Elimination Disorders

- Enuresis (primary and secondary)
- Encopresis (primary and secondary)
Elimination disorders

- **Toilet training**
  - Developmental milestone
  - Often required for entry into day care
  - Usual sequence: nighttime bowel control, daytime bowel control, daytime bladder control, nighttime bladder control
  - Usually complete between 18 and 36 months (1.5 – 3 years) in Western culture
Enuresis

• **Repeated voiding of urine during day or night into bed or clothes**
  - Not due to physical disorder (e.g., diabetes, UTI)
  - Not diagnosed before age 5 (b/c expected to “have accidents” before then)

• **At least twice weekly for 3 months**
  - or causing clinically significant distress/impairment in important areas of functioning

• **Nocturnal vs. diurnal**

• **Primary (85% of cases) vs. secondary**
Enuresis

- Secondary symptoms
  - Peer and family relational problems
  - Poor self image

- Prevalence:
  - Age 5: 7% of boys, 3% of girls
  - Age 10: 3% of boys, 2% of girls
  - Age 18: < 1% for both genders
Enuresis

• Causes (etiology)
  • No definitive causes identified
  • Emotional difficulties are outcome, not cause, of enuresis
  • Sleep abnormalities, lack of normal nocturnal increases in antidiuretic hormone (ADH) – hormone reduces urine production at night
    • Research inconsistent
    • May explain subset of cases (equifinality?)
  • Family history
    • High concordance rates
  • Organic predisposition
  • Failure to learn control over reflexive wetting – due to either faulty training or other environmental influences that interfere with learning (behavioral)
Enuresis

• Treatment
  • FIRST: Rule out medical cause for urinary difficulties (e.g., diabetes, UTI)
  • Pharmacological: may help for treatment-resistant cases, but relapse occurs when drug is discontinued (practical?)
  • Behavioral
    • Urine-alarm system
      • Absorbent sheet b/t 2 foil pads
      • Urine completes circuit and sounds alarm
      • Parents awaken child, who turns off alarm and goes to bathroom to finish voiding
      • Bedding changed, child returns to sleep
      • Discontinued after 14 consecutive dry nights
    • Full Spectrum home Training
      • Urine alarm + cleanliness training + retention control training + overlearning
**UC:** unconditioned Stimulus (full bladder)  \[\rightarrow\]  **UR:** unconditioned Response (wake-up response)

**UCS:** conditioned Stimulus (loud alarm)  \[\rightarrow\]  **UCR:** unconditioned Response (wake-up response); the UCR becomes a conditioned response (CR) to what was previously a neutral stimulus & is now a CS

Neutral stimulus = full bladder (becomes a conditioned stimulus (CS) through repeated pairings

In Alarm Training the goal is to train the full bladder to elicit a wake-up response
Encopresis

- Passage of feces into the clothing or other unacceptable area
  - Not due to a physical disorder
- At least 1x/month for at least 3 months
- Child age 4 or greater
- Prevalence: 1.5% to 7.5% (decreases with age)
  - Rare by adolescence
  - More frequent in males
- Occurs more during day than at night
  - More socially evident than enuresis - social stigma attached
Encopresis

- Secondary symptoms
  - Behavioral problems (due to social stigma attached?)
  - Lower social competence

- Etiology (causes)
  - Influenced by diet, fluid intake, medications, environmental stresses, or inappropriate toilet training
  - Neurodevelopmental approach – temporary developmental inadequacies in structure and function of physiological and anatomical mechanisms required for bowel control
  - Behavioral perspective – faulty toilet training, possibly in combination with poor dietary choices
    - Avoidance conditioning (avoidance of pain or fear reinforces retention)
    - Positive consequences may maintain soiling
    - Inadequate reinforcement for appropriate toileting
Encopresis treatment

• Medical + behavioral management
  • Education re: encopresis
  • Initial cleanout phase to eliminate impactions (enemas, high fiber intake)
  • Schedule regular toilet times
    • Use suppositories if defecation does not occur
    • Diet modification, laxatives, & stool softeners used to facilitate defecation
  • Positive consequences for unassisted (no suppository) BMs and for clean pants
  • Laxatives/suppositories/etc. withdrawn later in course of training
Sleep problems

- Normal sleep (lots of variability at all ages)
  - Quantity
    - Newborns: 16-20 hrs/day
    - 1-yr olds: 12 hrs/day
    - 6-12 yr olds: 10-11 hrs/day
  - Quality
    - Newborns: distributed between day and night
    - 3-months: day-night pattern (often corresponds with switching to solid foods)
    - 18-months: stable day-night pattern

- 2 phases of sleep
  - REM
    - Infants: 8 hrs/night → 4 hrs/night by age 1
  - Non-REM
    - 4 stages
      - Stages 3 & 4 – deepest part of sleep (EEG “slow wave” sleep)
  - Sequencing
    - Infants: stages/phases intermingles
    - As child develops: regular patterns of light NREM, deep NREM, and REM gradually established
Sleep problems

- Secondary symptoms
  - Poor academic performance
  - Anxiety
  - Depression
  - Health difficulties
## Sleep problems

- Common sleep problems
  - \( \frac{1}{4} \) to \( \frac{1}{3} \) of infants/young children experience some form of sleep problem disturbing to family

<table>
<thead>
<tr>
<th>Age</th>
<th>Common problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>Not sleeping through night</td>
</tr>
<tr>
<td>2</td>
<td>Reluctance to go to sleep; nightmares</td>
</tr>
<tr>
<td>3-5</td>
<td>Difficulty initiating sleep, nighttime awakenings, &amp; nightmares</td>
</tr>
<tr>
<td>School-age</td>
<td>Bedtime resistance, delayed sleep onset, &amp; night wakening</td>
</tr>
<tr>
<td>Adolescence</td>
<td>Need for more sleep, difficulty falling asleep</td>
</tr>
</tbody>
</table>
Sleep problems vs. sleep disorders

- Frequency, persistence, and association with other problems
- Impairment in important areas of functioning
- Significant distress
Sleep disorders

- **Dyssomnias**
  - Difficulties initiating and maintaining sleep, or excessive sleepiness
  - Quantitative problems

- **Parasomnias**
  - Disorders of arousal, partial arousal, or sleep-stage transitions
  - Qualitative problems
Dysomnia Categories

- Insomnia: At least a month of difficulty initiating or maintaining sleep, which causes life impairment and which is not better explained by another disorder.

- Hypersomnia: At least a month of excessive sleepiness, which causes life impairment.
Dysomnia Categories

- Narcolepsy: At least three months of daily and irresistible attacks of refreshing sleep that include loss of muscle tone or recurrent intrusions of REM sleep into the sleep-wakefulness transition.

- Breathing-Related Sleep Disorder: Evidence of a sleep-disrupting breathing condition.
Dysomnia Categories

• Circadian Rhythm Sleep Disorder: Impairing and persistent or recurring excessive sleepiness or insomnia due to a mismatch of the sleep-wake cycle to the individual’s circadian rhythm and/or environmental requirements.
  • Specifiers: Delayed Sleep Phase, Jet Lag, Shift Work, Unspecified.

• Dysomnia NOS: Catch-all category.
Parasomnia Categories

- Nightmare Disorder: Impairing and repeated sleep awakenings, with recall of extended and very frightening dreams, with rapid reorientation upon awakening.

- Sleep Terror Disorder: Impairing sleep awakenings, usually with a panicky scream, intense fear with related autonomic signs, relative unresponsiveness to comforting, with little recall of the dream.
  - i.e., “night terrors”
  - Prevalence: 3% of children between age 4-12
  - Most children outgrow it before adolescence
# Parasomnia Categories

<table>
<thead>
<tr>
<th></th>
<th>Nightmares</th>
<th>Sleep Terrors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sleep stage</strong></td>
<td>REM Sleep</td>
<td>NREM Sleep</td>
</tr>
<tr>
<td><strong>When?</strong></td>
<td>Middle/later portions of night</td>
<td>First 3(^{rd}) of night</td>
</tr>
<tr>
<td><strong>Verbalizations?</strong></td>
<td>Subdued, if any</td>
<td>Child wakes with cry or scream; verbalizations usually present</td>
</tr>
<tr>
<td><strong>Physiological arousal</strong></td>
<td>Mild to moderate</td>
<td>Intense (increased heart rate, profuse sweating, pupils dilated)</td>
</tr>
<tr>
<td><strong>Motor activity</strong></td>
<td>None to slight</td>
<td>Increased motor activity, agitation</td>
</tr>
<tr>
<td><strong>Responsiveness</strong></td>
<td>Easy to arouse, responsive to environment</td>
<td>Difficult to arouse, unresponsive to environment</td>
</tr>
<tr>
<td><strong>Memory of event</strong></td>
<td>Frequently remembered</td>
<td>Very limited/no memory</td>
</tr>
<tr>
<td><strong>Prevalence</strong></td>
<td>Quite common</td>
<td>Somewhat rare (~3%)</td>
</tr>
</tbody>
</table>
Parasomnia Categories

- Sleepwalking Disorder (somnambulism): Impairing repeated sleepwalking episodes, with unresponsivity in the episode, relatively quick reorientation, and amnesia for the episode.
  - 15% of children age 5-12 have isolated experience
  - 1-6% prevalence rate of persistent sleepwalking (i.e., sleepwalking disorder)
  - Occurs during first 1-3 hours of sleep, during later stages of NREM (not “acting out a dream”)
- Parasomnia NOS: Catch-all category.
Treatment for dyssomnias in children

• Extinction
  • Set bed time; ignore child until set time in a.m.
  • Graduated extinction (b/c hard for parents to listen to crying child …)

• Establishing positive, consistent, scheduled bedtime routines
  • Calm activities the child enjoys

• Scheduled awakenings
  • Parent awakens and consoles child approx 15 min before typical spontaneous awakening
    • Gradually faded out

• Parent education
  • Information about sleep, routine, putting child to bed while partially awake to learn to go to sleep without adult
Treatments for dyssomnias in children

- Sleep Studies.
- Biological Treatments: Use of Benzodiazepines and Antihistamines as sleep aids.
- Cognitive-Behavioral Therapy, including relaxation training and the use of biofeedback.
Treatment for parasomnias in children

• No treatment indicated

• Education and support usually sufficient
  • Most disappear spontaneously, and are of minimal impact (e.g., sleep terrors scary for parent, but child doesn’t remember them)

• Treatments available: scheduled awakenings, contingency management, instructional procedures, and anxiety-reduction procedures
  • e.g., scheduled awakenings for sleep terror disorder
    • Awaken child ~30 min prior to typical sleep terror episode (lightly touch child until child opens eyes, then allow him/her to fall back asleep)
Other Tips for Sleep Problems

- Initiate a regular program of exercise.
- Avoid large or late meals, and avoid going to bed very hungry.
- Avoid napping.
- Go to bed only when sleepy
- Cut down on caffeine, heavy smoking, and alcohol use.
- Cease fretting over inconsistencies in the sleep pattern.
- Keep the bedroom quiet, dark, and comfortable.
- Relearn a more appropriate bedtime routine.