

Instructor: Craig Strickland, PhD

1. Proposed Course Name:

Neurobiology and Pharmacology of Addiction

2. Brief Course Description:

This online seminar looks at the structures and chemistry of addiction in the human nervous system. Covered material includes the mechanisms of addiction, tolerance and withdrawal. In addition, this seminar will cover psychotropic medications used to treat addiction, opioid addiction in particular. Understanding these processes can lead to better treatment interventions and outcomes.

3. Learning Objectives:

At the conclusion of this session participants will be able to:

1. Identify the basic brain structures and primary neurotransmitters involved in addiction
2. Describe the “B” process in the brain associated with tolerance and withdrawal.
3. Identify medications used to treat opioid addiction
4. Recognize the rationale for treating symptoms of withdrawal associated with anxiety, depression and sleep disruption.

4. Content level: Beginner-Advanced

5. Outline:

Welcome/Overview/Objectives	9:30-9:35 AM
Anatomy/chemistry of Addiction	9:35-10:30 AM
Brainstem to cortex connections	
Nucleus Accumbens	
Dopamine pathways	
Mechanism of tolerance/withdrawal	10:30-11:00 AM
The “B” process	
Sympathetic nervous system	
Neural plasticity	
	Break 11:00-11:15 AM
Treating Opioid addiction	11:15-11:45 AM
Methadone	
Buprenorphine	
Narcan/naltrexone	
Medication to treat withdrawal	11:45-12:20 PM
Anti-depressants	
Anti-convulsant mood stabilizers	
Sleep aids	
Wrap up/Summary/Evaluation	12:20-12:30 PM

Instructor: Craig Strickland, PhD

6. Brief Bio

Dr. Strickland graduated from Bryn Mawr College with a Doctorate in Psychology and a focus on experimental research and neuroscience. Past positions include a faculty position at the Medical College of Pennsylvania and affiliate faculty positions at Widener University and Springfield College. He currently has guest lecturer privileges at the Bryn Mawr Graduate School of Social Work and Social Research, the Rutgers School of Social Work and an affiliate professor position at Thomas Jefferson University, East Fall Campus in the Community and Trauma Counseling program. Dr. Strickland is the owner of Biobehavioral Education and Consultation, LLC.