Fact Sheet: Aspiration

About Aspiration:

Aspiration is defined as entry of food below the vocal cords or in the lower airways. Recurrent wheezing, coughing, and choking, especially after eating (feeding) can be a symptom of possible swallowing dysfunction and aspiration.

- People with the following conditions or behaviors are at higher risk for aspiration:
  - Neuromuscular conditions especially when there is inability to get to a sitting upright position independently and when there is oral motor and swallowing dysfunction and a weak cough
  - Severe epilepsy
  - Lower level of consciousness
  - Chronic respiratory conditions
  - History of stuffing food
  - History of addiction (drug overdose)
  - Severe gastroesophageal reflux.
- Aspiration is not directly associated with developmental disability, except in severe cases of neurological damage or with uncontrolled epilepsy.
- Aspiration can lead to aspiration pneumonia. Aspiration pneumonia can occur as the result of chronic inhalation of small amounts of contents leading to an infection or it can occur from an acute inhalation of food.
  - Aspiration pneumonia is more common in males than in females and the extremely young and old are the most susceptible.
  - Aspiration pneumonia can be fatal or lead to chronic lung damage. Treatment consists of respiratory and medical support along with antibiotics.
- Upper respiratory infections resulting in stuffy nose, mucous nasal discharge, increased nasopharyngeal secretions, and cough often can exacerbate the risk of aspiration in persons with swallowing problems.
  - When such a patient has an upper respiratory infection, the diet may need to be altered and the individual may need to have secretions suctioned.

Diagnosis:

- A physician should determine the cause of aspiration, the type of bacteria causing infection, and whether there is resultant lung damage for prognosis and ongoing treatment and monitoring. To determine if the cause is related to swallowing dysfunction, a swallow study should be completed.
- For adult patients in nursing settings, a swallow screen should be completed by the nurse prior to the patient initially receiving anything by mouth, including medications,

and at any time the patient has possible or suspected alteration in his/her ability to swallow safely.

- When a swallow study shows aspiration, a G-tube is often recommended so that the risk for aspiration pneumonia is diminished.

Managing Aspiration:

- For people with severe swallowing dysfunction and individuals who stuff food, it may be necessary to have a plan where the person is observed directly by staff, fed by staff, or offered food at specific intervals to assist in the case of choking.
- Individuals at high risk should be fed with suction equipment at hand.
- Some individuals have a habit of pocketing food in their cheeks. Food also may be retained in the mouth when patients have difficulty swallowing. In those instances, the oral cavity should be checked after the individual has eaten.
- Medications should be crushed into applesauce or an equivalent.

Checklist: Aspiration/Aspiration Pneumonia

Does this person have any of the following risk factors for aspiration? (Check all that apply.)

- ☐ Neuromuscular conditions
- ☐ Severe epilepsy
- ☐ Lower level of consciousness
- ☐ Chronic respiratory conditions
- ☐ Stuffing food
- ☐ History of addiction (drug overdose)
- ☐ Severe gastroesophageal reflux

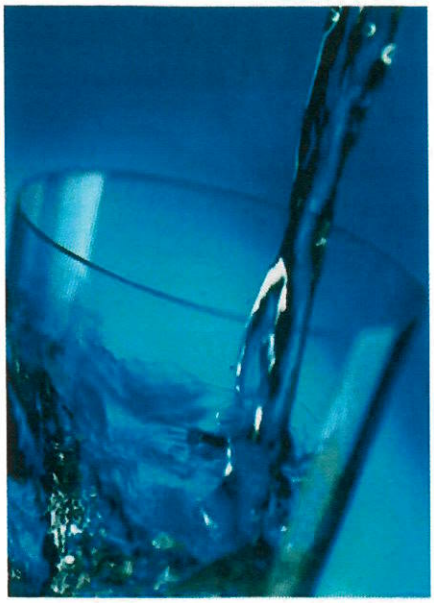
	**Does this person have unexpected or unexplained episodes of wheezing, coughing or choking?** Yes☐ No☐ Comments:	Recurrent wheezing, coughing and choking, especially after eating (feeding), can be a symptom of possible swallowing dysfunction and aspiration.
	**Has he or she been diagnosed with pneumonia two or more times during the past year?** Yes☐ No☐ Comments:	Recurrent pneumonia is having two or more episodes of pneumonia in the same year and most likely indicates that there is an underlying medical condition. The most common predisposing factor is aspiration.

	**Does this person have difficulty chewing or swallowing food?** Yes☐ No☐ Comments:	When there is trouble with swallowing, eating takes longer and food may be retained in the mouth longer or food may come out of the mouth during swallowing. Persons with trouble swallowing can choke or cough during eating.
	**Does this person have difficulty getting into a sitting position independently?** Yes☐ No☐ Comments:	Neuromuscular conditions prevent a person from sitting up independently. People with these conditions are more likely to have swallowing and choking problems. They can not change position independently, if they are choking. When a person is upright, gravity facilitates feeding and neck flexion facilitates swallowing.
	**Has this person ever been hospitalized and diagnosed as having aspiration pneumonia?** Yes☐ No☐ Comments:	The cause of aspiration, the type of bacteria that caused an infection, and whether there was resultant lung damage needs to be determined for prognosis, as well as future treatment and monitoring. To determine whether the cause was related to swallowing dysfunction a swallow study should be done.
	**Is this person receiving a special diet such as ground or chopped foods to prevent choking or aspiration?** Yes☐ No☐ Comments:	Aspiration may be related to poor oral motor and swallowing function, difficulty with chewing, or stuffing behaviors. In this case, appropriate food texture can help to prevent aspiration and choking.

	**Is there a special feeding and eating plan or a procedure to monitor this person during and after eating?** Yes☐ No☐ Comments:	Some individuals have severe swallowing dysfunction or tend to stuff their food. In such cases, it may be necessary to have a plan where someone observes the person during feeding, feeds him or her directly, or offers food at specific intervals, and assists the person if he or she begins to choke.
	**Does this person have a care plan for managing increased secretions during respiratory illness?** Yes☐ No☐ Comments:	Respiratory infections can result in stuffy nose, mucous nasal discharge, increased nasopharyngeal secretions, and cough. These conditions can exacerbate the risk of aspiration in persons with swallowing problems. During respiratory infections, a person's diet may need to be altered and he or she may need to have secretions suctioned.
	**Has a physician or nurse mentioned or recommended a G-tube to prevent this person from aspirating?** Yes☐ No☐ Comments:	When a swallow study shows aspiration, a physician will recommend a G-tube to reduce the risk of aspiration pneumonia. There may be differences of opinion regarding the timing and severity of the aspiration demonstrated by the test, and the person or the family may resist having a G-tube. Either of these may delay placement of a tube.

Unclear or concerned about an answer? *Please consult with your clinical staff for appropriate follow-up*

Dehydration is Bad. Water is Your Friend.



What is Dehydration?

- **When the body has less water than it needs to function optimally.**
- **Occurs when the body's output is greater than intake.**
- **A decrease of 2% or more can result in physical, visual, or cognitive changes.**

What Does Your Body Use Water For?

* Body temperature regulation
* Metabolic processes
* Lubrication of joints
* Digestion
* Respiration
* Nutrient distribution

Facts You Should Know:

- Dehydration is the most common fluid and electrolyte disorder in all elderly adults populations.
- Water makes up about 50% of total body weight.
- Water must be replaced daily because the body cannot store it.
- Death rates are 7 times higher for dehydrated patients.
- Hospitalization costs for dehydrated patients are more than $1 Billion per year in the United States.
- Women are more prone to dehydration.
- Medications such as diuretics, laxatives, and sedatives can cause dehydration.
- Drinking alcohol or caffeine can contribute to dehydration

Signs of Dehydration:

- **Mild Symptoms**
  - Dry, sticky mouth and tongue
  - Lightheaded or dizzy
  - Weakness and headache
  - Lethargy
- **Moderate Symptoms**
  - Confused or irritable
  - Stop sweating
  - Dark yellow urine
  - Decreased urine output
  - Blood pressure lower than usual
  - Increased heart rate
- **Severe Symptoms**
  - Fainting or unconsciousness
  - Disoriented
  - Onset of fever

How Much Water Should You Drink Each Day?

0.46 oz of water per pound of body weight

- To calculate: 0.46 x weight in lbs = recommended # of ounces per day
- For example: 120 lb person
  0.46 x 120 lbs = 55.2 oz of water

Consequences of Prolonged Dehydration:

- Muscle spasm
- Kidney dysfunction
- Dangerous reactions to medications
- Infections
- Seizures
- Hospitalization
- Coma
- Death

Easy Ways You Can Drink More Water:

- Drink from a fun straw
- Carry a water bottle with you
- Add lemon, lime, orange or favorite fruit
- In winter, drink hot water with mint leaves or lemon and honey
- Set an alarm to remind you when to drink more fluids
- Have a glass of water before and after each meal

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Preventing Dehydration

What is dehydration?

Dehydration is a lack of fluid in the body. Fluid fills almost every space in our bodies and even helps form the structure of some larger molecules like protein. Dehydration can be dangerous and sometimes even fatal.

- Water is the primary fluid in the body and serves a key role in the digestion, absorption, and transport of nutrients in food.
- Water aids in the removal of toxins and waste products from our bodies.
- Water helps the proper regulation of body temperature and joint lubrication.
- The human body cannot store fluid, so it must be replaced every day.

When fluid intake is adequate, the body has the right amount of fluid and electrolytes for proper functioning.

Is dehydration more common in older adults?

Yes, older adults are more vulnerable to dehydration. Reduced muscle mass, decreased sensitivity to thirst and less efficient kidney function all can contribute to dehydration. Studies show that one in three older adults may not get enough fluid. Declines in physical condition and mental sharpness can also contribute to dehydration.

What other things affect hydration status?

Dehydration can result because of weather or health status. For example, in a hot environment we perspire more, resulting in greater fluid loss. Dry winter air can increase fluid loss. Running a fever increases fluid needs. Medications, especially diuretics and laxatives also can increase fluid loss.

What are the signs and symptoms of dehydration?

Dehydration is identified many different ways. The first warning sign of dehydration is thirst. Other symptoms include:

Headache	Increased heart rate	Constipation
Fatigue	Low blood pressure	Sunken eyeballs
Dark urine	Decreased urination	Decreased functional ability
Weight loss	Dry mouth, tongue, and eyes	Decreased skin turgor

In some cases, problems such as weakness, trembling, lethargy, or confusion can result from dehydration.

How much fluid does a person need every day?

Fluid needs are based on a person's body size, the weather, activity, and medical history. The old recommendation of eight 8-ounce (oz.) glasses of water per day is a good place to start in figuring out how much water you need. Evaluating the color of your urine while eating a balanced diet and drinking eight 8-ounce glasses of fluid in a day can help indicate if you need daily fluid. A registered dietitian can help you figure out how much fluid is needed. Milk, juice, coffee, tea, and

water all count as sources of fluids. Discuss the amount of fluids that you drink with your doctor or healthcare professional. Some conditions call for a person to limit or restrict fluids.

Are there fluids in foods?

Yes. Individuals who eat a balanced diet can get the equivalent of two to three 8-oz glasses of water from the fluids found in the foods they eat. Many fruits and vegetables have high water content, as do soups, gelatin, and pudding. Dry foods, such as snack foods, cookies, and cheeses, have low water content. If a person is not eating, or is not eating well, additional fluids may be needed to make up for the fluids missed by not eating well.

Tips to stay hydrated

- Drink water and other beverages on a schedule to help reach goal.
- Set a daily fluid goal. Individual needs vary but a minimum of six to eight 8-oz glasses can be a starting point Include soup and other high fluid content foods in your diet regularly.
- Eat five to nine servings of fruits and vegetables each day. Limit fruit juice.
- Drink a glass of water or other beverage with meals, snacks, and medications.
- Keep a glass of water nearby and take frequent sips.
- Drink warm beverages in the winter and cool beverages in the summer.
- Add flavor to water with lemon, cucumber slices, or mint leaves.
- Select beverages that are low in calories to prevent weight gain.
- Remind elderly friends and loved ones to drink, offer the glass rather than just asking.
- Be alert for signs and symptoms of dehydration.
- Limit, or avoid, alcohol which is a diuretic (increases urine output).
- Look at your urine, if it is dark (like apple juice) then drink more liquids. Pale yellow urine indicates good hydration status.

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Review Date 4/11 Updated 12/14

Are You Hydrated?
Take the Urine Color Test

Urine Color Chart*

HYDRATED

OPTIMAL

WELL HYDRATED

DEHYDRATED

DEHYDRATED:
You need to drink more water

SEEK MEDICAL AID:
May indicate blood in urine or kidney disease

*This color chart is not for clinical use.

Water Consumption Table

Heat Category	WBGT Index, °F	Easy Work	Moderate Work	Hard Work
		Water Intake (Quart/Hour)	*Water Intake (Quart/Hour)*	*Water Intake (Quart/Hour)*
1	78° - 81.9°	½	¾	¾
2	82° - 84.9°	½	¾	1
3	85° - 87.9°	¾	¾	1
4	88° - 89.9°	¾	¾	1
5	> 90°	1	1	1
Body Armor = +5°		Easy Work – walking on a hard surface at less than 2 mph with less than a 30 pound load, weapon maintenance, marksmanship training, drill and ceremony	Moderate Work – patrolling, walking in the sand at 2.5 mph with no load, calisthenics, patrolling, individual movement techniques (i.e., high/low crawl)	Hard Work – walking in the sand at 2.5 MPH with a load, field assaults
MOPP 4 = +10°				
Rest - sitting or standing in the shade if possible				

The fluid replacement volumes will sustain performance and hydration for at least 4 HOURS of work in the specified heat category. Fluid needs can vary based on individual differences and exposure to full sun or full shade.

CAUTION: Hourly fluid intake should not exceed 1.5 quarts. Daily fluid intake should not exceed 12 quarts.

Purpose

- With normal kidney function, your level of hydration is indicated by the color of your urine. Some vitamins and supplements may cause a darkening of the urine unrelated to dehydration.
- Since heat-related illness often follows dehydration, this simple test will help protect your health.
- Dehydration also increases your risk for kidney stones.

How does it work?

- Match your urine color to closest color in the chart and read the hydration level on the chart.
- Watch the urine stream not the toilet water, as the water in the toilet will dilute your urine color.
- In response to dehydration, the kidneys conserve water and excrete more concentrated urine; the more concentrated the urine the darker the color.

Prevent Dehydration

- No amount of training or acclimatization can reduce the body's requirement for water.
- Follow the water consumption guidelines in the water consumption table.

U.S. Army Public Health Command (Provisional)
http://phc.amedd.army.mil
CP-070-0510 (Also available as a tip card.)

What you need to know about . . .

Constipation and Bowel Obstruction

- **Constipation** occurs when a person has less than three bowel movements per week, although this varies from person to person. Stools are usually hard, dry, small, and difficult to pass.
- **Bowel Obstruction** is a partial or complete blockage of the small or large intestine.
- **Perforation** occurs when the intestine or bowel gets torn, which allows intestinal contents to enter the abdominal cavity. This condition is very dangerous and can quickly lead to serious infection.

Know the risks

Common issues that increase the risk of bowel obstruction occur when a person:

- Has impaired mobility and cannot walk around on his/her own
- Has muscle weakness or poor body alignment
- Has difficulty eating or drinking
- Does not eat enough fiber
- Does not drink enough liquids
- Has cerebral palsy or similar diagnosis that can affect the muscles that move waste through the bowels
- Has diabetes
- Has a degenerative condition, such as Parkinson's disease
- Takes medications that have a side effect of constipation
- Does not have adequate time or privacy to use the bathroom.

Know the signs

These are signs that a person may have a bowel obstruction:

- No passing of stool or gas;
- Leakage of small amounts of watery stool;
- Nausea and/or vomiting
- Abdominal cramps, often felt in waves;
- Abdominal distension (bloated stomach) or hardened abdomen;
- Seizures.

Know what to do

Prevention Strategies:

- Consult with a physician about a constipation protocol, frequency of bowel movements for this person, and what treatment is recommended (such as laxatives or enemas)
- Consult with a dietitian
- Carefully follow all diet orders and document what the person eats
- Ensure that the person consumes adequate fiber and liquids daily
- Keep accurate bowel tracking and ensure that it is regularly monitored
- Make sure that any symptoms of constipation are communicated and documented between shifts
- Make sure all staff work together to help the person receive the medications they need, including PRN medications
- Help the person stay as active as possible
- Make sure the person has adequate time and privacy for using the toilet

IN AN EMERGENCY:

Call 9-1-1 if a person:

- vomits stomach contents or digested food that smells like feces;
- has low blood pressure and/or a very rapid pulse;
- loses consciousness (becomes unresponsive).

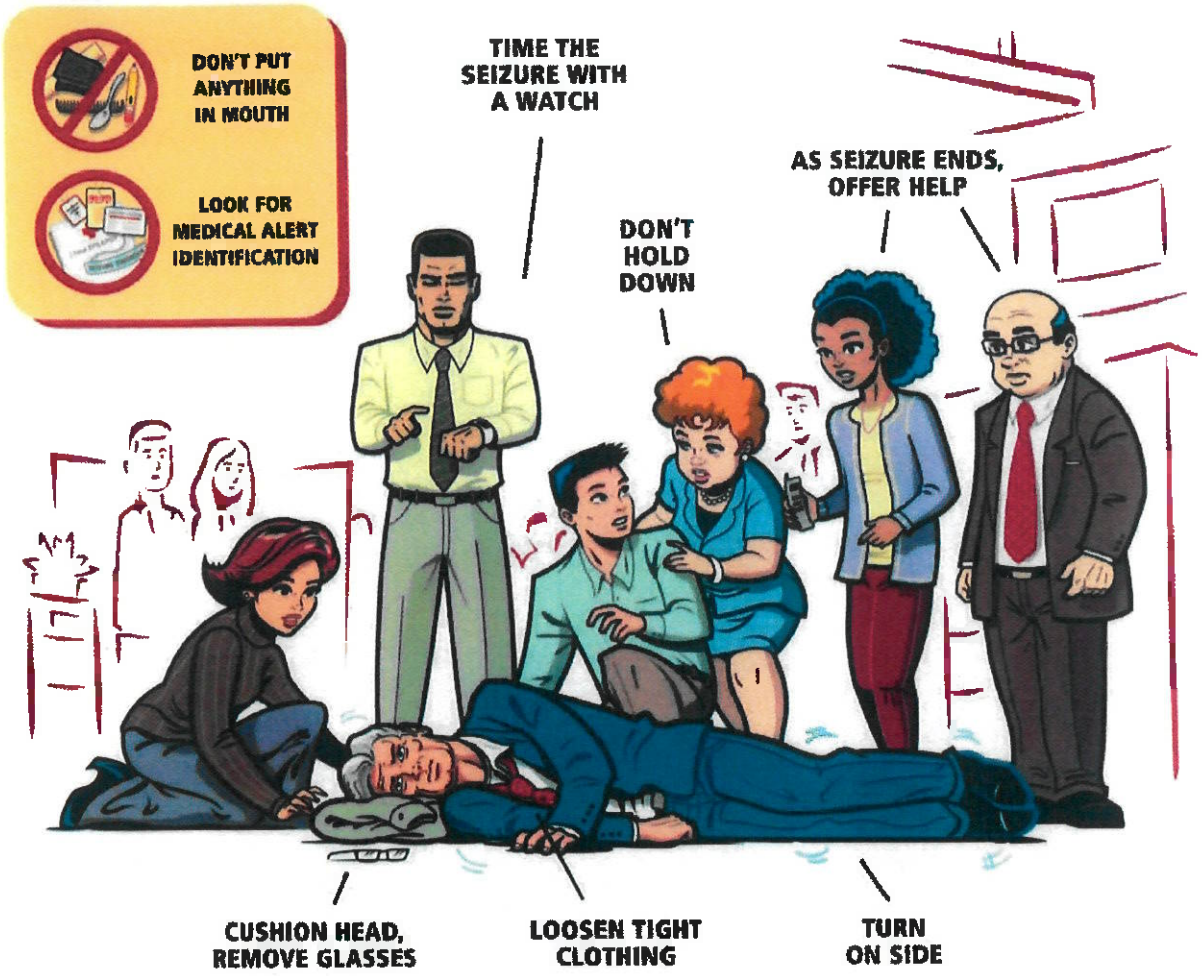
QR

developed with reference to resources available through the Arizona Division of Developmental Disabilities Quality Assurance Unit and the Illinois Department of Human Services. This Fact Sheet is not a substitute for clinical evaluation or physician's orders.

Updated: April 17, 2017

First Aid for Seizures

(Convulsive, generalized tonic-clonic, grand mal)



Most seizures in people with epilepsy are not medical emergencies. They end after a minute or two without harm and usually do not require a trip to the emergency room.

But sometimes there are good reasons to call for emergency help. A seizure in someone who does not have epilepsy could be a sign of a serious illness.

Other reasons to call an ambulance include:

- A seizure that lasts more than 5 minutes
- No "epilepsy" or "seizure disorder" identification
- Slow recovery, a second seizure, or difficulty breathing afterwards
- Pregnancy or other medical diagnosis
- Any signs of injury or sickness

EPILEPSY FOUNDATION®

Not another moment lost to seizures™

1-800-332-1000 • www.epilepsyfoundation.org

EFA 342
Rev 2/2010

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FIRST AID FOR SEIZURES

1. Stay calm, most seizures only last a few minutes.

2. Prevent injury by moving any nearby objects out of the way.

3. Pay attention to the length of the seizure.

4. Make the person as comfortable as possible.
   Turn the person on their side.

5. Keep onlookers away.

6. Do **not** hold the person down.

7. Do **not** put anything in the person's mouth.

8. Do **not** give the person water, pills, or food until the person is fully alert.

9. If the seizure continues for longer than five minutes, call 911.

10. Be sensitive and supportive, and ask others to do the same.

epilepsy.com

GERD (Gastroesophageal Reflux Disease)

What is GERD?

GERD is short for **gastroesophageal** [gas-troh-eh-sof-uh-GEE-uhl] **reflux disease.** It is a common condition in which food and acids in the stomach move back (or **reflux**) into the esophagus. When reflux continues, GERD develops. Here's how reflux happens:

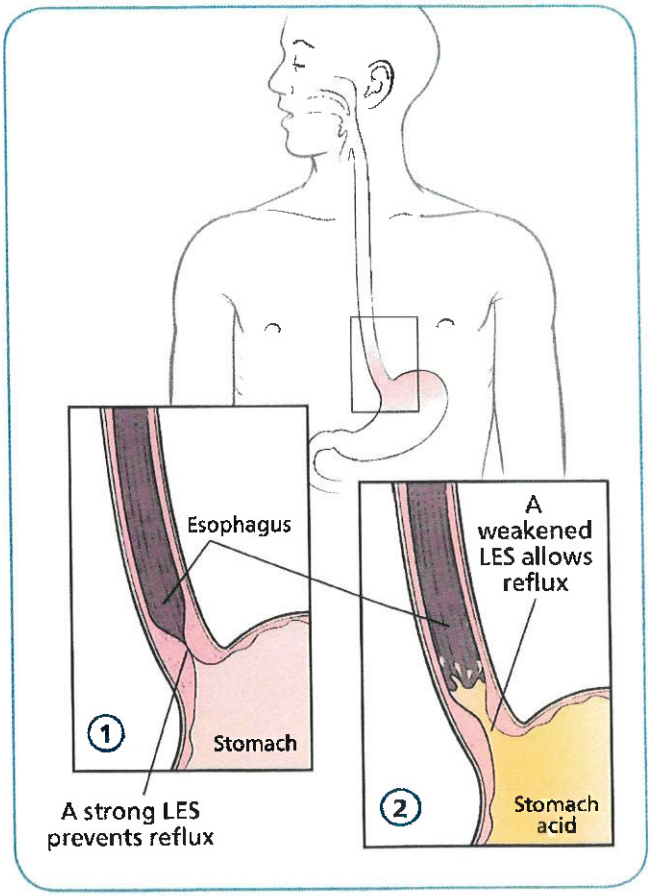
1 **Normally when you swallow food,** it goes from your mouth, down your esophagus, and in to your stomach. As the food enters your stomach, it passes through a ring-shaped muscle called the **lower esophageal sphincter (LES).** A strong and healthy LES opens to let food into the stomach and closes to prevent food and stomach acid from backing up.

2 **When the LES muscle is weakened,** food and stomach acid can move back up into the esophagus and throat, causing **reflux.** Stomach acid from reflux can irritate the esophagus and cause heartburn, indigestion, and trouble swallowing.

What causes GERD?

You are more likely to get GERD if you:

- Are overweight or obese
- Eat a high-fat diet
- Drink a lot of carbonated beverages such as soda pop and beer.
- Use alcohol
- Use tobacco products
- Have a hiatal hernia or damage to your esophagus



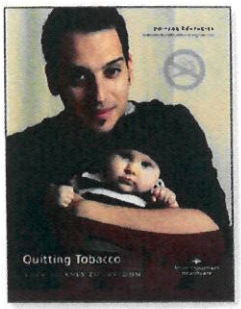
How is GERD treated?

Lifestyle changes

You can reduce the irritation of your esophagus and often even correct mild forms of GERD with a few lifestyle changes:

- **Don't lie down for 2 hours after eating.** Don't bend over at the waist either. Let gravity help your digestion.
- **Avoid foods that cause symptoms.** These include alcohol, coffee, fatty foods, spicy foods, chocolate, onions, tomato sauce, carbonated beverages, and mint.

- **Avoid wearing tight clothing** (such as belts, pants, or girdles).
- **Take an antacid** at bedtime and 30–60 minutes after each meal or as directed by your doctor.
- **Review all of your medicines** with your doctor, especially if you are taking sedatives, tranquilizers, and some types of blood pressure medicines.
- **Eat smaller meals** so your stomach isn't holding too much food at once.
- **Stop smoking,** or at least cut back. Ask your doctor for a copy of Intermountain's booklet, ***Quitting Tobacco: Your Journey to Freedom***, for tips and resources.



- **Lose extra weight.** Too much weight can put pressure on your stomach and cause reflux.

Medical treatment and tests

When GERD is moderate to severe, your doctor may recommend one or more of the following:

- **Prescription or over-the-counter medicines.** Your doctor may recommend an antacid or other medicine to control acid or to strengthen the LES. Be sure to take your medicines regularly and just as your doctor prescribes.
- **Endoscopy.** This procedure allows the doctor to view the inside of your esophagus with a camera to identify and sometimes treat any problems.
- **Dilation.** This procedure is done during an endoscopy. It stretches your esophagus if it's constricted.

Surgery

If other treatments don't relieve your GERD, your doctor may recommend surgery to tighten the LES.

What if I don't treat my GERD?

If you don't treat GERD, complications can occur. These include ulcers, bleeding, and **anemia** (a low number of red blood cells).

Over time, GERD can cause scarring and narrowing of the esophagus (stricture) making it difficult to swallow. It can also cause a condition called **Barrett's esophagus**, which is a serious change in the health of the cells lining the esophagus.

If you have symptoms of GERD, see your doctor. Treatment can usually prevent these complications.

When should I call my doctor?

Make an appointment to see your doctor if you have these ongoing symptoms:

- Frequent heartburn or chest pain, especially when lying down
- Trouble swallowing
- Sour-tasting fluid backing up into your mouth
- Coughing a lot and over a long period of time
- Wheezing or hoarseness
- Symptoms that get worse when you eat, bend over, or lie down

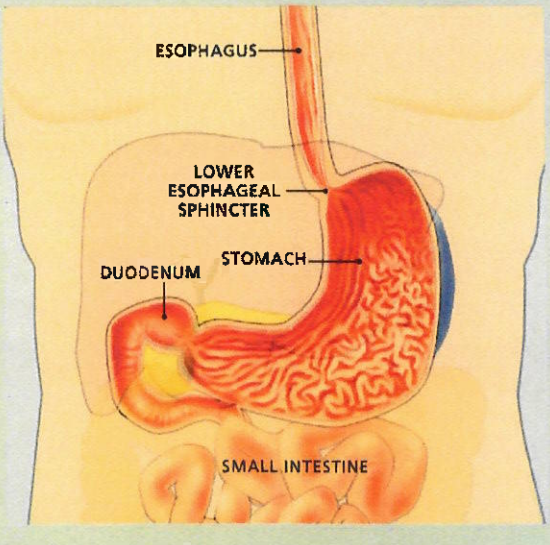
Call your doctor right away if you have any of the symptoms listed below. These symptoms could indicate more serious medical problems such as a heart problem or an ulcer:

- Vomiting red blood, or vomit that looks like coffee grounds
- Passing black, tarry, or bloody stools
- Losing weight unexpectedly

Diet and Gastroesophageal Reflux Disease (GERD)

What is GERD?

Gastroesophageal reflux is a chronic disease that occurs when stomach contents flow back (reflux) into the food pipe (esophagus). It is usually caused by failure of the muscle valve (called the lower esophageal sphincter) between the stomach and the esophagus to close properly. The backwash of stomach acid irritates the lining of the lower esophagus and causes the symptom of heartburn.



Heartburn, which is the most common symptom of GERD, usually feels like a burning sensation behind the breastbone, moving up to the neck and throat.

TRIGGER FOODS

Some foods are known to trigger symptoms of GERD. By keeping a food diary, you can identify your trigger foods and change your diet to reduce discomfort. Below is a list of some foods recognized to trigger symptoms of GERD and how they affect the digestive tract:

- **Coffee** (with or without caffeine) and caffeinated beverages relax the lower esophageal sphincter.

- **Citrus fruits and juices** such as orange, grapefruit and pineapple have high acid content.
- **Tomatoes** and processed tomato-based products such as tomato juice, and pasta and pizza sauces are highly acidic.

- **Carbonated beverages** (fizzy drinks) cause gaseous distension of the stomach (bloating) which increases pressure on the lower esophageal sphincter causing acid reflux.
- **Chocolate** contains a chemical called methylxanthine from the cocoa tree, which is similar to caffeine. It relaxes the lower esophageal sphincter, which causes acid reflux.

- **Peppermint, garlic and onions** relax the lower esophageal sphincter causing acid reflux.
- **Fatty, spicy or fried foods** relax the lower esophageal sphincter as well as delay stomach emptying and therefore cause acid reflux.

Contact your health care provider if symptoms do not improve with diet and lifestyle changes. Initial treatment may start with over-the-counter (OTC) medications that control stomach acid.

For more information, visit www.asge.org.

SEPSIS It's About TIME™

Sepsis is a **life-threatening condition** caused by the body's response to infection, which can lead to **tissue damage, organ failure, amputations** and **death**.

In the United States, in one year, more than

1.7 million people

had sepsis.[1] That's one person every twenty seconds.

Sepsis is the

3rd leading cause of death

in the United States after heart disease and cancer, killing more than **270,000 people** each year.[1] That's one person every two minutes.

As many as **87%** of sepsis cases **start in the community**, not in the hospital as is widely believed.[1]

42% of Americans have not heard of sepsis.[2]

The Importance of *TIME*

Sepsis is a **medical emergency** and its symptoms must be treated **quickly** and **properly** to reduce the risk of death.

The risk of death from sepsis increases by as much as **8% for every hour** that treatment is delayed.[3]

As many as **80% of sepsis deaths** could be prevented with rapid diagnosis and treatment.[3]

When it comes to sepsis, remember: ***IT'S ABOUT TIME***™. Watch for:

T — **TEMPERATURE** higher or lower than normal

I — **INFECTION** may have signs and symptoms of an infection

M — **MENTAL DECLINE** confused, sleepy, difficult to rouse

E — **EXTREMELY ILL** "I feel like I might die," severe pain or discomfort

Recognize the importance of *TIME* by learning more at **sepsis.org**

If you suspect sepsis, see a doctor, **call 9-1-1**, or go to the hospital right away and ask **"Could it be sepsis?"**

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SEPSIS ALLIANCE

SEPSIS™ IT'S ABOUT TIME

IT'S ABOUT TIME™

Recognizing the Signs of **Sepsis**

Steven Q. Simpson, MD
Chief Medical Officer, Sepsis Alliance

Jim O'Brien, MD, MS
Board of Directors, Sepsis Alliance

SEPSIS ALLIANCE

Sepsis is a life-threatening condition caused by the body's response to infection. This complex response can lead to tissue damage, organ failure, and death. The most common source of infection is bacterial, but infection can also arise from fungi, viruses, or parasites.[1,2] According to the Centers for Disease Control and Prevention, sepsis is the 11th leading cause of death in the United States.[3] However, deaths from sepsis are frequently reported as other comorbidities, suggesting that both incidence and cost estimates may be low.[4] Older studies likely underestimated mortality rates for sepsis; recent, more accurate epidemiology indicates that sepsis accounts for upwards of 270,000 deaths per year, placing sepsis as the third leading cause of death in the U.S.[5] In addition, sepsis creates a significant financial burden on healthcare systems in the U.S., where there were over 1.5 million cases of sepsis in 2014.[6] At an average cost of over $18,000 per sepsis hospital stay, this amounts to more than $27 billion annually.[7] Pediatric sepsis effects more than 75,000 children in the United States per year, with healthcare costs in excess of $4.8 billion.[8]

SEPSIS™
IT'S ABOUT TIME

Prompt treatment provides the best chance for reducing deaths and improving recovery from sepsis.

Among experts in the healthcare community, sepsis is considered a time-sensitive condition and treatment protocols have been developed to promote rapid care.[9] From the disease onset, the transition to serious illness occurs during the critical "golden hours," the time in which appropriate treatments can have the best chance of success.[10] Treatment for sepsis should be initiated as early as possible; for many sepsis patients, this occurs when they enter the emergency department.[11,12] Two important time-sensitive interventions for patients are early antibiotic administration and early delivery of intravenous (IV) fluids.[9] Early recognition and treatment have been shown to decrease morbidity and mortality.[13,14] Delays in antibiotic administration are associated with an increase

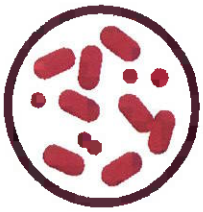
in mortality.[11,15,16] Survivors of sepsis are at an increased risk for rehospitalization, particularly due to infection, and may experience both acute and chronic health problems, known as post-sepsis syndrome.[17,18] Effects can include, but are not limited to, decreased cognitive and physical function, anxiety, depression, and symptoms of post-traumatic stress.[18,19]

Despite the prevalence and healthcare costs of sepsis, public awareness around the condition is low. According to the 2017 Sepsis Alliance Awareness Survey, 42% of Americans have not heard of sepsis.[20] In addition to low awareness of the disease, the signs and symptoms of sepsis are not well known outside of healthcare settings. Less than 1% of Americans can correctly identify the most common symptoms of sepsis.[20] Even among healthcare providers, sepsis is difficult to recognize and may be missed.[21,22] Since most sepsis cases start in the community, patients may need to ask providers about sepsis and emergency care.[5]

In order to raise public awareness and promote recognition of this condition, Sepsis Alliance has developed the It's About TIME campaign, an easily remembered acronym that can aid in the recognition of the signs of sepsis and that imparts the importance of receiving treatment quickly. It's About TIME breaks down these signs as:

Temperature

higher or lower than normal



Infection

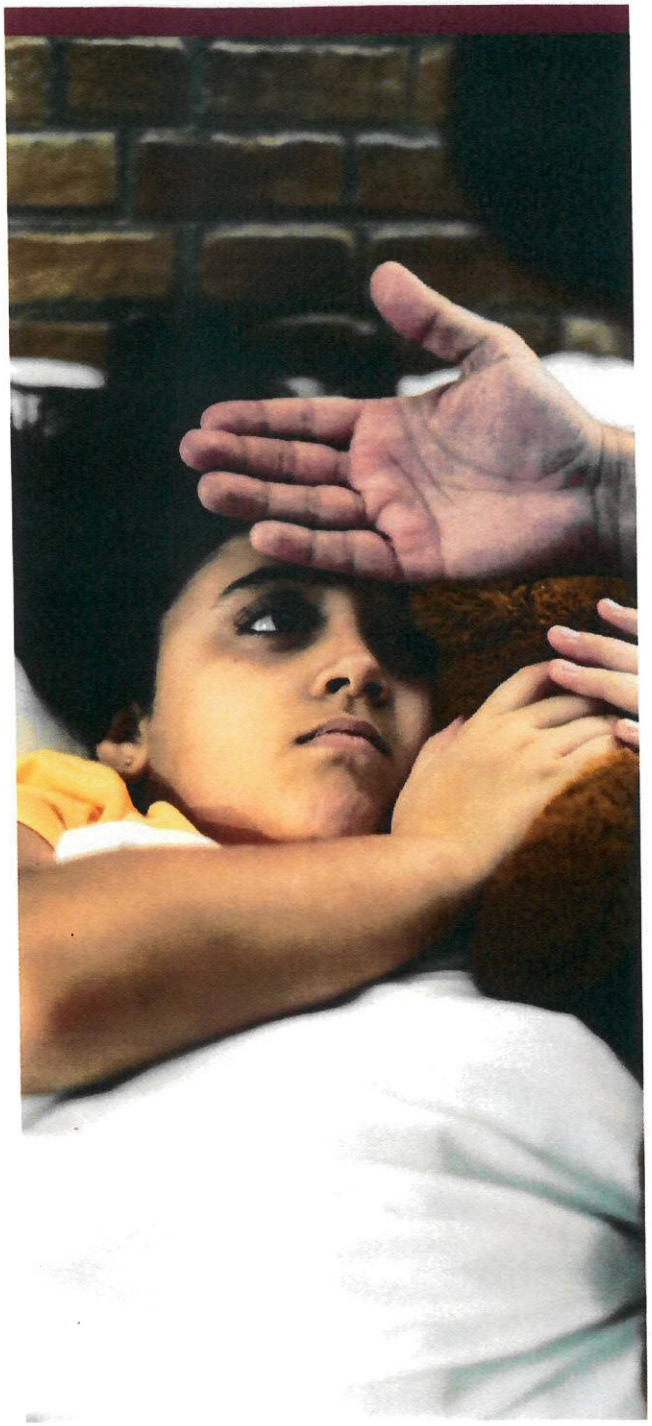
may have signs and symptoms of an infection

Mental decline

confused, sleepy, difficult to rouse

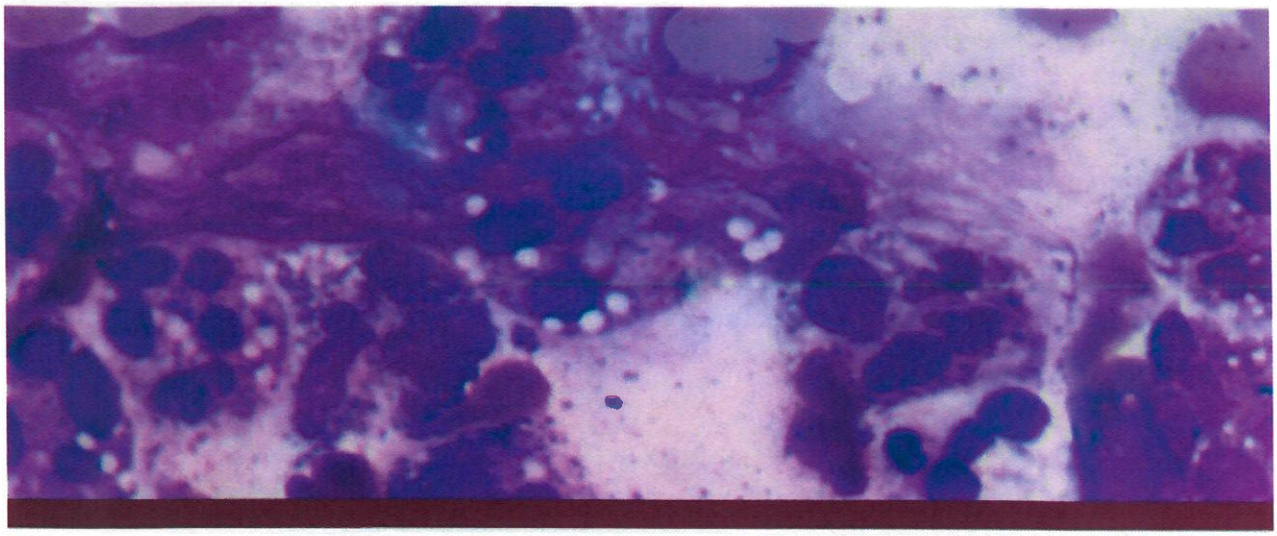
Extremely ill

"I feel like I might die," severe pain or discomfort



Temperature - Higher or lower than normal

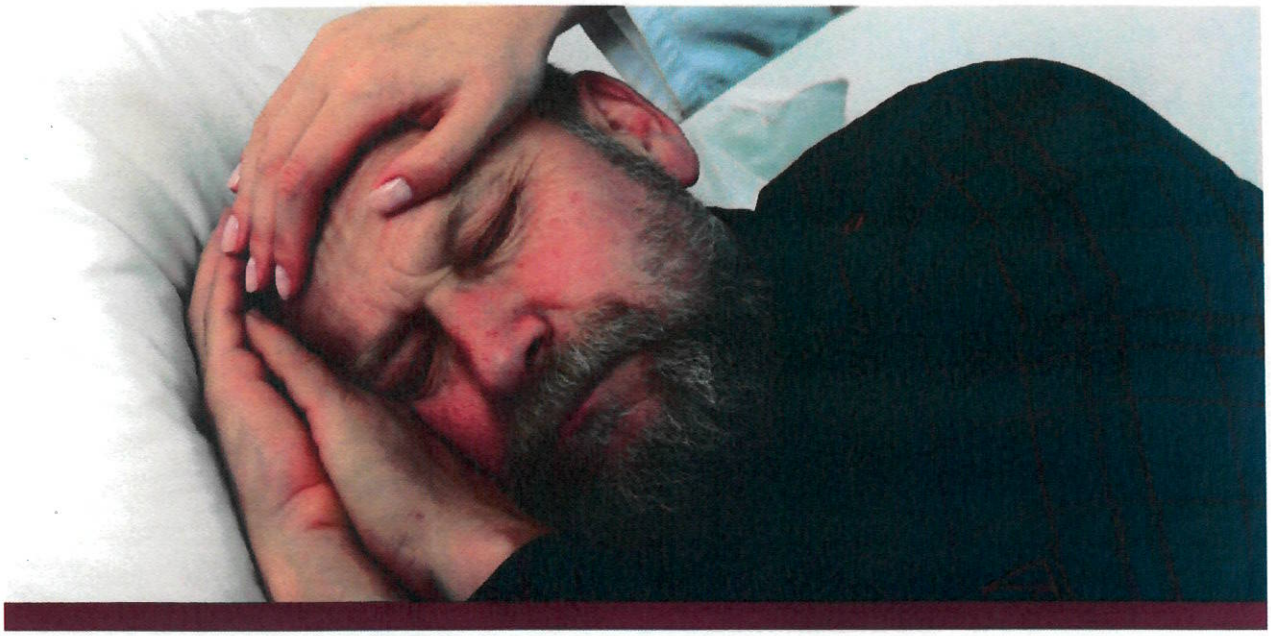
Changes in body temperature are one of the hallmarks of sepsis. Patients with sepsis can present with fever, defined as a temperature above 101 °F (38.3 °C). Patients may instead present with hypothermia, defined as a temperature below 98.6 °F (36.0 °C).[23] However, some patients, such as those taking certain types of medications, may not experience any changes in temperature.[2] Temperature may be one of the first signs of illness that could potentially be sepsis, so it is important to observe if any other signs of sepsis are also present. If so, it is critical to seek medical treatment.



Infection - May have signs of an infection

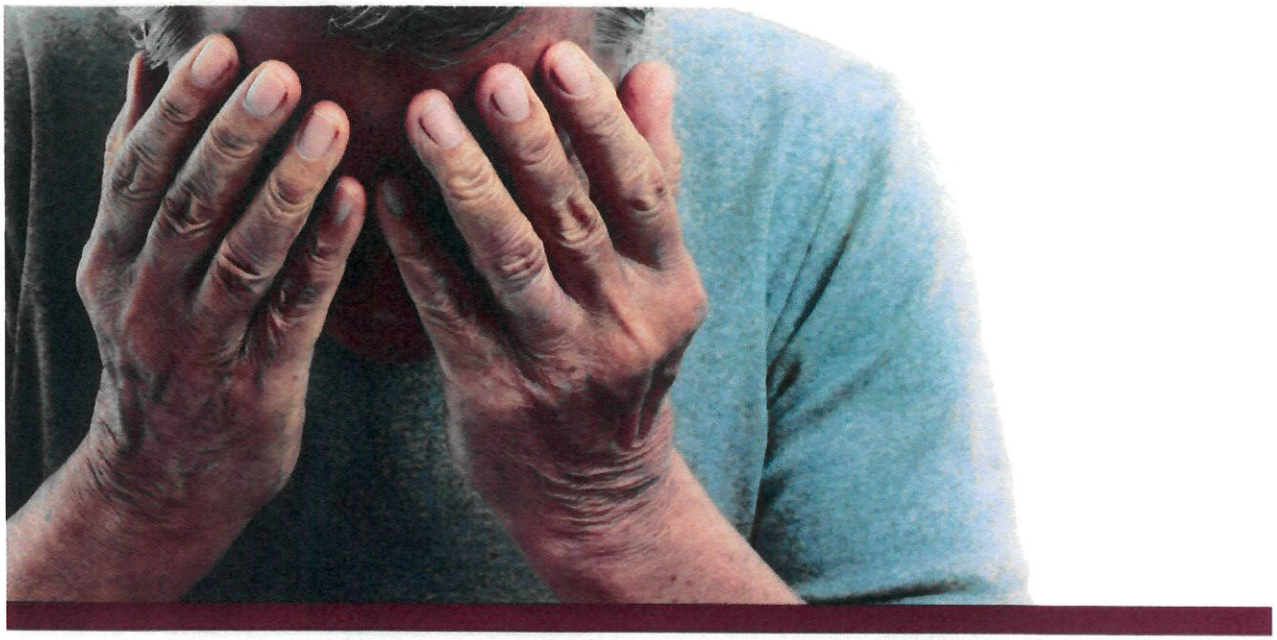
In addition to changes in temperature, there are other bodily signs that may indicate that an infection is present. For people with diabetes, one of the signs of infection can be a sudden elevation in blood sugar, for example. Additionally, sepsis can be the result of an infected cut or abrasion. If a cut or abrasion develops redness and tenderness, and continues to get larger, this may also be a sign of infection. Certain populations are more prone to infection, including those who are immunocompromised or suffer from liver disease. Other risk factors include chronic pulmonary disease, congestive heart failure, cancer, and diabetes. The most common infections leading to sepsis are pneumonia and urinary tract infections.

Pain is also associated with many types of infections. Intense pain may be localized to an abscess related to infection. This can occur in the gastrointestinal system (as in appendicitis), in a joint (as in septic arthritis) or related to an organ (such as near the lungs in pneumonia or in a kidney infection). Sepsis can also produce generalized pain, like the achiness associated with flu. Pain should not be ignored, especially acute, intense pain; it is an indication that medical evaluation is necessary.



Mental decline - Confused, sleepy, difficult to rouse

Another symptom of sepsis can be altered mental state.[24] Many patients experience feelings of excessive confusion and disorientation. This is often reported by family members, as the person with sepsis is unable to communicate these feelings because of their confusion. Recent advances in the management of sepsis have demonstrated the importance of recognizing altered levels of consciousness in patients suspected of being septic.[2] Symptoms can manifest themselves in a variety of behaviors. Excessive sleeping can be a sign of sepsis. People with sepsis can sleep for extended periods of time and are difficult to wake up. Confusion can manifest itself in a variety of behaviors as well, with people acting strangely, speaking without making sense, or not acting like themselves. In some cases, people who are septic won't be able to answer simple questions like "What is your address?" If it takes someone more than 20 seconds to answer this question, it may indicate that something is wrong and it is time to help them get medical care.



Extremely ill - "I feel like I might die," severe pain or discomfort

Patients with sepsis often report that their symptoms are above and beyond previously experienced sickness. The severity of the symptoms can make patients feel like they are on the verge of death. Faces of Sepsis, an online resource for sepsis survivors and those who have loved ones affected by sepsis, reports the experiences of sepsis patients.[25] In describing their illness, quotes include "I was delirious from the fever and could barely breathe," "My initial memories are a jumble of breathing very fast, struggling to bring in air, confusion, time distortion and feeling like I was dying," and "I told him 'I'm dying.'" Additionally, some patients report severe pain or discomfort, often located in the abdominal region. As noted earlier, this acute, intense pain may be related to the infection that is triggering sepsis.

In some instances, friends and family are the ones to recognize the severe symptoms of sepsis. In one story, a survivor says, "My parents were in town and noticed how sick I was... my mom brought me back (to the doctor)." Recognizing that a loved one is experiencing significant illness is critical in directing them towards proper medical care.

The goal of the **It's About TIME** campaign is to raise awareness around the symptoms of sepsis so that proper medical care can begin as soon as possible. A delay in first antibiotic administration is associated with an increase in the risk of mortality for each hour delay.[15,16] If sepsis is caught early, there are significant short- and long-term benefits for the patient.[10] Treatment and triage protocols have been shown to be effective in reducing the amount of time to IV fluids and antibiotics for patients with sepsis.[11,26,27] Even the timing of established treatment protocols has been revised to take place in a shortened amount of time: down to 1 hour from 3- and 6-hour bundles.[9] The recognition of sepsis as a medical emergency dictates that delays in treatment be minimized.

Though sepsis is treated in the medical setting, most cases of sepsis originate in the community. As many as 80% of sepsis cases are present on admission to the hospital.[5,28] Therefore, there is a need for recognizing the signs of sepsis by the general public, so appropriate steps will be taken to obtain emergency treatment. Furthermore, awareness in the healthcare community may be limited to those with expert knowledge of sepsis; it may be necessary for a patient to know and ask about emergency care for sepsis, or risk not getting appropriate care. A public awareness campaign like **It's About TIME is crucial to address sepsis in everyday life where sepsis strikes,** as it can serve to inform people outside of the medical profession about what to look for when sepsis develops.

Though sepsis is treated in the medical setting,
most cases of sepsis originate in the community.

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Awareness campaigns for other conditions have had a positive impact on the identification of the signs of disease that indicate the need for prompt medical treatment. Public awareness campaigns about stroke are an example, as stroke is another disease that benefits from rapid hospital treatment. Multimedia campaigns have been effective in increasing knowledge, awareness, and the intention to respond to a stroke as an emergency. Retrospective analysis of these campaigns has shown positive effects on reducing patient delay to hospital presentation and other behavioral indicants.[29]

Current treatments for sepsis can be effective if sepsis is caught in time. By aiming to reduce the time to treatment of septic patients, it is feasible that this campaign can serve its goal of reducing the incidence of largely preventable deaths. The Surviving Sepsis Campaign, aimed at medical professionals, has been successful in promoting timely and effective treatment of sepsis.[9,30] The It's About TIME campaign aims to educate patients and the public at large, so that the signs of sepsis are well known to all.

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Seizures: General Information

What are seizures?

- Seizures are the physical effects of unusual bursts of electrical energy in the brain. This electrical hyperactivity in the brain produces "seizures".
- Seizures are not the same in everyone who has them – they can be different in how they appear, how long they last (a few seconds to a few minutes) and how often they occur.
- Seizures may appear as a brief stare, a change of awareness, or convulsions that include muscle spasms, loss of consciousness, uncontrolled body movement, incontinence and/or vomiting.

What is epilepsy?

- Epilepsy is a condition where an individual has recurrent seizures secondary to unknown or uncorrectable causes.
- Anyone can develop epilepsy, but it is normally diagnosed in childhood.
- The most common cause of epilepsy is injury to the brain (e.g., birth trauma, infections, a head injury, low blood sugar, or stroke). However, often no cause can be found.
- If someone has seizure-like behaviour, it does not always mean they have epilepsy.

Can people tell that they are going to have a seizure?

- Some (but not all) people can tell, because they have a strange sensation before a seizure, called an "aura".
  - Common seizure warning signs to look for are:
    - » periods of forgetfulness or memory lapses
    - » feeling spacey, 'fuzzy', or confused
    - » jerking movements of an arm, leg, or body
    - » tingling, numbness or feelings of electricity in parts of the body
    - » odd feelings
    - » unusual smells or tastes
    - » daydreaming episodes
    - » headaches
    - » losing control of urine or stool unexpectedly.

Are there triggers that might make a person's seizures more likely to happen?

Yes. It is important to know what might trigger a seizure in an individual person, and to help them avoid the triggers, when possible. Some possible triggers to be aware of are:

- Stress:
  - » Emotional stress, eg, over-excitement, emotional upset, being startled.
  - » Physical stress, eg, illness, lack of sleep, low blood sugar (hypoglycemia), hormone changes, alcohol, or drugs.
  - » Environmental stress, eg, televisions, flashing lights (including flickering overhead lights), heat and/or humidity.
- Change in medication.
- Missed seizure medication.

Check with the person's doctor about how to respond when a seizure happens.

- If you are living with or caring for someone with a seizure disorder:
  - » Complete a Seizure Action Plan.
  - » Find out whether the doctor wants to be notified every time the personhas a seizure, or just in certain specific situations.
  - » Ask if there are any special warning signals that you should look for. Ask whether or when you should call an ambulance.
- Ensure the individual has a medical alert device (e.g., MedicAlert bracelet or ID).

How is epilepsy diagnosed?

- The doctor takes a detailed history, takes into account eyewitness reports of events thought to be seizures, usually does an EEG (electroencephalogram – a test that measures electrical activity in the brain), and may do further tests.

Misdiagnosis of seizures/epilepsy

- Epilepsy is difficult to diagnose and may be wrongly diagnosed some of the time, especially in people with IDD – behaviours may be wrongly given the diagnosis of a seizure.
- Behaviours that are caused by seizure activity may not be recognized and treatment not given.
- The role of caregivers in accurately recording and describing any event that may be a seizure is extremely important for the doctor's assessment.

Types of Seizures

People with a seizure disorder can have just one type of seizure or more than one type . This makes diagnosis and management more complicated.

There are more than 40 types of seizures, but most are grouped into two main types:

1) **GENERALIZED** – the seizure (electrical discharge) affects the whole brain.
2) **PARTIAL** – the seizure affects only part of the brain.

GENERALIZED OR PARTIAL	**Status Epilepticus**	▸ A state of prolonged seizure activity or repeated seizures without time for recovery. ▸ May exist for any seizure type. *Status epilepticus is a medical emergency that can lead to severe brain damage and even death. This is a medical emergency. Call 9-1-1.*
	Myoclonic	▸ Involves a sudden, shocking jerk of the muscles in the arms, legs, neck and trunk. ▸ Tends to involve both sides of the body at the same time and the person may fall over.
GENERALIZED	**Tonic-clonic Seizures** "Grand Mal"	▸ General convulsions with two phases. » First phase: Tonic. The person may vocalize (e.g., cry or groan), lose consciousness, and then the person's body grows stiff. » Second phase: Clonic. It involves jerking/twitching, sometimes with the whole body or just the face and arms. The person could have shallow breathing, bluish skin or lips, drooling and/or loss of bladder or bowel control. ▸ Normally lasts one to three minutes. ▸ Consciousness returns slowly and the person may look very tired or want to sleep.
	Absence "Petit Mal"	▸ Brief periods of complete loss of awareness, e.g., staring into space completely unaware of surroundings and unresponsive. Rapid blinking, mouth or arm movement may occur. ▸ These seizures start and end suddenly without warning. Lasts only a few seconds but happens many times a day.
	Atypical Absence	▸ Jerking or automatic movements lasting longer than 20 seconds with partial loss of awareness.
PARTIAL	**Atonic**	▸ Lasts a few seconds and involves sudden loss of tone in the muscles of the neck, arms, legs or trunk muscles. ▸ The person may fall to the ground suddenly. ▸ People with atonic seizures may have to wear a helmet to protect their head from injury during a fall.
	Simple Partial *"Focal"*	▸ Causes strange and unusual sensations, changing the way things look, sound, taste or smell. ▸ The person remains conscious but cannot control sudden, jerky movements or a part of the body.
	Complex Partial "Psychomotor or Temporal Lobe"	▸ Changes the person's awareness of what is going on during the seizure, so the person may seem dazed, confused or trance-like. ▸ The person may repeat simple actions over and over, e.g. head turning, mumbling, pulling at clothing, smacking lips, making random arm or leg movements or walking randomly. ▸ Lasts a minute or two.

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Seizures: Tips for Caregivers

Surrey Place Developmental
Disabilities Primary Care Program

CHECK

how to respond when a seizure happens. If you are living with or caring for someone with a seizure disorder, ask their doctor if:

- he/she wants to be notified every time the individual has a seizure, or just in certain specific situations.
- there are any special warning signals that you should look for.
- whether or when you should call an ambulance.
- health care provider can help you complete a Seizure Action Plan for the person you're caring for.

KNOW

- what the **triggers** are for the person's seizures; help the person avoid these.
- the usual or possible **signs and symptoms** of the person's seizures.
- **if and when** to provide seizure **medication**. PRN medication prescribed by a medical doctor should be given as directed or ordered by the doctor.
- seizure medication side effects which can include:
  - » short-term memory loss
  - » fatigue or drowsiness
  - » changes in hand coordination, balance, speech coordination
  - » hyperactivity
  - » dizziness
  - » vomiting
  - » mood changes

FOLLOW

- the **First Aid protocol** when the person has a seizure: gently roll the person onto their side and put something soft under their head to protect from injury. In fact:
  - » *A person cannot swallow her/his tongue during a seizure.* This is physically impossible.
  - » *Do not force something into the mouth of someone having a seizure.* That may cause more injury, eg, chip teeth, puncture gums, or even break someone's jaw.
  - » *Do not restrain someone who is having a seizure.*

DOCUMENT

- the **seizure incident** (eg, through the Seizure Baseline Chart, if new or unstable seizure, or the Seizure Monitoring Chart, if regular, short seizure) as soon as possible once the client is safe, describing what happened before, during and after the seizure. Be sure to put the length of time and any observations about how the seizure looked.
- **videotape the seizure**, if possible. The doctor and/or the person's health careprovider will be able to actually see what their patient is doing during a seizure. This will help in diagnosis, management, and treatment plans for the patient.
- **inform the appropriate people** when the individual has had a seizure (eg, the person's family physician or neurologist's office, the person's emergency contacts or the substitute decision-maker).

ENSURE

- the individual has a **medical alert device** (eg, MedicAlert bracelet or ID).
- **a copy of the Seizure Management Plan** is with the person on any outings or trips, along with phone numbers of the substitute decision-maker(s), group home manager, and/or primary caregivers' information.

PRACTICE

- **an Emergency Drill** yearly and when orienting new caregivers. Re-create a pretend seizure disorder emergency (as a fire emergency is re-created for a fire drill):
  - » ensure all elements of the emergency treatment plan are in place.
  - » ensure everyone knows their role and what to do

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DEVELOPED BY: Surrey Place Developmental Disabilities Primary Care Program

Seizure Action Plan

Surrey Place Developmental Disabilities Primary Care Program

This person is being treated for a seizure disorder. The information below should assist you if this person has a seizure.

Name		Date of Birth
First	Last	

Parent/Substitute Decision Maker (SDM)		Phone	Cell
First	Last		

Other Emergency Contact		Phone	Cell
First	Last		

Treating Physician		Phone	Fax
First	Last		

Significant Medical History

Seizure Information

Seizure Type	Length	Frequency	Description/What Happens

Seizure triggers or warning signs:

Response after a seizure:

Daily Medications to Prevent Seizures

Medication	Dosage and Time of Day Given	Comments

Basic First Aid: Care and Comfort

Basic first aid procedures adapted for this person

Does the person need time to recover after a seizure? ☐ No ☐ Yes

If YES, describe process for recovery and return to activity or program

Emergency Response

A "seizure emergency" for this person is defined as

Seizure Emergency Protocol (Check all that apply and clarify below)

- ☐ Call 9-1-1 for transport to hospital
- ☐ Notify parent or emergency contact/SDM
- ☐ Administer emergency medications as indicated below
- ☐ Notify doctor
- ☐ Other

BASIC SEIZURE FIRST AID

- Stay calm and track time
- Keep them safe
- Do not restrain
- Do not put anything in mouth
- Stay with them until fully conscious
- Record seizure in log

FOR TONIC-CLONIC SEIZURE

- Protect head
- Loosen tight clothing around neck
- Keep airway open/watch breathing
- Turn them on their side once he/she relaxed

WHEN IS A SEIZURE AN EMERGENCY?

- Convulsion lasts longer than 5 minutes
- Repeated seizures without regaining consciousness, or second seizure within a few minutes
- Co-morbid diabetes
- First-time seizure
- Breathing difficulties
- Resultant injury, or seizure in water
- Persistent confusion or unconsciousness
- Significant change in seizure pattern

Emergency Medications

Medication	Dosage and Special Instructions	Expected Outcomes/Side Effects

Special Considerations and Precautions (regarding activities, sports, outings, etc.)

Describe any special considerations or precautions:

Physician Signature		Date	
Patient/Parent/Guardian/SDM Signature		Date	

Epilepsy Foundation of America, My Seizure Response Plan. Retrieved June 10 2019 from https://www.epilepsy.com/sites/core/files/atoms/files/130SRP_MySeizureResponsePlan-fillable.pdf

Seizures: First Aid

A Seizure Is Considered An Emergency When:

- It lasts longer than 5 minutes.
- The individual has repeated seizures without regaining consciousness, or has a second seizure within a few minutes.
- There is co-morbid diabetes.
- It is a first-time seizure.
- Breathing difficulties are present.
- It results in an injury or occurs in water.
- There is persistent confusion or unconsciousness.
- There is a significant change in that person's seizure pattern (type, length, associated symptoms).

In a seizure emergency, CALL 9-1-1 – Seek Medical Help Immediately!

During the Seizure

- **Non-convulsive seizure** (e.g., absence, simple partial or complex partial)
  - Reassure the person.
  - Protect the person from injury.
  - Guide and support the person as needed.
- **Convulsive (tonic-clonic) seizure** (aka Grand Mal)
  - Do **not** hold the person down.
  - Do **not** put anything between their teeth.
  - If the person starts to bleed from the mouth, do not panic. He or she may have bitten their tongue.
  - Observe what happens so that you may tell the doctor about what you see, or record this information afterwards (length of seizure, types of movements, to which side the head and/or eyes turned, how long before returning to full consciousness).

After the Seizure

- Once the person has relaxed, turn them on their side to make sure there's an open airway and to prevent them from choking on anything.
- If he/she is in a wheelchair, set the wheelchair to a "partial recline" position (not "full recline") and gently turn the person's head to the side to let the saliva flow out of the mouth.
- Be reassuring, comforting and calm as awareness returns. After the seizure, let the person sleep if, needed.

As soon as possible, fill out the seizure monitoring chart (baseline) as accurately as you can.

REFERENCES

Epilepsy Ontario. *First Aid for Seizures.* Ontario: Epilepsy Ontario. Retrieved June 1, 2019 from www.epilepsyontario.org.

Duty Officer – Initial Incident Review Choking Protocol

The purpose of this protocol is to assure immediate follow-up with the AE / SCO / Provider when an incident initial section involving a choking situation is reviewed by the Regional Duty Officer. The Duty Officer, or designee, is to reach out to the AE / SCO/ Provider upon review of the incident, by either phone or email, to assure immediate action is taken in follow-up steps and necessary re-training for staff PRIOR to the individual's next meal. The follow-up information provided should then be included within the text comment area of the regional initial review. When it is reasonable that some follow-up information may not be available for the initial section review, it should be noted to be added to the final section of the report.

Follow-up questions should include:

- What specifically was the individual eating during the incident?
- In this situation, what was the immediate action taken by staff?
- Was the Heimlich maneuver administered? If yes, was the individual medically assessed?
- Did the individual lose consciousness? If yes, was the individual medically assessed?
- How is [name] doing now?
- Is [name] on a choking and or aspiration prevention diet?
- If so, was that diet being followed at the time of the choking event?
- If not, why not? (Incident classification should be changed to Neglect if not already)
- Were those staff who work with [name] trained in [name's] dietary needs?
- Is [name] on a supervision protocol while eating?
- If so, was that supervision protocol being followed at the time of the choking event?
- If not, why not? (Incident classification should be changed to Neglect if not already)
- Were those staff who work with [name] trained in [name's] supervision needs?
- What follow-up if any, will [name] require?
- Is there cause to believe that there is a swallowing problem?
- If so, has the PCP recommended a swallowing evaluation?
- What is the agency policy regarding individuals with choking and or aspiration related diets?
- Are all staff currently trained in how to work with folks who are at a higher choking and or aspiration risk?
- If not, what is the plan to ensure that this occurs timely?