Elimination Disorders

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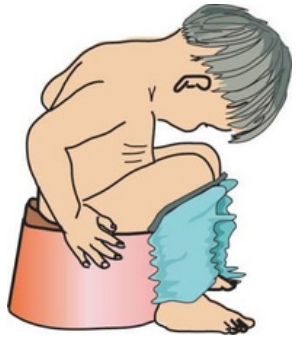
- Elimination Disorders: disorders characterized by developmentally inappropriate elimination of urine or feces

- Though typically involuntary, this may be intentional.

- includes: 1. Enuresis 2. Encopresis

Normal Development

- Toddler Phase (18 months-5 years) During toddler phase a child usually becomes interested in mastering elmination
- Most children have achieved bowel and bladder continence by age 4 & 5
- females achieve continence earlier than males



Enuresis

- Enuresis :The act of Involuntary urination; either during the day (diurnal) or atnight (nocturnal)
- Nocturnal Enuresis is 2-3 times more common than diurnal enuresis, and more common in boys

Enuresis

- Primary Enuresis

- Secondary Enuresis This type may be caused by psychological factors or an underlying medical condition

- Sub-type of enuresis: 1.Monosymptomatic 2.Polysymptomatic.

Risk Factors

- Genetic predisposition
- Increased urine volume (polyuria)
- Inhibition of the pontine micturition center of the brainstem
- Psychosocial factors
- local bladder dysfunction (UTI, neurogenic bladder, Cystitis)

Prevalence

- 30% of children achieve continence by age 2
- 15% of enuretic children have spontaneous resolution of symptoms each year
- 5-10% of 5 year olds meet criteria for nocturnal enuresis
- 2-3% of 12 year olds meet criteria for nocturnal enuresis
- 1% of 18 year olds still have enureticsymptoms

Diagnostic Criteria

- 1. Recurrent urination into clothes or bed-wetting.
- 2. Occurs two times per week for atleast 3 consecutive months OR result in clinical distress or marked impairment in social.
- 3. Atleast 5 years old developmentally.
- 4. Not due to a substance (e.g., diuretic) or another medical condition(e.g., UTI, neurogenic bladder, diabetes,spina bifida, seizure disorder).

Assessment:

1.History : The most important step

- Child's Age
- Onset of Symptoms (Primary/Secondary)
- Timing (Nocturnal/Diurnal/Both)
- Frequency
- Family History
- Developmental History

2.physical examination: It is essential that organic causes of incontinence are ruled out . A full pediatric and neurological exam is recommended.

3. Psychiatric assessment: a routine assessment regarding comorbid emotional and behavioral disorders is recommended. A validated and standardized parental questionnaire is recommended because of the high frequency of comorbid disorders.

Consults

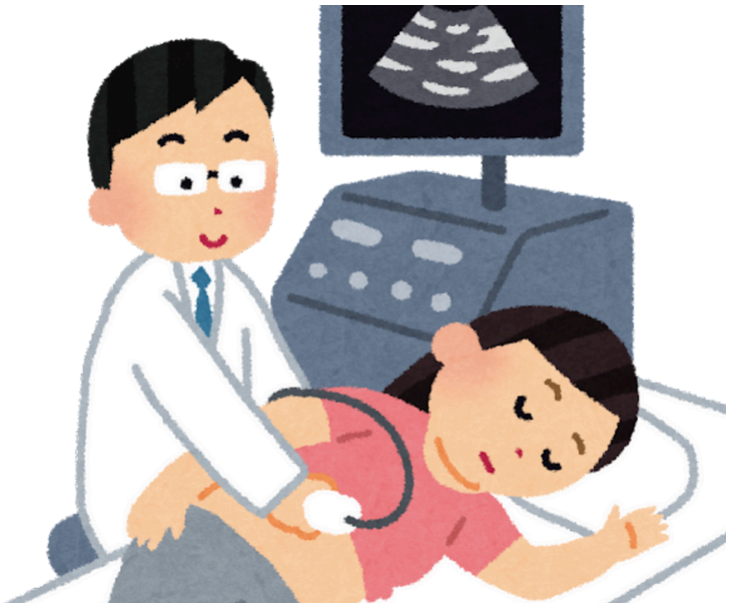
- Pediatric Urology

-Ultrasound of Genitourinary system

-Voiding Cystourethrogram

-Renal Ultrasound

- Pediatric Neurology
- Sleep Study



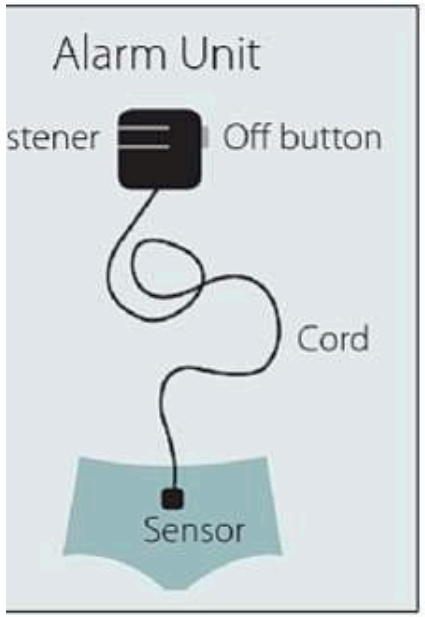
Treatment

- Education
- Watchful Waiting
- Non-pharmacological Management
- Pharmacological Management
- Therapeutic Interventions

Non-Pharmacological Interventions

Behavioral Modification:

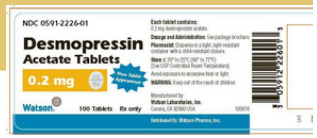
- Scheduled voiding times
- Nighttime fluids restriction
- Using waterproof bed covers
- Bladder-Volume Alarm
- Star Chart System
- Nightlifting
- Timed Night Awakening
- Bladder Training Exercises/Overlearning



Pharmacological Interventions

- Desmopressin

One starts with the low dosage of one pill 0.2mg in the evening for two weeks. If the child is dry or a marked reduction of wet nights is documented one stays with this dosage .Otherwise, medication is increased up to 0.4mg.



- Imipraminine
- Oxybutynin

NOTE: Due to high risk for cardiac arrhythmias even with therapeutic doses, a detailed family history, ECG before and during treatment and blood tests are recommended.

- NSAIDs(Indomethacin)

Additional Treatments :

This type of intervention can significantly address secondary enuresis which may be triggered by a psychological stressor

- Cognitive Behavioral Therapy
- Psychodynamic Psychotherapy
- Biofeedback :This is a form of pelvic floor physical therapy

ASK

As a Healthcare provider you should ask about:

- If other family members have had enuresis
- How often your child urinates during the day
- How much your child drinks in the evening
- If your childs have had recent stress in their life

Encopresis

- defined as the repeated passage of feces in inappropriate places. The voiding is typically regarded as involuntary although it may be volitional. The term is derived from the Greek Word Kopros meaning dung or feces.

Types:

Primary

soiling in a child who has never gained bowel continence for six months or more.

Secondary

soiling in a child who has previously acquired bowel control. When secondary encopresis is due to psychological stress it may be referred to as regressive enuresis.

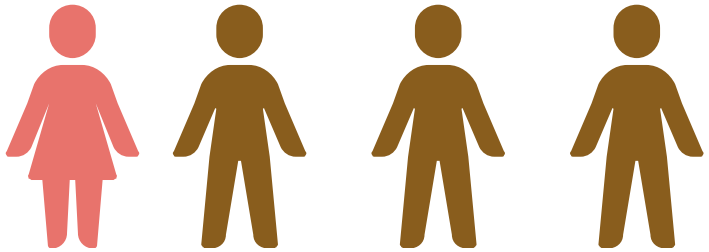
Retentive

Encopresis with Constipation and Overflow Incontinence.
80%

Non retentive

Encopresis without Constipation and Overflow Incontinence.
20%

Prevalence



- Secondary encopresis is more common
- Between ages 7-8 prevalence is 1.5%
- 3:1 male to female ratio
- Retentive type is 80-95% of cases

etiology

- Delay in maturation
- Underlying medical condition
  Psychological/Behavioral constipation
- often related to long-term constipation/impaction with overflow incontinence.

DSM-v Diagnostic Criteria

- Recurrent defecation into inappropriate places (e.g., clothes, f loor).
- Occurs at least one time per month for at least 3 months.
- At least 4 years old developmentally.
- Not due to a substance (e.g., laxatives) or another medical condition (e.g., hypothyroidism, anal fissure, spina bifida) except via a constipation related mechanism.

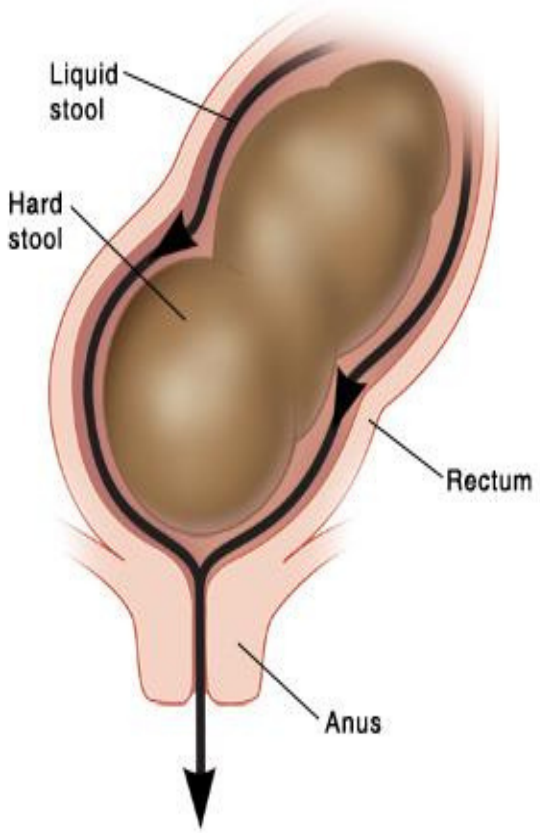
An exception to this criterion is encopresis due to overflow incontinence secondary to constipation or stool impaction. A diagnosis of encopresis can be established even if the constipationor stool impaction is caused by another medical condition

Primary Encopresis

- Delayed Physical Maturation
- Inappropriate Toilet Training

Retentive Encopresis

- Represents 80-95% of cases
- Infrequent Bowel Movements
- Large Stools
- Painful Defecation



Secondary Encopresis

- Birth of sibling
- Parental Divorce
- Abuse
- Autism / Psychosis

Diagnosis

- Child's age.
- Onset (primary/secondary).
- Timing (day/night).
- Frequency.
- Bowel Habits (frequency, stool size, consistency).
- Melena/Hematochezia.
- Pain with Defecation/Fluid and Dietary Habits.
- Location of soiling.

The history should focus on these items:

1.Developmental history.

2.Recent Stressors.

(potty training, transition to solid food, starting school)

3.Mental Health -anxiety, depression, MR,autism,ODD,CD)

4.Current Medications.

5.Previous Surgeries.

6.Past Medical History.

7.Family History.

8.Previous Treatment for encopresis.

Physical Examination

- Abdominal pain/distention
- Height/Weight
- Neurological Examination
- Skin Examination
- Rectal Examination
- Stool Collection: parasites
- Blood Testing: TSH hypothyroidism
- Rectal Biopsy/Barium Enema
- Abdominal XRAY

Treatment

- Advice/Education
- Non pharmacological
- Pharmacological Intervention

Advice/Education

- Dietary Changes (foods high in fiber)
- Increase Fluid Intake
- Make Toilet Training Non-Threatening
- Make Toilet Accessible
- Regular Bathroom Times

Nonpharmacological

- CBT
- Psychodynamic Psychotherapy

Pharmacological

- Laxatives
- Mineral Oil
- Stool Softeners

If encopresis is due to constipation, treat the underlying constipation with fecal disimpaction, stool softeners, and dietary changes

IMPORTANT!

- **Enuresis:**

Recurrent urination into clothes or bed-wetting (≥ 5 y)

- **Encopresis**:

Recurrent defecation into inappropriate places (≥ 4 y)

- They can cause significant distress or impair social or other areas of functioning.
- Majority spontaneously remit Prevalence decrease with age.
- significant genetic factor predisposition .
- Psycho-education is a key management
- **Desmopressin** as first line med. & **imipramine** med. can be used for enuresis .

Thank you