

WHAT ARE WE HERE TO LEARN

- ❖ Elimination disorders are disorders that concern the elimination of feces or urine from the body.
- ❖ The American Psychiatric Association recognizes two elimination disorders:
 - Enuresis
 - Encopresis



The normal sequence of developing control over bowel and bladder functions is the development of :

Nocturnal fecal continence

Diurnal fecal continence

Diurnal bladder control

Nocturnal bladder control



ENCOPRESIS

- **DSM-IV-TR Diagnostic Criteria for Encopresis**
 - A. “Repeated passage of feces into inappropriate places (e.g., clothing or floor) whether involuntary or intentional.
 - B. At least one such event a month for at least 3 months.
 - C. Chronological age is at least 4 years (or equivalent developmental level).
 - D. The behavior is not due exclusively to the direct physiological effects of a substance (e.g., laxatives) or a general medical condition except through a mechanism involving constipation.



- **ICD-10 Diagnostic Criteria for Encopresis:**
- A] The child repeatedly passes feces in places that are inappropriate for the purpose (e.g., clothing, floor), either involuntarily or intentionally. (The disorder may involve overflow incontinence secondary to functional fecal retention.)
- B] The child's chronological and mental age is at least 4 years.
- C] There is at least **one encopretic event per month.**
- D] Duration of the disorder is at **least 6 months.**
- E] There is no organic condition that constitutes a sufficient cause for the encopretic events.



CLASSIFICATION

PRIMARY

SECONDARY

**With constipation and overflow
incontinence (Retentive)**

**Without constipation and overflow
incontinence (Non-Retentive)**



CLINICAL DESCRIPTION

- Typically occurs during the day.
- 50-60% have secondary Encopresis.
- Association with ODD and Conduct disorder

RETENTIVE ENCOPRESIS –

Is characterized by a cycle of several days of retention, a painful expulsion, and another period of retention. While the fecal mass is growing, there may be leakage around the mass.

NONRETENTIVE ENCOPRESIS-

Applies to those children who simply do not control the expulsion of feces on a psychological, physiologic, or combined basis.



ETIOLOGY

- **RETENTIVE:**

- painful defecation,
- inadequate or punitive toilet training,
- fear of school bathroom, or toilet related fears
- Mechanisms include altered colon motility, and contraction factors, obstruction, stretched and thinned colon walls, and decreased sensation 2nd to neurological disorder.

- **NON RETENTIVE :**

- May be deliberate attempt, as a means of avoiding stressors or communicating anger.



EPIDEMIOLOGY

- Prevalence decreases with increasing age
- 3% of 4 year-olds
- 2% of 6 years old
- 1.6 % of 10-11year olds.
- Male > female: 2.5:1 to 6:1
- Secondary Encopresis often starts by age 8 years.
- Rare in adolescent
- Higher rates in MR and Low socioeconomic classes.



COURSE AND PROGNOSIS

63% recover with treatment

- **Laxative protocol:**
- 50% recover with no recurrence after 1 year, 20% after 2 years.
- **Psychiatric or medical co-morbidity:** major determinant of prognosis.
- 25% co morbid enuresis.



TREATMENT

- **INITIAL MEETING:** designed to educate both the parents and child about bowel function and to diffuse the psychological tension that may have developed in the family around the encopresis.
- **2ND STAGE:** Initial bowel catharsis, after which the child receives daily doses of laxatives or mineral oil.
- **BEHAVIORAL COMPONENT:** which consists of daily timed intervals on the toilet with rewards for success. 78% success rate seen



ENURESIS

- The term is derived from the Greek word **enourein** means **“to void urine.”**



- **DSM-IV-TR Diagnostic Criteria for Enuresis**

- A] Repeated voiding of urine into bed or clothes (whether involuntary or intentional).
- B] The behavior is clinically significant as manifested by either a frequency of twice a week for at least 3 consecutive months or the presence of clinically significant distress or impairment in social, academic (occupational), or other important areas of functioning.
- C] Chronological age is at least 5 years (or equivalent developmental level).
- D] The behavior is not due exclusively to the direct physiological effect of a substance (e.g., a diuretic) or a general medical condition (e.g., diabetes, spina bifida, a seizure disorder).



- **ICD-10 Diagnostic Criteria for Enuresis**

- A] Child's chronological & mental age is at least 5 yrs
- B] Involuntary or intentional voiding of urine into bed or clothes occurs at least twice a month in children aged under 7 years, & at least once a month in children aged 7 years or more.
- C] Duration of the disorder is at least 3 months.
- D] The enuresis is not a consequence of epileptic attacks or of neurological incontinence, & not a direct consequence of structural abnormalities of the urinary tract or any other nonpsychiatric medical condition.
- E] There is no evidence of any other psychiatric disorder that meets the criteria for other ICD-10 categories.



TYPES OF ENURESIS

NOCTURNAL

DIURNAL

MIXED



PREVALENCE

1-2% in 18 to 64 years-olds

1-2% in 15 years-olds

5% in 10 years-olds

20% in 5 years-olds



More common in boys.

Frequent co morbidities:

ODD, ADHD

Behavior problems (more with secondary enuresis)

Developmental delays

Learning disabilities

Poor school achievements

Secondary Enuresis

related to stress, trauma, or psychological crisis



ETIOLOGY

- The most severe form of dysfunctional voiding is called **Hinman's syndrome**, and is thought of as a non-neurogenic neurogenic bladder resulting from habitual, voluntary tightening of the external sphincter during urges to urinate.

- **Voluntary-**

ODD, Psychotic disorders .

- **Involuntary-**

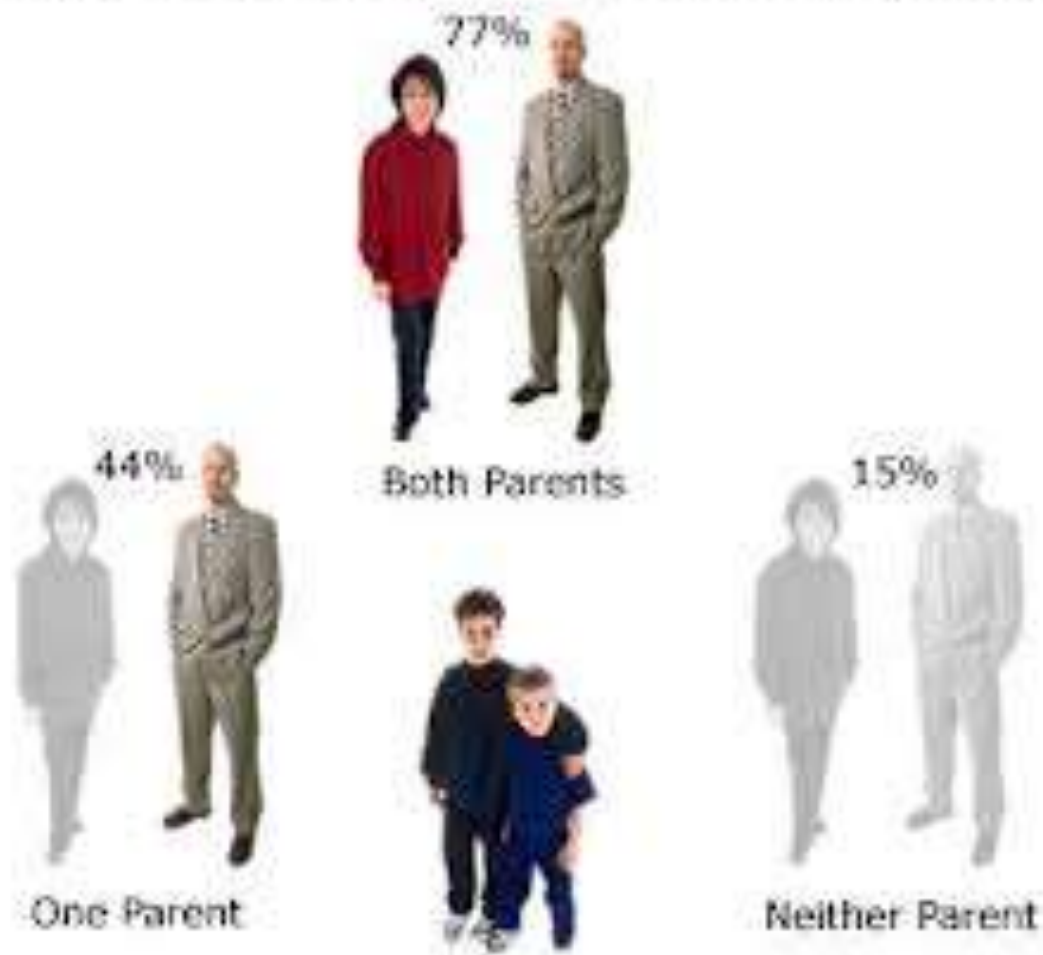
Familial: In families where both parents have a history of enuresis, 77 percent of children will have enuresis.

- In families where one parent has had enuresis, 44 percent of children will be affected;

- Only about 15 percent of children will have enuresis if neither parent was enuretic .



Chance of Enuresis in Child with Positive Family History



ENURESIS: GENETICS

- In one study, researchers evaluated 11 families with primary nocturnal enuresis. The trait showed nearly **complete penetrance** in these families.
- This seems to suggest the existence of a major dominant *gene* for primary nocturnal enuresis.
- While this gene located on chromosome 13q, no specific locus on this chromosome has yet been identified.
- Some studies also implicated chromosomes 4p, 8, 12q, 22 and AQP2 locus.



- **DEPTH OF SLEEP AND ENURESIS**

- It has been suggested that enuretic children are deep sleepers and more difficult to arouse than non- enuretic children.
- This would make it more difficult for them to awaken to cues associated with a full bladder while asleep.
- Most other studies have not supported this finding and demonstrate no consistent correlation between abnormal sleep patterns, or stage of sleep and bed-wetting.
- Some have documented more difficulty in waking.



- **ROLE OF ANTIDIURETIC HORMONE**

- There is some evidence that children with enuresis excrete significantly higher volumes of urine during sleep than children without enuresis.
- This suggests that abnormal (e.g., lower) secretion of antidiuretic hormone at night may be a significant contributor to nocturnal enuresis in some children.
- **Atrial natriuretic peptide(ANP), endogenous arginine vasopressin** are also found to be associated but no consistent correlation has been found.



MEDICAL CAUSES

- UTI
- Urethritis
- Diabetes
- Sickle cell anemia
- Seizure disorder
- Neurogenic bladder



COURSE AND PROGNOSIS

- **Primary:**
high spontaneous remission with 15% annual rate .
- **Secondary:**
Usually begins b/w ages 5-8 years.

Adolescent onset signify more psychiatric problems and less favorable outcome.



COMPLICATIONS

- Low self esteem
- Avoidance of overnight visits and socializing
- Anger from punishment by caregiver.
- Social rejection
- Embarrassment
- Teasing by peers.
- Angry outbursts.
- Anxiety



EVALUATION

- **Medical evaluation**
 - Urine analysis
 - Physical exam
- **Family history**
- **Psychosocial factors**
- **Child's perception of enuresis**
 - Treatment is more successful if child perceives problem to have psychosocial implications



Evaluation (contd)

- **History of the problem**

- How often and when it occurs
- Type of solutions parents have tried
- Environment issues

(Daily fluid intake, Bedtime ritual, Proximity to bathroom)

Psychiatric evaluation-

- Assessment of associated psychiatric symptoms
- Recent psychosocial stressors
- Family concerns about the problems and management of symptoms.



TREATMENT

- Only 38% of children with enuresis seek medical help
- 15% annual rate of spontaneous remission
- Between ages of 4 & 6 yrs:
 - 71% of girls stop wetting
 - 44% of boys



BEHAVIORAL TREATMENT

BELL & PAD METHOD

- The bell and pad method of conditioning is a reasonable first approach. Success rate of 75%
- Urine-sensitive pad connected to alarm
- Based on classical conditioning paradigm
 - Child learns to associate alarm with feeling of full bladder
 - Average use is 6 months
 - Increased success through:
Use of parental reinforcement
Continuing to use the alarm intermittently



- **OTHER PROCEDURES :**

- include reward systems, such as **star charts**,
- nighttime awakening to urinate,
- fluid restriction.



Case: 3-year-old X is experiencing difficulty with toilet-training for bowel and bladder.

Behavioral program for intensive daytime toilet training

A. Switch over to regular underwear.(i.e.removing diapers if used) This is important step in helping X get immediate unpleasant sensation when she wets herself.

B. Have X sit on the toilet for 5 minutes every half hour.

- If she urinates (even a little bit):

- 1) Give lots of praise and applause!!!

- 2) Give candy immediately (keep candy in the bathroom so it can be given quickly)

- 3) X is free to get off the toilet (she does not have to sit for the whole 5-minute period)

- If she does not void-- after sitting 5 minutes -- say "good trying", but insist that the child stay on the toilet for the full 5 minute (no candy is given).



PHARMACOLOGIC METHODS



IMIPRAMINE

- It is efficacious and approved for use in treating childhood enuresis, primarily on a short-term basis.
- Initially, up to 30 percent of patients with enuresis stay dry, and up to 85 percent wet less frequently than before treatment.
- The success often does not last, however, and **tolerance** can develop after 6 weeks of therapy.
- Once the drug is discontinued, **relapse** and enuresis at former frequencies usually occur within a few months.
- The drug's adverse effects, which include **cardiotoxicity**, are also a serious problem.



DESMOPRESSIN

- Synthetic replacement for Arginine vasopressin ,the hormone that reduces urine production during sleep
- Review Studies: 10%-91% success rate
- It can be given to children over 7 years, if rapid-onset and/or short-term improvement in bedwetting is the priority of treatment
- The dosage: **0.2 mg to 0.6 mg tablet for 3 to 6 wks.**
- Expensive & not a cure.
- Wetting resumes in 80%, once medication is discontinued
- **Most serious side effect (rare) is hyponatremia, leading to seizures**
- Most common side effects: Nasal stuffiness, headache, epistaxis, seizures and abdominal pain.



- **REBOXETINE**

- a norepinephrine reuptake inhibitor with a noncardiotoxic side effect profile has recently been investigated as a safer alternative to imipramine in the treatment of childhood enuresis.
- A trial in which 22 children with socially handicapping enuresis who had not responded to an enuresis alarm, desmopressin, or anticholinergics were administered 4 to 8 mg of reboxetine at bedtime. Of the 22 children, 13 (59 percent) in this open trial achieved complete dryness with reboxetine alone, or in combination with desmopressin.
- Side effects were minimal



FACTORS TO CONSIDER FOR ENURESIS TREATMENT

- Age of child
- Medical cause has been ruled out
- Rate of spontaneous remission
- Behavioral conditioning with bell and pad or similar methodology
 - Lower rate of relapse than with pharmacological treatment
 - Safer than pharmacological treatment
- Most commonly used pharmacological intervention is **Desmopressin acetate** (DDAVP)
- **Imipramine** is no longer first-line choice for pharmacological treatment, but can be used for refractory individuals
- **Combination of behavioral and pharmacological treatment can be considered for refractory enuresis**





THANK YOU...

Happy New Year!

