Feeding and Eating Disorders of Infancy or Early Childhood: Pica

<http://www.pvmhmr.org/37-childhood-mental-disorders-and-illnesses/article/572-feeding-and-eating-disorders-of-infancy-or-early-childhood-pica>

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Disorders in the "Feeding and Eating Disorders of Infancy or Early Childhood" category include Pica, Rumination Disorder, and Feeding Disorder of Infancy or Early Childhood.

**Pica**

Pica is a disorder that occurs when children persistently eat one or more non-food substances over the course of at least one month. Pica may not sound like a dangerous problem, but when you consider that the non-food substances that are ingested are frequently toxic or otherwise harmful to the human body, the potential for illness and even death becomes clear. Pica may result in serious medical problems, such as intestinal blockage, poisoning, parasitic infection, and sometimes death. This disorder has been described as one of the most serious forms of self-injurious behavior (i.e., deliberate self-harm) because of the high risk of death from this type of behavior.

The typical non-food substances that children with pica ingest tend to vary with age. Younger children with Pica frequently eat paint, plaster, string, hair, or cloth. In contrast, older children with Pica tend to eat animal droppings, sand, insects, leaves, or pebbles. Adolescents affected by the disorder often consume clay or soil substances.

Theorized causes of Pica include iron-deficiency (anemia), zinc deficiency, mental retardation, developmental delays, and a family history of Pica. Other theories suggest that Pica is caused by oral fixations, a lack of appropriate stimulation, or a lack of parental attention. In other words, the reasons why Pica occurs are not definitively known at this time.

Pica is more common among children and adolescents with other developmental disabilities such as Autism and Mental Retardation. For example, the prevalence of Pica appears to increase with the severity of retardation. Approximately 15% of adults with severe Mental Retardation also have Pica. Information about the overall prevalence rates for Pica is limited, however.

**Diagnosis of Pica**

Because of the potential health hazards and risks associated with Pica (e.g, malnutrition, poisoning, death), children suspected of having Pica are generally thoroughly examined by a pediatrician or family physician. The assessing clinician will need to gather as much information about the child as possible, so parents will generally be asked to describe the child's medical, psychological, and developmental histories, as well as food-related behavior, environmental factors that seem to trigger the pica symptoms, and the consequences of food related behavior. A developmental assessment (such as the Bayley Scales, described below), and comprehensive evaluations of children's home environment, including parental caregiving practices, dietary factors (whether or not children have been eating properly and receiving the full complement of necessary nutrients), physical activity levels, etc., may also be conducted.

*Bayley Scales of Infant Development*

The Bayley Scales of Infant Development measure children's sensory and motor development. These scales assess children's sensation and perception, memory, learning, problem solving, abstract thinking, and motor movement (e.g., coordination of large muscles and fine muscles in the hands and fingers) abilities. Despite the test's name, it is appropriate for children aged 0 to 42 months, or roughly until age 3 ½.

**Treatment of Pica**

Pica can be difficult to treat. One of the first steps is to encourage children to eat a healthy, balanced diet. Replacing non-food items that children ingest with more suitable, nutritious food items is an important goal. Speaking with a dietitian who is familiar with Pica can be very helpful in coming up with appropriate and tempting menus. Dangerous substances that are possibly ingestible should be removed from the home (and other relevant environments) immediately so that they are not available as temptations.

Children with Pica enjoy not only the taste or texture of whatever substances they chose to eat, but also the oral stimulation involved. Therefore, a plan to decrease Pica should include alternative ways of obtaining stimulation (oral and otherwise) that are both positive and reinforcing (e.g., enjoying safe food items, and engaging in other highly desirable activities). To this end, therapists help parents and caregivers come up with developmentally-appropriate stimulation plans. Toddlers, for example, may be stimulated simply by playing a game searching for toys.

Parents should consider consulting with a behaviorally-trained mental health clinician, as a comprehensive behavioral plan based squarely on principles of learning theory (e.g., reinforcement, discrimination training, and punishment) may be necessary to manage and ultimately eliminate Pica. Reinforcement of healthy eating behaviors increases the likelihood that children will behave similarly in the future (e.g., they might earn tokens for each hour they behave appropriately and then turn tokens in for toys). Discrimination training is used to help children understand the differences between non-food and food items. Punishment (sometimes called aversive training) methods, such as placing children in 'time-out' when they engage in Pica behaviors, decreases the likelihood that children will engage in these behaviors in the future. For other examples of how learning principles may be used to influence behavior, please see our [Psychological Self-Help Tools topic center](http://www.pvmhmr.org/poc/center_index.php?id=353&cn=353).

Research is unclear with regard to which types of procedures are most successful (reinforcement vs. punishment) in helping children to discontinue eating non-food substances. Punishment may be a quick way of suppressing such dangerous and self-destructive behaviors, but the gains may come with unwanted long-term consequences and emotional side effects (e.g., the child may become overly anxious about eating) if the punishments are not carefully chosen and rigorously implemented. Behavioral clinicians will help design and modify a behavior modification plan based on the specific child and family being treated. Such a behavior modification plan should be implemented consistently within all of the child's environments (within other homes, at school, etc.).

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**Pica**

Many young kids put nonfood items in their mouths at one time or another. They're naturally curious about their environment and might, for instance, eat some dirt out of the sandbox. Kids with pica, however, go beyond this innocent exploration of their surroundings.

**About Pica**

The word pica comes from the Latin word for magpie, a bird known for its large and indiscriminate appetite.

Pica is most common in people with developmental disabilities, like [autism](http://kidshealth.org/en/parents/pervasive-develop-disorders.html) and intellectual disabilities, and in children between the ages of 2 and 3. Pica also may surface in children who've had a brain injury affecting their development. It can also be a problem for some pregnant women, as well as people with epilepsy.

People with pica frequently crave and eat nonfood items such as:

* dirt
* clay
* paint chips
* plaster
* chalk
* cornstarch
* laundry starch
* baking soda
* coffee grounds
* cigarette ashes
* burnt match heads
* cigarette butts
* feces
* ice
* glue
* hair
* buttons
* paper
* sand
* toothpaste
* soap

Pica is an eating disorder that can result in serious health problems, such as [lead poisoning](http://kidshealth.org/en/parents/lead-poisoning.html) and [iron-deficiency anemia](http://kidshealth.org/en/parents/ida.html).

**Signs of Pica**

Warning signs that a child may have pica include:

* eating of nonfood items, despite efforts to restrict it, for a period of at least 1 month or longer
* the behavior is considered inappropriate for your child's age or developmental stage
* the behavior is **not** part of a cultural, ethnic, or religious practice

**Why Do Some People Eat Nonfood Items?**

The specific causes of pica are unknown, but certain conditions and situations can increase a person's risk:

* **nutritional deficiencies**, such as iron or zinc, that may trigger specific cravings (however, the nonfood items craved usually don't supply the minerals lacking in the person's body)
* **dieting** — people who diet may attempt to ease hunger by eating nonfood substances to get a feeling of fullness
* [**malnutrition**](http://kidshealth.org/en/parents/hunger.html), especially in developing countries, where people with pica most commonly eat soil or clay
* **cultural factors** — in families, religions, or groups in which eating nonfood substances is a learned practice
* **parental neglect, lack of supervision, or food deprivation** — often seen in children living in poverty
* **developmental problems**, such as mental retardation, autism, other developmental disabilities, or brain abnormalities
* **mental health conditions**, such as [obsessive-compulsive disorder (OCD)](http://kidshealth.org/en/parents/ocd.html) and schizophrenia
* **pregnancy**, but it's been suggested that pica during pregnancy occurs more frequently in women who exhibited similar practices during their childhood or before pregnancy or who have a history of pica in their family

Eating earth substances such as clay or dirt is a form of pica known as **geophagia**, which can cause iron deficiency. One theory to explain geophagia is that in some cultures, eating clay or dirt is believed to help relieve nausea (and therefore, morning sickness), control diarrhea, increase salivation, remove toxins, and alter odor or taste perception.

Some people claim to enjoy the taste and texture of dirt or clay or other non-food item, and eat it as part of a daily habit (much like smoking is a daily routine for others). Pica may also be a behavioral response to stress.

Another explanation is that pica is a cultural feature of certain religious rituals, folk medicine, and magical beliefs. For example, some people in various cultures believe that eating dirt will help them incorporate magical spirits into their bodies.

None of these theories, though, explains every form of pica. A doctor must treat each case individually to try to understand what's causing the condition.

**When to Call the Doctor**

If your child is at risk for pica, talk to your doctor. If your child has consumed a harmful substance, seek medical care immediately. If you think your child has ingested something poisonous, call Poison Control at (800) 222-1222.

A child who continues to consume nonfood items may be at risk for serious health problems, including:

* [**lead** **poisoning**](http://kidshealth.org/en/parents/lead-poisoning.html) (from eating lead-based paint chips or dirt contaminated with lead)
* [**constipation**](http://kidshealth.org/en/parents/constipation.html) **or** [**diarrhea**](http://kidshealth.org/en/parents/diarrhea.html) (from consuming indigestible substances like hair, cloth, etc.)
* **intestinal obstruction or perforation** (from eating objects that could block or injure the intestines)
* **tooth or mouth injuries** (from eating hard substances that could harm the teeth)
* **parasitic and other infections** (from eating dirt, feces, or other infected substances)

Medical emergencies and death can occur if the craved substance is toxic or contaminated with lead or mercury, or if the item forms an indigestible mass blocking the intestines. Pica involving lead-containing substances during pregnancy may be associated with an increase in both maternal and fetal lead levels.

**What Will the Doctor Do?**

Your doctor will play an important role in helping you manage and prevent pica-related behaviors, educating you on teaching your child about acceptable and unacceptable food substances. The doctor will also work with you on ways to to restrict the nonfood items your child craves (i.e., using child-safety locks and high shelving, and keeping [household chemicals](http://kidshealth.org/en/parents/household-checklist.html) and medications out of reach).

Some kids require behavioral intervention and families may need to work with a psychologist or other mental health professional.

Medication may also be prescribed if pica is associated with significant behavioral problems not responding to behavioral treatments.

Your doctor may check for anemia or other nutritional deficiencies. A child who has ingested a potentially harmful substance, such as lead, will be screened for lead and other toxic substances and might undergo [stool testing](http://kidshealth.org/en/parents/labtest8.html) for parasites. In some cases, X-rays or other imaging may be helpful to identify what was eaten or to look for bowel problems, such as an obstruction.

Fortunately, pica usually improves as kids get older. But for individuals with developmental or mental health concerns, pica may continue to be problem. Ongoing treatment and maintaining a safe environment and are key to managing this condition.

Reviewed by: [Mary L. Gavin, MD](http://kidshealth.org/en/parents/reviewers.html#g)

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