



## Diseases & Conditions

### Cyclic Vomiting Syndrome

#### What is cyclic vomiting syndrome (CVS)?

Cyclic vomiting syndrome (CVS) is a condition in which a person suffers from sudden, repeated attacks of severe nausea, vomiting, and exhaustion. These symptoms come from no apparent cause. Each attack can last from a few hours to several days. Attacks may be so severe that the patient is bedridden or must go to the emergency room or hospital. Often, the symptoms start early in the morning. Following an episode, the patient is free of symptoms and returns to normal health.

Both males and females of any age may be affected. CVS may last for months, years, or decades. However, symptoms do not occur each day. The attacks may take place anywhere from several times a year to several times a month. If a patient is having daily symptoms for weeks or a month, these are not due to cyclic vomiting syndrome.

The symptoms, time of day, frequency, severity, and length of each episode of CVS are usually the same for any one person. However, these may be different from patient to patient.

#### What are the symptoms of cyclic vomiting syndrome?

Some of the symptoms of CVS are:

- Repeated episodes of severe nausea, retching (attempting to vomit), and vomiting
- Heaving or gagging
- Lack of appetite
- Sensitivity to light
- Pain in the abdomen
- Pale appearance to the skin
- Severe fatigue
- Severe headaches
- Not wanting to talk
- Drooling or spitting
- Extreme thirst
- Low-grade fever (up to 101 degrees Fahrenheit)
- Diarrhea

#### Who is affected by cyclic vomiting syndrome?

CVS is more common in children than adults. About three of every 100,000 children are diagnosed with CVS. In most cases in children, CVS starts to occur between the ages of three and seven. However, the disorder can begin at any age from infancy through old age.

#### What causes cyclic vomiting syndrome?

There is no known cause of CVS, but mitochondria in the cells may have a role. Mitochondria act as the cells' digestive system, taking in nutrients and then breaking them down and forming energy that can be used by the cells. Mitochondrial DNA can become abnormal because of illness, a genetic condition inherited from the mother, or exposure to certain drugs or toxins. Often, tests suggest subtle changes in the mitochondrial function and exact diagnosis is not found. Cyclic vomiting may also occur more commonly in a patient who has a parent with migraines.

The following also could play a role in CVS:

- Migraine headaches, which appear in up to 80% of children and 25% of adults with CVS
- Problems with how food travels through the digestive system
- Problems with brain, spinal cord, or nervous system control over the body's gastrointestinal tract responses
- Hormone imbalances

#### What can trigger an episode of cyclic vomiting syndrome?

Anxiety, a panic attack, or something that is emotionally upsetting may bring on CVS. Also, the following may trigger CVS:

- Respiratory or sinus infections or the flu
- Reactions to certain foods such as chocolate or cheese, caffeine, or the food additive MSG (monosodium glutamate)
- Changes of season (symptoms are more common in fall and winter)
- Menstrual periods
- Motion sickness
- Overeating, fasting, or eating immediately before bedtime
- Physical exhaustion

## How is cyclic vomiting syndrome diagnosed?

Doctors diagnose CVS by ruling out other conditions that may have similar symptoms. These include:

- Pancreatitis (inflammation of the pancreas)
- Volvulus or malrotation (twisting of the intestine)
- UPJ obstruction (a urinary blockage at the point where one of the kidneys attaches to one of the tubes to the bladder [ureters])
- A number of different metabolic disorders

For the diagnosis of CVS, the doctor will ask questions about your medical and family history. He or she will do an exam to check your digestive system and nervous system. The doctor may order metabolic and liver function tests in addition to running tests on the blood and urine. The doctor also may order any of the following:

- Abdominal ultrasound
- Upper gastrointestinal (GI) tract X-ray series
- Brain magnetic resonance imaging (MRI)
- Upper GI endoscopy
- Gastric emptying test

If an upper endoscopy is ordered, a physician inserts a small, flexible tube through the throat and into the stomach in order to view the interior of the upper GI tract utilizing sedation or anesthesia. If a gastric emptying test is ordered in radiology, the patient eats a meal containing a marker that is tracked by a radiologist to see how well the digestive system is working. The physician will determine which if any of the above tests are required based on an individual patient's history and physical examination findings as well as lab work if performed.

## How is cyclic vomiting syndrome treated?

CVS is treated with abortive therapy and preventive therapy. Abortive therapy is given at the time of an episode and is meant to lessen the intensity or stop (abort) an attack after it starts. Preventive therapy is used to stop attacks from happening or to decrease the severity, duration (how long), or frequency (how often) of the attacks.

In most cases, treatment supports the patient. Doctors try to prevent CVS early on in the attack. The treatment for CVS depends on the stage. In the prodrome (early symptom) phase, when symptoms of a CVS episode first start, doctors use drugs to control nausea, reduce stomach acid production, and relieve migraine symptoms and abdominal pain.

In the vomiting phase, doctors use medicines to control migraine pain and to reduce stomach acid and anxiety. A health care provider should be seen as soon as possible. In cases of severe vomiting, it may be necessary to go to a hospital. Intravenous (IV) fluids may be required to prevent dehydration. In episodes lasting several days, IV fluids and nutrition may be needed. In the recovery phase, the patient continues to get IV fluids as needed. Gradually, the patient may begin to have clear liquids and food as tolerated. Medicines can help prevent future episodes.

In the well phase, preventive medicines such as amitriptyline (Elavil®) or cyproheptadine (Periactin®) can help to control future episodes. A trial period of a daily dose for one or two months is needed to see how effective the treatment is. There may also be a benefit in taking coenzyme Q10 and L-carnitine to treat abnormalities in mitochondria at doses recommended by your physician if appropriate. More research on this topic is still needed.

## What complications can result from cyclic vomiting syndrome?

- Dehydration from not replacing fluids lost due to vomiting and diarrhea
- Esophagitis – Inflammation of the esophagus (the tube that connects the mouth to the stomach) due to frequent exposure to vomit, which is very acidic
- Mallory-Weiss tear – A tear in the lower end of the esophagus caused by the muscular contractions of severe vomiting

## How can cyclic vomiting syndrome be prevented?

- Avoid known triggers such as certain foods or food additives.

- Get the right amount of sleep.
- Treat sinus problems and allergies right away.
- Reduce stress and anxiety.
- Use drugs as prescribed by a doctor.

## References

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