



# CASAT Learning

SCHOOL OF PUBLIC HEALTH  
UNIVERSITY OF NEVADA, RENO

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*"To help states, organizations, students, and the existing workforce apply research-based practices to improve prevention, treatment, and recovery services for individuals with addictive behaviors. This mission is achieved through university-based coursework; clearinghouses and libraries; continuing education workshops; product development and dissemination; conferences; and consultation and technical assistance activities."*



CASAT LEARNING PRESENTS

## Signs and Symptoms of Substance Misuse and Problem Gambling

Nick Tangeman, MSW LADC-S

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# ABOUT

## CASAT History

Since 1993, CASAT has provided culturally appropriate, state-of-the-art, research-based training and technology transfer activities, academic courses, and managed large multi-state, multi-organizational projects. As a Center within the School of Public Health at the University of Nevada, Reno, CASAT’s primary mission is to improve prevention and treatment services for individuals with addictive behaviors by helping states, organizations, students, and the existing workforce apply research-based practices. This mission is achieved through university-based coursework; online courses and trainings; conferences and institutes; continuing education workshops; product development; web-based and electronic products and databases; and consultation and technical assistance. Of particular note is CASAT’s familiarity with successful technology transfer strategies. Housing three federally-funded training and technical assistance projects, CASAT understands how to accelerate the dissemination of research using the most up-to-date technology transfer methods, thereby bridging the gap between science and practice.



# Nick Tangeman, MSW LADC-S

Graduate from the University of Northern Iowa

Treatment provider in Iowa and Nevada

Currently working for the Center for the Application of Substance Abuse Technologies (CASAT) as a Certification Specialist



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# Objectives

- Improve awareness of prevalence rates of Substance Use
- Identify the signs and symptoms of Substance Use Disorder and specific substances
- Identify the signs and symptoms of Gambling Disorder
- Develop awareness of treatment options and modalities
- Share some important considerations for family, friends, caregivers and supporters

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# Understanding Prevalence Rates of Substance Use In Nevada

## Reference: 2021-2022 National Survey on Drug Use and Health National Maps of Prevalence Estimates, by State.

- *Illicit Drug Use in the Past Month: Among People Aged 12 or Older; Nevada, Average Percentages, 2021 and 2022*
  - 20-26% (highest tier)
- *Illicit Drug Use in the Past Month: Among People Aged 18 to 25; Nevada, Average Percentages, 2021 and 2022*
  - 28-34% (2<sup>nd</sup> highest tier)
- *Illicit Drug Use in the Past Month: Among People Aged 26 or Older; Nevada, Average Percentages, 2021 and 2022*
  - 18-25% (highest tier)

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# Understanding Prevalence Rates of Substance Use In Nevada

## Reference: 2021-2022 National Survey on Drug Use and Health National Maps of Prevalence Estimates, by State.<sup>1</sup>

- *Marijuana Use in the Past Month: Among People Aged 12 to 17; Nevada, Average Percentages, 2021 and 2022*
  - 7-12% (highest tier)
- *Perceptions of Great Risk from Smoking Marijuana Once a Month: Among People Aged 12 to 17; Nevada, Average Percentages, 2021 and 2022*
  - 12-16% (lowest tier, meaning the smallest percentage see it as a risk)
- *Perceptions of Great Risk from Smoking Marijuana Once a Month: Among People Aged 26 and older; Nevada, Average Percentages, 2021 and 2022*
  - 20-22% (middle tier)

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# Understanding Prevalence Rates of Substance Use In Nevada

## Reference: 2021-2022 National Survey on Drug Use and Health National Maps of Prevalence Estimates, by State.

- *Illicit Drug Use Other Than Marijuana in the Past Month: Among People Aged 12 to 17; Nevada, Average Percentages, 2021 and 2022*
  - 1.7-1.8% (2<sup>nd</sup> lowest tier)
- *Illicit Drug Use Other Than Marijuana in the Past Month : Among People Aged 18 and Older; Nevada, Average Percentages, 2021 and 2022*
  - 4-5% (highest tier)

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# Common Misunderstandings about Substance Use Disorders

- Matter of Choice / Recovery is all about Willpower
- "Addiction is a sign of weakness"
- "Recovery is quick and easy – just don't use"
- "Treatment doesn't work"
- "Relapse is failure"



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# Biology of Addiction

## Simplified Version

### ASAM's Definition of Addiction

***"Addiction is a primary, chronic disease of the brain reward, motivation, memory, and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social, and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors."***

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# Biology of Addiction

## Simplified Version

### Major Risk Factors

- Family History (biological and environmental)
- Early onset
- Exposure to extraordinary stress / trauma

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# Biology of Addiction

## Simplified Version

### Hijacking of the Brain's Reward Circuitry

- Our brains are hardwired to reward behaviors necessary for survival and species propagation
- Our brains also push our bodies to react to avoid danger
- Frontal regions of the brain act as executive decision makers and assist when confronted with questionable choices (use this money to pay rent or go shopping)

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# Biology of Addiction

## Simplified Version

### Hijacking of the Brain's Reward Circuitry

- Different behaviors are reinforced at different intensities, e.g. eating vs reading a book
- A "craving" is a message sent by our brain to take action, e.g. 12 hours without eating vs 12 hours without reading a book
- This is necessary for our survival, but psychoactive substances like drugs and alcohol exploit this feature of the brain
  - The brain now sees these substances as necessary for survival
    - Adding symptoms of withdrawal only makes that stronger

# Types of Substances / Effects / Symptoms

## Depressants

Description - Drugs that suppress or slow the activity of the brain and nerves, acting directly on the central nervous system (CNS) to create a calming or sedating effect. Depressants are taken to relieve anxiety, promote sleep and manage seizure activity.

### Examples

- Alcohol
- Barbiturates
- Benzodiazepines

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# Types of Substances / Effects / Symptoms

## Depressants

### Signs & Symptoms

- Effect the central nervous system, slowing down messages between the brain and body
- Effect concentration and coordination and slow down a person's ability to respond to unexpected situations. In small doses, they can cause a person to feel more relaxed and less inhibited.
- In large doses, they can cause drowsiness, vomiting, unconsciousness, and death.

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# Types of Substances / Effects / Symptoms

## Depressants

### Withdrawal - (potentially lethal)

- Sweating
- High pulse rate
- Hand tremors
- Insomnia
- Nausea or vomiting
- Hallucinations
- Psychomotor agitation
- Anxiety
- Seizures

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# Types of Substances / Effects / Symptoms

## Stimulants

Description - Drugs that accelerate the activity of the CNS.

Stimulants can make you feel energetic, focused, and alert.

They can also make you feel edgy, angry, or paranoid.

### Examples

- Methamphetamines
- Cocaine
- Crack Cocaine

*According to the World Drug Report published by the United Nations Office on Drugs and Crime, amphetamine-derived stimulants like ecstasy and methamphetamine are the most commonly misused drugs around the world after marijuana.*



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# Types of Substances / Effects / Symptoms

## Stimulants

### Signs & Symptoms

- Dilated pupils
- Restlessness
- Hyperactivity
- Loss of appetite
- Weight loss
- Sweating
- Aggressive behavior or anger outbursts
- Psychiatric Symptomology

# Types of Substances / Effects / Symptoms

## Hallucinogens

Description - Also known as psychedelics, these drugs act on the central nervous system to alter perceptions of reality, time, and space. Hallucinogens may cause you to hear or see things that don't exist or imagine situations that aren't real

### Examples

- Psilocybin (found in magic mushrooms)
- Lysergic Acid diethylamide (LSD)
- Peyote
- Dimethyltryptamine (DMT)
- Marijuana – can also be classified as a hallucinogen

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# Types of Substances / Effects / Symptoms

## Hallucinogens

### Signs & Symptoms

- Responses to hallucinogens depend on several factors, including the user’s expectations, ability to cope with perceptual distortions, and the setting.
- Intoxication results in altered perceptions, including synesthesias (eg, seeing sounds, hearing colors), intensification of sensations, enhanced empathy, depersonalization (feeling the self is not real), a distorted sense of the environment’s reality, and changes in mood (usually euphoric, sometimes depressive). Periods of intense psychologic effects may alternate with periods of lucidity.
- Many hallucinogens may cause nausea and vomiting.
- Judgment is impairment
- LSD – dilated pupils, blurred vision, sweating, palpitations, and impaired coordination. Delusions and true hallucinations occur but are rare, as are anxiety attacks, extreme apprehensiveness, and panic states.

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# Types of Substances / Effects / Symptoms

## Hallucinogens

### Signs & Symptoms (continued...)

- Psilocybin and mescaline are more likely to cause hallucinations. When hallucinogenic reactions occur, they usually subside quickly if treated appropriately in a secure setting. However, some people (especially after using LSD) remain disturbed and may have a persistent psychotic state. Whether drug use has precipitated or uncovered preexisting psychotic potential or can cause this state in previously stable people is unclear.

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# Types of Substances / Effects / Symptoms

## Opioids

**Description** - Drugs that act on opioid receptors in the brain. Opioids are one of the most commonly prescribed medications worldwide and are commonly used to treat pain and cough.

### Examples

- Heroin
- Codeine
- Morphine
- Fentanyl
- Hydrocodone
- Oxycodone
- Buprenorphine
- Methadone

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# Types of Substances / Effects / Symptoms

## Opioids

### Signs & Symptoms – Intoxication

- Euphoria
- Drowsiness or nodding off
- Slurred speech
- Constricted pupils
- Confusion / disorientation
- Itchiness or sensation of crawling skin
- Respiratory depression - The main toxic effect. Slow, shallowed, or labored breathing, and could lead to respiratory arrest.

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# Types of Substances / Effects / Symptoms

## Opioids

### Signs & Symptoms – Withdrawal

Onset and duration of the syndrome depend on the specific drug and its half-life. Symptoms may appear as early as 4 hours after the last dose of heroin, peak within 48 to 72 hours, and subside after about a week.

#### Early

- Anxiety and a craving for the drug
- Agitation
- Muscle aches
- Lacrimation (flow of tears)
- Insomnia
- Runny nose
- Sweating
- Yawning
- Increased resting respiratory rate (>16 breaths/minute)

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# Types of Substances / Effects / Symptoms

## Opioids

### Signs & Symptoms – Withdrawal

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#### Late

- Abdominal cramping
- Diarrhea
- Dilated pupils
- Goosebumps
- Nausea
- Vomiting

*Heightened lethality risk is not from the withdrawal itself, but from the return to using after a break*

**Most opiate overdose deaths occur in people who have just detoxed**



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# Types of Substances / Effects / Symptoms

## Xylazine

**Description** — a.k.a. “Tranq” or “Tranq dope” - Xylazine is a non-opiate sedative, analgesic, and muscle relaxant only authorized in the United States for veterinary use according to the U.S. Food and Drug Administration. It is not currently a controlled substance under the U.S. Controlled Substances Act.

Illegal drugs such as cocaine, heroin, and fentanyl can be mixed with xylazine, either to enhance drug effects or increase street value by increasing their weight.

DEA has seized xylazine and fentanyl mixtures in 48 of 50 states, and the DEA laboratory system reported that approximately 23% of fentanyl powder and 7% of fentanyl pills seized by the DEA in 2022 contained xylazine.<sup>4</sup>

When combined with fentanyl or other synthetic opioids, xylazine can increase the potential for fatal overdoses, as the similarity in pharmacological effects can further reduce the already decreased respiratory function. Overdoses associated with xylazine may be more difficult to identify in clinical settings, as they often appear similar to opioid overdoses and may not be included in routine drug screening tests.

Xylazine has no approved antidote for human use, and as xylazine is not an opioid, naloxone does not reverse its effects. Consequently the presence of xylazine may render naloxone less effective; however, the administration of naloxone can still address the effect of an opioid on breathing which may be sufficient to prevent death.

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# Types of Substances / Effects / Symptoms

## Xylazine

### Signs & Symptoms

- Sedation
- Difficulty breathing
- Dangerously low blood pressure
- Slowed heart rate
- Wounds that can become infected
- Severe withdrawal symptoms
- Death

# Types of Substances / Effects / Symptoms

## Cannabis

**Description** – dried flowers, leaves, stems, and seeds derived from the cannabis plant, containing more than 100 compounds (or cannabinoids), including tetrahydrocannabinol (THC). It is the most commonly used illicit drug worldwide. It acts through the cannabinoid receptors in the brain.

### Signs & Symptoms – Acute

- Relaxation
- Sleepiness
- Mild euphoria
- Time, color, spatial perception alteration
- Decreased short-term memory
- Dry mouth
- Impaired motor skills
- Red eyes
- Many of the other reported psychologic effects seem to be related to the setting in which the drug is taken. Anxiety, panic reactions, and paranoia have occurred. Marijuana may exacerbate or even precipitate psychotic symptoms in schizophrenics, even those being treated with antipsychotics.

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# Types of Substances / Effects / Symptoms

## Cannabis

### Signs & Symptoms – Chronic

- Cannabinoid hyperemesis syndrome is a recently described syndrome of cyclic episodes of nausea and vomiting in frequent cannabis users; symptoms usually resolve spontaneously within 48 hours. Hot bathing ameliorates these symptoms and is a clinical clue to the diagnosis.
- Frequent marijuana smoking may reduce sperm count, resulting in a possible decrease in fertility.<sup>2</sup> Some studies show that women who smoke marijuana have decreased fertility.<sup>3</sup>
- Several studies have described a possible link between chronic, heavy marijuana use and increased risk of psychiatric disorders, including schizophrenia, depression, anxiety, and abuse of other substances, although a cause-and-effect relationship remains uncertain.

### Withdrawal

Cessation in frequent, heavy marijuana users can cause a mild withdrawal syndrome; the time of onset of withdrawal symptoms is variable but often begins about 12 hours after the last use.

- Insomnia
- Irritability
- Depression
- Nausea

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# Types of Substances / Effects / Symptoms

## Synthetics

### Bath Salts

- Classification of a stimulant
- Much like Methamphetamine
- Orally or nasally administered
- Short term affects: Paranoia, hallucinations, psychosis, confusion, agitation, suicidal tendencies, chest pain, and hypertension
- Long term affects are unknown at this time
- Onset is about fifteen minutes may last up to six hours
- Methylenedioxypropylone (MDPV) is a psychoactive stimulant included in bath salts, ingredients vary.

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# Types of Substances / Effects / Symptoms

## Synthetics

### Spice or K2 – Synthetic Marijuana

- JWH-018, JWH-073 (John W. Huffman) is the chemical compound made to mimic the effects of marijuana
- Plant materials are covered with the chemical compound
- Typically smoked
- Short-term effects: Delusions, hallucinations, lack of control and or pain response, agitation, seizures, vomiting, sweating, elevated, blood pressure, heart rate, and palpitations
- Long-term effects unknown
- Onset is quick and can last up to eight hours

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# Legal Classifications of Drugs

- Controlled Substances Act
  - Signed by President Richard Nixon into law in 1970
  - Establishes 5 classification, or "schedules," for drugs
- Classifications are broken down based on
  - Potential for abuse
  - Legitimacy of medical use

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# Legal Classifications of Drugs

- Schedule I
  - High potential for abuse / no currently accepted medical use / lack of accepted safety for use of drug under supervision
  - Examples: cannabis, ecstasy, GHB, heroin, LSD, mescaline, and methaqualone
- Schedule II
  - High potential for abuse / accepted medical use with severe restrictions / abuse may lead to severe physical dependence and/or psychological dependence
  - Examples: amphetamine, cocaine, fentanyl, hydromorphone, oxycodone, hydrocodone



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# Legal Classifications of Drugs

- Schedule III
  - Less potential for abuse than Schedules I and II / currently accepted medical use / abuse could lead to moderate or low physical dependence or high psychological dependence
  - Examples: anabolic steroids, buprenorphine, ketamine
- Schedule IV
  - Low potential for abuse relative to Schedule III / currently accepted medical use / abuse may lead to limited physical dependence or psychological dependence
  - Examples: benzodiazepines, modafinil, tramadol

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# Legal Classifications of Drugs

- Schedule V
  - Least potential for abuse / accepted medical use / abuse may lead to very limited physical or psychological dependence.
  - Examples: diphenoxylate (antidiarrheal medication), lacosamide (antiseizure medication), pregabalin (anticonvulsant)

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# Diagnostic Criteria for a Substance Use Disorder

## Four Categories

- Impulse Control
- Social Impairment
- Risky Use
- Pharmacological

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# Diagnostic Criteria for a Substance Use Disorder

## Impulse Control: Criteria 1-4

- Criteria 1: Taking the substance in larger amounts over a longer period than intended
- Criteria 2: Multiple unsuccessful attempts to cut down, control, or completely eliminate the use of the substance
- Criteria 3: Preoccupation with use
- Criteria 4: Cravings

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# Diagnostic Criteria for a Substance Use Disorder

## Social Impairment: Criteria 5-7

- Criteria 5: Recurrent substance use resulting in failure to meet major role obligations at work, school or home
- Criteria 6: Continued use despite persistent or recurrent social or interpersonal problems
- Criteria 7: Important social, occupational or recreational activities given up or reduced because of use

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# Diagnostic Criteria for a Substance Use Disorder

## Risky Use: Criteria 8-9

- Criteria 8: Recurrent substance use in situations that may be physically hazardous
- Criteria 9: Continued use despite knowledge of having a persistent or recurrent physical and/or psychological problems

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# Diagnostic Criteria for a Substance Use Disorder

Pharmacological: Criteria 10-11

- Criteria 10: Tolerance
  - Needing more to achieve earlier effects
  - Diminished effect with the same amount
- Criteria 11: Withdrawal
  - Experiencing physiological effects
  - Continuing to use to avoid physiological effects

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# Gambling Disorder

## Diagnostic Criteria

- Criteria 1: Needs to gamble with increasing amounts of money in order to achieve the desired excitement
- Criteria 2: Is restless or irritable when attempting to cut down or stop
- Criteria 3: Repeated unsuccessful efforts to control, cut back, or stop
- Criteria 4: Preoccupied with gambling (e.g., persistent thoughts of reliving past gambling experiences, planning the next venture, thinking of ways to get money to gamble)
- Criteria 5: Often gambles when feeling distressed



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# Gambling Disorder

## Diagnostic Criteria

- Criteria 6: After losing money gambling, often returns another day to get even ("chasing losses")
- Criteria 7: Lies to conceal the extent of involvement with gambling
- Criteria 8: Has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling
- Criteria 9: Relies on others to provide money to relieve desperate financial situations caused by gambling

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# Problem Gambling

## Similarities with Substance Use Disorder<sup>5</sup>

- Both include difficulties in reducing, limiting, or abstaining
- Both are preoccupied with the behavior
- Both commonly deny or minimize the extent of the addiction
- Both report a pattern of escalation
- Both report patterns of withdrawal
- Both will often engage in the behavior to escape or avoid painful emotions or stressful experiences
- Both include risk-taking behavior and patterns of impaired decision-making
- Both groups report jeopardizing careers, families/friends, education, hobbies
- Individuals in both groups often neglect self-care, leading to poor nutrition, sedentary lifestyles, lack of physical activity, and insufficient sleep

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# Problem Gambling

## Differences from Substance Use Disorder

- Gambling behavior can remain hidden
- Gambling has no saturation point, cannot overdose – the behavior can continue for as long as they have credit
- Gambling does not have a substance that can be blamed for behavior
- Handicapping, calculations, researching odds, etc. does not have an analog in substance use
- Chasing behaviors are unique to gambling
- Substance users have no illusion that using will produce long-lasting positive effects
- Claims of being a professional gambler are socially acceptable and even rationalized
- No FDA approved medications for treatment
- Substance users typically know what to expect, i.e., how long it will last, what kind of high to expect, what coming down will be like
- On average, individuals with gambling problems have higher levels of financial distress compared to those with substance use disorders.

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# Treatment Options and Modalities for Substance Use Disorder

- Withdrawal Management Services
- Residential vs. Outpatient
- Groups and Individual sessions

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# Challenges faced in early recovery

- Withdrawal and Post-Acute Withdrawal
- Rewards from using are immediate and negative effects are distant; In recovery, negative effects are immediate and rewards are distant
- Disconnecting triggers from physiological and psychological responses
- Establishing new routines, behavioral patterns and habits
- Using healthy coping skills
  - Dealing with the challenges of the world with coping skills that have not been perfected, while having a very effective coping mechanism in drug use that cannot be used.
- Navigating co-occurring mental health issues
- Creating new support systems
- Finding meaning and purpose / rediscovering a life without substance use

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# How to be supportive

- Be encouraging of treatment
- Be involved in their treatment
  - The closer you are, the more involved you should be
- Practice self-care and seek your own help
  - Therapy
  - Al Anon
- Set and enforce boundaries
  - Never set a boundary you can't / won't enforce
  - Make it clear how and in what ways you are able to help and ways in which you are not able to help
- Be patient and do your best to understand the struggles of early recovery / Avoid taking their setbacks personally
- Ask them how you can be supportive

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# THANK YOU.

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