Vomiting Without Diarrhea

Schmitt-Thompson Clinical Content

DEFINITION

• Vomiting (throwing up) is the forceful emptying of a large portion of the stomach's contents
• Nausea and abdominal discomfort usually precede each bout of vomiting
• Triager Tip: Rule out appendicitis, the most common serious diagnosis that is missed in nurse telephone triage.

Vomiting Severity is Defined as:

• The following is an arbitrary attempt to classify vomiting by risk for dehydration:
• **Mild:** 1 - 2 times/day
• **Moderate:** 3 - 7 times/day
• **Severe:** Vomits everything or nearly everything for more than 8 hours while receiving sips of clear fluid and using correct hydration technique.
• Triager Tip: Most callers cannot provide an accurate report of how many times their child has vomited.
• Caution: Multiple stomach contractions (dry heaves) do not count as separate episodes of vomiting. At least 10 minutes need to pass, before we consider it another episode of vomiting.
• Severity relates even more to the length of time that the particular level of vomiting has persisted.
• At the beginning of a vomiting illness (especially following food poisoning), it's common for a child to vomit everything for 3 or 4 hours and then become stable with mild or moderate vomiting.
• The younger the child, the greater the risk for dehydration.

INITIAL ASSESSMENT QUESTIONS

1. SEVERITY: "How many times have they vomited today?" "Over how many hours?"
   - MILD:1-2 times/day
   - MODERATE: 3-7 times/day
   - SEVERE: Vomits everything for over 8 hours. Note: "Vomiting everything" requires vomiting while receiving frequent sips of clear fluids using correct hydration technique.
2. ONSET: "When did the vomiting begin?"
3. FLUIDS: "What fluids have they kept down today?" "What fluids or food have they vomited up today?"

4. HYDRATION STATUS: "Any signs of dehydration?" (e.g., dry mouth [not only dry lips], no tears, sunken soft spot) "When did they last urinate?"
5. CHILD'S APPEARANCE: "How sick is your child acting?" "What are they doing right now?" If asleep, ask: "How were they acting before they went to sleep?"
6. CONTACTS: "Is there anyone else in the family with the same symptoms?"

- Author's note: IAQ's are intended for training purposes and not meant to be required on every call.

TRIAGE ASSESSMENT QUESTIONS

Call EMS 911 Now

Signs of shock (very weak, limp, not moving, unresponsive, gray skin, etc)

First Aid: Lie down with the feet elevated.

Difficult to awaken

R/O: encephalitis, intussusception, overdose, increased ICP

Confused talking or behavior

R/O: meningitis, encephalitis

Sounds like a life-threatening emergency to the triager

See More Appropriate Protocol

Food or other object stuck in the throat

Go to Protocol: Swallowed Foreign Body (Pediatric)

Diarrhea also present (multiple watery or very loose stools)

Go to Protocol: Vomiting With Diarrhea (Pediatric)

Reflux previously diagnosed and volume increased today and infant acts normal (appears well)

Go to Protocol: Spitting Up (Reflux) (Pediatric)

Age of onset < 1 month old and sounds like reflux or spitting up

Go to Protocol: Spitting Up (Reflux) (Pediatric)

Vomiting occurs only while coughing

Go to Protocol: Cough (Pediatric)

Diarrhea is the main symptom (no vomiting or vomiting resolved)

Go to Protocol: Diarrhea (Pediatric)

Vomiting only occurs after taking a medicine and child does not have a vomiting illness

Go to Guideline: Vomiting on Meds (Pediatric)

Head injury reported by caller within past 24 hours

Go to Protocol: Head Injury (Pediatric)

Severe headache and history of migraines

Go to Protocol: Headache (Pediatric)

Motion sickness suspected

Go to Protocol: Motion Sickness (Pediatric)

Food allergy previously diagnosed and vomiting occurs within 2 hours after eating specific allergic food

Go to Protocol: Food Allergy - Diagnosed (Pediatric)

Go to ED Now

Can't move neck normally and fever

Altered mental status suspected in young child (true lethargy, awake but not alert, not focused, slow to respond)

R/O: intussusception, hypoglycemia, increased ICP, meningitis

Could be poisoning with a plant, medicine, or other chemical

Age < 12 weeks with fever 100.4° F (38.0° C) or higher by any route (rectal reading preferred)

R/O: sepsis

Too weak to stand or has fainted

R/O severe dehydration

Fever and weak immune system (sickle cell disease, HIV, chemotherapy, organ transplant, adrenal insufficiency, chronic steroids, etc)

R/O: serious bacterial infection. Note: if available, refer to established specialist.

Go to ED/UCC Now (or to Office Now per Practice Policy)

Newborn (< 1 month old) and vomited 2 or more times in last 24 hours (Exception: normal reflux or spitting up)

Age < 12 weeks (3 months) with vomiting 3 or more times within the last 24 hours and ILL-appearing (not acting normal)

R/O: GI obstruction, pyloric stenosis

Blood (red or coffee-ground color) in the vomit that's not from a nosebleed

R/O: peptic ulcer, esophagitis, Mallory-Weiss tear

Intussusception suspected (brief attacks of severe abdominal pain/crying suddenly switching to 2-10 minute periods of quiet) (age usually < 3)

Appendicitis suspected (e.g., constant pain > 2 hours, RLQ location, walks bent over holding abdomen, jumping makes pain worse, etc)

Bile (green color) in the vomit and 2 or more times (Exception: stomach juice which is yellow)

R/O: GI obstruction, necrotizing enterocolitis

SEVERE constant abdominal pain (when not vomiting) present > 1 hour

R/O: bowel obstruction

Any constant abdominal pain or crying (after has vomited) present > 2 hours (Note: brief abdominal pain that comes on before vomiting and then goes away is common)

R/O: GI obstruction due to intussusception, volvulus, etc.

Dehydration suspected (e.g., no urine in > 8 hours, etc)

SEVERE vomiting (vomits everything for > 8 hours)

High-risk child (e.g., diabetes mellitus, CNS disease, V-P Shunt, recent GI surgery)

Recent abdominal injury within the last 3 days

R/O: traumatic pancreatitis

Rehydration therapy (IV or oral) needed recently in medical setting, and looks worse or like they did then

Recent hospitalization and child not improved or worse

Hernia in the groin that looks like it's stuck

Severe headache persists > 2 hours

R/O: increased intracranial pressure, 1st migraine headache

Child sounds very sick or weak to the triager

Reason: severe acute illness or serious complication suspected

Go to Office Now

Age < 12 weeks with vomiting 3 or more times within the last 24 hours and baby acts normal (WELL-appearing) (Exception: just normal spitting up or reflux)

Fever > 105° F (40.6° C)

R/O: serious bacterial infection

Diabetes suspected (excessive thirst, frequent urination, weight loss, deep or fast breathing, etc.)

Kidney infection suspected (flank pain, fever, painful urination, female)

R/O: acute pyelonephritis

Discuss With PCP and Callback by Nurse Within 1 Hour

Vomiting an essential medicine (e.g., antibiotic, seizure medications)

Taking Zofran, but vomits 3 or more times

R/O: wrong diagnosis

See in Office Today

Fever returns after going away > 24 hours

R/O: UTI, strep pharyngitis, sinusitis

Age < 1 year and vomiting > 12 hours

See in Office Today or Tomorrow

Fever present > 3 days

Age > 1 year and vomiting > 48 hours

See in Office Within 3 Days

Triager thinks child needs to be seen for non-urgent acute problem

Caller wants child seen for non-urgent problem

See in Office Within 2 Weeks

Vomiting is a chronic problem (present > 4 weeks)

R/O: psychogenic vomiting, peptic ulcer, eating disorder

Home Care

Mild-moderate vomiting (probable viral gastritis)

Home Care Advice for Vomiting Without Diarrhea

1. **Reassurance and Education - Vomiting Without Diarrhea:**
   - Most vomiting is caused by a viral infection of the stomach or mild food poisoning.
   - Vomiting is the body's way of protecting the lower GI tract.
   - Fortunately, vomiting illnesses are usually brief.
   - The main risk of vomiting is dehydration. Dehydration means the body has lost too much fluid.

2. **For Formula-Fed Infants - Reduce the Amount Per Feeding**:
   - If vomits once, give half the regular amount of formula. Do this every 1 to 2 hours.
   - If vomits twice, give 1 ounce (30 mL) of formula. Do this every 30 to 60 minutes.
   - If continues to vomit, switch to an electrolyte solution (such as Pedialyte). Reason: it will help your baby stay hydrated. Give small amounts of formula until you can get some.
   - Spoon or syringe feed Pedialyte in small amounts. Give 1 to 2 teaspoons (5 to 10 mL) every 5 minutes.
   - After 2 hours without throwing up, double the amount.
   - After 4 hours without vomiting, go back to regular formula.

3. **For Breastfed Infants - Reduce the Amount Per Feeding:**
   - If vomits once, nurse 1 side every 1 to 2 hours.
   - If vomits more than once within last 2 hours, nurse for 5 minutes, every 30 to 60 minutes. After 4 hours without vomiting, return to regular breastfeeding.
   - If continues to vomit, switch to pumped breastmilk.
   - Electrolyte solutions (such as Pedialyte) are rarely needed in breastfed babies. It can be used if vomiting becomes worse.
   - Spoon or syringe feed small amounts of pumped breastmilk: 1-2 teaspoons (5-10 mL) every 5 minutes.
   - After 4 hours without vomiting, return to regular breastfeeding. Start with small feedings of 5 minutes every 30 minutes and increase as tolerated.

4. **Pumped Breastmilk Bottle-Fed Infants - Reduce the Amount per Feeding:**
   - If vomits once, give half the regular amount of breastmilk every 1-2 hours.
   - If vomits more than once within last 2 hours, give 1 ounce (30 mL) every 30 to 60 minutes.
   - If continues to vomit, switch to an electrolyte solution (e.g., Pedialyte) Reason: It will help your baby stay hydrated. Give small amounts of breastmilk until you can get some.
   - Spoon or syringe feed Pedialyte in small amounts. Give 1-2 teaspoons (5-10 mL) every 5 minutes.
   - After 2 hours without throwing up, double the amount.
   - After 4 hours without vomiting, go back to breastmilk. Start with 1 ounce (30 mL) every 30 minutes. Then slowly increase as tolerated.

5. **Older Children Over 1 Year - Offer Sips of Clear Fluids Frequently:**
   - Offer clear fluids in small amounts for 8 hours.
   - Water or ice chips are best for vomiting in older children (Reason: Water is directly absorbed across the stomach wall)
   - Other clear fluids: Use half-strength Gatorade. Make it by mixing equal amounts of Gatorade and water. Can mix apple juice the same way.
   - Electrolyte solutions (such as Pedialyte) is usually not needed in older children, but can also be used. Popsicles work great for some kids.
   - The key to success is giving small amounts of fluid. Offer 2-3 teaspoons (10-15 ml) every 5 minutes. Older kids can just slowly sip a clear fluid.
   - After 4 hours without vomiting, double the amount.
   - After 8 hours without vomiting, return to regular fluids.
   - **Caution:** If vomiting continues over 8 hours, switch to an electrolyte solution or half-strength Gatorade (Reason: needs some sugar and electrolytes).

6. **Stop Solid Foods:**
   - Avoid all solid foods (and baby foods) in kids who are vomiting.
   - After 8 hours without throwing up, gradually add them back.
   - Start with starchy foods that are easy to digest. Examples are cereals, crackers and bread.
   - Return to completely normal diet in 24-48 hours.

7. **Do Not Give Medicines:**
   - Stop giving any medicine that is over the counter and not important. Reason: Most oral medicines make vomiting worse.
   - **Fever.** Most fevers don't need to be treated with any medicines. Reason: Fevers help the body fight the infection. For fevers over 104 F (40 C), you can use an acetaminophen (Tylenol) suppository.
   - **Call your doctor if:** Your child vomits an essential or prescription medicine.

8. **Try to Sleep:**
   - Help your child go to sleep for a few hours (Reason: Sleep often empties the stomach and relieves the need to vomit).
   - Your child doesn't have to drink anything if they feel very nauseated.

9. **For Severe or Continuous Vomiting, but Well-Hydrated:**
   - Sometimes children vomit almost everything for 3 or 4 hours, even if given small amounts.
   - However, some fluid is being absorbed and this will help prevent dehydration.
   - From what you've told me, your child is well hydrated at this time. So continue offering clear fluids (Avoid: NPO).

10. **Return to Day Care or School:**
    - Your child can return to day care or school after vomiting and fever are gone.

11. **Expected Course:**
    - For the first 3 or 4 hours, your child may vomit everything. Then the stomach settles down.
    - Vomiting from viral gastritis usually stops in 12 to 24 hours.
    - Mild vomiting with nausea may last 3 days.

12. **Dehydration: How to Tell**
    - The main risk of vomiting is dehydration. Dehydration means the body has lost too much water.
    - Severe vomiting is a common cause of dehydration.
    - Dehydration is a reason to see a doctor right away.
    - Your child may have dehydration if not drinking much fluid and:
    - The urine is dark yellow and has not passed any in over 8 hours. (over 12 hours if age over 1 year)
    - Inside of the mouth is very dry and there are no tears if your child cries.
    - Your child is irritable, tired out or acting ill. If your child is alert, happy and playful, they are not dehydrated.

13. **Call Back If:**
    - Vomiting becomes severe (vomits everything) over 8 hours while receiving ORS or clear fluids correctly
    - Vomiting persists over 12 hours for age less than 1 year
    - Vomiting persists over 48 hours for age 1 year and older
    - Blood or bile in vomit
    - Blood in diarrhea
    - Signs of dehydration
    - Stomach pain becomes constant or severe
    - Your child becomes worse

FIRST AID

N/A

BACKGROUND INFORMATION

Matching Pediatric Care Advice (PCA) Handouts for Callers

Detailed home care advice instructions have been written for this protocol. If your software contains them, they can be sent to the caller at the end of your call. Here are the names of the pediatric handouts that are intended for use with this protocol:

- Vomiting (Baby on Breastmilk)
- Vomiting (Baby on Baby Formula)
- Vomiting (Age 1-5)
- Vomiting (Age 6-21)
- Fever - How to Take the Temperature
- Fever - Myths Versus Facts
- Food Poisoning
- Acetaminophen (Tylenol) Dosage Table - Children

Causes of Vomiting

- **Viral Gastritis.** Stomach infection from a stomach virus is the most common cause. Also called stomach flu. A common cause is the Rotavirus. The illness starts with vomiting. Watery loose stools may follow within 12-24 hours.
- **Food Poisoning.** This causes rapid vomiting within hours after eating the bad food. Diarrhea may follow. Caused by toxins from germs growing in foods left out too long. An example is Staph toxin in egg salad.
- **Ibuprofen.** Ibuprofen products (such as Advil) can be a stomach irritant. If taken on an empty stomach, it can cause vomiting.
- **Food Allergy.** Vomiting can be the only symptom of a food reaction. The vomiting comes on quickly after eating the food. Common foods are peanuts, tree nuts, fish and shellfish (such as shrimp).
- **Food Protein-Induced Enterocolitis Syndrome (FPIES)**. In rare cases, the vomiting starts 2 to 3 hours after eating the food. Happens mainly in infants. The main trigger foods for a delayed vomiting reaction are cow's milk or soy milk.
- **Coughing.** Hard coughing can also cause your child to throw up. This is more common in children with reflux.
- **Motion Sickness.** Vomiting and dizziness are triggered by motion. Sea sickness or fun-park ride sickness are the most common types. Strongly genetic.
- **Migraine Headaches.** In children, most migraine headaches also have vomiting.
- **Serious Causes.** Vomiting alone (without diarrhea) should stop within about 24 hours. If it lasts over 24 hours, you must think about more serious causes. Examples are appendicitis, a kidney infection, diabetes, shaken baby syndrome and head injury. A serious cause in young babies is pyloric stenosis. (See below for more on this).
- **Cyclic Vomiting.** Cyclic vomiting is the most common cause of recurrent attacks of vomiting. Attacks have a sudden onset and offset. Often occur in children who later develop migraine headaches.

Pyloric Stenosis (Serious Cause)

- The most common cause of true vomiting in young babies.
- Peak Age: 2 weeks to 2 months. Rare after 3 months.
- Vomiting is forceful. It becomes projectile and shoots out.

- Right after vomiting, the baby is hungry and wants to feed. ("hungry vomiter")
- **Cause:** The pylorus is the channel between the stomach and the gut. In these babies, it becomes narrow and tight.
- **Risk:** Weight loss or dehydration
- **Treatment:** Cured by surgery.

Vomiting: Most Frequent Pediatric Call

- Every year, vomiting comes in first in call frequency. This can be explained by the following:
- Before vomiting, children are apprehensive and unable to participate in any normal activities.
- During vomiting, children are miserable.
- Parents remember how badly vomiting has made them feel in the past.
- Parents often hope there is a medicine to stop the vomiting. Unfortunately, there is no OTC medicine for home treatment. Zofran (ondansetron) can be prescribed for children with severe vomiting, but only after they have been seen.
- All parents want to be sure they are treating the vomiting correctly. Hence, the importance of providing helpful, detailed care advice.

Detecting Bile in Vomitus

- Bile in the vomitus is a serious finding. In young infants, it is commonly seen with volvulus and bowel obstruction. These are surgical emergencies.
- Bile is always green or dark green in color.
- When mixed with stomach juices, it can be greenish-yellow, but never just yellow. If the caller is unsure if the color is greenish, ask "Does it look like spinach or mustard?" If the caller is still unsure, the child also needs to be seen.
- Bile is in a liquid state. If the green color is in a glob of mucus, it's usually nasal mucus ("snot") or coughed-up phlegm that has been swallowed.
- Yellow-colored fluid in vomitus is usually normal stomach juices and acid.

Clues to Neurological Causes of Isolated Vomiting (e.g., meningitis)

- Delirium (confusion), lethargy, stupor
- Headache
- Stiff neck
- Bulging soft spot
- Recent head trauma

Clues to Serious GI Causes of Isolated Vomiting

- Abdominal pain that is continuous and present over 2 hours
- Intussusception pain pattern
- Appendicitis pain pattern
- Vomiting bile and under 6 mo
- Vomiting bile associated with abdominal pain or swollen abdomen
- Vomits everything over 8 hours
- Age under 12 weeks and vomits 3 or more times
- Age under 2 yo and isolated vomiting over 12 hours
- Age over 2 yo and isolated vomiting over 48 hours

Shaken Baby Syndrome (SBS): Presenting Symptoms

- SBS is a severe form of child abuse seen in the first year of life (peak age 3 months).
- SBS can cause bilateral subdural hematomas. Result: death or serious neurological complications.

- Triager goal: prevent all child abuse by helping parents manage crying and colic.
- Triager goal: Detect child abuse injuries of skin or bones before SBS occurs. Examples: grab mark bruises of arms or chest and unexplained tenderness of bones.
- The following are symptoms of SBS:
- Vomiting is common
- Inconsolable crying and extreme irritability
- Unexplained spells (also called BRUE) or seizures
- Unexplained apneic episodes
- Decreased activity or movement
- Decreased alertness
- Hard to awaken or keep awake
- Bulging anterior fontanel

Ketotic Hypoglycemia - a Serious Complication of Vomiting

- Definition: a type of low blood sugar (hypoglycemia) caused by fasting more than 8-12 hours.
- Hypoglycemia is a blood sugar less than 70 mg/dL (3.9 mmol/L).
- Symptoms: hard to awaken, confusion, even a seizure.
- Trigger: fasting. Most commonly seen with prolonged vomiting associated with poor fluid intake, such as with norovirus. Can also occur in otherwise healthy children after prolonged fasting.
- Peak age: 1-3 years.
- Prognosis: outgrown by age 6
- Prevention: avoid water as only fluid beyond 8 hours during a vomiting illness. Use sips of drinks that contain sugar, such as half-strength juice, sports drinks or electrolyte solutions (such as Pedialyte).
- Vomiting guideline: current fluid care advice attempts to prevent this complication.

Giving Fluids Versus Nothing Per Mouth (NPO) For Vomiting

Sometimes children vomit everything that is offered to them, including oral rehydration solution (ORS) and water. Other children are so nauseated they don't want to swallow anything. If vomiting is the only symptom (no associated diarrhea), it is safe to rest the stomach completely for 1 or 2 hours. It's unusual to become rapidly dehydrated from vomiting alone. Some children who begin vomiting at bedtime will vomit several times during the night without having any fluid intake, but still be hydrated with very concentrated urine in the morning. The reason that this guideline instructs callers not to use NPO is that recommending it in selected circumstances can be confusing to some parents and contribute to dehydration in children who develop watery diarrhea with their vomiting. In addition, during the brief time that fluid is retained in the stomach, some of it is absorbed and this can help prevent dehydration. The literature demonstrates that we can feed most children through a vomiting and/or diarrhea illness.

Vomiting: Treating with Sips of Water versus Oral Rehydration Solution (ORS)

- This guideline recommends treating vomiting with small amounts of water (rather than ORS) after 1 year of age. The following are the reasons:
- Vomiting as an isolated symptom is usually short-lived (24 hours or less). During that time, it is difficult to become dehydrated from vomiting without diarrhea.
- If diarrhea also develops, the fluid is switched to ORS.
- Water is the most accessible fluid and in contrast to ORS, older children rarely refuse it, as they may do with ORS.
- The cutoff of 12 months for switching from ORS to water was arbitrary but matches the age of switching fluids in the Diarrhea protocol. I think there needs to be some age after which we no longer use ORS to treat isolated vomiting.
- With diarrhea, the older children can also receive water as their main fluid as long as they are receiving their electrolytes from solid foods. Again, this is based upon the fact that we teach parents to feed through diarrhea. In children with diarrhea, if we only give them ORS for more than 6 hours, they become hungry and ketotic.

- All children with isolated vomiting are seen if it persists more than 24 hours.
- Summary: Treating vomiting with sips of water is safe and will not cause hyponatremia under the following conditions: Age greater than 1 year, no associated diarrhea and limited to less than 24 hours.

Dehydration: How to Explain to Callers

- The main risk of not drinking enough fluids is dehydration.
- Dehydration means the body has lost too much water.
- Dehydration is a reason to see a doctor right away. Your child may have dehydration if not drinking much fluid and:
- The urine is dark yellow and has not passed any in over 8 hours.
- Inside of the mouth and tongue are dry or very sticky.
- There are no tears if your child cries
- Slow blood refill test: Longer than 2 seconds. First, press on the thumbnail and make it pale. Then let go. Count the seconds it takes for the nail to turn pink again. Ask your doctor to teach you how to do this test.
- A child with severe dehydration may become too weak to stand or be very dizzy when trying to stand. Severe dehydration can also lead to confusion, rapid breathing, or floppiness.

Expert Reviewers

- Mark Corkins, MD; AAP Committee on Nutrition
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- Nancy Krebs, MD; AAP Committee on Nutrition
- Marion Sills MD, MPH, Pediatric Emergency Medicine, Children's Hospital Colorado, Aurora, Colorado
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