Three classifications of sleep disorder

1) Dyssomnia: Difficulty initiating or maintaining sleep, or sleepiness during the day, that is attributable to one of three types:
   - Intrinsic: source from within body (narcolepsy, apnea, stress)
   - Extrinsic: source outside body (environment, altitude, drugs)
   - Circadian (e.g., jet lag, shift work)

2) Parasomnia: Undesired disturbances during sleep
   - Arousal disorders (e.g., sleep walking)
   - Sleep transition disorders (e.g., sleep talking)
   - REM disorders (e.g., nightmares; REM behavior disorder)
   - Other (e.g., bed wetting, teeth grinding)

3) Medical/psychiatric disorders not specifically related to sleep: (e.g., pain, schizophrenia, depression)

Common Sleep Disturbances

- Jet lag (Dyssomnia): circadian clock temporarily desynchronized with local time.
  - Going east: behind local time, difficulty going to sleep, tend to awaken late
  - Going west: ahead of time, easy to get to sleep, awaken too early
  - Traveling west, about 1 day per time zone traveled is needed for circadian recovery (but there are individual differences)
  - Traveling east, about 1.5 days per time zone traveled are needed for circadian recovery (gain, individual differences)

Coping with jet lag

- Must attend to both circadian and homeostatic sleep drive
- Homeostatic: Stay awake at least 16 hrs. (ideally) before new local bedtime.
- Circadian: Adjust zeitgeber factors to new local time immediately.
  - Morning: don’t sleep late, eat breakfast on time, exercise, bright light, noise (link: TV).
  - Evening: go to bed a new local bedtime, quite and cool room, relaxing activity before bed, melatonin for first several nights can help, particularly going east.
• Shift work: working at night or on rotations
  – Creates serious problems with circadian synchronization (dyssomnia)
    – Consequences: emotional, social & physical problems; higher divorce rate; more accidents and job mistakes
  – Night shift paralysis: conscious but can’t move; 12% of nurses report (parasomnia)
  – About 20% of workers cant tolerate
  – Coping:
    • Bright work lighting
    • Modafinil
    • Don’t do shiftwork

Night Shift Paralysis Example

Air Traffic Controller: A private plane was drifting too close to a commercial plane. I tried to reach the switch to turn the radio to the private plane’s channel, but couldn’t move my arm. I tried my other arm and it didn’t move. I tried to stand up but that didn’t work. My arms and legs were kind of numb, stiff and heavy like they were made of stone. I could see and hear everything around me. When I tried to move my arm again I could see my fingers moving, which kept me from completely freaking out. I looked at the screen again and the private looked like he was on a convergence with their passenger plane. I did panic then. I let out a yell. I shouted for my supervisor to take this one. He took over and separated the planes. They were close enough to qualify as a near miss. The paralysis resolved after about 3 minutes.

• Night terrors (parasomnia)
  – Mostly children
  – Waken from SWS in terror, screaming, flailing around, difficult to control
  – Mo memory of any dreams
  – Usually resolves with age; no treatment needed.

• Sleep paralysis (parasomnia)
  – Feeling of awakening but unable to move.
  – Often believe animal/alien/monster in room or sitting on chest
  – Possible anomalous REM-on state with atonia only.
  – Or, it may be a dream (i.e., experience of being awake and paralyzed is a dream)

A sleep paralysis report

As a college student in 1964, David J. Hufford met the dreaded Night Crusher. Exhausted from a bout of mononucleosis and studying for finals, Hufford retreated one December day to his rented, off-campus room and fell into a deep sleep. A short time later he awoke with a start to the sound of the bedroom door creaking open—the same door he had locked and bolted before going to bed. Hufford then heard footsteps moving toward his bed and felt an eerie presence. Terror gripped the young man, who couldn’t move a muscle, his eyes plastered open in fright.

Without warning, the malevolent entity, whatever it was, jumped onto Hufford’s chest. An oppressive weight compressed his rib cage. Breathing became difficult, and Hufford felt a pair of hands encircle his neck and start to squeeze. “I thought I was going to die,” he says. At that point, the lock on Hufford’s muscles gave way. He bolted up and sprinted several blocks to take shelter in the student union. “It was very puzzling,” he recalls with a strained chuckle, “but I told nobody about what happened.”
• Sleepwalking (parasomnia)
  - Begins during SWS!
  - Sits up in bed with glazed look in eyes
  - Sometimes walks and performs routine activity
    - May urinate, clean, go to fridge, etc.
  - Implied partial activation of ARAS/reticular formation
  - Minimal level of awareness
  - Predictors: age, stress, sleep deprivation, and genetics
  - Peaks at age 12

• Dealing with a sleepwalker
  - Usually do not attempt to awaken
  - Prevent injury
  - Direct back to bed
  - Make suggestions: "Looks like you are done cleaning..."
  - If walker is talking, ask simple questions: "Would you like to go back to bed now?"

Sleep walking used as defense:

Kenneth Parks, a 23-year-old, drove his car 15 miles to his in-laws house in May 1987. There, he attacked his father-in-law leaving him unconscious and stabbed his mother-in-law, killing her. He then went to the police station saying, "I think I have killed some people". He was bloody and his hand was badly injured. Parks was unable to recount anything about the murder, and he had no motives for committing it. He was unemployed and stressed. He went to sleep that night thinking about how he was going to visit his in-laws the next day with his wife to tell them about his financial and gambling problems. After a year, he was found not guilty of murder or attempted murder. There was an appeal, but his acquittal was upheld. He was not even sentenced to time in a mental ward since "non-insane automatism" (i.e. Sleepwalking) is not legally viewed as a mental disorder.

• Sleep talking (parasomnia)
  - Mostly in stage 2 NREM sleep or during NREM stage transition
  - Correlated with sleep walking
  - 50% of young children
  - Usually mumbling, but records of up to 100 words
  - No awareness on awakening