician and patient to resolve health barriers.
4. Incorporate hands-on approaches to assess mechanobiology and mechano-transduction and understand their roles in regulating cellular biochemistry, gene expression, and tissue development.
5. Understand the physiological relationship between the cranial system, spine, and cerebrospinal fluid dispersion as they relate to neurodegenerative disease.
6. Assess spinal and extremity dysfunction, determine the upper motor and lower motor neuron factors, and use a low-level laser to correct maladaptive movement patterns.
7. Discuss differences in the Autonomic, Sympathetic, Parasympathetic, and Enteric Nervous Systems, and develop strategies to facilitate synchronization of these systems using Nutrition, circadian rhythms, movement, and low-level laser therapy.
8. Identify molecular mediators in Gut-Brain Access syndromes, and develop clinical strategies, behavioral modifications, and nutritional therapies to reset physiology.
9. Recognize environmental drivers of abnormalities in inflammatory and autoimmune diseases, and create protective strategies.
10. Identify key indicators of brain imbalances, use low-level laser therapy to reduce aberrant biofeedback into the central nervous system, and utilize protective strategies for enhancing brain health and function.
11. Understand the influential roles of Nutrition, supplementation, sleep hygiene, meditation, and "stacked therapies" to overcome the most challenging clinical conditions.

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The Top Ten Program Topics:

1. Documentation, consent, and patient management.
2. Appropriate management (Capabilities of LLLT based on research and clinical experience).
3. Cellular physiology and the properties of low-level laser therapy. (All wavelengths).
3. Aspects of diagnosis and differentials related to orthopedic and neurological systems.
5. Supportive Nutrition over orthopedic and neurological conditions.
6. Appropriate use of laboratory analysis
7. Hands-on demonstrations for clarity and concept solidification.
8. Co-management and case integration
9. Top take-home points for care and integration
10. Safety to maintain due diligence for the public at large. (Disclaimer described)

Speaker Bios:

Dr. Brandon Brock is a practitioner in Dallas, Texas, at Carpathia Collaborative. This is a multidisciplinary medical group. He holds a doctorate in family nursing practice as an advanced family nurse practitioner from Duke University and post-doctorate orthopedic nurse practitioner credentialing. He has a doctorate in Chiropractic from Parker University. He has a diplomate status in functional neurology (ACNB), conventional medicine, and Integrated Medicine. He holds fellowship status in childhood developmental disorders, functional neurology, electro-diagnostic medicine, and neurochemistry and is a member of the International College of Chiropractors. Dr. Brock is also a global clinical research scholar from Harvard Medical School and is a participating member of the Harvard Club in Dallas, Texas. He is a third-year Ph.D. student focusing on a holistic heart care model looking at the quality of life post-myocardial infarction. During his Ph.D. studies, he has become a member of Sigma Theta Tau (STT), The National Society of Leadership and Success (NSLS), and The Society for Collegiate Leadership & Achievement (SCLA). He is on the educational board of the National Association of Orthopedic Nurses (NAON).

Dr. Brock enjoys teaching and providing educational support to facilitate learning for multiple groups and agencies. This includes topics that range from neurology and Nutrition to orthopedics and regenerative medicine. He is currently an active member of the Pediatric Acute-Onset Neuropsychiatric Syndrome Advisory Council (PANSAC) for the state of Texas with health and human services.

Dr. Brock received the most outstanding functional neurology teacher of the year from the ACA council of neurology four years straight and two times from IAFNR (International Association of Functional Neurology and Rehabilitation). He has also received a humanitarian award from IAFNR. Dr. Brock is also the honorable recipient of the prestigious Living Legacy Award from Samford Universities Ida Moffett School Nursing in 2015. During his doctoral studies, he has

also been a spotlight student at Duke University. His blend of clinical and teaching experience, along with a background in medicine, chiropractic, neurology, and Nutrition, has created a unique and integrated clinical background that has helped him treat complex cases.

Dr. Kristin Hieshetter is a Doctor of Chiropractic, certified in Nutrition, a metabolic biochemist, and a low-level laser specialist. She graduated Magna Sum Laude from Central Michigan University, and while attending, she supervised the medical microbiology laboratory and biotechnology laboratory for two years. Dr. Hieshetter is a published Research Scholar in Mammalian Physiology. Upon completing her Bachelor of Science, she attended Chiropractic College at Palmer in Davenport, Iowa. Dr. Hieshetter's highlighted achievements include the prestigious Vogt Leadership Society and Scholarship, the Extern Recognition Award from Palmer College Clinics, was a teaching assistant in neuromusculoskeletal diagnosis, physical diagnosis, and radiology. Dr. Hieshetter graduated Summa Cum Laude from Palmer College. Dr. Hieshetter was a Keynote Speaker for The Seven Miracles of Chiropractic at Palmer Homecoming 2005. She has been a post-doctorate educator since 2018. Her core expertise is maximizing neurological function using chiropractic-mediated facilitation, anti-inflammatory protocols, and low-level lasers.

Dr. Hieshetter simultaneously owned and operated two clinics while living in Michigan. She was awarded the Newberry Michigan Chamber of Commerce Employer of the Year Award in March 2019. Dr. Hieshetter served as UP Chiropractic Association President from 2015-2019. Dr. Hieshetter has opened a clinic in Florence, South Carolina, and created a thriving operation during a global pandemic.

Dr. Hieshetter has given several corporate wellness classes; she was a Michigan Association of Chiropractic Work-Safe doctor and has served as a continuing telehealth coach for clientele nationwide. She has been a presenter at the WDC ProGroup. She was featured on Carolina AM and WFXB Fox TV twice in 2021. Dr. Hieshetter has been a presenter for lobbyists seeking to change healthcare paradigms about patient insurance coverage and better reimbursement for doctors in Florida [2023].

Dr. Hieshetter is on the medical advisory board for Neumi, the World's only nano-hydrolyzed glutathione. She is a faculty member of the Wellness Alliance in Melbourne, FL, and is the lead clinical educator for low-level laser therapy for the post-doctorate program.

Dr. Hieshetter's hobbies and interests include water sports, basketball, and golf; she is a classically trained pianist, loves being in nature, and spending time with family.

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Instructional Methods:

- On-stage presentation
- Power-point usage with AI feedback and crowd participation.
- Dry-erase board usage
- Hands-on demonstrations with LLLT technology.
- Q and A sessions.
- Notes available with supporting material.
- Post-session testing for credit as set forth by the standards needed per hour.
- Regulation of sign-in and sign-out methodology.

Program Outline:

Friday:

11:00 – 12:00 (Dr. Kristin Hieshetter

Therapeutic Laser in The Human body

- Low-Level Laser fundamentals
- Classes of lasers and their medical applications
- Hormesis and low-level laser applications
- Overview of common clinical conditions amenable to laser care

12:00 - 1:00 (Dr. Brandon Brock)

From the cell to the system

- Wavelength and electron transport chain function
- Mitochondria, cellular respiration, and ATP production
- Neuronal Excitotoxicity
- Neuronal Plasticity

1:00 - 1:15 (Break)

1:15 - 2:15 (Dr. Kristin Hieshetter)

Epigenetic Influences on Cellular Health

- Neurochemistry and Nutrition
- Glycation, degeneration, and aging
- Fatty acid ratio implications in human physiology
- Baseline supplementation for optimizing brain health

2:15 - 3:15 (Dr. Brandon Brock)

From the cellular environment to the systems

- Causes of inflammation
- Metabolic syndrome, obesity, and joint pain
- Review of basic labs
- Case study
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3:15 - 3:30 (Break)

3:30 - 4:30 (Dr. Kristin Hieshetter)
Gut-Brain Systems in Central Nervous System recovery

- Traumatic Brain Injury – Case Study
- Vertebral Fracture, rib fracture, concussion – Case Study
- Enteric Nervous System Interventions
- Cranial Protocols

4:30 – 5:30 (Dr. Brandon Brock)
A developing systems approach to treatment

- Creating the hierarchy of treatment
- The joint-brain connection
- Brain therapeutics
- Brain therapeutics

5:30 – 5:45 (Question and Answers)
Dr. Kristin Hieshetter
Dr. Brandon Brock

Polling Question Day One:

1. What color laser activates complex three of the electron transport chain?

a. Blue
b. Violet
c. Green
d. Red

Saturday:
8:00 – 9:00 (Dr. Brandon Brock)
Brain and biomechanical connection

- Treatment of the foot and ankle
- Demonstration of evaluation, diagnoses, and clinical concepts
- Demonstration of evaluation, diagnoses, and clinical concepts
- Case study

9:00 – 10:00 (Dr. Kristin Hieshetter)
Brain and Biomechanical Connections

- Assessment of Pelvic instability
- Active and Passive approaches to stabilize sacroiliac joints
- Demonstration of evaluation, diagnoses, and clinical concepts
- Case Study

10:00 – 10:15 (Break)

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10:15 – 11:15 (Dr. Brandon Brock)
Brain and biomechanical connection

- Treatment of the knee and lower extremity and biomechanics
- Demonstration of evaluation, diagnoses, and clinical concepts
- Demonstration of evaluation, diagnoses, and clinical concepts
- Case study

11:15 – 12:15 (Dr. Kristin Hieshetter)
Brain and Biomechanical Connection

- Assessment of temporomandibular joint
- Cranial adjusting support for temporomandibular joint
- Demonstration of evaluation, diagnosis, and clinical concepts
- Case Study

12:15 – 12:30 Break

12:30 – 1:30 (Dr. Brandon Brock)
Brain and biomechanical connection

- Treatment of the shoulder and elbow
- Demonstration of evaluation, diagnoses, and clinical concepts
- Demonstration of evaluation, diagnoses, and clinical concepts
- Case study

1:30 – 2:30 (Dr. Kristin Hieshetter)
Brain and Biomechanical Connection

- Cervicogenic headache
- Cerebrospinal fluid gradients and the dural pump
- Environmental EMF exposure and subsequent risk to the cells
- Demonstration or evaluation, diagnoses, and clinical concepts

2:30 – 3:00 (Question and answers)
Dr. Kristin Hieshetter
Dr. Brandon Brock

Polling Question Day Two:

1. The cellular target of low-level laser therapy is:
    a. The nucleus
    b. The mitochondria
    c. The cytoplasm
    d. The cytoskeleton

Instructional Methods:

- On-stage presentation
- Live streaming
- Power-point usage

- Dry-erase board usage
- Hands-on demonstrations
- The ability to play back after watching
- Q and A sessions.
- Notes available
- Post-session testing for credit as set forth by the standards needed per hour.
- Regulation of sign-in and sign-out methodology.
-A bonus of one pre and one post-one-hour webinar to those that register early.

Session quiz:

1. What frequency is effective in the violet spectrum
   - **a.** 405 nm
   - **b.** 635 nm
   - **c.** 532 nm
   - **d.** 890 nm

2. What is the primary focus of low-level laser therapy
   - **a.** Photo-biomodulation
   - **b.** Photo-chemical
   - **c.** Protein denaturization
   - **d.** Activation of Janus Protein

3. **What is a contraindication to low level laser therapy.**
   - **a.** Muscle injury
   - **b.** Retinal exposure
   - **c.** Bone demineralization
   - **d.** Pain

4. **True or false: The more "power" or dosage a laser produces, the greater effect and penetration it will have?**
   - a. True
   - b. False

5. **True or False: A laser has the potential to penetrate into sort tissue, bone, and brain?**
   - a. True
   - b. False

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