

## Nausea and Vomiting

**Nausea** refers to an uncomfortable urge to throw up. Some people call it queasiness or feeling “sick to the stomach”.

**Vomiting** is the medical term for throwing up. It happens when the stomach muscles contract and force stomach contents up the esophagus and out of the mouth.

Nausea and vomiting may happen together or separately. They themselves are not diseases but are symptoms.

### Common Causes

- Stomach problems (e.g. reflux, inflammation, infection, indigestion, or delayed emptying)
- Certain smells or odors
- Motion sickness
- Early pregnancy
- Certain medications (e.g. chemotherapy for cancer)
- Migraine headaches
- Severe pain
- Stress and anxiety
- Use of marijuana or alcohol

### Severe Causes

- Brain-related: Injury, inflammation, infection, cancer
- GI-related: Intestine blockage, appendicitis, ulcer
- Swallowing drug or poison (especially by children)

### When to Get Medical Help

- **Dehydration:**
  - sunken eyes (or sunken soft spot on baby’s head)
  - increased thirst
  - dark yellow urine or not urinating (no wet diapers)
  - crying without tears
  - skin not bouncing back after a gentle press
- Persistent vomiting
- Vomiting happening with **diarrhea** or **fever**

### Get Medical Help Right Away If:

- Vomit may be due to **poisoning**
- Vomit contains **blood** (looks like coffee grounds)
- Very bad **headache** or **stiff neck**
- Very **sleepy** / lack of energy / not alert
- Severe **pain** in the abdomen
- Vomiting with **fever** over 101°F or 38.3°C

**Inform healthcare providers the timing and severity of all the symptoms (including what is in the vomit) and medications taken.**

### Nausea and Vomiting in Individuals with 22q11.2 Deletion Syndrome (22q11.2DS)

#### Children and Adolescents

Vomiting is a common GI problem in children with 22q11.2DS. In some cases, the children experience severe nausea and vomiting for hours at a time (cyclic vomiting – see next page).

#### Adults

In a study of 206 adults with 22q11.2DS, 17% experienced nausea or vomiting. There is an increase in nausea/vomiting among adults who had hypothyroidism (thyroid gland cannot produce enough hormones).

### Home Care for Minor Cases of Nausea and Vomiting

**Everyone is different in terms of what helps with nausea and vomiting.**

Here are some possible remedies for nausea:.

- Drink small sips of clear liquid once in a while. Do not drink a large amount at a time.
- Eat small amounts of light, bland food (e.g. saltine crackers or plain bread)
- Avoid food that are greasy or too sweet
- Take medicine approved by your healthcare provider
- Do not look at fast-moving objects, especially if nausea is due to motion sickness
- Stay still – moving can make nausea worse
- Rest

To treat minor cases of vomiting:

- Drink small amounts of clear liquids, only increase in volume if you can tolerate it.
- Avoid solid food until vomiting has stopped
- Rest

## Nausea and Vomiting (continued)

### Preventing Nausea

- Eat smaller meals more frequently
- Eat without rushing or playing at the same time
- After eating, rest and stay upright
- Avoid foods that are hard to digest
  - Hard fruits and vegetables in raw form
  - Food with too much fiber
  - Greasy foods (e.g. fried food)
  - Acidic foods (e.g. lemons, oranges, grapefruit)
  - Highly processed meat and carbs

### Preventing nausea in special cases

**Hypothyroidism** – Take a blood test to check your thyroid. If you have hypothyroidism (a common condition in individuals with 22q11.2DS), your thyroid is not producing enough thyroid hormones. Your healthcare provider may prescribe a hormone replacement, which may reduce your nausea.

**Pregnancy** – There are special medications that can help reduce nausea during pregnancy. Please discuss your options with your healthcare provider.

### Cyclic Vomiting Syndrome (CVS)

- CVS is a recurring condition of sudden, severe, repeated vomiting with no known cause. The vomiting episodes can last for hours or days, but the patient also has symptom-free days.
- Some children with 22q11.2DS have CVS.
- The vomiting in CVS can be so severe that the patient needs to go to the hospital to receive fluids directly into the vein.
- CVS may be related to problems in these areas:
  - Nerves involved in brain-GI communications
  - The autonomous nervous system that controls heartbeat, blood pressure, and vomiting reflex
  - Migraine headaches in patient and his/her family
  - Problem with mitochondria (energy supplier for cells)
- Factors that **trigger** CVS include (but are not limited to):
  - Seasonal changes
  - Excitement
  - Panic attack, stress, anxiety
  - Allergies, sinus infections, flu
  - Foods like chocolate, cheese, caffeine, MSG
  - Marijuana (prolonged use)
  - Physical exhaustion
- CVS is **difficult to diagnose** because vomiting is a symptom of many GI conditions.
  - Healthcare providers may order tests and imaging studies to rule out other causes.
- CVS can lead to dehydration, inflammation in or damage to the esophagus, and tooth decay.
- To reduce cyclic vomiting:
  - **Manage the triggers promptly (e.g. allergies) or avoid them (e.g. foods)**
  - Ask your doctor about anti-migraine, anti-nausea, and anti-seizure **medications**
- Children usually outgrow CVS eventually but tend to develop severe migraines as adults.

### References / Resources

#### Clinical practice recommendations and research reports

- [Updated clinical practice recommendations for managing children with 22q11.2 deletion syndrome](#) – 2023
- [Updated clinical practice recommendations for managing adults with 22q11.2 deletion syndrome](#) – 2023
- [Gastrointestinal Features of 22q11.2 Deletion Syndrome Include Chronic Motility Problems From Childhood to Adulthood](#) – 2022
- [Recurrent nausea, vomiting and abdominal pain due to hypothyroidism](#) – 2010

#### Websites of medical institutions

- [Nausea & Vomiting](#) – Cleveland Clinic
- [Nausea and vomiting](#) – Penn Medicine
- [Cyclic Vomiting Syndrome](#) – Cleveland Clinic
- [Cyclic Vomiting Syndrome](#) – Mayo Clinic