Parasomnias
Parasomnias

- Disorders of Arousal (NREM Sleep)
  - Confusional Arousals
  - Sleep Walking
  - Sleep Terrors
- Parasomnias Usually Associated with REM
  - REM Behavior Disorder
  - Recurrent isolated sleep paralysis
- Nightmare Disorder
- Other Parasomnias
  - Sleep Related Dissociative
  - Sleep Enuresis
  - Sleep Related Groaning
  - Exploding Head Syndrome
  - Sleep Related Hallucinations
  - Sleep Related Eating Disorder
  - Parasomnia, Unspecified
  - Due to Drug or Substance
Disorder of arousal - Confusional Arousals

A. Recurrent mental confusion or confusional behavior occurs during an arousal or awakening from nocturnal sleep or a daytime nap

Key Points
Aka Sleep inertia
Occurs help of Non-REM slow-wave sleep
Retrograde amnesia for many intercurrent events
Fragmentary or no recall of dream mentation
Poor response to efforts to provoke behavioral wakefulness
Episodes of mental confusion following arousal from sleep
  Typically from slow wave sleep in 1st third of night
  Sleep talking and occasional shouting is common
  Last 5-15 mins (can last as long as 30-40 min)
Prevalent in children and adults <35 yr.
  17% of children 3-13 yrs.
Treatment:
  reassurance
  clonazepam rarely
Disorder of arousal-
Sleepwalking (Somnambulism)

A. Ambulation occurs during sleep

B. Persistence of sleep, and altered state of consciousness, or impaired judgment during ambulation as demonstrated by at least one of the following:
   i. Difficulty in arousing the person
   ii. Mental confusion when awakened from an episode
   iii. Amnesia either complete or partial for the episode
   iv. Inappropriate or nonsensical behavior
   v. Potentially dangerous behavior
Disorder of arousal-
Sleepwalking (Somnambulism)

Key Points
Most common in children aged 4-6 years
  Frequently disappears during adolescence.
  Adult cases are not infrequent; if present, often precipitated by stress or medications
Strong family history is common; often family or personal history of other arousal disorders from SWS
Usually occur in first half of the night from slow-wave sleep but occasionally stage II
Usual duration of an episode is 1-5 minutes.
Once aroused, shows mental confusion with amnesia for the event.
Eyes open typically (compared to REM parasomnia which have eyes closed)
Adults may be precipitated by zolpidem particularly if prior history of sleepwalking
Always recommend safety measures such as locks, sleeping on the first floor, etc.
Treatment:
  reassurance
  environmental control
  Sleep hygiene
  clonazepam
Differential diagnosis: Seizure, RBD, arousal disorder, nocturnal eating disorder
Disorder of arousal-Sleep Related Eating Disorder

A. Recurrent episodes of involuntary eating and drinking occurring during the main sleep period

B. One or more of the following must be present with recurrent episodes of involuntary eating or drinking:

i. Consumption of peculiar forms or combinations of food or inedible or toxic substances

ii. Insomnia related to sleep disruption from repeated episodes of eating, with complaints of nonrestorative sleep or EDS

iii. Sleep related injury

iv. Dangerous behaviors performed while in pursuit of food or while cooking

v. Morning anorexia

vi. Adverse health consequences from recurrent bunge eating of high caloric foods
Disorder of arousal-
Sleep Terrors

A. Sudden episode of tear or occurs during sleep, usually initiated by a cry or loud scream that is accompanied by autonomic nervous system and behavioral manifestations of intense fear

B. At least one of the following associated features is present:
   i. Difficulty in arousing the person
   ii. Mental confusion when awakened from episode
   iii. Amnesia either complete or partial for episode
   iv. Potentially dangerous behavior
Disorder of arousal-
Sleep Terrors

**Key Points**

- Autonomic symptoms include tachycardia, tachypnea, skin flushing, diaphoresis, mydriasis, and increased muscle tone
- Familial pattern may be present
- Differential diagnosis: Seizure, RBD, arousal disorder, nocturnal eating disorder
REM parasomnia-
REM Behavior Disorder

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
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<tbody>
<tr>
<td>A.</td>
<td>Presence of REM sleep without atonia: The EMG finding of excessive amounts of sustained or intermittent elevation of submental EMG tone or excessive phasic submental or limb EMG twitching</td>
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<td>B.</td>
<td>At least one of the following is present:</td>
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<tr>
<td></td>
<td>i. Sleep related injuries or disruptive behaviors</td>
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<td></td>
<td>ii. Abnormal REM sleep behavior documented during sleep study</td>
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<td></td>
<td>iii. Awakening short of breath</td>
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<td>C.</td>
<td>Absence of EEG epileptiform activity during REM sleep unless RBD can be clearly distinguished from any concurrent REM sleep related seizure disorder</td>
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REM parasomnia - REM Behavior Disorder

Key Points
Predominantly male after 50 yr. of age
- Often with underlying neurological disorder such as Parkinsonism (1/3 have RBD), MSA (90% have RBD), narcolepsy, and stroke
- Medication may precipitate
  - venlafaxine
  - SSRI
  - mirtazapine
- Intermittent loss of REM EMG atonia
- Exaggerated motor activity with dreams
- Tx: reassurance; enviromental control; clonazepam
- PSG shows increased chin EMG in REM with prolonged limb movements
  - Increase in REM density and SWS time
## Differential Diagnosis of Nocturnal Events

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<thead>
<tr>
<th></th>
<th>NREM Parasomnia</th>
<th>REM Behavior Disorder</th>
<th>Nocturnal Seizures</th>
<th>Psychogenic Events</th>
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</thead>
<tbody>
<tr>
<td><strong>Time of Occurrence</strong></td>
<td>First 1/3 of night</td>
<td>During REM; latter 2/3 of night</td>
<td>Any time (most common during first 2 hours and last 2 hours of sleep)</td>
<td>Anytime</td>
</tr>
<tr>
<td><strong>Memory of Event</strong></td>
<td>Usually none</td>
<td>Dream recall</td>
<td>Usually none but frontal lobe may have some recall</td>
<td>None</td>
</tr>
<tr>
<td><strong>Stereotypical Movements</strong></td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>PSG Findings</strong></td>
<td>Arousal from delta sleep</td>
<td>XS EMG tone during REM sleep</td>
<td>Potentially epileptic activity</td>
<td>Occur from awake state</td>
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## Frontal Lobe Seizures vs NREM Parasomnia

<table>
<thead>
<tr>
<th>Differential Diagnosis</th>
<th>Frontal Lobe Seizures</th>
<th>NREM Parasomnias</th>
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<tbody>
<tr>
<td>Age of onset</td>
<td>11.8 +/- 6.3</td>
<td>Usually &lt; 10 yo</td>
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<tr>
<td>Attacks per month</td>
<td>20 to 40 (multiple events per night)</td>
<td>1-4</td>
</tr>
<tr>
<td>Clinical course</td>
<td>Increasing frequency or stable</td>
<td>Decreasing/disappearing</td>
</tr>
<tr>
<td>Movement semiology</td>
<td>Stereotypic</td>
<td>Polymorphic</td>
</tr>
<tr>
<td>Attack onset</td>
<td>Any time during night</td>
<td>First third of night</td>
</tr>
<tr>
<td>Attack distribution</td>
<td>2- NREM (65%)</td>
<td>3-4 NREM</td>
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<tr>
<td>Motor Pattern</td>
<td>2-3 repetitive types of attacks</td>
<td>Absence of motor pattern</td>
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<tr>
<td>Duration of attacks</td>
<td>&lt; 1 minute (usually 15 to 30 sec)</td>
<td>Several minutes</td>
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### Diagnostic Evaluation
1) Daylab video EEG (awake only): essentially all normal
2) Daylab videoEEG (after sleep deprivation): 52.2% abnormal
3) 24 hour videoEEG (daytime and nocturnal): 87% abnormal