

# LASER THERAPY

and Light Emitting Diodes  
FOR VETERINARY PROFESSIONALS



Presented and directed by Narda G. Robinson, DO, DVM, MS, FAAMA  
President and CEO, CuraCore Integrative Medicine & Education Center



How do lasers and LED's work to promote healing and reduce pain?

How does photomedicine speed healing from disc disease and spinal cord injury?

How does light facilitate wound healing and fight infection?

How does photobiomodulation reduce inflammation?

Is there an alternative to risking thermal burns from hot lasers?

**40 Hours  
Continuing Education**

**SEE WEBSITE FOR ADDITIONAL REGISTRATION INFORMATION AND COURSE FEES**



**CURACORE**  
INTEGRATIVE MEDICINE & EDUCATION CENTER

# PHOTOMEDICINE PHYSIOLOGY

## SCIENCE, EVIDENCE AND CLINICAL APPLICATIONS.

### ABOUT THE COURSE

Designed for veterinary professionals, this course instructs participants on how light heals tissue, alleviates pain, and improves function for a variety of acute and chronic clinical conditions. The course includes recorded lectures, reading assignments, web-based videos, and assessments. Through this multi-media approach, the student builds a solid foundation in the physics, physiology, and clinical value of photomedicine. We also emphasize that safe and cogent application of less intense laser heat to focus instead on slower, longer treatment times that optimize healing and reduce risk of thermal injury and burns.

### Course Director and Instructor

Narda G. Robinson, DO, DVM, MS, FAAMA President and CEO of CuraCore®, whose publications include:

- “Laser Acupuncture: Keep It Scientific.” *Photomedicine and Laser Surgery*, 32(12), pp. 647–648.
- “Photomedicine, not opioids, for chronic pain.” *Photomedicine and Laser Surgery*, 34(10), pp. 433-434.
- Chapter 31. Photomedicine for exotic animals: a case-based discussion. In *Handbook of Low-Level Laser Therapy*. Hamblin MR, Pires de Sousa MV, and Agrawal T (eds.). Pan Stanford Publishing, Pte, Ltd., 2017. Pp. 559-579.

### ADMISSION ELIGIBILITY

Registration is open to all veterinary healthcare providers. Please contact your state’s licensing or comparable regulatory board (if you practice outside the United States) with regard to whether this course qualifies for 40 hours of continuing education. Those who satisfy all the requirements of the program will receive a certificate of completion.

### COURSE CONTENT AND ACCESS

Participants will gain access to the online materials for one year following their enrollment. Content includes 12 modules that participants can complete at their own pace. Each module may contain videos, reading assignments, and homework. Each participant must finish the program within the one year access period in order to receive a certificate of completion. Course content subject to change as new research becomes available.



# COURSE OVERVIEW

## Module 1. Introduction to Photobiomodulation, Devices and Controversies

- Establish a firm footing in the terminology and physiology of photobiomodulation
- Become familiar with the devices and settings of photomedicine equipment, as well as claims and controversies surrounding their use and effectiveness

## Module 2. Photomedicine Physiology I — How Light Repairs Tissues

- Explain the changes that occur within cells following exposure to photons
- Describe how mitochondria respond to light and why they are considered “photoacceptors”
- Identify at least three tissues that respond to light in a reparative manner, including how their responses are similar to each other and how they differ
- Explain how laser therapy supports regenerative medicine

## Module 3. Photomedicine Physiology II — How Light Reduces Pain

- List the general analgesic effects of light for a variety of pain problems, including neuropathic, traumatic, and inflammatory pain, both acute and chronic
- Explain how the neuroanatomic and myofascial substrates of a patient’s pain problem inform photomedicine treatment protocols

## Module 4. Photomedicine Physiology III — How Light Impacts Inflammation

- Describe at least three avenues through which light reduces inflammation, whether local, regional or system-wide
- Develop treatment approaches based on evidence and anatomical considerations

## Module 5. Photomedicine Physiology IV — Immunomodulation

- Identify at least three ways in which photomedicine impacts the immune system
- Describe how clinical conditions involving the immune system could benefit from photomedicine
- Consider dysfunctional immune states for which photomedicine could be contraindicated

## Module 6. From Molecules to Medicine The Spectrum of Clinical Conditions Addressed by Photobiomodulation

- Examine and describe the relative strength of evidence for a variety of clinical conditions

## Module 7. Healing the Skin and Regenerating Tissue with Light — Science, Evidence, and Controversies

- Discuss the physiologic rationale for treating skin wounds with photomedicine
- Identify preferred treatment parameters for wounds based on science and evidence

## Module 8. Photomedicine for Traumatic Brain Injury and Other Brain Disorders

- Formulate a cogent rationale for treating cerebral dysfunction and injury with photomedicine
- Define appropriate treatment parameters for brain-based disorders and dysfunction

## Module 9. Spinal Cord Disease, Dysfunction, and Trauma

- Identify the value of photomedicine for patients with spinal cord injury, disease and dysfunction
- Note the appropriate treatment parameters for patients with spinal cord issues

## Module 10. How to Treat Neurologic Injury with Photobiomodulation

- Describe the physiologic effects of photomedicine on peripheral nerve injury
- Define appropriate parameters for treatment of spinal cord problems based on anatomy and physiology

## Module 11. Photomedicine in Rehabilitation and Pain Practice Promoting Functional Restoration and Analgesia

- Identify muscular, fascial, neural, and functional contributors to functional restoration with photomedicine
- Describe key targets and treatment parameters for an array of rehabilitation scenarios

## Module 12. Emerging Applications in Photomedicine, including Photodynamic Therapy for Cancer and Internal Organ Treatment, and Laser Acupuncture

- List novel applications for photomedicine in oncology and internal medicine
- Contrast light therapy as used in a pain and rehabilitation setting with photodynamic therapy as utilized in oncology practices

# YOUR NEXT STEP STARTS HERE

REGISTER AND BEGIN LEARNING TODAY.

[curacore.org/veterinary-photomedicine/](https://curacore.org/veterinary-photomedicine/)

LEARN THE SCIENCE,  
EVIDENCE, AND SAFETY  
OF PHOTOMEDICINE.

MINUS THE SALES PITCH.



## **Narda G. Robinson** DO, DVM, MS, FAAMA

Narda is a leading authority on scientific integrative medicine from a One Health perspective.

With over two decades of practicing, teaching, and writing about integrative medical approaches in both veterinary and human osteopathic medicine, Dr. Robinson helps healthcare professionals sort fact from fiction.

A scholar, researcher, and published author, Dr. Robinson held the only professorship at a veterinary college designed specifically to investigate the legitimacy of integrative medicine. In 1998, she launched Colorado State University's first integrative medicine service and for eight years directed CSU's Center for Comparative and Integrative Pain Medicine. Over the past two decades, Dr. Robinson has taught a variety of popular, scientifically based continuing education courses, ranging from medical acupuncture and massage to herbology and photomedicine.

Dr. Robinson holds a Bachelor of Arts (AB) degree from Harvard/Radcliffe, a doctorate in osteopathic medicine (DO) from the Texas College of Osteopathic Medicine, and a doctorate in veterinary medicine (DVM) and master's degree in biomedical sciences (MS) from the Colorado State University College of Veterinary Medicine and Biomedical Sciences. She is a fellow within the American Academy of Medical Acupuncture. She also serves on the American Board of Medical Acupuncture, the board-certifying organization for physician medical acupuncturists.

### For More Information Contact:

Sharon Sherwood  
Education and Event Director, CuraCore  
905 S Summit View  
Fort Collins, CO 80524

Sharon@CuraCore.org  
970.818.0851

# CuraCore.org