Pica: An age-old eating disorder that’s often missed

A thorough patient history and selective testing can help you to head off the adverse effects that occur with patients who eat nonnutritive substances such as dirt and paper.

**Practice Recommendations**

› Ask about pica behavior or unusual cravings in certain high-risk groups: pregnant women, immigrants or refugees, and children and adults with autism or other developmental disabilities.  
  | Strength of recommendation (SOR) |  
  | Good-quality patient-oriented evidence |  
  | Inconsistent or limited-quality patient-oriented evidence |  
  | Consensus, usual practice, opinion, disease-oriented evidence, case series |  

› Obtain serum hemoglobin and hematocrit levels along with iron levels, if necessary, in patients who report cravings for unusual substances.

› Check serum lead levels and consider testing for ova and parasites in patients who eat dirt.

**Case** A 6-year-old African girl, developing and growing appropriately for age, was brought to our clinic by her father with the chief complaint of “eating the textbooks at school.” The child had eaten paper for years, the father said; he never thought it unusual until her teacher brought it to his attention. The father reported that his daughter had met all developmental milestones and was up to date with her immunizations. When asked why she ate paper, the child responded, “I don’t know.” The child was diagnosed with pica and, because we were concerned that she was eating other nonnutritive foods, we ordered hematologic studies. Her lead level (2 mcg/dL) was within the normal range; her hemoglobin/hematocrit was 10.4 g/dL/32.3%. Iron therapy was started. At follow-up 4 weeks later, the child’s paper-eating behavior had resolved.

The word pica comes from the Latin word for magpie, a bird with a reputation for eating practically anything. The Diagnostic and Statistical Manual of Mental Disorders, 5th edition, defines pica as persistent eating of nonnutritive substances for at least 1 month that is inappropriate to developmental level and not part of a culturally supported or socially normative practice. The practice reportedly decreases as a child ages, but an es-
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Adverse outcomes linked to pica
Pica is associated with adverse outcomes, however. A study by the Agency for Healthcare Research and Quality found that despite an overall decline in hospitalizations for eating disorders, hospitalizations for pica have risen. From 1999 to 2009, pica-related hospitalizations jumped 93%, although the overall number of patients hospitalized for the condition remains small (964 in 1999 to 2000, 1862 in 2008-2009).

Documented adverse effects of pica include potassium abnormalities and gastrointestinal conditions ranging from irritation and abdominal pain to perforation, blockage, and colon ischemia. Reported bidirectional effects (which both result from and contribute to pica) include iron deficiency, parasitic infections, and heavy metal exposure—particularly lead, mercury, and arsenic.

Management: Prevention and behavior modification are key
Treatment for pica varies by patient and the specific behavior. Management approaches are primarily preventive, educational, and directed toward behavior modification.

Prevention. Residential facilities and primary care offices that care for people with developmental disabilities may screen for pica by means of prevalence surveys, direct observation, stool checks, review of medical history records, and interviews with caregivers.

Residential facilities can create a pica-safe environment by training staff in pica prevention, instituting regular on-site monitoring to ensure that no dangerous objects are available, and developing procedures to guide staff behavior, such as safe disposal of rubber gloves. Parents and caregivers of young children or children with developmental disabilities who don’t live in residential facilities should be aware of pica and monitor what their children are ingesting.
Behavior modification. Behavior-based approaches have proved effective for treating pica in developmentally disabled patients. Applied behavioral analysis “was found to have the most robust empirical support to treat this behavior.” Patients found to have pica may be referred for further assessment to a behavior specialist or a psychologist with experience in treating the condition.22,39

A review of 26 studies found that, in 25 studies, behavioral therapy reduced pica behavior by 80% or more.23 Behavioral treatments included reinforcement procedures alone, response reduction procedures alone, and combined reinforcement and response reduction procedures. Reinforcement shape behavior by controlling the consequences of the behavior using a combination of rewards and punishments.23 Response reduction, or blocking, involves obstructing every attempt to eat inedible items.22

Treatments that combined reinforcement and response reduction showed good efficacy.23 An example of the combined approach would be to stop the patient from eating nonnutritive items while redirecting him to eat food instead.22

Supplementation. Iron supplementation has decreased or even reversed pica in patients whose clinical symptoms and behavior were associated with iron deficiency.35,40

Medications. Successful treatment with selective serotonin reuptake inhibitors (escitalopram), atypical neuroleptics (olanzapine), and attention-deficit/hyperactivity disorder medications (methylphenidate) has been reported in some patients, but case reports are few, and the evidence for the drugs’ efficacy is limited.41-43

Be alert for pica. Primary care physicians need to be aware of pica and proactively seek information about cravings or behaviors suggesting the condition from patients in high-risk populations—pregnant women, children, immigrants and refugees, people with developmental disabilities—or their caregivers. Once pica is identified, clinicians should undertake appropriate laboratory investigation and behavior modification attempts.

References


