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## Cyclic Vomiting Syndrome

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In cyclic vomiting syndrome (CVS), people experience bouts or cycles of severe nausea and vomiting that last for hours or even days and alternate with longer periods of no symptoms. CVS occurs mostly in children, but the disorder can affect adults, too.

CVS has no known cause. Each episode is similar to the previous ones. The episodes tend to start at about the same time of day, last the same length of time, and present the same symptoms at the same level of intensity. Although CVS can begin at any age in children and adults, it usually starts between the ages of 3 and 7. In adults, episodes tend to occur less often than they do in children, but they last longer. Furthermore, the events or situations that trigger episodes in adults cannot always be pinpointed as easily as they can in children.

Episodes can be so severe that a person may have to stay in bed for days, unable to go to school or work. No one knows for sure how many people have CVS, but medical researchers believe that more people may have the disorder than is commonly thought (as many as 1 in 50 children in one study). Because other more common diseases and disorders also cause cycles of vomiting, many people with CVS are initially misdiagnosed until the other disorders can be ruled out. What is known is that CVS can be disruptive and frightening not just to people who have it, but to the entire family as well.

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### The Four Phases of CVS

CVS has four phases:

- prodrome
- episode

- recovery
- symptom-free interval

The **prodrome** phase signals that an episode of nausea and vomiting is about to begin. This phase, which is often marked by abdominal pain, can last from just a few minutes to several hours. Sometimes taking medicine early in the prodrome phase can stop an episode in progress. However, sometimes there is no warning: A person may simply wake up in the morning and begin vomiting.

The **episode** phase consists of nausea and vomiting; inability to eat, drink, or take medicines without vomiting; paleness; drowsiness; and exhaustion.

The **recovery** phase begins when the nausea and vomiting stop. Healthy color, appetite, and energy return.

The **symptom-free interval** phase is the period between episodes when no symptoms are present.

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## Triggers

Most people can identify a specific condition or event that triggered an episode. The most common trigger is an infection. Another, often found in children, is emotional stress or excitement, often from a birthday or vacation, for example. Colds, allergies, sinus problems, and the flu can also set off episodes in some people.

Other reported triggers include eating certain foods (such as chocolate or cheese), eating too much, or eating just before going to bed. Hot weather, physical exhaustion, menstruation, and motion sickness can also trigger episodes.

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## Symptoms

The main symptoms of CVS are severe vomiting, nausea, and retching (gagging). Episodes usually begin at night or first thing in the morning and may include vomiting or retching as often as six to 12 times an hour during the worst of the episode. Episodes usually last anywhere from 1 to 5 days, though they can last for up to 10 days.

Other symptoms include pallor, exhaustion, and listlessness. Sometimes the nausea and vomiting are so severe that a person appears to be almost unconscious. Sensitivity to light, headache, fever, dizziness, diarrhea, and abdominal pain may also accompany an episode.

In addition, the vomiting may cause drooling and excessive thirst. Drinking water usually leads to more vomiting, though the water can dilute the acid in the vomit, making the episode a little less painful. Continuous vomiting can lead to dehydration, which means that the body has lost excessive water and salts.

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## Diagnosis

CVS is hard to diagnose because no clear tests—such as a blood test or x ray—exist to identify it. A doctor must diagnose CVS by looking at symptoms and medical history and by excluding more common diseases or disorders that can also cause nausea and vomiting. Also, diagnosis takes time because doctors need to identify a pattern or cycle to the vomiting.

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### CVS and Migraine

The relationship between migraine and CVS is still unclear, but medical researchers believe that the two are related. First, migraine headaches, which cause severe pain in the head; abdominal migraine, which causes stomach pain; and CVS are all marked by severe symptoms that start quickly and end abruptly, followed by longer periods without pain or other symptoms.

Second, many of the situations that trigger CVS also trigger migraines. Those triggers include stress and excitement.

Third, research has shown that many children with CVS either have a family history of migraine or develop migraines as they grow older.

Because of the similarities between migraine and CVS, doctors treat some people with severe CVS with drugs that are also used for migraine headaches. The drugs are designed to prevent episodes, reduce their frequency, or lessen their severity.

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### Treatment

CVS cannot be cured. Treatment varies, but people with CVS are generally advised to get plenty of rest; sleep; and take medications that prevent a vomiting episode, stop or alleviate one that has already started, or relieve other symptoms.

Once a vomiting episode begins, treatment is supportive. It helps to stay in bed and sleep in a dark, quiet room. Severe nausea and vomiting may require hospitalization and intravenous fluids to prevent dehydration. Sedatives may help if the nausea continues.

Sometimes, during the prodrome phase, it is possible to stop an episode from happening altogether. For example, people who feel abdominal pain before an episode can ask their doctor about taking ibuprofen (Advil, Motrin) to try to stop it. Other medications that may be helpful are ranitidine (Zantac) or omeprazole (Prilosec), which help calm the stomach by lowering the amount of acid it makes.

During the recovery phase, drinking water and replacing lost electrolytes are very important. Electrolytes are salts that the body needs to function well and stay healthy. Symptoms during the recovery phase can vary: Some people find that their appetites return to normal immediately, while others need to begin by drinking clear liquids and then move slowly to solid food.

People whose episodes are frequent and long-lasting may be treated during the

symptom-free intervals in an effort to prevent or ease future episodes. Medications that help people with migraine headaches—propranolol, cyproheptadine, and amitriptyline—are sometimes used during this phase, but they do not work for everyone. Taking the medicine daily for 1 to 2 months may be necessary to see if it helps.

In addition, the symptom-free phase is a good time to eliminate anything known to trigger an episode. For example, if episodes are brought on by stress or excitement, this period is the time to find ways to reduce stress and stay calm. If sinus problems or allergies cause episodes, those conditions should be treated.

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## Complications

The severe vomiting that defines CVS is a risk factor for several complications:

- **Dehydration.** Vomiting causes the body to lose water quickly.
- **Electrolyte imbalance.** Vomiting also causes the body to lose the important salts it needs to keep working properly.
- **Peptic esophagitis.** The esophagus (the tube that connects the mouth to the stomach) becomes injured from the stomach acid that comes up with the vomit.
- **Hematemesis.** The esophagus becomes irritated and bleeds, so blood mixes with the vomit.
- **Mallory-Weiss tear.** The lower end of the esophagus may tear open or the stomach may bruise from vomiting or retching.
- **Tooth decay.** The acid in the vomit can hurt the teeth by corroding the tooth enamel.

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## Points to Remember

- People with CVS have severe nausea and vomiting that come in cycles.
- CVS occurs mostly in children, but adults can have it, too.
- CVS has four phases: prodrome, episode, recovery, and symptom-free interval.
- Most people can identify a condition or event that triggers an episode of nausea and vomiting. Infections and emotional stress are two common triggers.
- The main symptoms of CVS are severe vomiting, nausea, and retching. Other symptoms include pallor and exhaustion.
- The only way a doctor can diagnose CVS is by looking at symptoms and medical history to rule out any other possible causes for the nausea and vomiting. Then the doctor must identify a pattern or cycle to the symptoms.

- CVS has no cure. Treatment varies by person, but people with CVS generally need to get plenty of rest and sleep. They may also be given drugs that may prevent an episode, stop one in progress, speed up recovery, or relieve symptoms.
- Complications include dehydration, loss of electrolytes, peptic esophagitis, hematemesis, Mallory-Weiss tear, and tooth decay.

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## For More Information

Information about cyclic vomiting syndrome is also available from

### **Cyclic Vomiting Syndrome Association**

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The National Digestive Diseases Information Clearinghouse (NDDIC) is a service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The NIDDK is part of the National Institutes of Health of the U.S. Department of Health and Human Services. Established in 1980, the Clearinghouse provides information about digestive diseases to people with digestive disorders and to their families, health care professionals, and the public. The NDDIC answers inquiries, develops and distributes publications, and works closely with professional and patient organizations and Government agencies to coordinate resources about digestive diseases.

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NIH Publication No. 04-4548  
February 2004

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