Sleep and Substance Abuse Treatment:

The importance of getting your Zzzzzzzzzzzz’s

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• Why do we need sleep?

• Is it really that important???

• If I’m not drinking or using drugs, won’t I feel better anyways?
Brain Basics: Understanding Sleep

• Up until the 1950s, sleep was thought of as a passive, dormant part of daily functioning.

• We now know that our physical and mental health are directly related to sleep.
Brain Basics: Understanding Sleep

- Neurotransmitters control whether we are asleep or awake by acting on different groups of neurons in the brain.

- Neurons in the brainstem produce neurotransmitters such as serotonin and norepinephrine that keep some parts of the brain active while we are awake.

- Other neurons at the base of the brain begin signaling when we fall asleep.
Brain Basics: Understanding Sleep

• These neurons appear to “switch off” the signals that keep us awake.

• Research also suggests that adenosine builds up in our blood while we are awake and causes drowsiness.

• Adenosine gradually breaks down while we sleep.
Sleep Cycle

• During sleep, we usually pass through 5 phases of sleep:
  1, 2, 3, 4, and REM
Stage 1 Sleep

• Light sleep.

• We drift in and out of sleep and can be easily awakened.

• We often remember fragmented visual images.

• We can experience hypnic myoclonia.
Stage 2, 3, and 4 Sleep

- Stage 2: Eye movements stop and brain waves become slower. We spend almost 50% of our total sleep time in stage 2 sleep.

- Stage 3: Extremely slow brain waves (delta waves) begin to appear, interspersed with smaller, faster waves.

- Stage 4: The brain produces delta waves almost exclusively.
Stage 3 and 4 Sleep

- It is very difficult to wake someone during stages 3 and 4, which together are called “deep sleep.”

- No eye movement or muscle activity.
Stage 3 and 4 Sleep

People awakened during deep sleep do not adjust immediately and often feel groggy and disoriented for several minutes. Children can experience bedwetting, night terrors, or sleep walking during deep sleep.
REM Sleep

- Breathing becomes more rapid, irregular, and shallow.
- Eyes jerk rapidly in various directions.
- Limb muscles become temporarily paralyzed.
- Heart rate increases and blood pressure rises.
- When we awaken during REM sleep, we can describe bizarre/illogical tales -dreams.
Sleep Facts

• Foods and medicines that change the balance of neurotransmitter signals affect whether we feel alert or drowsy and how well we sleep.

• Caffeinated drinks, drugs, and decongestants can cause insomnia.

• Many antidepressants suppress REM sleep.
Sleep Facts, cont’d

• Heavy smokers often sleep lightly and have reduced amounts of REM sleep and often wake up after 3-4 hours due to nicotine withdrawal.

• A night cap helps people fall into light sleep but robs them of REM sleep and more restorative stages of sleep.

• Abnormally hot or cold sleep environments can disrupt REM sleep.
Brain Basics: Understanding Sleep

http://youtube/pwNMvUXTgDY
So, what does sleep do for us?

• It is necessary for survival.
• It is necessary for our nervous systems to work properly. Too little sleep leaves us:
  • Drowsy
  • Unable to concentrate
  • Impaired memory
  • Poor physical performance
  • Reduced ability to carry out math calculations.
• Continued sleep deprivation can lead to mood swings and hallucinations.
So, what does sleep do for us?

- Deep sleep helps with the release of growth hormone in children and young adults.

- Many body cells show increased production of proteins and reduced breakdown of proteins during deep sleep.
  - Since proteins are the building blocks needed for cell growth and repair of damage from factors like stress and ultraviolet rays, deep sleep may truly be “beauty sleep.”
So, what does sleep do for us?

• Activity in parts of the brain that control emotions, decision-making processes, and social interactions is drastically reduced during deep sleep, which helps with optimal emotional and social functioning.
Sleep and Disease

• Sleep and sleep-related problems play a role in a large number of human disorders.
  • Stroke and asthma attacks tend to occur more during the night and early morning, likely due to change in hormones and heart rate.
  • Sleep affect some kinds of epilepsy. REM sleep seems to help prevent seizures that begin in one part of the brain from spreading.
Sleep and Disease

• ...while deep sleep may promote the spread of these seizures.

• Sleep deprivation can trigger seizures in people with some types of epilepsy.

• Neurons that control sleep interact closely with the immune system. i.e. infectious diseases make us feel sleepy (flu, colds)

• Chemicals our immune systems produce while fighting an infection (cytokines) are powerful sleep-inducing chemicals.
Sleep and Disease

- Sleep helps the body conserve energy and other resources that the immune system needs to mount an attack.

- Your mother was right:

  When you’re sick, get plenty of sleep.
Sleep and Disease

• Sleep problems occur in most people with mental disorders.
• The amount of sleep a person gets can influence the symptoms of mental disorders.
• Sleep deprivation is an effective therapy for people with certain types of depression, while it can cause depression in others.
Sleep and Disease

• Extreme sleep deprivation can lead to a seemingly psychotic state of paranoia and hallucinations in otherwise healthy people.

• Disrupted sleep can trigger episodes of mania and agitation in people with bipolar disorder.
Sleep problems are common in Alzheimer’s disease, stroke, cancer, and head injury.

These sleeping problems may arise from change in the brain regions and neurotransmitters that control sleep, or from drugs used to control symptoms of other disorders.
• Patients who are hospitalized or receiving 24-hour care, treatment schedules may disrupt sleep.

• The joke about the patient complaining about the nurse who woke him up to take a sleeping pill contains a grain of truth.
Sleep and Disease

- Once sleeping problems develop, they can add to a person’s impairment and cause confusion, frustration, or depression.
- Patients who are unable to sleep notice pain more and may increase requests for pain medication.
- Better management of sleeping problems can improve overall health and quality of life.
Substance Abuse Recovery & Sleep

- Sleep disturbances are common in the early stages of substance dependence.
- Sleep disturbances may persist for several months despite continued abstinence.
- Sleep disturbances independently increase the risk for relapse.
- Targeting sleep problems during recovery may support continued abstinence.
As we know, persistent sleep problems are associated with wide ranging adverse consequences:

- Decreased quality of life
- Increased risk for psychiatric disturbances
- Increased work absenteeism
- Poor interpersonal functioning
Substance Abuse Recovery & Sleep

- There is limited information about appropriate treatment options for insomnia during recovery.
  - Assumption that co-morbid sleep problems will remit with abstinence.

- Sleep problems are de-emphasized as relatively less important in the early stages of treatment.
Substance Abuse Recovery & Sleep

• Physicians may be reluctant to address sleep problems due to concerns about sleep medication and addiction AND limited awareness of other sleep treatment options.
Reality Check ... 

Poor or unhealthy sleeping habits can lead to unhealthy habits and consequently an unhealthy lifestyle.

For the recovering addict, the reforming of sleep habits can go a long way in the recovery process.

www.youtube.com/embed/IAaaptPh36Q
Insomnia in Early Recovery

• “You’ll never die from lack of sleep!”

• WRONG!!! (Not only is this statement wrong, it’s cruel.)

• Insomnia is genuine suffering.
Insomnia in Early Recovery

• Insomnia is:
  • Being awake night after night
  • Feeling drowsy in the daytime
  • Snoozing at school, work, group therapy
  • Often given “write ups” or bad remarks for “not participating.”
Insomnia in Early Recovery

The truth is that insomnia can be a normal symptom of being newly sober.

It is one of the outward signs that the brain is slowly repairing itself.

Getting mad at the person for being tired is like getting angry with the heart attack patient for having chest pain.
Insomnia in Early Recovery

Lack of sleep may not kill a person, but insomnia, left unchecked, can lead to relapse. And that can kill a person, or lead to a negative outcome.

Insomnia is the newly abstinent patient is something to take seriously.
Insomnia in Early Recovery

To dismiss the person’s suffering from sleep deprivation is to invite that person to relapse.

Patients need tools to cope with their sleep disorder. ...TBA

And patients need to use those tools.
Insomnia in Early Recovery
Insomnia in Early Recovery

The key to treatment is to get the addict as far out from their last episode of substance use as possible so that the maximal amount of repair can occur.
Insomnia in Early Recovery

This is only half of the story ....

If the egg stays sober,

The egg can un-fry,

Hop out of the frying pan back into its’ shell,

And get on with its’ life.
Insomnia in Early Recovery

Sleep is one of the first things to come back “on line” as the brain repairs itself. 60-90 days of sobriety can lead to a “perfect night’s sleep.”
A Perfect Night’s Sleep

• A person turns out the light and puts their head on their pillow at 10:00 p.m.
• They are asleep by 10:07 p.m.
• They sleep 7 ½-8 hours without waking.
• They wake up spontaneously, refreshed and ready to take on the day.
• This can be an emotional experience for the addicted person.
“A Perfect Night’s Sleep”

• A “perfect night’s sleep” can occur 60-90 days of sobriety.

• Then, they may get another ...

• And the next week – maybe 2 in a row.

• By 6-9 months of sobriety, sleep may be normal, regular, and expected.
“A Perfect Night’s Sleep”

• The resolution of insomnia is one of the first rewards of sobriety that is waiting for the addict – if they can just get some time away from the drugs and alcohol.
How do you get the perfect night’s sleep?

• Try to avoid the sedatives and hypnotics in the addicted patient.

• Behavioral tools are preferred over prescription medications.

• Try to minimize the addict’s risk of relapse secondary to insomnia ....
How do you get the perfect night’s sleep?

• ... but we also want the brain to heal.

• Behavioral tools can be equally effective at promoting sleep as medications – they just are not quite as quick and easy as taking a pill.
• 90% of the time, if someone is suffering from simple insomnia, the doctor can prescribe a medication for short-term relief.

• The patient takes the medication at bedtime ...

• ...exactly as directed. The medication works perfectly.
• The patient’s sleep disorder resolves.
• The remaining pills go stale.
• In 9 out of 10 patients this can be successful.
• It is the 10th patient, the addict, that has trouble.
How do you get the perfect night’s sleep?

• For people with substance abuse disorders, something other than medications must be used to help restore sleep.

• “Sleep Hygiene” is a form of structured behaviors that, if practiced, can clear up most sleep problems without medication.

• “Sleep Hygiene” practice is not as easy as taking a pill, but it does work.
What is good sleep hygiene?

- Avoid caffeine, alcohol, nicotine, and other chemicals, particularly before bed.
- Create an environment conducive to sleep.
- Follow a pre-sleep routine.
- Sleep when you are tired.
- Don’t watch the clock.
- Allow sunlight into rooms in the morning and go outside during the day.
- Avoid naps.
- Eat your last meal early in the evening.
What is good sleep hygiene?

- Hydrate throughout the night.
- Exercise early in the day.
- Check with a physician if you snore, have restless leg syndrome, narcolepsy, or other conditions.
- Set a regular schedule.
- Relax before bed.
- Control your room temperature.
Surprising Sources of Caffeine

• More people are using caffeine as an energy crutch than ever before.

• That’s not all bad.

• 250 milligrams of caffeine per day (2-3 cups):
  • Wakes up the brain
  • Improves concentration
  • Relieves stress
  • And may help you live longer
Surprising Sources of Caffeine

• If you’re trying to cut back, you’ve probably already reduced the amount of coffee, tea, and sodas that you consume.

• But the sneaky (often endorphin-producing) stimulant can pop up in unexpected places.

• The FDA does not require manufacturers to list caffeine content on nutrition labels.
Surprising Sources of Caffeine

• Decaf Coffee

Don’t trust your coffee stand-bys: while they have less caffeine than regular coffee, some had over 20 mg of caffeine (vs. 100 mg for regular)
Surprising Sources of Caffeine

- Non-cola Sodas
  - Barq’s Root Beer: regular and diet both have 23 mg of caffeine
  - Sunkist Orange has 41 mg of caffeine
  - A&W Cream Soda has about 25 mg of caffeine
Surprising Sources of Caffeine

• Chocolate

• The darker the chocolate, the higher the caffeine content.

• Hershey’s Special Dark has 31 mg, almost as much as a can of Coke.
Surprising Sources of Caffeine

• Ice Cream

• If there’s coffee or chocolate in your ice cream, expect the scoop to deliver a small jolt.

• Many popular brands have coffee flavors that contain between 30-45 mg of caffeine per half cup. About the same as a can of Coke.
Surprising Sources of Caffeine

• Weight-loss pills

• Diet pill manufacturers have overloaded their pills with caffeine.

• A daily dose of Zantrex-3 (1223 mg of caffeine) is like having 12 cups of coffee. (2005 analysis by ConsumerLab.com)
Surprising Sources of Caffeine

• Pain relievers
  • A little caffeine can curb headaches, but in large quantities, can actually cause them.
  • Don’t take more than label suggests.
  • 2 Exedrin Migraine tablets = 130 mg of caffeine, same as Starbucks Light Frappuccino with Espresso.
Surprising Sources of Caffeine

- Energy Water
  - Some display caffeine content prominently.
  - Others do not.
- Beware of guarana, a Brazilian plant that is a natural source of caffeine.
- Propel (limited edition) Invigorating and VitaminWater Energy have 50 mg of caffeine.
Surprising Sources of Caffeine

Breath Fresheners

Caffeinated gum and mints: Jolt gum provides the caffeine in a cup of coffee.

3 Penguin’s caffeinated mints or 1 Foosh mint contains the equal amount of caffeine in a cup of coffee.
Surprising Sources of Caffeine

SumSeeds Energized Sunflower Seeds

These are marketed as a healthier alternative to energy drinks. The seeds are infused with caffeine, plus natural energy boosters taurine, lysine, and ginseng.

Sunflower seeds are packed with folate, B6, and Vitamin E. And don’t contain added sugar of sodas or energy drinks.

1 serving = 140 mg caffeine (or 4 Cokes)
Surprising Sources of Caffeine

• Morning Spark Instant Oatmeal
  • Amped-up instant breakfast with caffeine. Same as coffee.
  • Why not have coffee with regular oatmeal???
Surprising Sources of Caffeine

• Perky Jerky

  • Yes ... ‘Perky Jerky’ ....
  • Actually has less fat, sodium, and calories than traditional beef jerky.
  • 1 serving has about 75 mg of caffeine, about as much as a can of Red Bull.
Resources

• **Insomnia in Early Recovery.** Kevin T. McCauley, M.D.  2010.

• **Sleep Disorders, Alcoholism, and Drug Addiction Effects on Sleep.** 7/18/13.

• Rubin Naiman, Ph.D., *Psychology Today.* Mindful Sleep, Mindful Dreams.  3/2012.

• **Harvard Medical Newsletter.** “Sleep, Learning, and Memory.”  6/2011.
