



# COMPLEMENTARY & INTEGRATED CARE FOR SUBSTANCE USE DISORDER

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**OCTOBER 17,2019**

# DEFINITIONS



National Center for  
Complementary and  
Integrative Health

- “The mission of NCCIH is to define, through rigorous scientific investigation, the usefulness and safety of complementary and integrative health interventions and their roles in improving health and health care.”
- Conventional Medicine – mainstream healthcare modalities originating from a Western medical approach
- Non-conventional Medicine – healthcare modalities not considered mainstream whose origins are typically outside of Western practices
- Complementary Medicine – Using conventional and non-conventional modalities TOGETHER to address a patient or diagnosis
  - Example: Oral contraceptives together with acupuncture to treat dysmenorrhea
- Alternative Medicine – Using non-conventional modalities IN PLACE of conventional treatments
  - Example: Using acupuncture alone to treat dysmenorrhea

# DEFINITIONS



National Center for  
Complementary and  
Integrative Health

- Integrated Medicine – Brings together conventional medicine and complementary approaches to treat the patient in a holistic, coordinated fashion to provide the best possible outcome.
    - Patient-Centered Approach rather than a Symptom-Centered approach
    - Coordination of care between providers is ESSENTIAL
    - Addresses physical, mental, emotional, social aspects of a human's life
  - Examples of most commonly used complementary approaches
    - Natural products including vitamins, minerals, probiotics
    - Mind-Body Practices
      - Yoga
      - Acupuncture
      - Chiropractic
      - Meditation or Mindfulness
      - Hypnotherapy
    - Homeopathy or Naturopathic Medicine, Functional Medicine, Ayurvedic Medicine
    - Example: Using a combination of acupuncture and botanicals to treat dysmenorrhea
- National Center for Complementary and Integrative Health <http://nccih.nih.gov>

# DEFINITIONS



Substance Abuse and Mental Health  
Services Administration



“**Wellness** is a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity.” – The **World Health Organization**.

Wellness is the **ACTIVE** process of making choices in our lives that promote health and well-being in multiple dimensions.

“The Substance Abuse and Mental Health Services Administration’s (SAMHSA) Wellness Initiative envisions a future in which people with mental or substance use problems pursue health, happiness, recovery, and a full and satisfying life in the community. “

Creating a Healthier Life. A Step by Step Guide to Wellness. [samhsa.gov](https://samhsa.gov)

# DEFINITIONS



THE INSTITUTE FOR  
FUNCTIONAL  
MEDICINE®

“The Functional Medicine model is an individualized, patient-centered, science-based approach that empowers patients and practitioners to work together to address the underlying causes of disease and promote optimal wellness.”

Functional Medicine utilizes functional lab testing, intensive behavioral interventions to address nutrition, exercise, stress-management, sleep, and relationship domains and an integrated approach to prevention and treatment of chronic disease.

Substance Use Disorder is a chronic disease of the brain, and should therefore be addressed in an integrated fashion utilizing all of the modalities we apply to other chronic diseases.

These should include life-style modifications, nutritional products and botanicals, mind-body therapies and a doctor-patient relationship that supports our patients' pursuit of WELLNESS rather than just the ABSENCE of their disease.

# COMPLEMENTARY THERAPIES FOR SUD

- Complementary NOT Alternative
- Complementary modalities should be utilized ONLY as ADJUNCTIVE therapies to evidence-based medical and behavioral treatments based on the unique needs of the patient and their given diagnoses
- The literature regarding complementary therapies for SUD is difficult to interpret due to small sample sizes, less than optimally designed studies, and conflicting results even between similarly designed studies
- Keep in mind that people suffering from SUD are too-often lured into expensive complementary treatments with the false hope of TREATMENT
- First do no harm

# COMPLEMENTARY THERAPIES FOR SUD

- N-Acetylcysteine
- Kudzu Extract
- Oxytocin
- Acupuncture
- Hypnotherapy
- Mindfulness Based Interventions
- Yoga
- Music Therapy

# N-ACETYLCYSTEINE (NAC)

- OTC antioxidant which is thought to be helpful in SUD by reducing glutamate in areas of the brain where an excess of glutamate may potentiate compulsive behaviors in SUD
- Stimulant use disorders – may reduce relapse in patients who are currently abstinent
- Cannabis use disorder – may improve abstinence, specifically in adolescents when combined with contingency management
- Less evidence for tobacco and alcohol use, further research is needed
- Dosing ranges from 1200 to 2400 mg per day  
Tomko, RL et al. *N-Acetylcysteine: A potential treatment for substance use disorders*. *Current Psychiatry*. June 2018;17(6): 30-55.



# KUDZU

- Chinese herbal root which has been used since at least 600 AD to reduce “drunkenness”
- Contains isoflavones which are anti-inflammatory compounds found in legumes
- Multiple proposed mechanisms of action for mitigating the effects of alcohol and therefore reducing consumption
- Lukas et al 2005 – significant reduction in number of beers consumed after 7 days of treatment (1,000 mg TID) with kudzu extract in “male and female” heavy drinkers
- Lukas et al 2013 – significant reduction over 4 weeks of treatment of male heavy drinkers (1,000 mg TID) in number of drinks/week, number of heavy drinking days, number of consecutive abstinent days
- Penetar et al 2015 – significant reduction of beers consumed in one setting 90 minutes after single 2 gram dose in male heavy drinkers

# KUDZU

- Cravings for alcohol were not reduced in any of these studies
- No significant side effects, known SE include headache and nausea
- No negative effects on renal or liver function
- May be a useful adjunctive treatment for AUD as well as in reduction of binge drinking episodes in patients without diagnosis of AUD
- 2005 study “male and female” was really 11 males, ? Use in females, some evidence of estrogenic activity
- 60 capsules \$29.95



# KUDZU

Lukas et al. An extract of the Chinese herbal root Kudzu reduces alcohol drinking by heavy drinkers in a naturalistic setting. *Alcoholism: Clinical and Experimental Research*. May 2005; 29 (5): 756-762.

Lukas et al. A standardized Kudzu extract reduces alcohol consumption in non-treatment seeking male heavy drinkers. *Psychopharmacology*. 2013 ;226(1): 65-73.

Penetar et al. A single dose of Kudzu extract reduces alcohol consumption in a binge drinking paradigm. *Drug Alcohol Depend*. 2015 ; 153: 194-200.

# OXYTOCIN

- 9 unit neuropeptide which can be delivered intranasally and crosses the BBB
- Early clinical work suggests OT may decrease development of PTSD in patients with high acute PTSD symptoms by mitigating stress response
- OT may enhance therapeutic connection in patients with PTSD as well as decrease isolation and avoidance
- Mitigating stress response may reduce return to use of substances, OT may also reduce cravings
- Small trial in patients undergoing lorazepam treatment for alcohol withdrawal, patients treated with OT had reduced withdrawal symptoms and lorazepam use
- Small trial in patients using marijuana treated with OT had reduces cravings and stress scores
- OT reduced desire to smoke and cigarettes smoked in subjects randomized to 40 units intranasal OT versus placebo

# OXYTOCIN

- Lee MR and Weerts EM. Oxytocin for the treatment of drug and alcohol disorders. *Behav Pharmacol.* Dec 2016;27(8):640-648.
- Van Hedger K et al. Oxytocin reduces cigarette consumption in daily smokers. *Nicotine and Tobacco Research.* 2019: 799-804.

# ACUPUNCTURE



# ACUPUNCTURE

- Whole body acupuncture, auricular acupuncture and acupressure, laser acupuncture and trans-cutaneous electric acupoint stimulation are modalities utilized in studies
- Mead et al. – Transcutaneous Electric Acupoint Stimulation in addition to buprenorphine/naloxone reduces withdrawal symptoms and decreases return to use of opioids and other substances.
- He et al. – Combined whole body, ear acupuncture and acupressure significantly reduces smoking in motivated patients seeking treatment and the effect may last 18 months
- Behere et al. – despite positive findings that various types of acupuncture may improve alcohol, cocaine, and opioid related outcomes, studies provide equivocal results and further study is needed
- Wang et al. – review of evidence for acupuncture and smoking suggests it may be superior to no treatment and is safe, but larger trials with clearly defined treatment protocols are needed
- NCCIH – There is not enough data to support the use acupuncture for treatment of SUD but may be helpful as adjunctive therapy, no firm conclusions about efficacy for smoking

# ACCUPUNCTURE



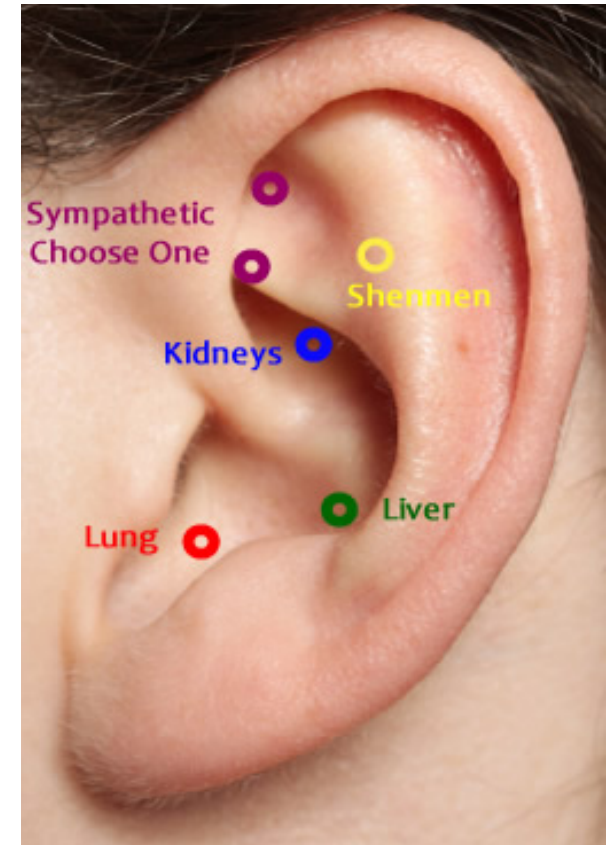
- 5 point auricular acupuncture and acupressure developed 30 years ago primarily for use in detoxification from cocaine and opioids
- Physicians can be trained to deliver treatment in Utah
- There are many observational and small randomized trials studying NADA in patients with tobacco, alcohol, opioid, and stimulant use disorders with equivocal results
- Acupuncture studies are difficult to conduct due to “blinding” issues, variability in treatment delivery – timing, number of sessions, needle placement
- NADA is also very helpful for insomnia, anxiety, pain, and stress relief in clinical setting



# ACUPUNCTURE

- “Although it does not have the compelling force of large replicated RCT’s, the preponderance of small varied trials collectively paints a picture supporting acudetox as an “evidence-based practice.”

Stuyt, EB and Voyles, CA. The National Acupuncture Detoxification Association protocol, auricular acupuncture to support patients with substance abuse and behavioral health disorders: current perspectives. Substance Abuse and Rehab. 2016 ; 7:169-180.



<http://acudetox.com>

# ACUPUNCTURE

- Meade CS, Lukas SE, McDonald LJ, et al. A randomized trial of transcutaneous electric acupoint stimulation as adjunctive treatment for opioid detoxification. *Journal of Substance Abuse Treatment*. 2010;38(1):12–21.
- He D et al. Effect of acupuncture on smoking cessation or reduction: an 8-month and 5-year follow-up study. *Preventative Medicine*. 2001; 3:364-372.
- Behere R et al. Complementary and alternative medicine in the treatment of substance use disorders – a review of the evidence. *Drug and Alcohol Review*. 2009;28:292-300.
- Wang H, et al. Acupuncture for smoking cessation: A systematic review and meta-analysis of 24 randomized trials. *Tobacco Induced Disorders*. 2019;48:1-17.

# HYPNOTHERAPY

- NCCIH – Safe but not enough evidence in support of hypnotherapy for smoking cessation
- Hasan et al. – RCT of hospitalized patients comparing hypnotherapy and hypnotherapy plus NRT to NRT alone
  - Hypnotherapy and Hypnotherapy with NRT patients more likely to be abstinent at 12 and 26 weeks post-hospitalization but was not statistically significant
- 2019 Cochrane Review Hypnotherapy for Smoking Cessation -14 studies 1926 patients comparing hypnotherapy to behavioral interventions or no intervention
  - Only one study, comparing hypnotherapy to no intervention, showed a benefit for hypnotherapy but the study was small and had problems with its methods
  - No evidence that hypnotherapy was better than other interventions

# HYPNOTHERAPY

- Mind and Body Approaches for Substance Use Disorder:What the Science Says. National Center for Complementary and Integrative Health. April 2018. [nccih.nih.gov](http://nccih.nih.gov).
- Hasan FM, et al. Hypnotherapy is more effective than nicotine replacement therapy for smoking cessation:results of a randomized controlled trial. Complement Ther Med.2014;22(1):1-8.
- Barnes J, et al. Hypnotherapy for smoking cessation. Cochrane Database Syst Rev. 2019 Jun 14;6:CD001008.

# MINDFULNESS BASED INTERVENTIONS

- MBI include Mindfulness Based Stress Reduction (MBSR), Mindfulness Based Cognitive Therapy (MBCT), Mindfulness Based Relapse Prevention (MBRP), Spiritual Self Schema Therapy (3S-therapy) and to a lesser extent Dialectical Behavioral Therapy (DBT) and Acceptance and Commitment Therapy (ACT)
- NCCIH – MBI significantly reduces use of alcohol, opiates, and cigarettes
- 2014 Systematic review in Substance Use and Misuse
  - 24 articles
  - Multiple MBI's studies for various substances
  - MBI significantly reduces use of alcohol, cocaine, amphetamines, marijuana, opiates and tobacco compared to support groups or other behavioral interventions

Chiesa A and Serretti A. Are Mindfulness based interventions effective for substance use disorders? A systematic review of the evidence. Substance Use and Misuse. 2014;49(5). 492-513.

# MINDFULNESS ORIENTED RECOVERY ENHANCEMENT

- Eric Garland – Center on Mindfulness and Integrative Health Intervention Development, University of Utah College of Social Work
- MORE was designed by Dr. Garland and is an evidence-based adjunctive treatment for patients with addiction, chronic pain, and stress
- MORE significantly reduces cravings, stress, and pain in patients with OUD on methadone maintenance
- MORE improves positive affect, reduces pain, and reduces risk of opioid misuse in patients with chronic pain on long-term opioid therapy

Garland EL et al. Mindfulness-Oriented Recovery Enhancement reduces opioid craving among individuals with opioid use disorder and chronic pain in medication assisted treatment: Ecological momentary assessments from a Stage 1 randomized controlled trial. *Drug and Alcohol Dependence*. 2019;203:61-65.

Garland EL et al. Pain, hedonic regulation and opioid misuse: Modulation of momentary experience by Mindfulness-Oriented Recovery Enhancement in opioid-treated chronic pain patients. *Drug and Alcohol Dependence*. 2017;173 Suppl 1:S65-S72.

# MINDFULNESS ORIENTED RECOVERY ENHANCEMENT

- Physicians and therapists can be trained by Dr. Garland to deliver MORE to their patients  
Contact Eric Garland directly for information regarding training  
[eric.garland@socwk.utah.edu](mailto:eric.garland@socwk.utah.edu)  
Website: <http://drericgarland.com>
- Ongoing study with active recruitment of patients with chronic pain on daily opioid therapy. If you have a patient that would benefit from treatment contact Dr. Garland's team!  
[mathias.sanyer@utah.edu](mailto:mathias.sanyer@utah.edu)  
[amy.watson@utah.edu](mailto:amy.watson@utah.edu)

# YOGA

- There are many studies evaluating yoga for depression, anxiety and stress but few evaluating yoga for substance use disorder, many combine yoga and mindfulness and are difficult to interpret
- Review of yoga and mindfulness in the treatment of SUD  
Khanna, S and Greeson JM. A narrative review of yoga and mindfulness as complementary therapies for addiction. *Complementary Therapies in Medicine*. 2013;21 (3):244-252
- NCCIH – Few studies available regarding yoga and SUD
  - Yoga and meditation may assist in smoking cessation programs
  - Yoga may improve smoking cessation in women
  - Exercise including yoga make reduce cravings for cigarettes



# MUSIC THERAPY

- Music Therapy (MT) - music intervention is delivery by a certified music therapist
- Music Based Intervention (MBI) – music intervention is not delivered by a certified therapist
- Types of therapies – Listening to music for relaxation, lyric analysis, song-writing, performance, playing instruments, single session versus multiple in different treatment settings
- Diverse outcome measures – depression scores, motivation, participation, stress-reduction, but no specific measures related to retention or abstinence after treatment
- Certainly MT and MBI provide opportunities for self-expression, coherence, and participation but evidence regarding SUD specific outcomes are lacking and RCT of these interventions could be difficult to implement and replicate

# MUSIC THERAPY

- NCCIH – Music therapy is safe and may improve emotional and motivational outcomes in treatment settings, but outcomes related specifically to SUD are unclear

Holman, L et al. Effects of music therapy and music-based interventions in the treatment of substance use disorders: A systematic review. PLoS ONE. 2017;12(11):e0187363.



# ROCK TO RECOVERY

Rock to Recovery provides professional musicians in recovery to engage in a songwriting process with NON-musicians in treatment.

## What Happens in a Rock to Recovery Session

- Playing music and singing disrupts obsessive thought patterns.
- Important “feel good” chemicals are released, including Oxytocin, serotonin, and dopamine.
- Because the therapy is fun, individuals stay in treatment longer.
- Check-in and lyric writing processes reinforce progress and provide information for other groups.
- Individuals do something they are proud of and work together, forming supportive relationships.
- Though fun, Rock to Recovery is a form of therapy. Providers can write group notes and the group may be billed to insurance.

## About Rock to Recovery

- Rock to Recovery is a nationwide organization, providing more than 500 sessions a month in 100+ facilities in four states.
- R2R works nationally and internationally with the Air Force Wounded Warrior program through a contract with the Department of Defense.
- The organization provides services to youth, veterans, those overcoming trauma, substance use disorders, and mental health issues.

<http://rocktorecovery.org>

# NUTRITION

- OVERCONSUMPTION, especially of dietary fats is strongly associated with substance use
- Reduced consumption of micronutrients, especially vitamins, is associated with substance use, most likely secondary to reduction of neurotransmitter production
- The western diet, high in fat, sugar, and processed foods is associated with depression and anxiety which may (LIKELY) contribute to SUD
- Disruptions to the gut microbiome associated with AUD increase neuroinflammation which leads to anxiety, further alcohol craving and increased alcohol use.
- Substitution of sugar for opioids in early abstinence, as well as increased consumption of “highly palatable foods” and weight gain in early recovery are well documented

# NUTRITION

- Nutrition services and education in SUD programs, provided individually or in groups, may be associated with improved treatment outcomes
- Further research regarding nutrition assessment, treatment and monitoring throughout the continuum of SUD care should be a PRIORITY
- ALL patients, and I would argue ESPECIALLY those with behavioral health and SUD diagnoses deserve to be evaluated, educated and treated with interventions that will improve their health and wellness in the PHYSICAL domain

# NUTRITION

“Old wisdom from the recovery community would suggest that a liberalized approach to sweets, nicotine and caffeine is favorable to help the individual get past the immediate crisis. New wisdom suggests that this behavior is a form of cross addiction that should be addressed early in recovery.”

David Wiss MS RDN

<http://nutritioninrecovery.com>

# NUTRITION

- Schroeder RD, Higgins GE. You are what you eat: The impact of nutrition on alcohol and drug use. *Substance Use and Misuse*. 2017;52(1): 10-24.
- Wiss, DA. A biopsychosocial overview of the opioid crisis: Considering nutrition and gastrointestinal health. *Frontiers in Public Health*. July 2019. <http://frontiersin.org>
- Grant LP et al. Nutrition education is positively associated with substance abuse treatment program outcomes. *Journal of the American Dietetic Association*. 2004;104:604-610.
- Davis Wiss. Nutrition in recovery from addiction. *Psychology Today*. October 26, 2016.
- <http://www.psychologytoday.com/us/blog/food-junkie/201610/nutrition-in-recovery-addiction>

# A FEW LAST THINGS

- Exercise makes everything better – exercise should be “prescribed” during SUD treatment
- Opioid induced androgen deficiency is real, patients should have their hormones evaluated and optimized
- Progesterone may decrease cravings and attenuate use in women with tobacco and other SUD.
- Treatment of SUD should proceed as would the treatment of any other chronic disease ; A patient-centered, holistic, and integrated approach to guide patients on their path to WELLNESS.







**THE UNIVERSITY OF UTAH**  
**FOUNDED FEBRUARY 28, 1850**

Thank you!

Join our next session on October 24<sup>th</sup>  
on

**Cannabis Use with  
Dr. Elizabeth Howell**