Insomnia and Substance Use Disorders

Denver Health Addiction Learning Collaborative

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Covered in this talk

- Scope of problem
- Definitions
- Sleep disorders with specific drugs of abuse
- Treatment options
- Helpful resources

Why are we talking about this?

- Such a common problem!
  - 70% of patients admitted to detox
- The problem works both ways!
  - Substance use causes sleep problems, but insomnia also makes substance use more likely
  - Sleep abnormalities predict relapse
- Drug use, dependence, and withdrawal may all contribute
  - Use and withdrawal from use may both alter wakefulness or arousal

Persistent Insomnia (DSM-V)

- Dissatisfaction with sleep quantity or quality, ≥3 nights/week for ≥3 months, plus at least one of the following:
  - Difficulty initiating sleep
  - Difficulty maintaining sleep characterized by frequent awakenings or problems returning to sleep after awakenings
  - Early morning awakening with inability to return to sleep
  - Nonrestorative sleep
- Must cause distress or impairment:
  - Fatigue, daytime sleepiness, cognitive or mood impairments, behavioral problems, or occupational, interpersonal, social, or family dysfunction

Simpler definition

Impaired sleep continuity

(trouble falling asleep or staying asleep, or early morning awakening)

-Plus-

Impaired daytime functioning

But what do patients tell us?

- I can’t fall asleep
- I can’t stay asleep
- I’m not sleeping enough
- I’m tired during the daytime/I can’t function

Assessment

- Scales:
  - Insomnia Severity Index (ISI)
  - RLS Rating Scale
  - STOP-BANG (OSA)
  - Morningness/Eveningness Questionnaire (MEQ)

Insomnia Severity Index

- Validated
- Spanish, French, several other languages
- Available to use with permission

Insomnia Severity Index

Please rate the CURRENT (i.e. LAST 2 WEEKS) SEVERITY of your insomnia problem(s).

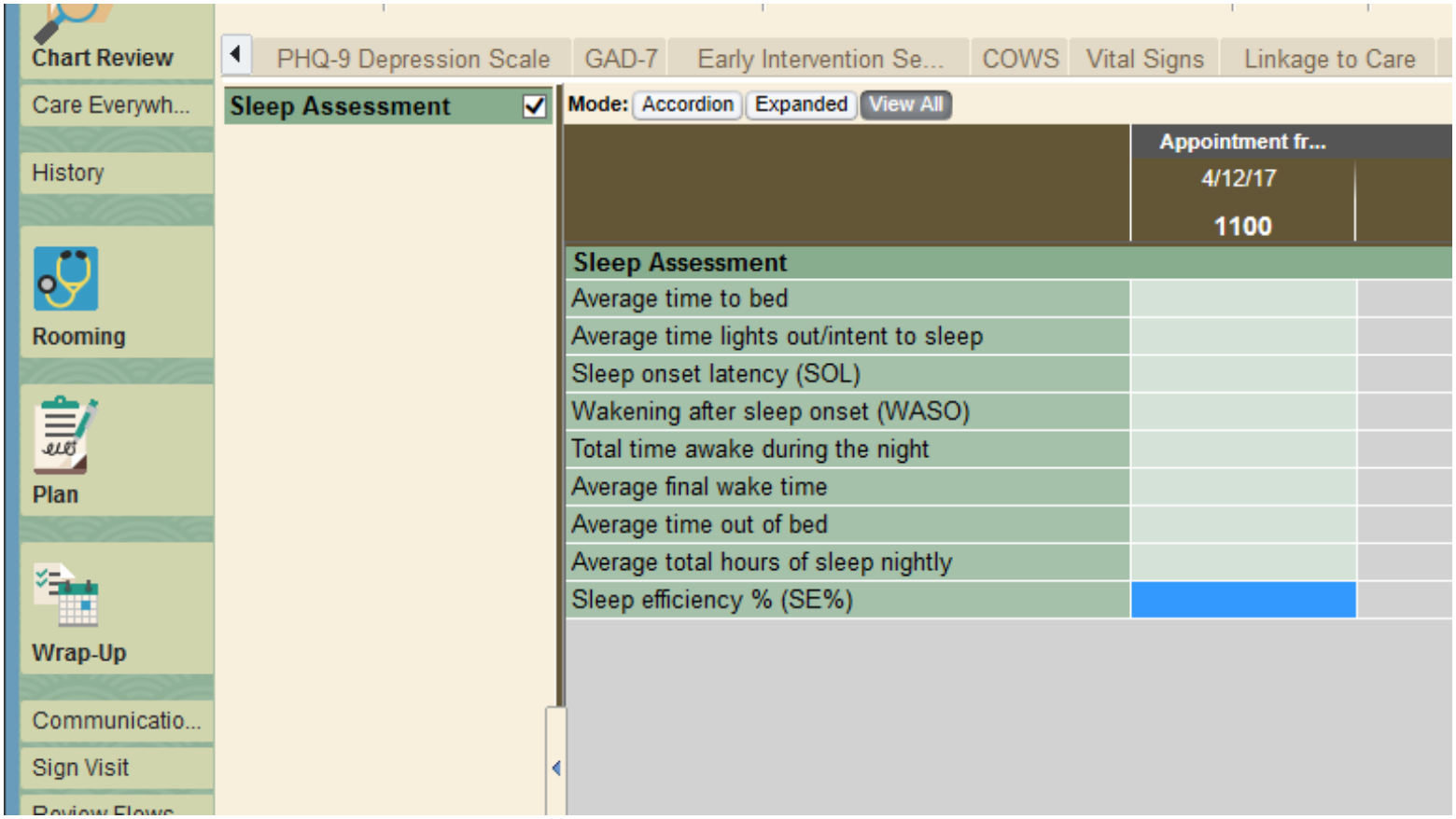
Insomnia Problem	None	Mild	Moderate	Severe	Very Severe
1. Difficulty falling asleep	0	1	2	3	4
2. Difficulty staying asleep	0	1	2	3	4
3. Problems waking up too early	0	1	2	3	4

Question	Score
How satisfied/dissatisfied are you with your current sleep pattern?	0-4
How NOTICEABLE to others do you think your sleep problem is in terms of impairing the quality of your life?	0-4
How WORRIED/DISTRESSED are you about your current sleep problem?	0-4
To what extent do you consider your sleep problem to INTERFERE with your daily functioning (e.g. daytime fatigue, mood, ability to function at work/daily chores, concentration, memory, mood, etc.) CURRENTLY?	0-4

ISI Scoring

- 0–7 = No clinically significant insomnia
- 8–14 = Subthreshold insomnia
- 15–21 = Clinical insomnia (moderate severity)
- 22–28 = Clinical insomnia (severe)

What's available in Epic



Sleep Diary example

Please fill out each morning: day and date	Example
Yesterday I napped for (duration and time of day):	20 min, 4 pm
Medications taken:	Ambien 10 mg
Lights out time:	10:30 pm
It took me ___ minutes to fall asleep	45 minutes
Total time awake in middle of night	30 minutes
Total time asleep	7 hours
Total time in bed	9.5 hours
Sleep efficiency (tot. sleep time/tot. time in bed)	74%
Time you woke up in morning	6:30
Time you got out of bed	7:30
Overall, how refreshing and restorative was your sleep? (1= not at all, 5 = very)	2

Case 1

37 yo male presents to clinic asking for help with insomnia. Falls asleep easily but wakes up multiple times per night, sometimes with sweats. Wakes up early in ams, mind racing and worrying. Sleepy with little energy in daytimes. Alcohol “about a six pack” 3-4 nights per week. Calls out sick a lot, blames on insomnia rather than alcohol intake/withdrawal.

PE: Obese, hypertensive

Case 1: What do you do next?

You talk to him about his problem drinking to assess motivation.

- Prescribe diazepam 10 mg nightly prn #30
- Prescribe trazodone
- Prescribe gabapentin for alcohol cessation and insomnia
- Prescribe nothing; explain that his insomnia is likely to improve once he quits drinking

Alcohol

- Insomnia in 35-70%, depending on setting
  - 15-30% in general population
- Frequent complaints include:
  - Difficulty falling asleep
  - Early and frequent awakenings
  - Abnormal sleep quality
  - Daytime sleepiness/fatigue

Alcohol

- Total sleep time reduced
- Reduced slow wave (Stage 3) and REM sleep
- Objective sleep quality
    - Sleep fragmentation
- Persistent insomnia is an incredibly common complaint after cessation
    - Increased sleep latency demonstrated in acute drinking episodes, early and post-acute withdrawal (2-8 weeks)

Alcohol

- Severity of insomnia correlates with amount of alcohol used and severity of AUD
- Subjective reports correlate with objective measurement
- Persistent insomnia symptoms predict relapse

Medication options: insomnia in AUD

- **Gabapentin**: several double blind RCTs show subjective and objective improvements
- **Ramelteon**: Decreased sleep latency, increased total sleep time, improved ISI
    - low levels of melatonin demonstrated in chronic alcohol users
- **Quetiapine**: improved time awake after sleep onset and subjective insomnia
- **Trazodone**: some improvements in sleep times
    - But does not translate into clinical improvements
    - Increased risk of return to drinking in trazodone users

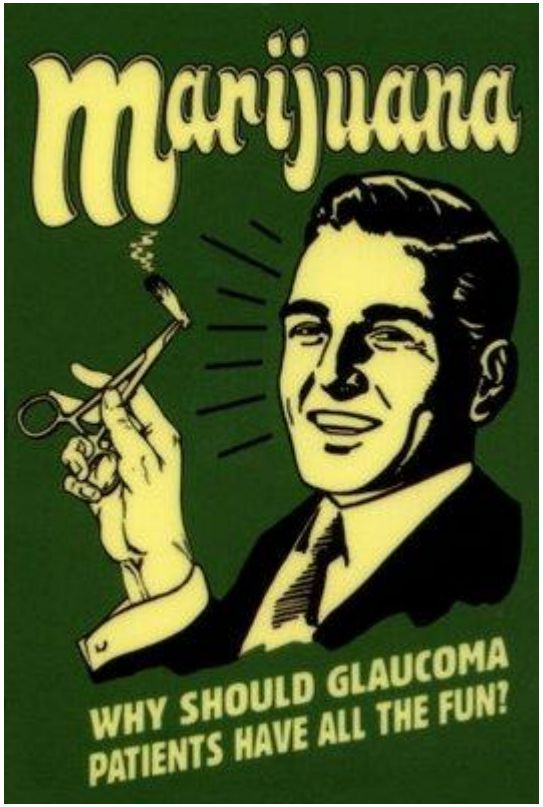
Case 2

25 yo male on stable buprenorphine-based MAT for prior heroin use. Lives with mother and brother, who both continue to use drugs. Self-stated goal of getting own apartment. Works as temporary laborer. Uses marijuana daily “for sleep and anxiety.” Smokes 1/8 oz daily, spending $200/week.

Does marijuana use improve sleep?

Cannabis

- Improves subjective sleep complaints, sleep latency, slow-wave sleep *over short period*
- Chronic use: negative sleep effects
  - Especially in withdrawal (32%-76%)
  - Reliable, significant subjective reports
  - Even with low dose exposures
- **Strange dreams**
  - Typically begin 1-3 days following cessation, peak at 2-6 days, last ≤14 days



Cannabis Catch-22

- Tolerance to sleep-promoting effects
- Heavier and heavier use to treat insomnia
- Worsened overall sleep quality

Medication options: insomnia & MJ

- Zolpidem: XR form effective
- Mirtazapine: improves sleep and appetite
- Gabapentin: small proof-of concept study
- Quetiapine

- ***None of these agents have been shown to be effective for abstinence***

Stimulants: cocaine, meth

- Short term use: increased sleep latency
- Chronic use: diminished SWS time, suppressed REM
- Withdrawal: hypersomnia, bad dreams, depression, fatigue, agitation, increased appetite
- Continued abstinence: subjective and objective improvements
- After prolonged abstinence, self-reported sleep quality similar to healthy sleepers

Medication options: sleep & cocaine

- Modafinil: normalizes slow-wave sleep time, improves wakefulness in withdrawal, improves cognition
    - Mixed results on measures of abstinence

Opioids

- Tolerance to sedative effects after 2-3 days of stable doses
- Cognition often normalizes
    - Some note persistent impairments in alertness
- Lots of disturbances of objective measures
    - Reduced REM
    - Reduced SWS
    - Increased stage 2 sleep

Opioids

- Few studies of withdrawal; early w/d sx include insomnia, daytime somnolence, increased sleep latency, reduced sleep duration
    - **Symptoms typically improve after about 6 weeks**
- Long-term MAT (>12 months):
    - Better recovery sleep following deprivation compared with short-term treatment

Sleep changes in abstinence

Table 2 Objective sleep changes during early and late abstinence, in comparison to healthy sleepers

	Alcohol		Cocaine		Cannabis		Opioids	
	Early Abs	Late Abs	Early Abs	Late Abs	Early Abs	Late Abs	Early Abs	Late Abs
Sleep latency	?	↑	?	↑	↑	?	↑	↑
Total sleep time	?	↓	?	↓	↓	↓	↓	↓
Slow wave sleep	?	↓	↓	↓	↓	?	↓	↓
REM sleep	?	?	?	↓	↑	↓	↓	?
REM latency	?	?	↓	?	↓	?	↑	?

Early Abs Early Abstinence or acute withdrawal

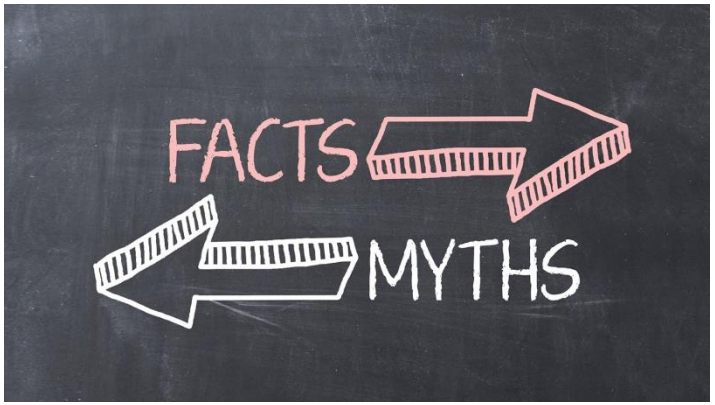
Late Abs Late Abstinence or subacute withdrawal

? Insufficient data or conflicting results across studies

Myths about sleep

- We need 8 hours of sleep each night
- “I only sleep 2 hours a night!”
- Daytime sleepiness must be caused by insomnia
- Drugs don’t work/drugs do work

- We can function on less than a full night’s sleep
- People sleep longer than they think
- Many factors may contribute to sleepiness
- Drugs don’t work/drugs do work

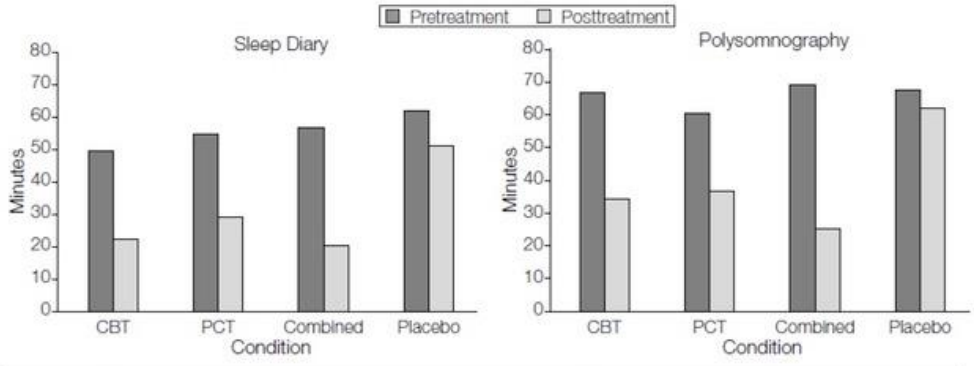


CBT-I, Temazepam, Both, or Placebo

- 20 patients in each arm
- CBT-I: 8 weekly small group sessions, 90 min.
- Temazepam 7.5-30 mg
- Reduction of time awake after sleep onset

- **Combined: 63.5%**
- **CBT-I: 55%**
- **Temazepam: 46.5%**
- **Placebo: 16.9%**

Figure 2. Changes in Wake After Sleep Onset From Pretreatment to Posttreatment as Measured by Sleep Diaries and Nocturnal Polysomnography



Sleep diary data are based on 2 weeks of self-monitoring at baseline (before treatment) and the last 2 weeks of treatment. Polysomnographic data are based on nights 2 and 3 before and nights 5 and 6 after treatment. CBT indicates cognitive-behavior therapy; PCT, pharmacotherapy.

Pharmacologic treatments for insomnia

Prescription

- BZDs
- Non-BZD BRAs (Z-drugs)
- Melatonin agonist: ramelteon
- Doxepin
- Hydroxyzine
- Trazodone
- Quetiapine

OTC

- Valerian Root
- Melatonin
- Chamomile

Non-pharmacologic options

- CBT-I best studied
- Mindfulness

Cognitive Behavioral Therapy (CBT-I)

- Typically administered as 50 minute weekly sessions x 8 weeks
  - Varies from 2-4 to 12-16 sessions
- Is not sleep hygiene instruction!
  - No clinical trial evidence of sleep imprvement
  - Often used as control condition for CBT-I
  - Patients may decline CBT-I because of mistaken belief that the sleep hygiene instruction they received was CBT-I

Cognitive Behavioral Therapy (CBT-I)

- First sessions: assessment
  - Sleep diary for 2 weeks
  - Assess appropriateness/barriers
    - Comorbid medical, psychiatric, substance use disorders
- 2 main components of treatment:
  - Sleep restriction
  - Stimulus control

CBT-I: sleep restriction

- Correct the mismatch between “sleep opportunity” and “sleep ability”
- Case example: 32 yo male gets sleepy around 10, tosses and turns, falls asleep around 11. Wakes up 2-3x/night, awake a total of 90 minutes. Gets up at 7 am to go to work.
  - Sleep opportunity: 9 hours
  - Sleep ability: 6.5 hours
- If diary shows that this is average, first step is to correct mismatch

CBT-I: sleep restriction

- Case: reduce time in bed from 9 hours to 6.5 hours
  - Recommend bed time at midnight, wake time at 6:30
- If patient achieves good match, up-titrate sleep duration by 15 minutes per week
- This concept is difficult for patients: therapist is recommending ***less sleep***!
- If process successful, patient has decreased sleep latency and less time awake at night

CBT-I: stimulus control

- Complement to sleep restriction
- During nocturnal awakenings, patients instructed not to stay in bed and to return only when sleepy
- Keep regular bedtime regardless of previous night's sleep
- Get out of bed at the same time regardless of previous night's sleep

Overcoming patient resistance

- Patients may be shocked that they are not going to bed when sleepy
- Reframe treatment expectation from “I need to get more sleep to “I’d be happy with less sleep if I fell asleep quickly and stayed asleep most of the night.”

Things that people do to “help” insomnia that actually make it worse

- Spending more time in bed
- Constant rumination, worry over sleep
- Sleeping in when they happen to get a good night’s sleep
- Long naps

Bedrock advice to improve sleep

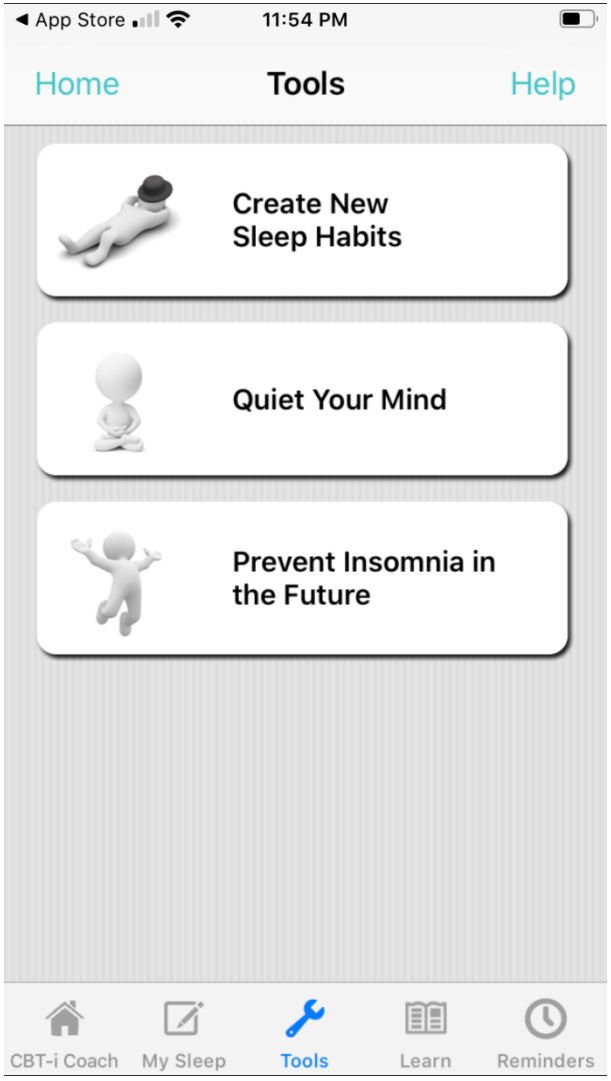
- Exercise daily
  - Sedentary lifestyle = death
- Control your stimuli before sleep
- Practice relaxation
- Sleep hygiene
  - Consistent sleep/wake times
  - No caffeine/other stimulants after noon
  - Don’t spend time in bed if not asleep
  - Avoid daytime napping

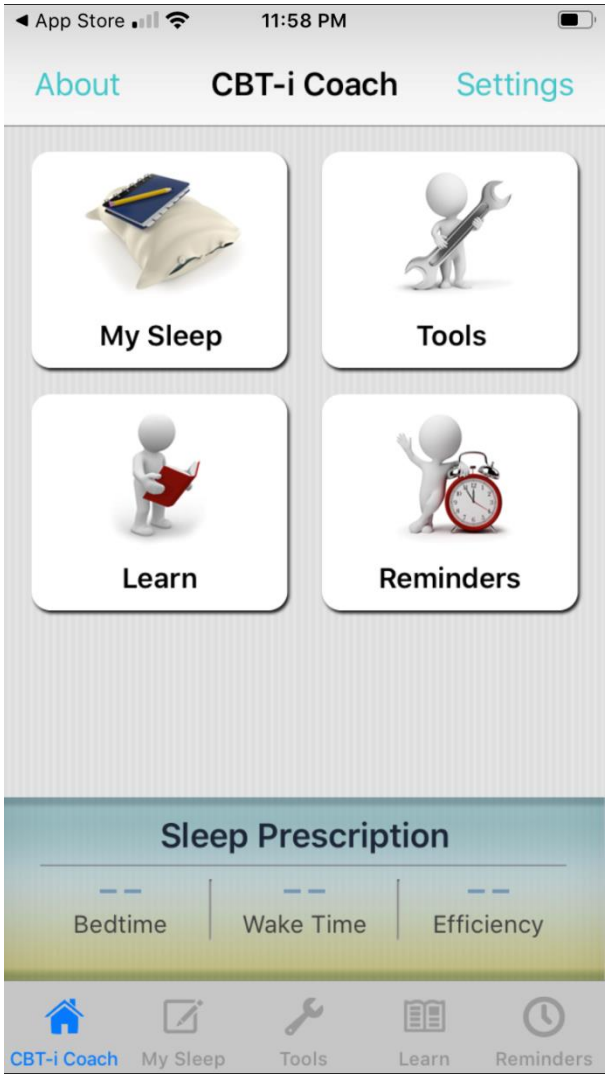
Helpful resources for patients

- Websites: National Sleep Foundation
  - https://www.sleepfoundation.org/articles/nsf-tool-get-right-amount-sleep
  - http://www.med.upenn.edu/cbti/cont_ed.html
  - https://pesi.com
  - http://www.cbtieducationalproducts.com/

- Apps: **CBT-i Coach**: free from VA
  - Meant to be used with therapist but motivated patients can use alone
- Books: *Say Goodnight to Insomnia* (Jacobs), *End the Insomnia Struggle* (Ehrnstrom & Brosse)

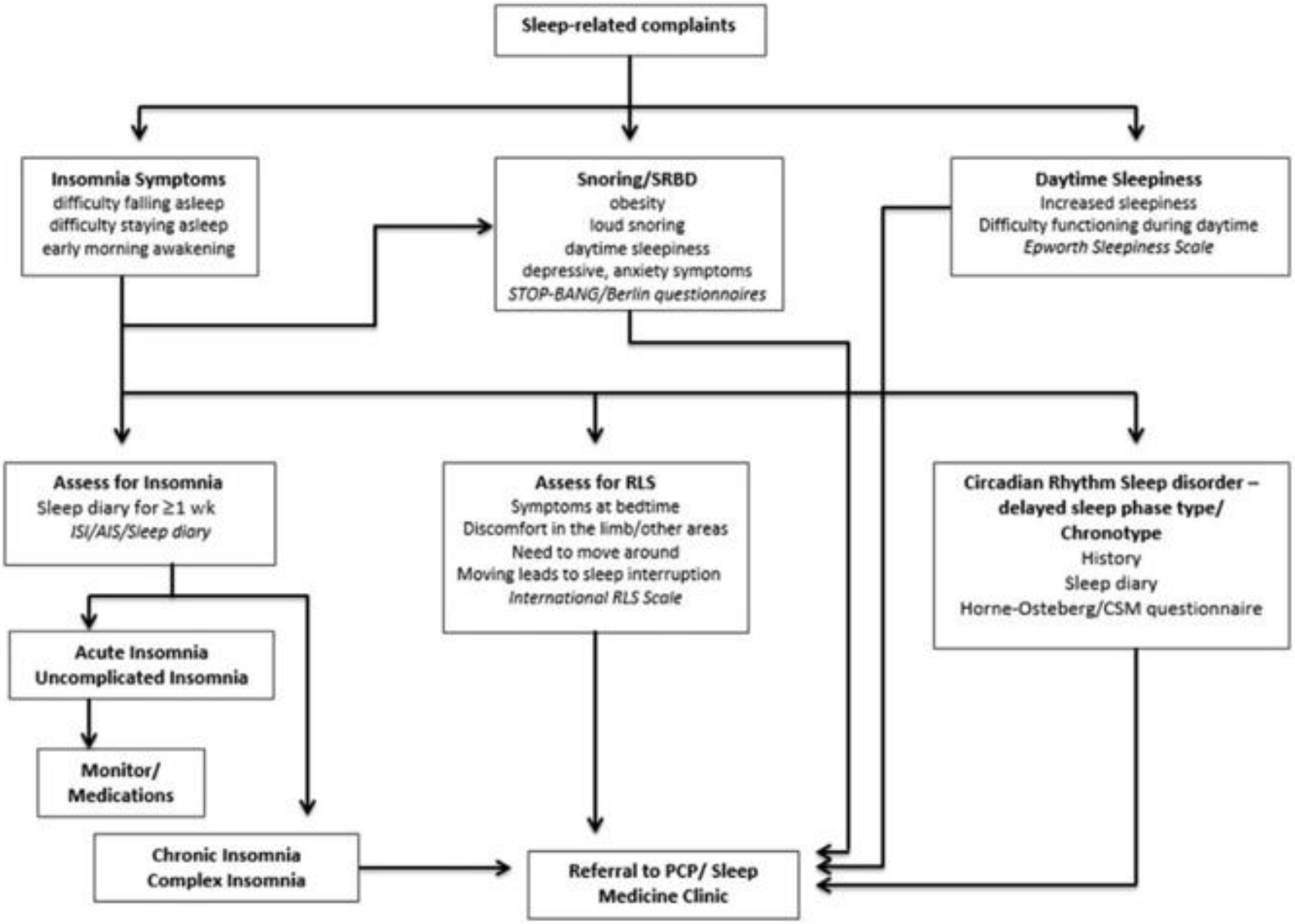
CBT-I Coach Screenshots





Don’t overlook

- Insomnia caused by major mood disorders, especially major depression, anxiety
- Medical disorders: thyroid, sleep-disordered breathing
- Medication side effects
- Trauma history



Chakravorty S et al. *Med Clin North Am* 2018

Summary

- Sleep disorders common with SUD; relationship is bi-directional
    - People with sleep disorders more likely to use substances
    - Persistent insomnia predicts drug relapse
- Know when insomnia is likely to improve without treatment and reassure patient
- Several medications effective short-term
- CBT-I best studied longer term
- Refer patients to online resources and books

References

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DH Learning Collaborative

- Upcoming Dates;
  - Wed Aug 19; “Dialectical Behavioral Therapy Skills to Use in Client Visits”
  - Wed Sep 16
  - Wed Oct 21
  - Wed Nov 18
  - Wed Dec 16