CONQUERING INSOMNIA - ACHIEVING SLEEP WELLNESS

Insomnia: Facts

Sleep is so important to us that we literally can't live without it

Insomnia affects a lot of us and its very unrecognized and under treated

Insomnia badly affects our physical health

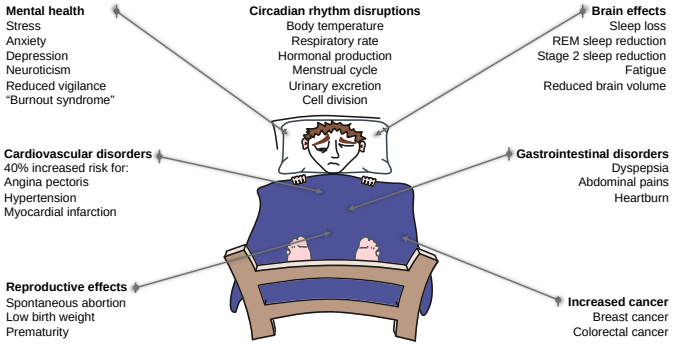
Insomnia is a major cause of depression and anxiety

* Look at the two illustrations to the right, it shows you how problematic insomnia truly is

* Insomnia is however very treatable! We have a lot of non-medication and medication ways of treating it

* Knowledge is power. To overcome insomnia for a lifetime, its important to understand it inside out. keep reading this booklet, it will help you overcome insomnia!

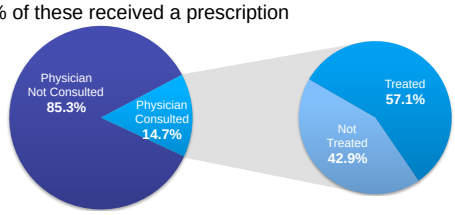
Health Problems Associated with Insomnia



REM, rapid eye movement.
Foster RG, Wulff K. *Nat Rev Neurosci.* 2005;6(5):407-414.

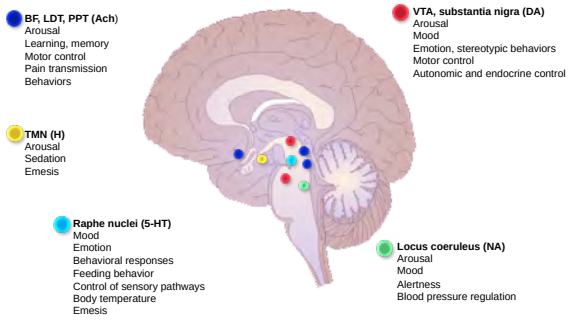
Insomnia is Underrecognized and Undertreated

- Telephone survey of adults >18 years conducted in France, Italy, Japan, and the United States in 2003 (N=2,061)
- 27.1% (n=570) in the United States had insomnia symptoms in the previous 12 months
  - 88% of those had sleep problems >12 months
  - 14.7% consulted a physician
  - 8.4% of these received a prescription



Leger D, Poursain B. *Curr Med Res Opin.* 2005;21(11):1785-1792.

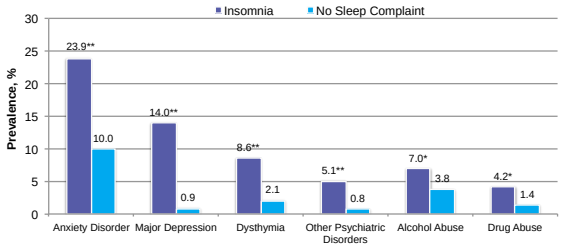
Sleep and Executive Functions



Rang HP et al. *Pharmacology.* 6th Edition. Churchill Livingstone; 2007.

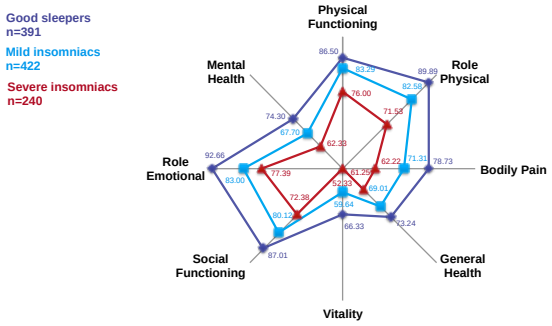
Insomnia is Highly Comorbid with Psychiatric Conditions

Prevalence of comorbid psychiatric disorders in 811 individuals with insomnia



*P=0.05 vs no sleep complaint; **P<0.001 vs no sleep complaint.
Benca RM, Peterson MJ. *Sleep Med.* 2008;9(suppl 1):S3-S9.

Insomnia Has a Detrimental Impact on Quality of Life



P<0.05 for all measures.
Leger D et al. *Psychosom Med.* 2001;63(1):49-55.

A Few Things we Need to Explore -

Executive function - which includes many things like memory, concentration, decision making, alertness, etc is all pretty significantly impaired by insomnia

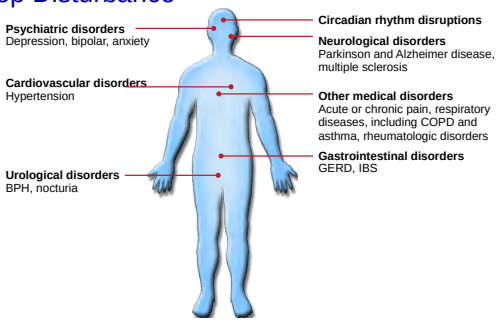
Insomnia very frequently occurs along with mental health challenges such as depression bipolar disorder, and anxiety. So, if you have insomnia, please do ask a health care professional to assess you for these conditions

The thing to remember is that insomnia affects nearly all of our life functioning. As you look at the third illustration on this page, you will see why we clinicians take insomnia so seriously. Mental health, physical health, social life, even body pain - all are negatively affected by insomnia

The take home message is - lets better understand insomnia, respect it, and then find ways to conquer it - for life

HOW WELL DOES PHYSICAL EXERCISE WORK FOR DEPRESSION ?

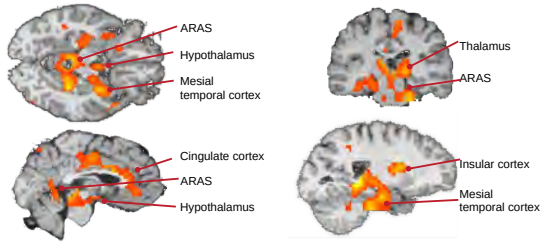
Diverse Medical Conditions Associated with Sleep Disturbance



COPD, chronic obstructive pulmonary disease; GERD, gastroesophageal reflux disease; IBS, irritable bowel syndrome; BPH, benign prostatic hyperplasia.
Taylor DJ et al. *Sleep.* 2007;30(2):213-218.

Some Brain Regions Do Not "Switch Off" in Insomnia Patients

Arousal systems in insomnia patients that do not deactivate from waking to sleep

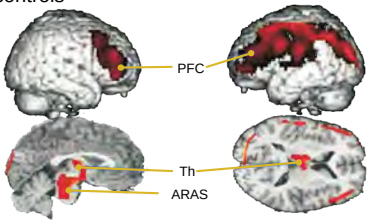


Nofzinger EA et al. *Am J Psychiatry*. 2004;161(11):2126-2129.

As you review these four illustrations on this slide, you will see the brain of a person with insomnia does not 'shut off' during sleep as it should. This excessive work the brain does during sleep, perhaps explains daytime fatigue folks with insomnia feel. so insomnia becomes a night and day problem. Also - worrisomely, there is evidence that insomnia can actually decrease the size of an important part of our brain - the hippocampus

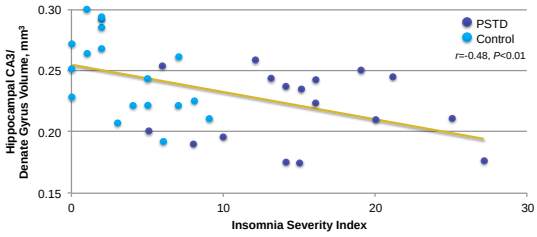
Daytime Fatigue in Insomnia Patients Related to Relative Hypometabolism in Frontal Areas

Insomnia patients have lower metabolism during waking in prefrontal cortex, ARAS, and thalamus compared with healthy controls



PFC, prefrontal cortex; Th, thalamus.
Nofzinger EA et al. *Am J Psychiatry.* 2004;161(11):2126-2129.

Insomnia Severity is Associated with Decreased Hippocampal Volume



Scatterplot of CA3/dentate gyrus volume (mm^3) and subjective sleep quality. Higher values on the Insomnia Severity Index correspond to worse sleep. Volumes of hippocampal subfields in 17 veteran men positive for PTSD (41±12 years) and 19 age-matched male veterans negative for PTSD were measured with 4-T magnetic resonance imaging.
Neylan TC et al. *Biol Psychiatry*. 2010;68(5):494-496.

Understanding Insomnia Even Better -

DSM-5 Insomnia Disorder

A. Dissatisfaction with sleep quantity or quality with ≥1 of the following
   1. Difficulty initiating sleep (children: w/o caregiver intervention)
   2. Difficulty maintaining sleep (children: w/o caregiver intervention)
   3. Early morning awakening w/ inability to return to sleep

B. Significant distress or impairment in social, occupational, educational, academic, behavioral, or other important areas of functioning

C. ≥3 nights per week

D. >3 months

E. Adequate opportunity for sleep

F. Not better explained by and does not occur exclusively during the course of another sleep-wake disorder

G. Not attributable to the physiological effects of a substance

H. Coexisting mental disorders and medical conditions do not adequately explain the predominant complaint

American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*. Arlington, VA: American Psychiatric Association; 2013.

Its very important we don't misdiagnose Insomnia Disorder. Occasional insomnia is not Insomnia Disorder. Please look over the illustration above - this is the DSM-5 definition of Insomnia Disorder. Do consider discussing this with your clinician. And if you see below, we have a number of ways we can treat clinically significant insomnia

Psychological and Behavioral Treatments for Primary Insomnia

Techniques	Method
Stimulus Control Therapy*	If unable to fall asleep within 20 minutes, get OOB and repeat as necessary
Relaxation Therapies*	Biofeedback, progressive muscle relaxation
Restriction of Time in Bed (Sleep Restriction)	Decrease time in bed to equal time actually asleep and increase as sleep efficiency improves
Cognitive Therapy	Talk therapy to dispel unrealistic and exaggerated notions about sleep
Paradoxic Intention	Try to stay awake
Sleep Hygiene Education	Promote habits that help sleep; eliminate habits that interfere with sleep
Cognitive-Behavioral Therapy*	Combines sleep restriction, stimulus control, and sleep hygiene education with cognitive therapy

***Standard treatment according to American Academy of Sleep Medicine.**
OOB = out of bed. Morgenthaler T, et al. *Sleep*. 2006;29(11):1415-1419. Bootzin RR, et al. *J Clin Psychiatry*. 1992;53 Suppl:37-41.

Pharmacological (Medication) Treatment of Insomnia

Many different types of Insomnia medications are available. They all have their own specific benefits and risks

Medications are NEVER first line treatment. Its always wise to try non-medication treatments first

Prescription Agents for Insomnia

- **Orexin Receptor Antagonist**
- **FDA-non-approved for insomnia**
  - Sedating antidepressants
  - Antipsychotics
  - Anticonvulsants
- **FDA-approved hypnotics**
  - BzRAs
    - Benzodiazepines
    - Non-benzodiazepines
  - Melatonin receptor agonist
  - H_1 receptor antagonist

BzRA = benzodiazepine receptor agonist.

A common class of medications used to treat insomnia are benzodiazepines, also called BZRAs.

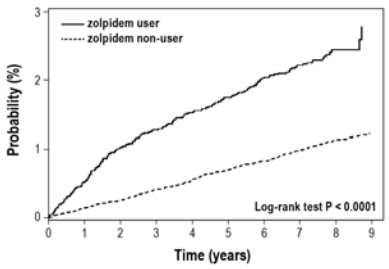
They can be helpful, but there are problems too. These problems are discussed here honestly - please do consider discussing them with your clinician

Adverse Effects of BZRAs

- Daytime sedation, psychomotor and cognitive impairment (depending on dose and half-life)
- Rebound insomnia
- Respiratory depression in vulnerable populations
  - OSA
  - COPD
- Abuse liability; DEA Schedule IV

OSA = obstructive sleep apnea; COPD = chronic obstructive pulmonary disease.
Mitler MM. *Sleep*. 2000;23 Suppl 1:S39-S47. Holbrook AM, et al. *CMAJ*. 2000;162(2):225-233. MICROMEDEX. Available at: www.micromedex.com. US Food and Drug Administration. Drugs@FDA. www.accessdata.fda.gov/scripts/cder/drugsatfda/index.cfm. Charney DS. et al. In: Hardman JG, et al (Eds). *Goodman and Gilman's The Pharmacological Basis of Therapeutics*. Tenth Edition. McGraw Hill; 2001:399-427.

Hip Fracutures and Zolpidem: What's the Cause?

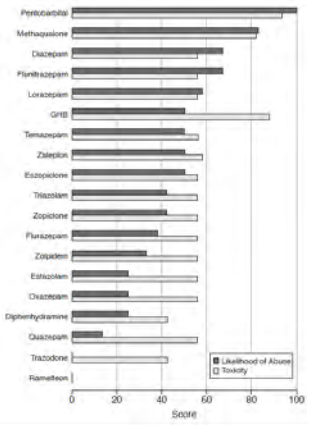


Lin FY, et al. *Sleep*. 2014;37(4):673-679.

Driving Safety

Driving tests 9-11 hours post-dose.
Staner L, et al. *Psychopharmacology*. 2005;181(4):790-798.

Relative Abuse Liability of 19 Hypnotics



- **Abuse**: animal drug self-administration, human liking/reinforcement, actual abuse
- **Toxicity**: animal and human withdrawal, memory impairment, acute sedation, lethality in overdose

GHB = gamma-hydroxybutyrate.
Griffiths RR, et al. *J Clin Psychiatry*. 2005;66 Suppl 9:31-41.

Addiction and physical depend is a risk on ALL benzodiazepine and benzodiazepine like medications. Not all sleep drugs have this risk, but all BZRDs do carry this risk. Please discuss this with your clinician carefully and make all decisions in close consultation with him or her

Rebound Insomnia

- Worsening of sleep compared to pre-treatment baseline
- Typically lasts 1-2 nights after discontinuation
- Does not increase in severity with number of repeated nights of use
- More likely following higher doses of short- and intermediate-acting BzRAs
- Can be minimized by gradual taper (1 clinical dose per week) and by using lowest effective dose

Walsh TK, et al. In: Kryger MH, et al (Eds). *Principles and Practice of Sleep Medicine*. Fifth Edition. St. Louis, MO: Elsevier Saunders; 2011:Chapter 81.

Another potential risk BZRDs and BZRD like medications carry is rebound insomnia. Watch out for this! This is one of the reasons we clinicians always want to use the smallest dose of sleep medication for the shortest period of time. Don't abruptly stop your medications and if and when you and your clinician chose to stop these medications, do consider doing it gradually and slowly

If you are taking a Medication to help you with Sleep, please keep these points in mind

1. ALWAYS discuss your medication fully with your clinician, and discuss the Risk-Benefit ratio before starting it

2. Try, if possible, non-medication way to improve sleep first

3. Use the smallest dose, for the shortest duration of time

4. Avoid or minimize alcohol intake when on sleep medication

5. when you and your clinician do decide to step a sleep medication, please consider a slow and gradual taper off

6. Never combine sleep mediations, and never increase dose of the sleep medication without first taking with your clinician

7. ALWAYS use good hygiene techniques. This rule applies if you are taking sleep medication, or not. Improving Sleep Hygiene is very important!

"If sleep does not serve an absolutely vital function, then it is the biggest mistake the evolutionary process ever made."

– Allan Rechtschaffen, PhD

Lets Remember a few things:

* Sleep is very important for our optimum mind-body functioning

* Improvement in sleep is often achievable with getting ride of some 'bad' sleep habits, and improving certain, well tested, 'good' sleep habits

* Regular practice does make a difference. Lets learn a few skills !

Please read the recommendations below and practice them regularly - these are simple suggestions, yet highly effective ways to improve sleep.

Just remember, please follow these recommendations daily - that's how they are the most effective!

Stimulus Control

- The bed is only for sleep and sex
- If you are unable to sleep, get up, and go into another room
- Do something quiet, calm, and relaxing in dim light
- Do not fall asleep anywhere except for in bed
- Do not watch the clock
- Go back to bed only when sleepy
- Always use an alarm in the morning set for the same time

SLEEP HYGIENE

1. **Sleep only as much as you need to feel refreshed during the following day**.

Restricting your time in bed helps to consolidate and deepen your sleep. Excessively long times in bed lead to fragmented and shallow sleep. Get up at your regular time the next day, no matter how little you slept.

2. **Get up at the same time each day, 7 days a week**.

A regular wake time in the morning leads to regular times of sleep onset, and helps to set your "biological clock."

3. **Exercise regularly**.

Schedule exercise times so that they do not occur within 3 hours of when you intend to go to bed. Exercise makes it easier to initiate sleep and deepen sleep.

4. **Make sure your bedroom is comfortable and free from light and noise.**

A comfortable, noise-free sleep environment will reduce the likelihood that you will wake up during the night. Noise that does not awaken you may also disturb the quality of your sleep. Carpeting, insulated curtains, and closing the door may help.

5. **Make sure that your bedroom is at a comfortable temperature during the night.**

Excessively warm or cold sleep environments may disturb sleep.

6. **Eat regular meals and do not go to bed hungry.**

Hunger may disturb sleep. A light snack at bedtime (especially carbohydrates) may help sleep, but avoid greasy or "heavy" foods.

7. **Avoid excessive liquids in the evening.**

Reducing liquid intake will minimize the need for nighttime trips to the bathroom.

8. **Cut down on all caffeine products.**

Caffeinated beverages and foods (coffee, tea, cola, chocolate) can cause difficulty falling asleep, awakenings during the night, and shallow sleep. Even caffeine early in the day can disrupt nighttime sleep.

9. **Avoid alcohol, especially in the evening.**

Although alcohol helps tense people fall asleep more easily, it causes awakenings later in the night.

10. **Smoking may disturb sleep.**

Nicotine is a stimulant. Try not to smoke during the night when you have trouble sleeping.

11. **Don't take your problems to bed.**

Plan some time earlier in the evening for working on your problems or planning the next day's activities. Worrying may interfere with initiating sleep and produce shallow sleep.

12. **Do not *try* to fall asleep.**

This only makes the problem worse. Instead, turn on the light, leave the bedroom, and do something different like reading a book. Don't engage in stimulating activity. Return to bed only when you are sleepy.

13. **Put the clock under the bed or turn it so that you can't see it.**

Clock watching may lead to frustration, anger, and worry which interfere with sleep.

14. **Avoid naps.** Staying awake during the day helps you to fall asleep at night.

Please xerox this page and put it by your bedside, or by your bathroom mirror, or wherever else you can often lay your eyes on this Sleep Wellness information

Below is a 2 week Sleep Diary. Please consider filling this out and sharing the results with your clinician. A lot can be learned from filling out this two week sleep diary diligently

Date	Unusual Daytime Stressors	Naps (*time & length)*	Exercise (*Y/N, time of day and how long)*	Caffeine *(note type and time) Cigarette*	Sleep meds or alcohol (*name & dose)*	Time you went to bed and turned out the lights	How long it took you to fall asleep for the first time	Number of times you woke up after falling asleep	How long you were awake in the middle of night	Time you finally woke up	Time you finally got out of bed
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My Plan to Achieve Sleep Wellness !!

(please work on this section in consultation with your clinician)