

PICA DISORDER

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فوق تخصص روانپزشکی کودک و نوجوان

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Overview

▶ **What is pica?**

- ▶ Pica is an eating disorder where a person compulsively eats things that aren't food and don't have any nutritional value or purpose



- ▶ The condition currently known as pica was first described by Hippocrates.
- ▶ Pronounced “PIKE-ah,” pica gets its name from a bird species.
- ▶ This bird has a reputation for eating unusual objects.

- ▶ Depending on **when** and **why** a person does this, pica can be normal, expected and harmless.
- ▶ However, it can cause major problems if a person with this condition eats something toxic or dangerous.

- ▶ Complications from pica may range from benign to life-threatening complications, depending on the **quantity** and **nature** of the substance ingested.

A 42-year-old man with severe chronic schizophrenia who was on no medications presented to the internal medicine ward with a 2-week history of vomiting and 10-kg weight loss in the past 3 months.



Photograph of the many plastic, wooden, and metal objects that were surgically removed from the patient's stomach

- ▶ Individuals who present with pica have been reported to mouth or ingest a wide variety of nonfood substances, including:
 - ▶ clay, dirt, sand, stones, pebbles, hair, feces, lead, laundry starch, vinyl gloves, plastic, pencil erasers, ice, fingernails, paper, paint chips, coal, chalk, wood, plaster, light bulbs, needles, string, cigarette butts, wire, and burnt matches.
 - ▶ The hair or skin is typically ingested when pica exists with trichotillomania or excoriation disorder.

DSM- 5 Diagnostic criteria for Eating and Feeding Disorders

- ❑ Anorexia Nervosa (AN)
- ❑ Bulimia Nervosa (BN)
- ❑ Binge Eating Disorder (BED)
- ❑ Other Specified Feeding and Eating Disorder (OSFED)
- ❑ **Pica**
- ❑ Rumination Disorder
- ❑ Avoidant/Restrictive Food Intake Disorder (ARFID)
- ❑ Unspecified Feeding or Eating Disorder (UFED)

Pica Disorder in DSM5

A-Persistent eating of **nonnutritive, nonfood** substances over a period of **at least** 1 month.

B-The eating of nonnutritive, nonfood substances is **inappropriate to the developmental** level of the individual.

C- The eating behavior is **not part of a culturally** supported or socially normative practice.

D- If the eating behavior occurs in the context of **another mental disorder** (e.g., intellectual disability, autism spectrum disorder, schizophrenia) **or medical condition** (including pregnancy), it is **sufficiently severe** to warrant additional clinical attention.

Specify if: **In remission:** After full criteria for pica were previously met, the criteria have not been met for a sustained period of time.

Feeding disorders

- ▶ DSM-IV-TR captured feeding disorders within the section ‘Disorders usually First Diagnosed in infancy, childhood or adolescence’.
- ▶ implying that feeding disorders must have onset in youth.
- ▶ The **DSM5** reorganization unifies feeding and eating disorders into a single category, allowing for the recognition that the feeding disorders can have **onset at any age.**

A-Persistent eating of nonnutritive, nonfood substances over a period of at least 1 month.

▶ **DSM5: ‘nonfood’**

- ▶ As a qualifier for substances consumed, this term was added in DSM5 to exclude individuals who consume items such ice, raw pasta, or artificial sweetener. That, despite having minimal nutritional value, are still considered food
- ▶ Unlike individuals with AN or BN, those with pica do not have aversion to food in general and may consume food in addition to nonfood substances

B-The eating of nonnutritive, nonfood substances is **inappropriate to the developmental level** of the individual

- ▶ For example a teething infant who eats or sucks on nonnutritive substances should not be diagnosed with pica
- ▶ So an age of **2 years** is suggested minimum in pica diagnosis

C- The eating behavior is not part of a culturally supported or socially normative practice

- ▶ In some cultures dirt, clay, or other nonfood nonnutritive substances are consumed for their believed medicinal or spiritual benefits.

- ▶ **Geophagia or consumption of earth:**

The intentional practice of eating earth or soil-like substances such as clay, chalk, or termite mounds.

- ▶ **Geophagy in non-human primates is primarily used for protection from parasites, to provide mineral supplements and to help metabolize toxic compounds from leaves**
- ▶ **In ancient Greece and Rome**
- ▶ **Women from communities in sub-Saharan Africa, for believed benefits of skin softening and increased fertility.**

D- If the eating behavior occurs in the context of another mental disorder (e.g., ID, ASD, schizophrenia) or medical condition (including pregnancy), it is sufficiently severe to warrant additional clinical attention.

- ▶ In the presence of other comorbid medical complications, pica should only be diagnosed if the consumption of non food, nonnutritive substances is serious enough to warranted additional clinical attention.

- ▶ When a person consumes non food, nonnutritive substances for perceived appetite suppression effects, as a method of non suicidal self injury or as a result of psychotic disorder like schizophrenia, pica diagnosis should not be considered.
- ▶ Pregnancy is included as an **exceptive** medical condition in DSM5 unless the consumption of non food, nonnutritive substances is severe enough to warrant additional clinical attention.(iron and zinc deficiencies)

Subtypes are characterized by the substance eaten

- ▶ Acuphagia (sharp objects)
- ▶ Amylophagia (purified starch, as from corn)
- ▶ Cautopyreiophagia (burnt matches)
- ▶ Cintaphagia (tape)
- ▶ Coniophagia (dust)
- ▶ Coprophagia (feces)
- ▶ Dermatophagia (skin)
- ▶ Emetophagia (vomit)
- ▶ Geomelophagia (raw potatoes)
- ▶ Geophagia (earth, soil, sand, clay, chalk)
- Hyalophagia (glass)
- Kleptophagia (Small objects)
- Lignophagia (wood)
- Lithophagia (stones)
- Metallophagia (metal)
- Mucophagia (mucus)
- Pagophagia (ice)
- Plumbophagia (lead)
- Sapophagia (soap)
- Trichophagia (hair, wool, and other fibers)
- Urophagia (urine)
- Xylophagia (wood, or wood products such as paper)
- Hematophagia (vampirism) (blood)

The Glore Psychiatric Museum in Saint Joseph, Missouri

Stomach contents of a psychiatric patient with pica: 1,446 items, including "457 nails, 42 screws, safety pins, spoon tops, and salt and pepper shaker top



▶ Pica can happen to anyone at any age but tends to happen in three specific groups of people:

▶ Young children, especially those under 6 years old.

▶ People who are pregnant.

▶ People with certain mental health conditions, especially autism spectrum disorder, intellectual disabilities or schizophrenia

Epidemiology

- ▶ A variety of reasons make it challenging to estimate the exact prevalence of pica:
- ▶ studies use variable definitions of pica,
- ▶ under-reporting is common among affected subjects,
- ▶ strong cultural and social influence adds further difficulty to detection.

Epidemiology

- ▶ pica prevalence varies widely
- ▶ Pica occurs throughout the world.
- ▶ Geophagia is the most common form of pica in people who live in poverty and people who live in the tropics and in tribe-oriented societies.
- ▶ Pica is a widespread practice in western Kenya, southern Africa, and India.

- ▶ It has been reported in Australia, Canada, Israel, Iran, Uganda, Wales, Turkey, and Jamaica.
- ▶ In some countries (eg, Uganda) soil can be purchased for the purpose of ingestion.
- ▶ Pica behaviors may be considered normal in certain societies.



Haitian mud cookies being prepared

- ▶ Several different rocks of clay-like material being sold at a local market in Kabwe, Zambia. These are usually purchased and consumed by pregnant women.



Epidemiology

- ▶ One study found that approximately 1.1% of adults experience recurrent PICA behaviors and another study found that 5% of youth aged 7 to 14 years experience recurrent PICA behaviors.
- ▶ The prevalence of PICA varies between countries and is higher in developing countries.
- ▶ Kaplan & Sadock 11th edition: Approximately 1.7% to 5% of children

Epidemiology

- ▶ Pica is the sole feeding or eating disorder that may be diagnosed in addition to any other eating or feeding disorder.
- ▶ So regular consumption of nonfood items should be assessed even when the presence of AN, BN, BED, ARFID or rumination disorder has already been established.
- ▶ Pica may also coexist with avoidant/restrictive food intake disorder, especially when there is a strong sensory component to the presentation

Epidemiology

Age-, sex-, and race-related demographics

- ▶ Pica is reported most commonly in children, with equal frequency in boys and girls.
- ▶ Pica is most frequently observed during **the second and third years** of life and is considered developmentally **inappropriate in children older than 18-24 months**.

- ▶ About 4% of typically developing children are reported to have pica, but this increases significantly in those with developmental disabilities

Epidemiology

- ▶ 10% in those with intellectual disability (ID), 14% in those with autism spectrum disorder (ASD), and 28% in those with combined ASD and ID.
- ▶ The risk for and severity of pica increase as the severity of the disability increases

- ▶ Iron malabsorption and micronutrient deficiencies have demonstrated increased pica behaviors specially in individuals with ID and ASD, impaired expressive communication, fetal alcohol syndrome

- ▶ A linear decrease in pica occurs with increasing age.
- ▶ Pica occasionally extends into adolescence but is rarely observed in adults who are not mentally disabled.
- ▶ Infants and children commonly ingest paint, plaster, string, hair, and cloth.
- ▶ Older children tend to ingest animal droppings, sand, insects, leaves, pebbles, and cigarette butts.
- ▶ Adolescents and adults most often ingest clay or soil.

Epidemiology

- ▶ **Pica is reported to be more common in lower socioeconomic status**
- ▶ **Pica is common in young pregnant women.** The onset of pica frequently occurs during their first pregnancy in late adolescence or early adulthood. Although the pica usually remits at the end of the pregnancy, it may continue intermittently for years.

- ▶ **Worldwide prevalence of pica during pregnancy and the postpartum period has been estimated at 27.8%.**
- ▶ In patients with **sickle cell disease (SCD)**, pica has been found to be prevalent. Individuals who demonstrated pica behaviors tended to have lower hemoglobin and higher reticulocyte count

- ▶ Pica is rare in adolescent and adult males of average intelligence who live in developed countries.
- ▶ Although no specific data exist regarding the racial predilection of pica, the practice is reported to be more common among certain cultural and geographic populations.
- ▶ For example, geophagia is accepted culturally among some families of African lineage and is reported to be problematic in 70% of the provinces in Turkey.

Work up

▶ Laboratory Studies

No specific laboratory studies are indicated in the evaluation of pica.

Laboratory evaluation should be tailored according to the suspected substances ingested:

Iron studies: especially in women who are pregnant, and children.

Lead (in pica for paint and chalk) and **zinc levels** should be checked where appropriate

- ❑ **Basic metabolic panel:** (in clay ingestion which can cause metabolic disturbances such as hypokalemia), (Hyperkalemia after cautopterysiophagia)
- ❑ **Stool ova and parasites** (when consuming clay or soil)
- ❑ **Mercury level:** If paper is the ingested material

- ▶ Various **imaging studies** may be used to identify ingested materials and aid in the management of gastrointestinal (GI) tract complications of pica. These may include the following:
 - ▶ Abdominal radiography
 - ▶ Upper and lower GI barium examinations
 - ▶ Repeated imaging at regular intervals to track changes in location of ingested materials
 - ▶ Upper GI endoscopy to diagnosis bezoar formation, identify associated lesions, or both
 - ▶ **(ECG or EKG):** in certain electrolyte imbalances or parasitic infections

Treatment

- ▶ **Psychosocial and Behavioral** interventions are considered to be the most effective for treating pica behaviors.
- ▶ No medical treatment is specific for pica.
- ▶ Few studies of pharmacologic therapy for pica have been performed; however, the hypothesis *that diminished dopaminergic neurotransmission* is associated with pica suggests that **drugs that enhance dopaminergic functioning** may provide treatment alternatives in individuals with pica that is refractory to behavioral intervention.
- ▶ There are anecdotal reports about **antipsychotic** use to reduce pica behaviors, these drugs also cause constipation and other adverse effects.

Differential Diagnosis

- ▶ Careful screening should be performed for mental health problems in the setting of pica.
- ▶ Several psychiatric illnesses should be considered in the differential diagnosis including other eating disorders, schizophrenia and psychosis, autism and developmental delay in children, substance abuse, and addiction.

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Thank you

