

UNC SON **ECHO** ABC for MOUD

Addiction and Behavioral Clinic for Medication for Opioid Use Disorder Treatment

NUTRITIONAL CONSIDERATIONS AND SUBSTANCE USE DISORDERS

Elizabeth Sherwood RN MS ANP-C

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University of North Carolina
at Chapel Hill
School of Nursing

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NO DISCLOSURES TO REPORT



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Objectives

The participant will be able to list 3 vitamins that are often deficient in people with a substance use disorder.

The participant will be able to state 2 minerals that are commonly deficient in people with a substance use disorder.

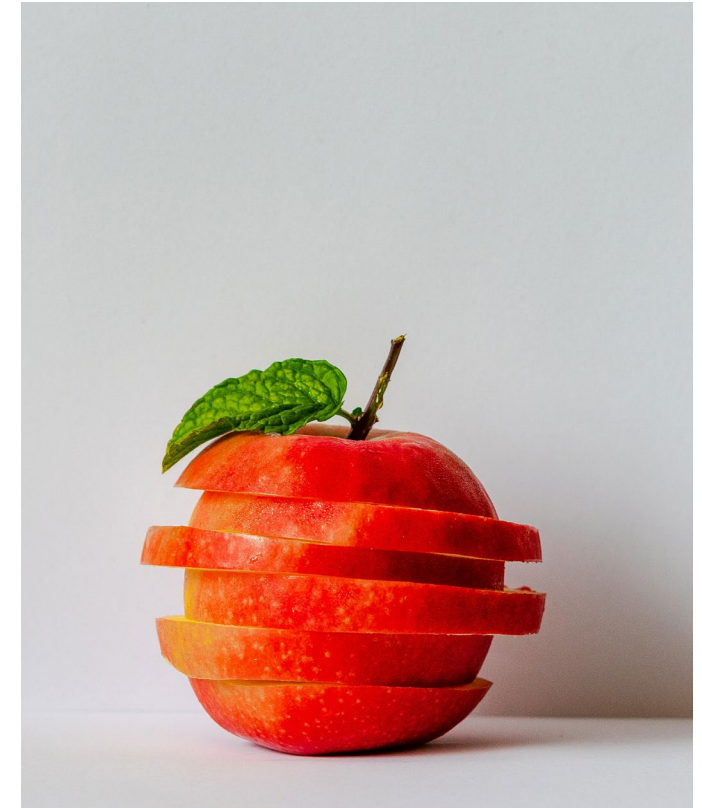
The participant will be able to address the potential impact of neuroinflammation and drug seeking behavior.

The participant will be able to state 3 considerations when assessing nutritional status of the individual with substance use disorder.

Nutrition as an adjunct to care?

Nutrition can play a key role in the treatment and recovery from substance use disorders, although commonly overlooked.

- Malnutrition is a common occurrence in this population.
- Malnutrition can increase drug-seeking behaviors.
- Addiction and appetite have similar impacts on the brain in terms of motivating behaviors.
- Several studies have demonstrated greater efficacy when nutritional support is incorporated into treatment approaches. (Jeynes and Grant, 2017; Cowan and Devine, 2012).



Substance Abuse and Nutritional Health

- Chronic substance use and abuse impacts the individual's nutritional choices, nutritional status and body composition due to poor food choices, decreased and increased food consumption, nutrient absorption issues, and alterations of hormones that alter the mechanisms of food intake and sense of satiety. (Mahboub et al, 2021).
- Leading to:
 - Increased risk of infectious illnesses, mental health disorders, cancer, stroke and chronic diseases of the liver, lungs and cardiovascular system.
 - Compromised nutrition and dietary decisions. Decision making is often compromised by decisions to use funds for substances over nutritional needs as well as altered states affecting undereating and overeating.

Nutrition and Neuroplasticity

Nutrition is important to neuroplasticity. Adequate nutrition can improve neuroplasticity by helping the brain to replenish normal amounts of neurotransmitters.

Increasing evidence demonstrates the role of neuroinflammation as having a role in several mental and cognitive disorders including substance abuse (Peng et al, 2021).

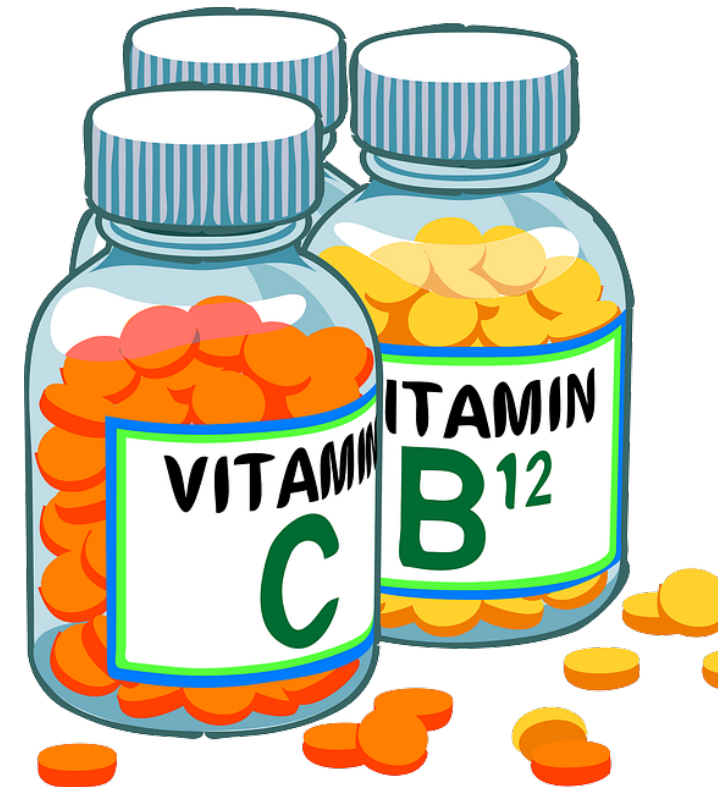
- **Carbohydrates**- raise serotonin levels > stabilize mood, improve sleep and reduce cravings for drugs and alcohol.
- **Amino Acids**-the brain uses to produce dopamine. Low dopamine levels are associated with negative mood changes, more severe cravings and increased aggression.
- **Dietary Fats**-needed for neuroplasticity and to decrease neuroinflammation and protect cell membranes. Polyunsaturated fatty acids (PUFAs)/Omega 3's are critical regulators of the central nervous system.



Plasma nutrient deficiencies in PWUD

People Who Use Drugs (PWUD) may have:

- low selenium and low potassium from low muscle mass related to malnutrition.
- iron deficiencies and iron deficiency anemia especially in women
- low Vitamin A, C, D, E
- Some plasma levels may be elevated
 - phosphorus, sodium and magnesium elevations may be related to dehydration
 - copper and zinc elevations may be related to inflammation, acute fasting and smoking
- Certain medications for SUD can cause magnesium deficiency.



Nicotine

- ↓ Beta carotene
- ↓ B vitamins
- ↓ Vit C, D, E
- ↓ Selenium
- ↓ Zinc
- ↓ Omega 3



High dose omega-3 fatty acid supplementation appears to reduce cigarette craving and oxidative stress index in males who smoke heavily.
(Sadeghi-Ardekani et al, 2018)

Alcohol

↓ A

↓ B vitamins especially Thiamine/B1, B6, Folic Acid

↓ Vit C

↓ Vit E

↓ Amino acids

↓ Zinc

**Wernicke Korsakoff Syndrome is due to severe lack of thiamine and often malnutrition.

Opioids

- ↓ Vit C
- ↓ B vitamins
- ↓ Vit D (strongly exaggerates craving and effect of opioids→↑risk of dependence and addiction) (Fischer 2021).
- ↓potassium
- ↓selenium
- ↓zinc
- ↓calcium
- ↓magnesium
- ↓decreased food consumption
- ↓GI motility



Stimulants

- Often includes binges of substances → ↓ food and fluid intake → dehydration and electrolyte imbalances.
- May also lead to cognitive issues (confusion, impaired problem solving), heart rate and rhythm disturbances, low body temp, muscle wasting and weight loss.
- After binging/stopping may experience strong spike in appetite.



Heroin and Cocaine

↓ energy

↓ protein

↓ B vitamins (esp. thiamin, riboflavin, pyridoxine, and folate)

↓ Vit D, C

↓ magnesium

↓ iron, copper and zinc

↓ calcium

Most vitamins and minerals are low--consistent with the decreased intake of nutrient dense food.

Considerations for the health care provider

- Malnutrition is common among people with substance use disorders.
- Proper nutrition aids the healing process and may reduce cravings and drug seeking behaviors.
- Treatment may be more effective when nutritional support is incorporated. Offering adequate nutrition tools in the recovery process has been shown to support behavior change during the recovery process (Cowan & Devine, 2012; Jeynes & Gibson, 2017).
- Nutrition as an adjunct to support recovery is not well utilized. Less than 7% of treatment centers utilize a nutritionist and only half involve nutritional education. (Wiss, et al., 2019; Reid, 2014).
- Macro and micronutrient deficiencies can lead to symptoms of depression, anxiety and low energy, which may lead to use of drugs or triggering a relapse.

Considerations for the health care provider

- Do you currently do any nutritional assessment or inquiry as part of your assessment for persons dealing with a substance use disorder?
- Do you have nutrition professionals available to your practice (RDN, health coaches)? Available in specialty substance abuse treatment?
- Given the information provided would you change your approach to caring for these patients?
- Do you currently recommend any vitamins, minerals or supplements for those dealing with a substance use disorder?

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