DEPARTMENT OF PUBLIC HEALTH & HUMAN SERVICES

HEALTH AND MEDICATION ADMINISTRATION MANUAL

FOR PERSONS WITH INTELLECTUAL/DEVELOPMENTAL DISABILITIES

A STUDY GUIDE AND REFERENCE MANUAL

SECTION 2 2024

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Chapter 13. DIABETES MELLITUS

Diabetes is a chronic medical condition that requires lifetime treatment and monitoring. All cells in the body need sugar to work normally. Insulin is needed to get sugar into the cells. Without enough insulin, sugar builds up in the blood.

A. TYPE 1 DIABETES MELLITUS

Type 1 diabetes mellitus (DM) usually begins in childhood or young adulthood but can develop at any age. In type 1 DM the pancreas no longer makes insulin.

1. **Symptoms of high blood sugar:**
   a. hunger and excessive thirst
   b. fatigue
   c. blurred vision
   d. frequent urination
   e. unexplained weight loss
   f. slowly healing wounds
   g. frequent yeast or urinary tract infections

2. **DKA (diabetic ketoacidosis): a medical emergency**
   a. Life threatening condition with high blood sugar levels along with:
      - Nausea, vomiting and abdominal pain, rapid breathing.
      - Sluggishness and trouble concentrating, sometimes coma.
3. **Treatment = control blood sugar levels. Control is affected by:**
   a. **Physical activity.**
   b. **Diet**: what and how much is consumed.
      - Eat at the same time each day - skipping or delaying a meal can cause low blood sugar.
      - Carbohydrates directly affect blood sugar; proteins and fats have little impact.
      - Eat a consistent amount of carbohydrates to help control levels.
   c. **Medication** – don't skip doses or forget to eat after taking insulin.

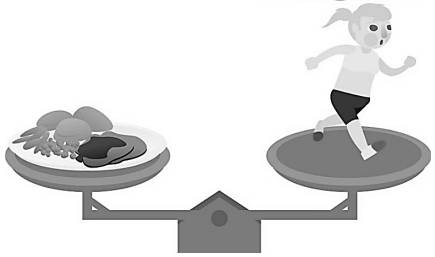
B. TYPE 2 DIABETES MELLITUS

Type 2 diabetes is a condition in which the cells cannot use blood sugar efficiently to meet the body's needs.

1. **Symptoms:**
   a. Usually no symptoms but may be same as in type 1 Diabetes mellitus.

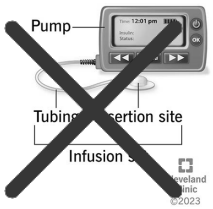
2. **Risk factors:**
   a. Family history.
   b. Metabolic syndrome: hypertension, high cholesterol, obesity.
   c. Lifestyle: unhealthy diet and sedentary lifestyle which leads to obesity.
3. **Treatment and prevention of complications:**
   a. Keep blood sugar at target level.
   b. Treat other medical conditions such as hypertension.
   c. Make lifestyle changes – stop smoking, etc. to prevent complications.

   d. Follow a recommended diet. Limit or stop sugary beverages such as soda or juice and limit portion sizes.
   e. Exercise regularly to improve the body's response to insulin.
   f. Monitor glucose and take medications as directed.

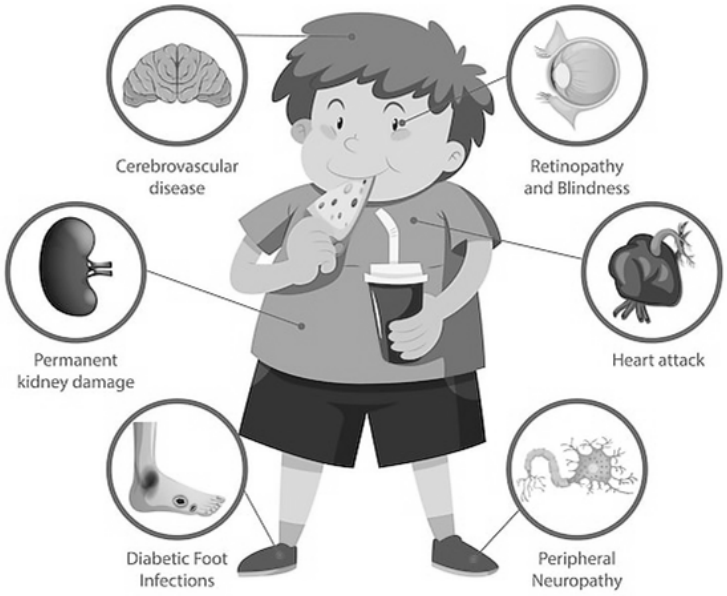


   g. Inspect skin, especially feet, daily. Wear shoes/slippers to prevent cuts and other injuries that could lead to an infection.

4. **Medications:**
   a. There are many oral and injectable medications available for treatment.
   b. Insulin may be used if control is not possible with other medications. **DSPs are not allowed to inject insulin or manage an insulin pump!**



C. COMPLICATIONS OF DIABETES



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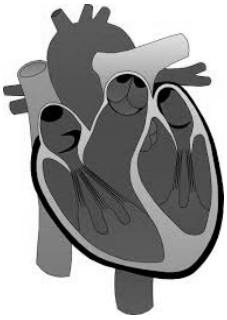
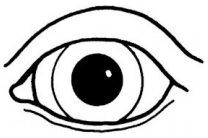
1. **Cardiovascular – heart and blood vessels:**
   a. Heart disease is the most common long-term complication and includes heart attacks and stroke.
   b. Heart disease is the major cause of death in persons with diabetes.
   c. People with diabetes tend to develop high blood pressure and high cholesterol levels.
   d. The risk of stroke is 2 to 4 times higher in persons with diabetes.
   e. Problems with circulation may affect the heart, eyes, kidneys, legs, and especially the feet.



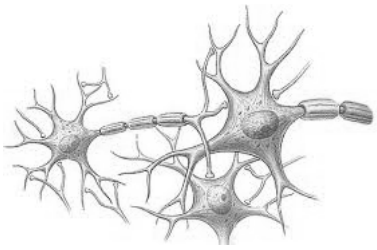
2. **Kidney complications (nephropathy):**
   a. Kidneys no longer work as well, and dialysis is often needed. Hypertension speeds this process.
   b. Diabetics should have their urine checked at least once a year by a medical provider to rule out kidney disease.

3. **Eye complications:**
   a. Vision is affected because diabetes causes blood vessels to become fragile. DM is the leading cause of new cases of blindness in adults. Issues include:



      - Retinopathy
      - Cataracts
      - Glaucoma

4. **Nerve damage - Diabetic Neuropathy:**
   a. Nerve damage may occur as a result of poor circulation**.** This damage is called diabetic neuropathy.



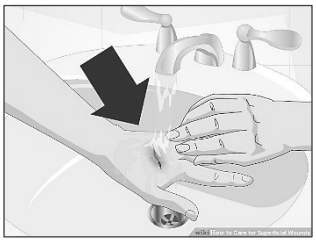
   b. Symptoms of neuropathy include burning pain, numbness, tingling or loss of feeling in the feet or lower legs, especially at night.
   c. Neuropathy can also cause changes in stomach and bowel function.
   d. Decreased sensation can be a serious threat to safety and security.
      - When a person has decreased sensation in a particular body part, they may not realize they have injured themselves.
      - With no pain to warn the person of injury, an infection may develop. Because the body has developed problems with circulating blood, the body is less able to fight the infection and heal the injury.
      - In very serious cases, infected body parts may need to be amputated. Amputations and foot ulceration are some of the most common consequences of diabetic neuropathy.
5. **Frequent infections:**
   a. High blood sugar levels reduce the body's ability to fight off many kinds of infections such as skin infections, bladder infections, vaginal yeast infections, tooth and gum infections. Even the slightest cut or sore may be slow to heal and become easily infected.
   b. You can help prevent infections by:

      - Use sunscreen to avoid sunburns
      - Avoid dental problems by brushing and flossing daily and seeing the dentist regularly.

      - Get flu shots annually and other vaccinations when indicated.

- Wear puncture resistant gloves when doing anything that might cause injury to the skin.
- Prevent blisters by wearing socks with shoes and gloves when working outdoors.
- Avoid frostbite in the winter by keeping hands and feet warm and wearing a hat that covers the ears. Change shoes or gloves immediately if they get wet from the snow.

- Take care of the skin by keeping it clean. Shower or bathe daily or every other day with warm water and mild soap. Use water-based moisturizers recommended by the medical provider. Avoid lotions containing perfumes.



- Wash cuts and scrapes immediately with warm water and soap. Use antibacterial ointment or cream if recommended by the medical provider. Cover the area with a bandage (though do not use tape or band aides on the feet of diabetics). Change bandage at least daily or more frequently if needed. It should be changed if it gets wet or dirty.
- Report any signs or symptoms of infection to the medical provider. Signs and symptoms of infection include:
  - Redness.
  - Oozing of yellow or green discharge.
  - Swelling.
  - An area that is red and warm or hot to touch.
  - Tenderness.
  - Temperature over 100 degrees F.

D. AVOIDING FOOT PROBLEMS IN THE PERSON WITH DM

Poor circulation, nerve damage and trouble fighting infections can cause any foot problem to become serious. To avoid complications and keep feet healthy, there are things you can do for the clients or teach them to do for themselves.

- Ask the client's doctor to check his/her feet at every visit.
- The client may need to see the podiatrist on a regular basis for nail trimming and cutting as well as to have feet checked.
  - Nail trimming can be done by staff if the client is calm and has the ability to hold still. See Appendix 13 for instructions for trimming toenails.

- Caution the diabetic person to **NEVER go barefoot**, but to always wear shoes or slippers with hard soles.

- Shoes should always be comfortable and supportive. If they become uncomfortable and no longer are supportive, replace them.
- Look inside the shoe daily to make sure nothing got inside the shoe such as a stone or the lining is not worn, torn, or bunched up inside the shoe.
- Caution the client to never wear socks or stockings that are too tight around the toes or ankles. Wear cotton socks that are not so big that they bunch up inside the shoe when walking.

- Make sure the feet are washed daily with warm water and mild soap. If the client has decreased sensation, test the water to make sure it is not too hot. Dry the feet thoroughly, using the edge of the towel to carefully dry between the toes.
- Do not soak the feet. Soaking can dry the skin and cause cracking and peeling.
- If moisturizer is needed, check with the medical provider as to which would be best to use. Only a water-based moisturizer should be used. Never put moisturizer between the toes or over any cuts or breaks in the skin.

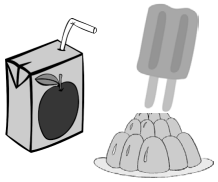
- Never apply tape or band aids to the skin of the foot.
- Check the client's feet daily for any redness, swelling, corns, calluses, ingrown toenails, or breaks in the skin Look between the toes and at the bottom of the foot. Use a mirror to examine the foot if it is too difficult to bend down and look closely. Report any problems immediately.

- If a client complains their feet are too cold, do not use a heating pad or anything hot to warm the feet. A diabetic with a neuropathy cannot accurately tell the temperature of something touching their feet or hands and can be burned easily.

E. MANAGING SICK DAYS TO AVOID IMBALANCES IN BLOOD SUGAR

There should be a plan in place for days when a person with diabetes becomes ill for whatever reason. General guidelines include:

1. Because illness can cause blood glucose levels to be higher or lower than normal, it is important to include more frequent glucose testing in the plan.
   - If blood glucose levels become too high, the ill person may urinate more frequently. It is necessary to replace fluids to avoid dehydration. Have the client take frequent sips of low calorie, sugar free liquids such as water, unsweetened iced tea or broth. If nausea or vomiting prevent the client from drinking fluids, notify the medical provider.
2. Follow the client's regular meal plan as much as possible. If appetite is decreased, suggest eating small amounts of carbohydrates every few hours. If nausea or vomiting do not permit the client to eat even the small amounts of food listed below, notify the medical provider. Possible foods to have the person try every few hours include:



- 1 twin popsicle
- ½ cup ice cream
- ½ cup apple juice
- ½ cup regular gelatin
- ¼ cup sherbet
- 6 saltine crackers
- ½ cup cooked cereal
- 1 cup broth with noodles/rice

3. It is important for the client to take all diabetic medications ordered during a time of illness unless otherwise ordered by the medial provider. The client should be careful about taking any OTC medications since these can affect blood sugar levels.

F. HYPERGLYCEMIA (HIGH BLOOD SUGAR)

1. Glucose levels get too high when there is an imbalance between food/fluids consumed, exercise/activity level and diabetes medications. This imbalance occurs when the person with diabetes:
   - Is stressed
   - Is not exercising enough or is not active enough
   - Is taking medications that increase blood glucose levels such as certain psychotropics and steroids.
   - Has consumed too many carbohydrates
   - Is not getting the right amount of medication for their level of activity
   - Is ill, has an infection, has vomiting or diarrhea, etc.

2. **Symptoms of hyperglycemia:**

- weakness, irritability
- headache
- blurred vision
- drowsiness or decreased alertness
- slow, lethargic movements
- abdominal pain, nausea, vomiting
- dehydration, thirst, dry mouth
- flushed skin
- rapid respirations

G. HYPOGLYCEMIA (LOW BLOOD SUGAR)

1. **Symptoms:**
   a. Early stages (sugar levels below 60 to 70 mg/dl).
      - Sweating, palpitations, trembling, anxiety.
      - Hunger, loss of inhibitions, irritability.

   b. Severe (levels below 50 to 55 mg/dl).
      - Difficulty walking with weakness.
      - Lack of coordination.
      - Difficulty seeing clearly, blurred vision.

c. Later symptoms: **CALL 911.**
   - Lethargy, confusion at levels below 45 to 50 mg/dl.
   - Loss of consciousness or coma at levels of about 30 mg/dl.
   - Seizures at levels of about 20 mg/dl with death shortly thereafter.

2. **Causes:**

a. Stress, illness.
b. Drinking excessive alcohol.
c. Taking too much insulin or other diabetes medication.
d. Not eating enough food or waiting too long between meals.
e. Exercising vigorously without eating a snack or decreasing the dose of insulin beforehand.

3. **Treatment: for glucose below 70 mg/dl:**
   a. The person must be alert enough to be able to swallow.
   b. Give the individual any one of the items listed:
      - A half cup (4 to 6 ounces) of fruit juice or soda pop.
      - 6 to 8 hard candies such as Lifesavers®.
      - 2 teaspoons jelly, jam, or thin pancake syrup.
      - 3 to 4 glucose tablets.

   c. Avoid foods that contain fat (candy bars) or protein (cheese) initially since they slow down the body's ability to absorb glucose.

4. **Recheck levels in 15 minutes.**
   - Give an additional sugar source (as listed above) if the reading is either the same or rising but still below 70 (**and** the person remains alert enough to swallow and follow instructions).
   - Call 911 if the sugar level is dropping.

5. **Call 911 if the person shows decreased alertness.**
6. If a second dose of glucose was given, recheck the blood sugar level in 15 minutes. Call 911 if the reading is still below 70.

7. When the glucose level is above 70 and symptoms are resolving, give food with protein and fat.

		
CHECK	**TREAT**	**CHECK**

8. **Glucagon – for treatment of severe hypoglycemia:**
   a. If the blood sugar level is very low, the person may become unconscious or be too disoriented to eat. Glucagon may be needed to stop symptoms and prevent seizures and death.
      - Glucagon is a hormone given by injection and requires a medical provider's order for use.
      - Glucagon is used when someone is unable to safely swallow.
      - Because glucagon is an emergent, life-saving medication (like epinephrine for allergic reactions), medication certified staff can administer it after they receive appropriate training.

See **Appendix 13. Diabetes mellitus** for more information.

Chapter 14. DEHYDRATION

A. DEHYDRATION AND NORMAL BODY WATER

1. **Dehydration** is the term used when the body loses too much water.
   a. Death from dehydration can occur in 3 days or less.
2. **Recommendations:**
   - How much water a person needs in one day varies according to that person's health, activities, and other foods that are consumed. There are several recommendations outlining how much a person should drink in one day.

   a. The Institute of Medicine recommends a total of 13 cups (about 3 liters or 3.25 quarts) of fluid for men each day. For women, they suggest 9 cups (a little over 2 liters or 2.25 quarts) of fluid each day.
   b. The US National Academies of Sciences, Engineering, and Medicine determined that an adequate daily fluid intake is:
      - About 15.5 cups (3.7 liters) of fluids a day for men.
      - About 11.5 cups (2.7 liters) of fluids a day for women.
   c. Another way to determine how much fluid someone should consume in a day is to divide the body weight (in pounds) by 50 = quarts of fluid needed.

   d. These recommendations cover fluids from water, other beverages, and food. About 20% of daily fluid intake comes from food, the rest from liquids. So, if you recalculate how many cups to drink in one day after subtracting the 20% that you get from food, then the 13 to 15 cups recommended for men becomes 10.5 to 12 cups per day and for women, 7 to 9¼ cups.

B. CAUSES OF WATER LOSS

1. **Lack of access.**
2. **Illness – fever.**
3. **Medications.**
4. **Activities and environment.**

C. SYMPTOMS

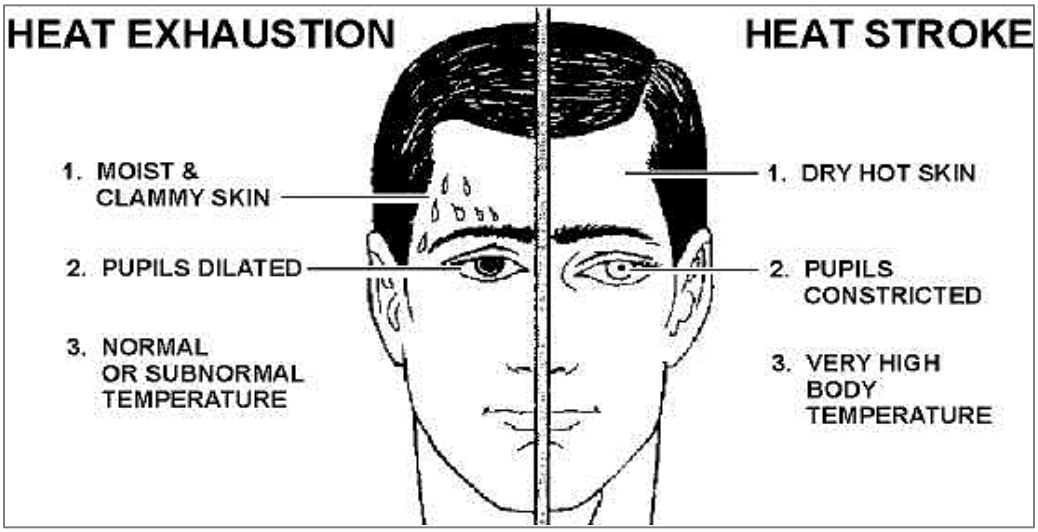
1. **Thirst:**
   a. Not always a reliable early indicator.
   b. Some adults, especially older adults, don't feel thirst until they are already dehydrated.
2. **Age** influences the signs and symptoms of dehydration:
   a. Infants may not have wet diapers as frequently as normal.
   b. Adults may have dark-colored urine and not urinate as often as usual.
3. **Serious cases:**
   a. In very serious cases, delirium, loss of consciousness, or coma may be seen.

Symptoms of Dehydration

Mild	Moderate	Severe
• Thirst • Dry lips • Slightly dry mouth	• Very dry, sticky mouth • Thirst • Sleepiness or tiredness • Less frequent urination • Lack of tears when crying • Headache • Muscle weakness and cramps • Dizziness or lightheadedness • Sunken eyes • Skin lacks elasticity (it doesn't bounce back when pinched into a fold)	• Extreme thirst • Irritability • Confusion • Little or no urination • Dark, concentrated urine • Lack of sweating • Low blood pressure • Rapid heart rate and breathing • Cold hands, blue lips • Fever

D. COMPLICATIONS

1. **Heat injury:**
   a. **Heat cramps**: occur commonly in people who work hard in the heat. The muscles being used are usually the ones that cramp.
   b. **Heat exhaustion**: seen when the body temperature is above 102º F. Symptoms include headache, nausea, dizziness, weakness, and thirst.
   c. **Heat stroke**: a medical emergency.
      - Symptoms include confusion, headache, and irritability and may result in loss of consciousness, seizures, and coma.
      - The body temperature is usually over 104º F.



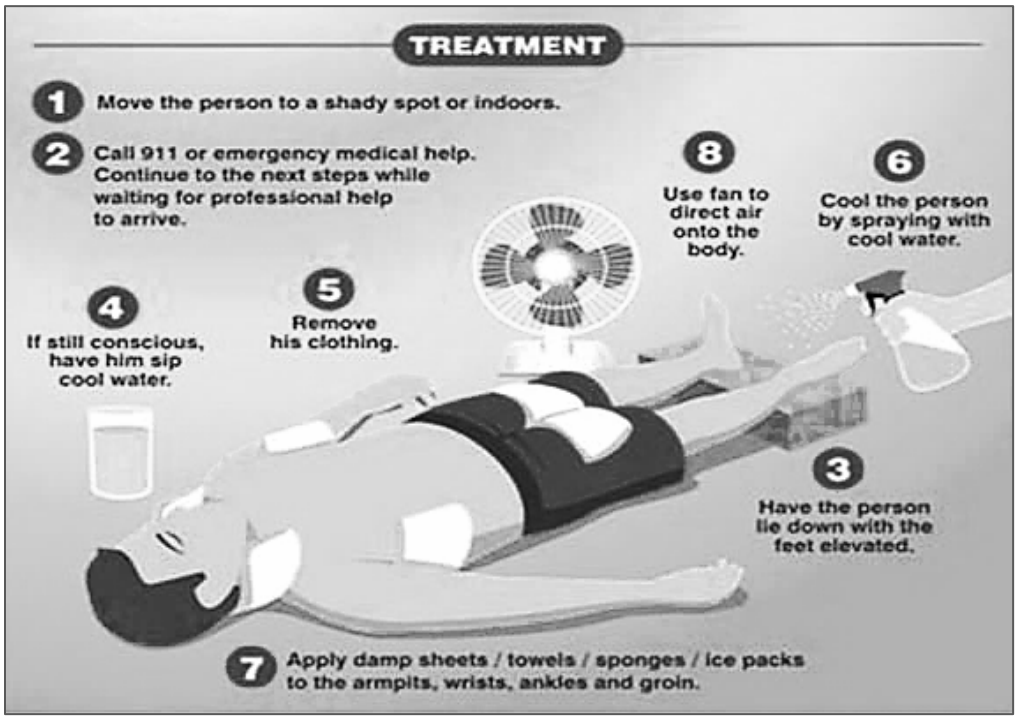
2. **Other complications include:** Brain swelling (cerebral edema), seizures, urinary and kidney problems, and shock.

E. PREVENTION

1. Consume plenty of fluids and foods containing water on a regular basis.
2. Drink extra fluids during hot weather and when ill.
3. When strenuous exercise is planned, start hydrating a day early and replenish fluids regularly during and after exercise.
4. Schedule physical outdoor activities during cooler parts of the day.
5. For those who cannot get their own fluids or tell anyone if they are thirsty, offer fluids regularly and frequently unless they require a fluid restriction.

F. TREATMENT OF HEAT INJURIES

1. The only effective treatment is to **replace lost fluids and electrolytes.**
   a. Fluids should be taken in frequent, small amounts as drinking too much, too fast can cause vomiting.
   b. Caffeine can stimulate further water loss by increasing urination.
   c. Fluids that contain a lot of sugar can cause or worsen diarrhea.
   d. Intravenous fluids may be needed for severe dehydration.

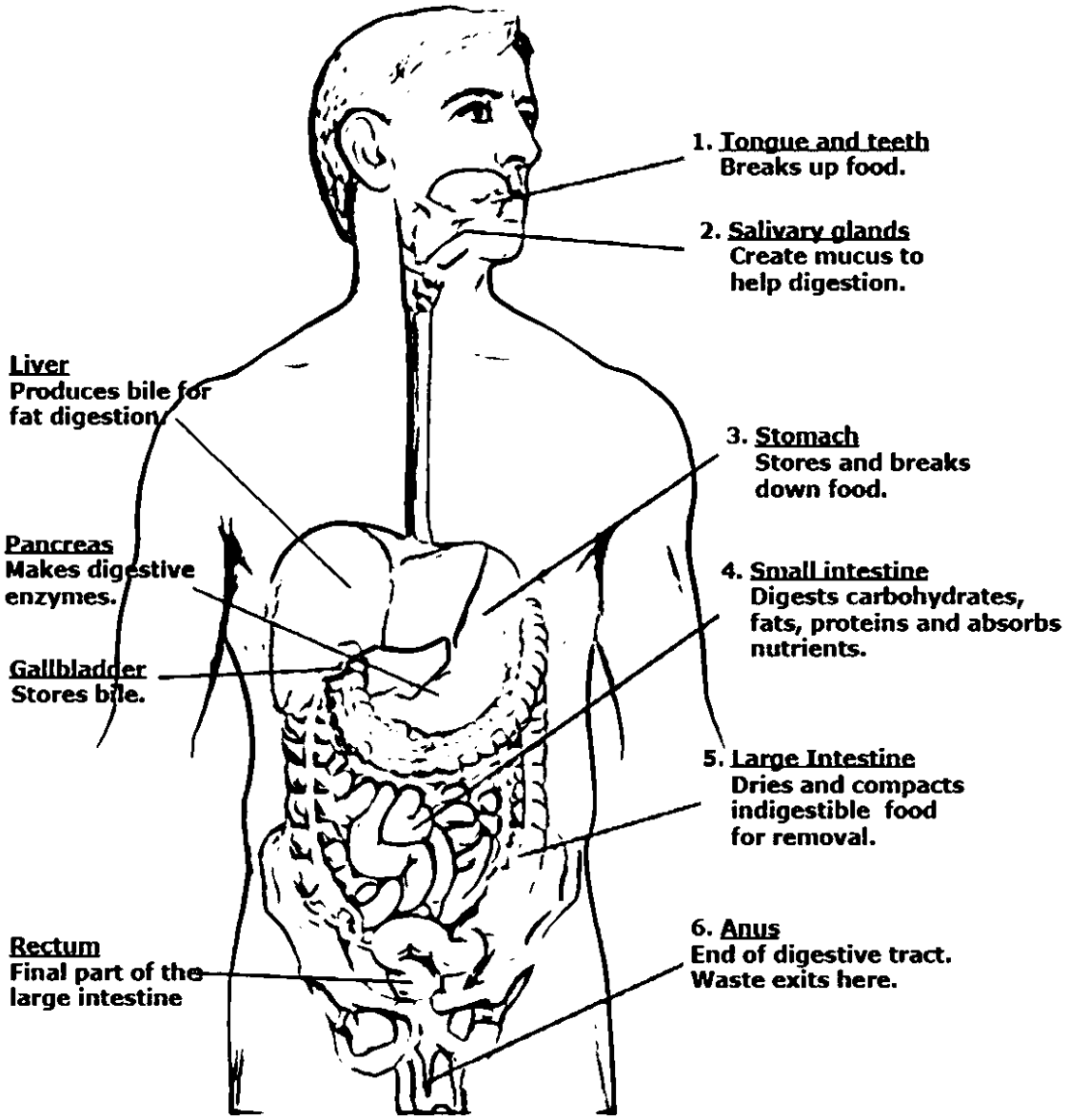


See **Appendix 14. DEHYDRATION** for more information.

Chapter 15. GASTROINTESTINAL SYSTEM

A. THE GASTROINTESTINAL (GI) SYSTEM

The gastrointestinal tract is a continuous path from the mouth to the anus where digestion and absorption of nutrients and medications occurs. It is divided into two parts: the upper and lower tract.



B. SWALLOWING/DYSPHAGIA

1. **Dysphagia is a swallowing disorder which:**
   a. Occurs during any of the three phases of swallowing.
   b. Increases the risk for choking.
   c. Often leads to aspiration and aspiration pneumonia.

C. CHOKING

1. **Choking occurs when something becomes lodged in the throat or trachea (windpipe).**

   a. In adults, the object is usually food.
   b. In children, small objects such as parts of toys, may cause choking.
   c. Often the object partially blocks the trachea and can be coughed out.
   d. At times, the object fully cuts off airflow into and out of the lungs. This causes a lack of oxygen in the blood.

CHOKING IS A MEDICAL EMERGENCY

- If someone starts to choke but can still cough and is not turning blue, stand by and observe. If the person can talk, the airway is only partially blocked. Encourage coughing until the obstruction is cleared.
- Do not give water to the person as fluids may take up the space needed for air to pass.

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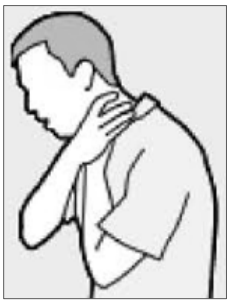
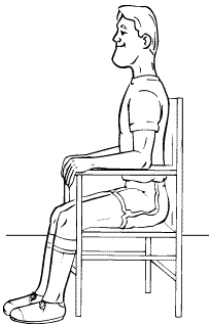
2. **Signs of choking:**



   a. The universal sign of choking is hands clutched to the throat.
   b. For someone who is choking, other signs include:
      - Trouble speaking, looking scared.
      - Inability to cough forcefully.
      - Difficulty breathing or noisy breathing.
      - Turning blue – skin, lips, nails look blue or dusky.
      - Passing out or loss of consciousness.
      - **NOTE:** A person who is starting to choke, may suddenly get up and quickly leave the table – be sure to follow that person to make sure he is ok.

3. **After a choking episode:**
   In the days following a choking episode, the person should be examined by a medical provider if the person develops:
   a. A cough that doesn't go away
   b. Fever
   c. Difficulty swallowing or speaking
   d. Shortness of breath
   e. Wheezing

4. **Causes/risks for choking:**
   Persons with IDD are known to be at a higher risk for choking than the general population due to multiple factors. These factors include:
   a. **Disorders involving the mouth:** dry mouth, missing teeth, etc.
   b. **Swallowing problems:** stroke, head trauma, Parkinson's disease, etc.
   c. **Obstruction of esophagus:** tumor, stricture, etc.
   d. **Medications:** antipsychotics, antiseizure medications, narcotics, benzodiazepines, antihistamines, etc.
   e. **Behavior** issues:
      - Eating too fast and not chewing the food.
      - Taking large or many bites before swallowing
      - Inattention to eating; laughing or talking a lot while trying to chew.
      - Poor posture/slouching at the table:
      - The best position for eating is sitting straight up with hips pushed back in the chair; sitting on the "sit bones", not rolled back onto the tail bone. Head should be straight and nose, belly button, and knees should be facing forward.



      - Stealing food because:
        - It may not comply with a prescribed diet.
        - Usually if food is stolen, it is then eaten too quickly.
      - Getting up from the table with food in the mouth.
      - Pica (swallowing inedible objects).

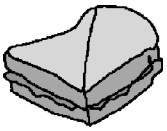
5. **Choking hazards:**
   a. **Diet** can play a large role in choking and prevention.
      - The correct texture of food is important.
      - **Common textures** for someone with swallowing problems include soft/chopped food (often the size of a sugar cube or M&M), ground food, and pureed food.

b. Especially **challenging foods** include:
   - Peas and corn which can roll to the back of the throat before a person is ready to swallow.

   - Meat can be hard to chew and can get stuck easily.
     - Hot dogs are especially hazardous when cut into little disks. When cut, they should be in sizes less than one half inch to avoid round shapes.
   - Rice may get stuck in the throat and fall into the airway.

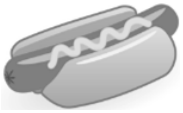
c. **Foods to avoid** (common choking hazards):
   - Soft bread can form a sticky ball and block the airway.
   - Peanut butter is hard to process in the mouth. If aspirated, it will block airways and cannot be removed with a Heimlich maneuver.

     - The combination of bread with peanut butter and/or honey is especially risky.



     - Deaths from choking have occurred with peanut butter even when the person had no history of choking nor an elevated risk for choking.
   - Round, slippery, and firm foods:
     - Whole grapes, whole cherry tomatoes, cherries, whole olives.

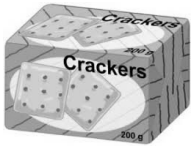
     - Hard candies, round candies, suckers, nuts.
     - Chunks of cheese, hot dogs.



   - Hard to chew items:
     - Tough meats.
     - Raw vegetables (broccoli, Brussel sprouts, carrots).
     - Popcorn and chips.

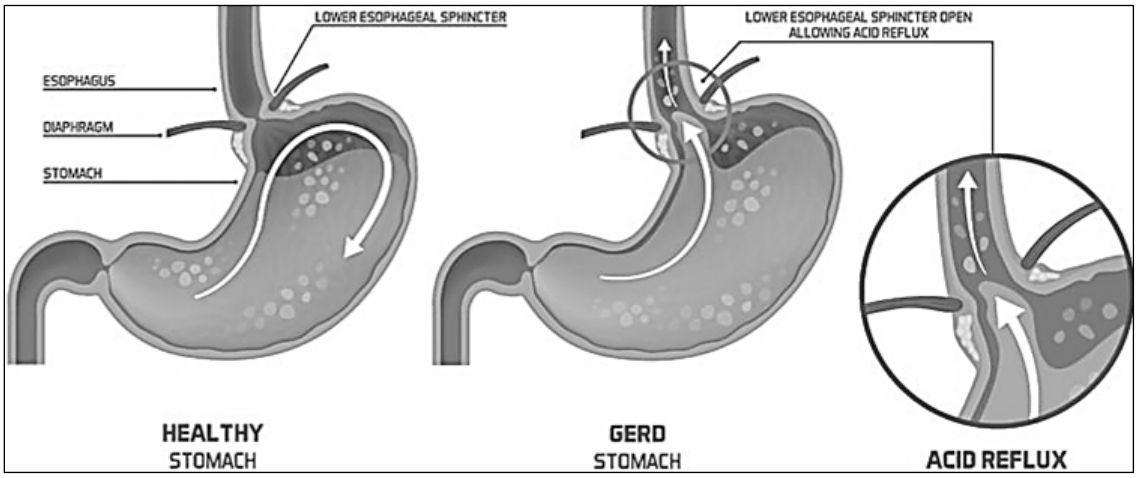
   - Stringy or fibrous textures:
     - Pineapple.
     - String beans, celery.
     - Lettuce.

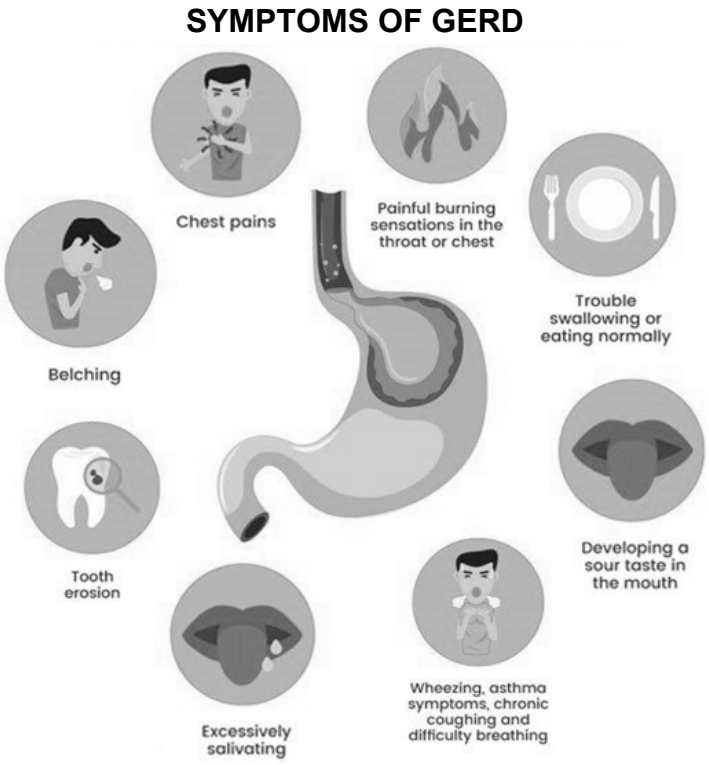
   - Crunchy food:
     - Potato chips, toast.
   - Crumbly foods:
     - Cookies, crackers.



D. GASTROESOPHAGEAL REFLUX

1. **Gastroesophageal reflux (GER) or acid reflux:**
   a. Occurs when stomach contents back up (reflux) into the esophagus.
   b. Can affect vocal cords and cause hoarseness.
   c. Can spray to the back of throat and cause chronic sinus problems.
   d. Can be aspirated into the lungs.
2. **The Lower Esophageal Sphincter (LES) is very important in preventing reflux.**
   a. The LES is a ring of muscle at the end of the esophagus.
   b. During swallowing, the LES relaxes to allow food into the stomach.
   c. After food enters the stomach, the LES tightens to stop food and acid from backing up into the esophagus.





/lifethroughnutrition.weebly.com/uploads/5/3/4/0/53402617/gerd.pdf

3. **Identifying GERD in individuals with IDD:**

   Many individuals with IDD will show the following signs from reflux:

   a. **PICA** – because the person may be trying to "feed the pain" or increase saliva to wash the acid down and out of the esophagus.

   b. **Hand mouthing** – inserting fingers as far back into the mouth as possible to increase saliva. Saliva helps to wash the acid down through the esophagus.

   c. **Agitation within 30-60 minutes of mealtime** due to reflux of stomach acid causing pain in the esophagus.

   d. **Agitation in the middle of the night:** because it takes 5 to 6 hours for a large meal to clear the stomach, GERD is more likely to be seen when the person is lying down.

e. If stomach contents flow far enough up to be aspirated, **coughing and hoarseness** are common symptoms.

f. **Weight loss.**

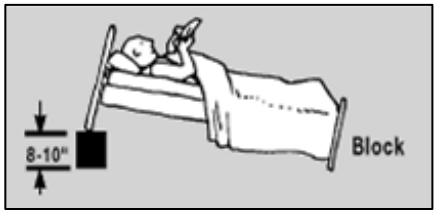
g. **Low hemoglobin** indicating possible slow bleeding in lower esophagus.

h. **Meal refusals**, especially those that have caused "heartburn" or discomfort in the past.

4. **Treatment and interventions:**
   a. **Lifestyle changes:**
      1) **Weight loss:** excess weight puts pressure on the lower esophageal sphincter (LES).

      2) **Raising the head of the bed**:

- o If the head of bed is raised 6-8 inches (at least 45 degrees), gravity helps prevent reflux. A full length wedge or placing blocks under the feet at the head of the bed works best.
- o Never use multiple pillows for head elevation. Multiple pillows can place the head and shoulders at an angle which compresses the stomach. This will aggravate aid reflux and make it worse.



www.physio-pedia.com/Gastroesophageal_Reflux_Disease

- o In order for the stomach to start to empty, food must reach the lower 1/3 of the stomach which signals the sphincter to open so food can pass into the intestine.
- o The stomach takes 3 to 6 hours to empty, thus it is necessary to elevate the head for at least 60 minutes to allow the stomach to start to empty.

3) **Avoid certain foods** that contribute to reflux:

   - o **Foods that relax the LES**: caffeine, any caffeinated beverage, chocolate, alcohol, peppermint, onions, garlic, fatty foods, spicy foods, and fried foods.
   - o **Carbonated beverages** cause **bloating** which puts pressure on LES.
   - o **Citrus fruits** and juices, tomatoes and tomato products are highly acidic and are associated with reflux symptoms.

4) **Smoking cessation**:

   - o Smoking relaxes the LES and dries the mouth (decreases saliva needed to neutralize acid).

5) **Avoid large and late meals**:

   - o Lying down with a full stomach increases reflux.
   - o Avoid eating for at least 3 hours before going to bed to reduce reflux.
   - o Smaller meals are associated with less stomach distention.

6) **Avoid tight fitting clothing**:

   - o Tight clothing puts pressure on the abdomen, forcing stomach contents into the esophagus.

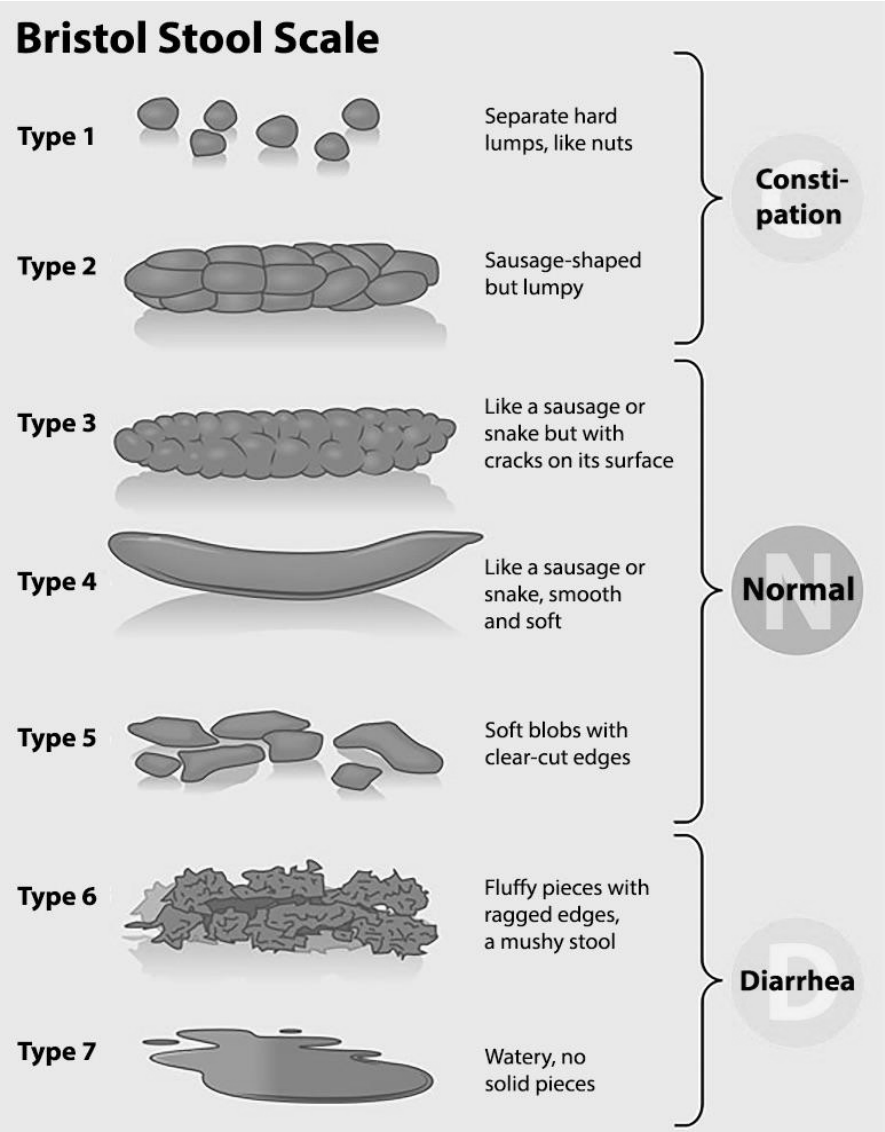
E. NORMAL BOWEL MOVEMENTS

A “normal” bowel movement can occur as often as 3 times a day or only 3 times a week.

Anything outside this range might be considered abnormal and involve:

- **Constipation: having fewer than 3 bowel movements a week.**
- **Diarrhea: having loose, watery stools three or more times a day.**

1. **Stool consistency:**
   - A normal stool is one that is soft, well-formed to somewhat loose, and easy to pass.
   - Depending on the person’s size and frequency of bowel movements, a stool can be as small as a breakfast sausage or as large as a banana.



oakclinic.ca/articles/Bristol-stool-chart

Type 1-2: This type of stool is hard, lumpy, and difficult to pass. It can indicate constipation and dehydration.
Type 3: This stool is a combination of solid and lumpy, but it is easier to pass than Types 1&2. It is considered normal and healthy.
Type 4: This stool is smooth, soft and is considered the ideal type of feces. It is easy to pass and indicates a healthy digestive system.
Type 5: This stool is soft, but it has distinct edges. It can indicate that an individual might be lacking fiber but is still considered normal.
Type 6-7: This stool is too soft and can indicate diarrhea. It can be a sign of an infection or a more serious underlying health issue.

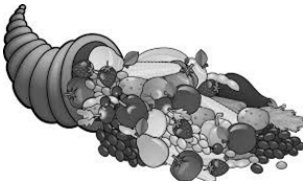
2. **Changes in size and consistency:**
   a. Stools that vary in size are usually no cause for alarm. Certain medications and changes in diet, temperature, or activity can alter the size and appearance of stool.
   b. Narrow, pencil-like stool is generally caused by narrowing of the intestinal passage due to inflammatory bowel disease, irritable bowel syndrome, colon cancer and other causes. A low fiber diet and temporary infections may also be to blame.
3. **Stool color:**
   a. Brown stool is considered a healthy stool color.
   b. Changes in color or consistency that are concerning include:
      - **Blood** in the stool: causes include hemorrhoids, diverticular bleeding, inflammatory bowel disease, or colon cancer.
      - **Red** stools can be the result of eating red colored foods like beets, tomato soup, red candy, or strawberry gelatin. Some stools that are more maroon in color, rather than red, indicate bleeding in the intestine.
      - **Black** or tarry stool may be caused by internal bleeding high in the digestive tract, such as caused by cancer or a peptic ulcer. It may also be due to eating iron supplements, taking Pepto-Bismol®, or eating black licorice or blueberries.
      - **Green** stool can be cause by severe diarrhea and excess bile or from a bacterial, viral, or parasitic infection. Iron supplements and certain foods such as lime gelatin, certain drink mixes, or spinach can cause green stool.
      - **Pale or clay-colored** stool is a common sign of liver or gallbladder disease, including hepatitis but may also be due to things such as a barium enema.

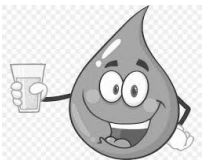
F. CONSTIPATION

Constipation refers to a change in bowel habits but has varied meanings. It may mean that stools are too hard or too small, difficult to pass, or infrequent (less than 3 times/week). Constipation may be accompanied by bloating, abdominal discomfort, and straining on the toilet.

1. **Causes:**
   a. Dehydration, lack of exercise, and low dietary fiber are among the most common causes of constipation.
   b. Other causes include:
      - Pregnancy.
      - Medication side effects.
      - Diverticular disease, irritable bowel syndrome.
      - Bowel obstruction.
      - Neurological disorders such as stroke or Parkinson's disease.
      - Autoimmune diseases like lupus or scleroderma.
      - Colorectal cancer.
2. **Complications of constipation:**

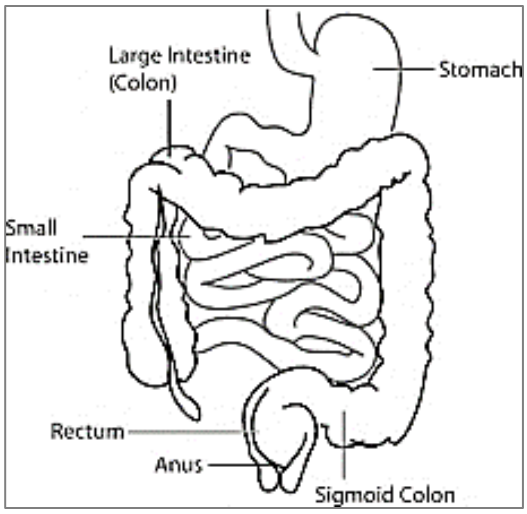
   a. Abdominal pain.
   b. Hemorrhoids.
   c. Stool impaction.
   d. Nausea, vomiting.
   e. Urinary retention (inability to urinate).
   f. Ulcers in the rectum.
   g. Anal fissures (painful tears in the anal canal from passing hard stool).
4. **Treatment:**
   a. Behavior changes:
      - Bowels are most active following meals and stool may pass more readily after eating. Thus, this may be an ideal time to try to have a bowel movement.
      - If signals to pass stool are ignored, over time those signals become weaker. It is important to pay attention to signals from the body and to have access to a restroom after meals.
   b. Diet – **fiber and water** are the two most important components for preventing and treating constipation.





   c. Medications – include stool softeners, laxatives, etc.

G. BOWEL OBSTRUCTION



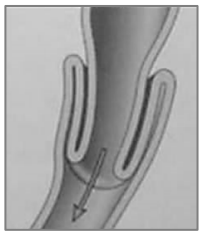
Intestinal obstruction is a blockage that keeps food or liquid from passing through the small intestine (small bowel obstruction or SBO) or large intestine (colon).

- The intestines can be partly or completely blocked.
- A complete block can lead to serious problems because:
  - the wall of the intestine can tear, causing an abdominal infection, or
  - parts of the intestine can die due to lack of blood flow caused by swelling and pressure on the intestinal wall.

1. **Things that can lead to a bowel obstruction:**
   a. Poor diet, dehydration, low fiber intake.
   b. Decreased mobility.
   c. Medications.
2. **Types of blockage and causes:**
   a. **Herniations:** A hernia is an opening in the muscle and a small loop of bowel can slide through the opening and get trapped
   b. **Adhesions:** bands of scar tissue that cause the intestines to stick together; stick to the abdominal wall, and/or stick to other organs resulting in pressure on the intestine and can cause an obstruction.
   c. **Intussusception** (pronounced: in-tuh-suh-SEP-shun): Part of the intestine slides into an adjacent part of the intestine like a telescope.
   d. **Volvulus:** A loop of bowel twists around itself.
   e. **Tumors:** Malignant and non-malignant tumors can grow inside the intestine and block it, or a tumor can cause a blockage from outside.


Herniation


Adhesions


Intussusception


Volvulus

https://healthjade.net/bowel-obstruction

3. **Symptoms:**
   a. Symptoms depend on where the intestine is blocked and how completely it is blocked. The most common symptoms are:
      - Refusal to eat.
      - Nausea and vomiting.

      - Abdominal pain which can be intense and colicky.
      - Swelling and bloating of the abdomen.
      - Inability to have a bowel movement or pass gas.
      - Diarrhea may be seen if liquid stool manages to seep around the obstruction.

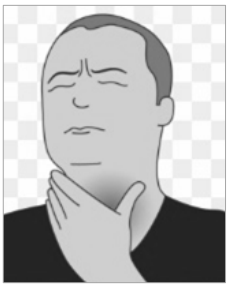
See **Appendix 15. Gastrointestinal System** for more information.

Chapter 16. ASPIRATION PNEUMONIA

Aspiration occurs when a substance that should not be in the lungs, gets into the lungs.

1. **Normally the body has defense mechanisms to prevent aspiration including:**
   - a coughing reflex to clear the substance.
   - closing off the trachea (the main passageway into the lungs) during swallowing.
2. **Even with these defense mechanisms, substances can get into the airways and lungs. They usually cause no problems and are cleared, but they can:**
   - damage the lung tissue by a direct toxic effect.
   - cause an infection (pneumonia).
   - block the airway.
3. **Aspiration can be viewed as falling into two categories:**
   - coming from above (swallowing problems).
   - coming from below (gastroesophageal reflux).

A. SIGNS OF CHRONIC ASPIRATION



1. Chronic cough, wheezing, noisy breathing.
2. Excessive throat clearing.
3. Sore throat or chest discomfort.

4. Choking, gagging, coughing, and/or spitting during eating.
5. Recurrent vomiting.
6. Hoarseness, or wet or gurgly sounding voice when eating.
7. Trouble breathing, turning blue.
8. Unexplained fever or chills and excessive sweating.
9. Recurrent pneumonia.

B. PREDISPOSING CONDITIONS OR RISKS FOR ASPIRATION

1. Reduced consciousness – decreases ability to cough or close off airways.
2. Dysphagia (swallowing problems).
3. Neurological deficits such as stroke or MS.
4. Mechanical disruption such as tracheostomy or intubation.
5. Miscellaneous:
   - Eating or drinking too fast.
   - Lying down or slouching while eating.
   - G-tube feeding, especially large volume.
   - Prolonged vomiting.
   - Near-drowning.

C. PREVENTION

1. **Management of dysphagia is done by:**
   a. **Positioning:**
      1) Sit upright, in good alignment, whenever taking any food, fluids, or medications.
         - o Alignment = nose, navel, knees pointing in same direction.
         - o No slouching to one side or eating while head is turned.

      2) Head: neck extended with chin only **SLIGHTLY** tucked.
      3) After eating, remain upright for 20 to 60 minutes.
      4) Elevating the head of the bed can decrease reflux
   b. **Behavior:**
      1) Eating too fast or while agitated, talking, or goofing around increases the risk for aspiration.
         - o Assist the person in eating slowly.
         - o **DO NOT RUSH** the person eating - allow adequate time to eat.
         - o Offer small amounts of foods at a time, sips between bites.
         - o Allow time to swallow and clear the mouth between bites.
         - o Keep the environment calm and relaxed.

c. **Diet**:

1) Soft, moist foods such as cooked pasta, mashed potatoes, cooked vegetables, etc. are easier to swallow.
2) Foods that are sticky are difficult to manage and to swallow. These include caramel and fruit roll-ups.

3) Certain foods increase reflux and thus contribute to aspiration.

2. **Oral hygiene**
   a. Missing teeth, lack of teeth (edentulous), and poorly fitting dentures can lead to chewing and swallowing difficulties, increasing the risk for aspiration.

   b. Poor oral hygiene and periodontal disease cause an increase in pathogens (bacteria). When aspirated, pneumonia develops more easily when these pathogens are present.
   c. Daily oral hygiene is very important.

See **Appendix 16. Aspiration Pneumonia** for more information.

Chapter 17. SLEEP APNEA

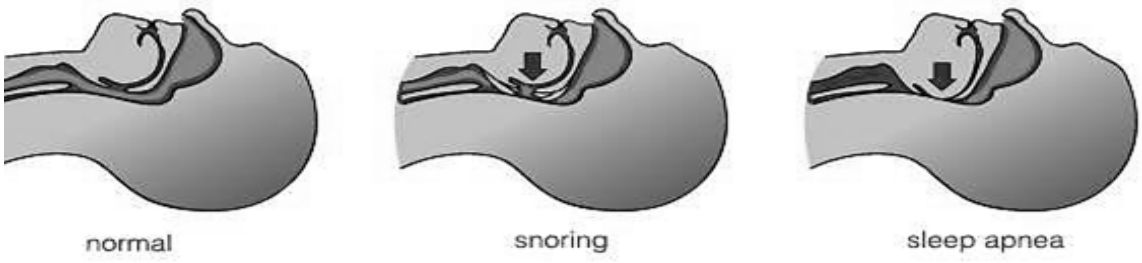
Sleep apnea is a condition that makes a person stop breathing for short periods of time while asleep. There are two types of sleep apnea:

A. CENTRAL SLEEP APNEA

- In central sleep apnea, a person stops breathing because the brain does not send the right signals to make you breathe.

B. OBSTRUCTIVE SLEEP APNEA

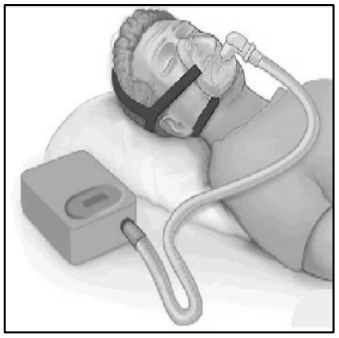
- In obstructive sleep apnea (the most common type), breathing stops because the throat narrows or closes.



C. SYMPTOMS

- Loud snoring; waking up choking or gasping.
- Restless sleep, tiredness, and daytime sleepiness.
- Morning headaches, dry mouth, sore throat.
- Waking up often to urinate at night.
- Waking up feeling unrested or groggy.
- Trouble thinking clearly or remembering things.

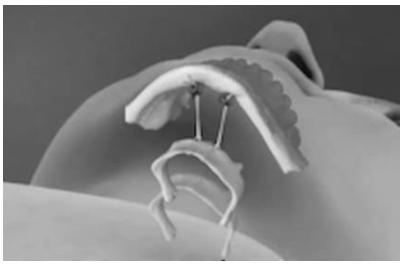
D. TREATMENT



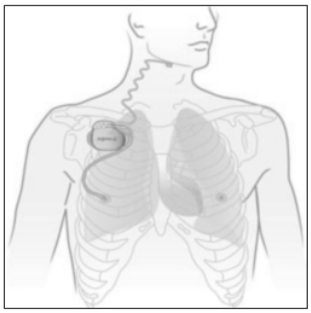
1. **CPAP** (Continuous Positive Airway Pressure) and BiPAP (Bi-level Positive Airway Pressure) deliver pressurized air to the lungs.
2. **Sleep position -** sleeping on the side, not the back, may help improve quality of sleep.
3. **Weight loss**.
   a. For some people, the weight of the neck and fat deposits within the neck narrow and block the airway during sleep. There is also a decrease in muscle activity in this region.

Images on this page from the Ohio DDD med manual

4. **Dental devices** to reposition the jaw can relieve obstruction.
5. The **Airlift procedure** uses sutures and suture anchors to suspend the hyoid bone closer to the jaw.



uthscent.com/ask-a-doctor/ask-a-doctor-airlift-sleep-apnea-procedure



froedtert.com/sleep-disorders

6. Newer devices such as **Inspire** which delivers mild stimulation to key upper airway muscles, allowing the airway to remain open during sleep.
   - A neurostimulator delivers electrical stimulating pulses to the hypoglossal nerve through the stimulation lead.
7. **Surgical treatment** to reshape structures in the upper airway such as uvulopalatopharyngoplasty and glossectomy or maxillomandibular advancement.

See Appendix 17. SLEEP APNEA for use and cleaning instructions of CPAP.

Chapter 18. ALLERGIES

A. SYMPTOMS CAUSED BY ALLERGIES

1. **Allergic rhinitis (hay fever)** can cause:

   a. **Nose**: watery discharge, blockage of nasal passages, sneezing, itching, post-nasal drip, loss of taste, and facial pressure or pain.
   b. **Eyes**: itching, gritty feeling, redness, swelling, blue skin under eyes.
   c. **Ears**: congestion, popping, itching.
   d. **Sleep**: mouth breathing, frequent awakening, daytime fatigue.

2. **A food allergy can cause:**

   a. Tingling in the mouth. b. Hives
   c. Swelling of lips, tongue, face, or throat.
   d. Anaphylaxis.

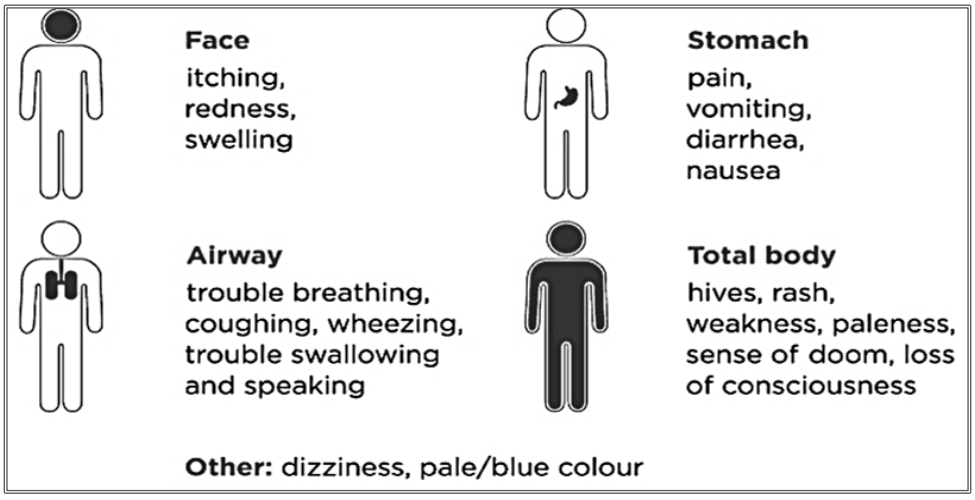
3. **An insect sting allergy** can cause:

   a. A large area of swelling at the sting site.
   b. Itching or hives all over the body.
   c. Cough, chest tightness, wheezing, shortness of breath.
   d. Anaphylaxis.

4. **A drug allergy** can cause:

   a. Hives, rash, itchy skin.
   b. Facial swelling, wheezing.
   c. Anaphylaxis.

ANAPHYLAXIS SYMPTOMS: think “FAST” www.emnote.org/emnotes/anaphylaxis



B. CAUSES

1. **Common allergy triggers:**
   a. Airborne allergens: pollen, animal dander, dust mites, mold.
   b. Foods (peanuts, nuts, shellfish, cow's milk, soy, eggs, wheat, etc.
   c. Insect stings
   d. Medications (antibiotics, ibuprofen, aspirin, etc.)
   e. Latex (gloves, balloons, condoms, bottle nipples)
   f. Exercise, etc.

https://www.freepik.com/

C. PREVENTION

1. **Avoid known triggers:**
   a. Ask about ingredients such as nuts.
   b. For insect allergies:
      - Take precautions outdoors with clothing and footwear.
      - Beware that bees often get into beverage containers.
      - Be aware that perfumes may attract insects.
2. **Wear a medical alert bracelet**

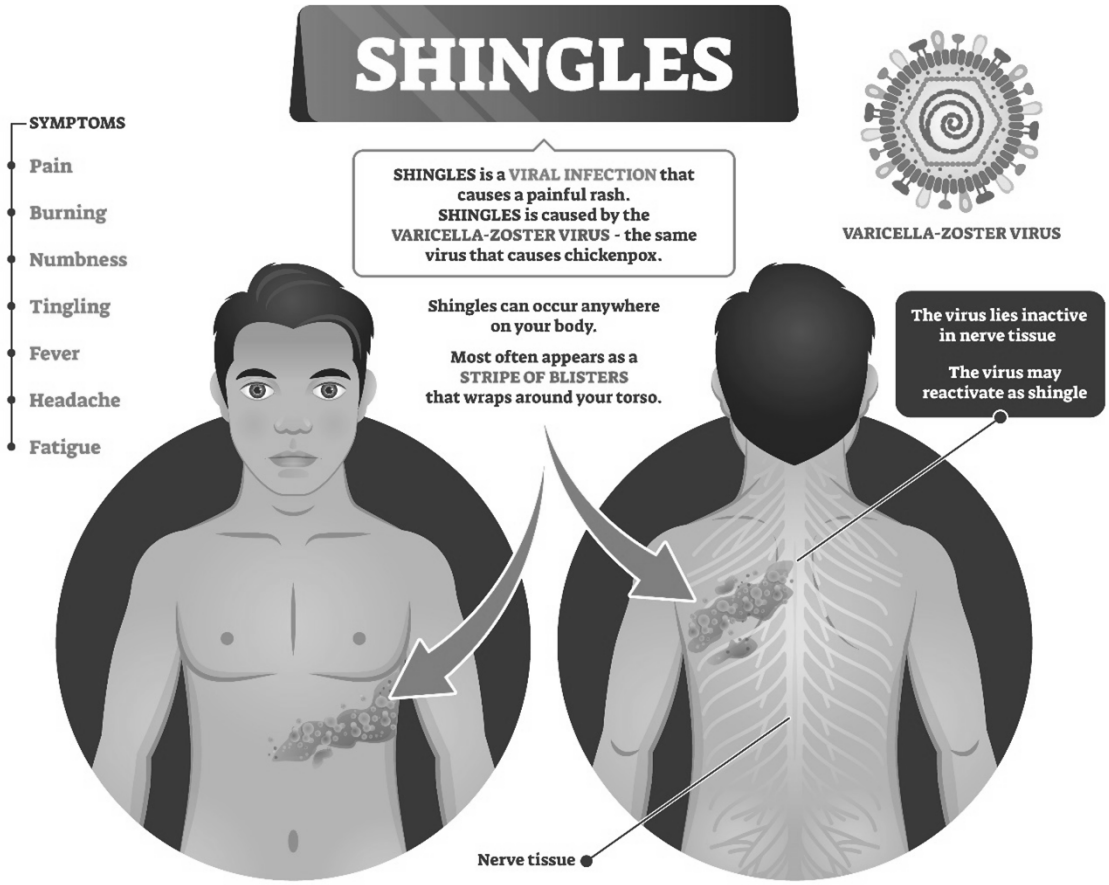
D. EMERGENCY TREATMENT

Because an allergic reaction (anaphylaxis) is a life-threatening emergency, DSPs can and should give epinephrine injections with an EpiPen® when indicated. See Appendix 18 for instructions on using EpiPens®.

See Appendix 18. ALLERGIES for more information.

Chapter 19. SKIN PROBLEMS

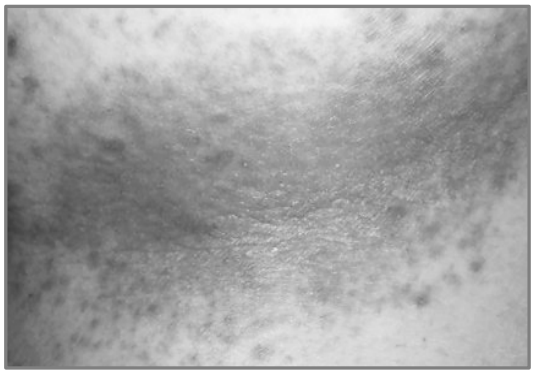
A. SHINGLES



https://depositphotos.com/vectors/shingles.html

B. INTERTRIGO

1. Rash that occurs when two skin surfaces are in contact (such as in skin folds) and there is moisture.
2. It is characterized by redness with scaling and small blisters can sometimes be seen.
3. It can be prevented by making sure skin folds are kept dry. Antifungal powders may be needed.



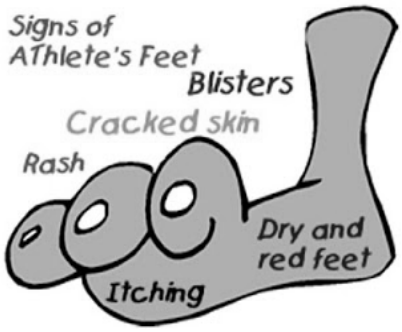
https://community.babycenter.com

C. TINEA CRURIS (jock itch)

1. Fungal skin infection involving the groin.
   a. Begins with a red patch high in the inner thighs.
   b. Tiny blister like lesions are seen along border.
   c. To prevent: keep area clean, dry, and avoid tight fitting clothes.
   d. Antifungal sprays or powders can help prevent recurrences.

D. TINEA PEDIS (athlete's foot)

1. Fungal infection of the feet.
2. It is very contagious, especially in warm, moist environments.
3. Prevention:
   a. Keep feet clean and dry.
   b. Do not put on socks or shoes when feet are wet.
   c. Change socks at least once daily.

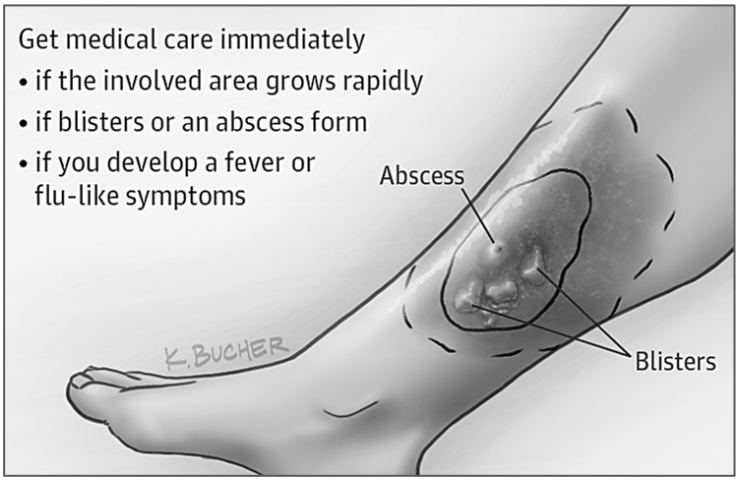


footankleinstitute.com

E. CELLULITIS

1. Cellulitis is a bacterial skin infection that can occur anywhere on the body but most often affects the lower legs.
2. **Characteristics:**
   a. Red area with pain and swelling, that tends to spread.
   b. Often feels warm, may cause a fever.
3. **Treatment:**
   a. Usually requires oral antibiotics.
   b. Place cool, damp cloth on area to help ease discomfort.
   c. Elevate the affected part of the body if possible.

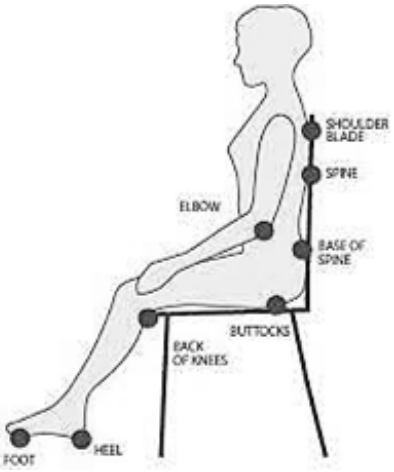
www.healthnavigator.org.nz/



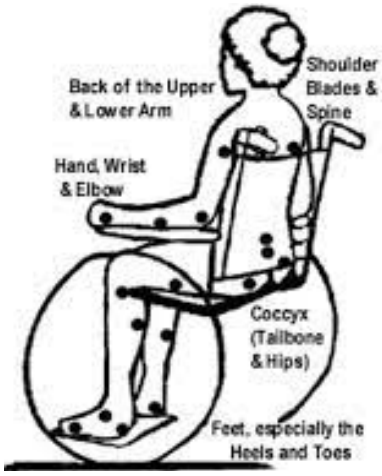
4. **Prevention:**
   a. Keep skin moist to prevent cracking.
   b. Wear protective equipment and clothing when playing sports or during other activities.
   c. Wash any wound daily with soap and water.
      - Apply a protective ointment or cream such as bacitracin or polysporin after washing.
      - Cover wounds with a bandage and change at least daily.
      - Watch for any signs of infection surrounding wounds (redness, pain, swelling, drainage).

F. PRESSURE SORES, ULCERS

1. Pressure sore = pressure ulcer = bed sore = decubitus ulcer.
2. Common sites of injury are bony prominences: tailbone, back, heel, ankle, hips, and elbow.



cec.health.nsw.gov.au



https://www.oregon.gov

3. **What to look for and report:**
   a. Red skin that stays red.
   b. Localized areas of skin that are warm and swollen.
   c. Patches of hard skin, blisters, or abrasions.
   d. Open sores.
4. **Prevention:**
   a. Avoid prolonged pressure– change position at least every 2 hours.
      1) For someone In a wheelchair, shift position every 15 minutes by:
         - tilting the wheelchair
         - shifting from side to side
         - pushing up with the arms
         - leaning forward with feet on floor

b. Make sure bedding and clothing under pressure areas is clean, dry, and free of wrinkles or other objects.
c. Use pillows or wedges between ankles and knees.
d. Use special mattresses or pads that are made of gel, foam, air, or water to relieve some of the pressure.
   - Use special seat cushions in wheelchairs.
   - Protect skin where bones protrude by using special pads.


nursingtimes.net

e. For those who are incontinent, make sure diapers or briefs are changed frequently, and the area is cleansed promptly following episodes of incontinence.
f. Avoid skin scrapes from friction:
   1) Follow safe transfer procedures.
      - Do not drag or slide a person across surfaces.
      - Use a lift sheet to turn and move a person in bed.
      - Get help when needed.
   2) Do not elevate the head of the bed more than 30 degrees (except after eating) to prevent the person from sliding down in bed and to reduce pressure on the tailbone.
   3) Prevent the person from sliding down in the wheelchair.
g. Protect fragile skin from getting scratched.
h. Protect skin from constant moisture and irritants.

5. **Lifestyle changes:**
   a. Eat a healthy diet and take in adequate fluids as hydration helps maintain skin integrity.
   b. Quit smoking.
   c. Exercise to improve circulation.
6. **Skin care**
   a. If an area is reddened, provide light massage around the reddened area (not on it), to increase circulation to the area.
   b. If skin is not broken, wash gently with mild soap and water.

See Appendix 19. SKIN PROBLEMS for more information.

Chapter 20. VITAL SIGNS

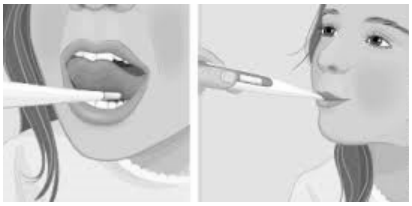
Vital signs are important tools for detecting illness. **You should be able to obtain vital signs and know if the results obtained are normal or abnormal. You must know how to respond to abnormal results.**

Vital signs are measurements of the body's basic functions. Normal vital signs change with age, sex, weight, and overall health. The five main vital signs that are usually monitored are:

- Body temperature
- Pulse (heart rate)
- Oxygen saturation
- Blood pressure
- Respiration rate (rate of breathing)

A. BODY TEMPERATURE

1. Body temperature varies depending on activity, when the person last ate or drank, and the time of day.
2. **Taking someone's temperature:**
   a. A person should not smoke, eat, or drink for at least 10 minutes before taking an oral temperature as the temperature will be altered.
   b. Document which part of the body was used when a temperature is taken.
      - Ear and rectal temperatures are ½ to 1ºF higher than oral temperatures.
      - Axillary (armpit) and forehead temperatures are usually ½ to 1ºF lower than oral temperatures.



Normal and Abnormal Body Temperatures (based on oral readings)

Normal	97 to 99 degrees Fahrenheit (ºF)
Fever	Anything over 100.4ºF • Notify medical provider if temperature is over 103ºF* • Notify medical provider if any fever for more than 3 days* • Notify medical provider if fever accompanied by severe throat swelling, vomiting, headache, stiff neck, rash, or severe cough*
Hypothermia	Temperature below 95ºF

***Individual protocols may differ - follow the protocols of your agency.**

B. HEART RATE (PULSE)

1. Pulse = number of times the heart beats per minute.
   - With each heartbeat, blood is pushed through the arteries causing them to pulsate.
   - The pulsation is felt by placing a finger over an artery.

PROCEDURE:

1. Using your first and second fingertips, press down on the artery until you feel the pulse. Never use your thumb as you will be feeling your own pulse.
2. The radial pulse is located on the thumb side of the wrist, where the wrist bends.
3. Count the heartrate for 30 seconds and multiply by 2 to get the pulse which is always recorded as beats per minute.
4. Note if the pulse is regular or irregular (rhythm).
5. Document the pulse rate and rhythm.

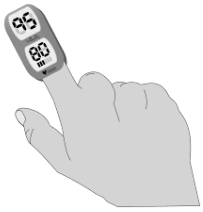
Normal and Abnormal Heartrates

Normal	60 to 90 beats per minute (BPM).
Tachycardia	Over 100 BPM. • Rate normally increases with exercise, sickness, injury, and emotions. • Seek medical attention if heart rate is over 130 or is very irregular. • Seek medical attention if accompanied by shortness of breath, lightheadedness, or chest discomfort.

Bradycardia	Abnormally low heart rate.
	• Heart rates are slower when sleeping.
	• Athletes can tolerate a heart rate down to 40 BPM.
	• Concerning symptoms (**report to medical provider**).
	  ○ Feeling lightheaded, dizzy, faint.
	  ○ Weakness, fatigue (especially when exercising).
	  ○ Confusion.
	• **Seek immediate medical attention if accompanied by:**
	  ○ Chest pain, trouble breathing.
	  ○ Low blood pressure, fainting.

C. OXYGEN SATURATION

1. **Pulse oximetry** is a non-invasive method for monitoring the amount of oxygen in a person's blood.



   a. It is used to monitor oxygen levels in persons with sleep apnea, COPD, pneumonia, and other illnesses.

   b. Causes for **false readings** include:

      - Low blood pressure can cause poor blood circulation in the hands.
      - Nail polish or artificial nails affect readings. Removing nail polish or artificial nails will give the best readings but placing the probe sideways on the finger so the pulsated light does not go through the fingernail can be done.

      - Hypothermia (very low body temperature) causes blood vessels to constrict or narrow and the readings are not accurate.
      - Motion of the person such as shivering, or seizures affects readings.
      - Dark pigment of skin can alter the strength of the light beam through the finger.

      - Dirt on hands/fingers can interfere with the functioning of the oximeter. Wash hands before applying.
      - Intense light such as very bright daylight or fluorescent light can cause falsely low readings.

BLOOD OXYGEN LEVELS

Pulse Oximeter Reading	
95 to 100%	**Normal** blood oxygen levels
91 to 95%	"**Concerning**" blood oxygen levels - monitor
Under 90%	**Low** blood oxygen levels – notify medical provider
80 to 85%	**Seek Medical attention** • Brain is affected at these levels and below
80% and lower	**Cyanosis**

2. **Symptoms of hypoxia:**

   a. Restlessness
   b. Headache

   c. Confusion
   d. Rapid heart rate (tachycardia)
   e. Rapid breathing (tachypnea)
   f. Anxiety
   g. Difficulty breathing (dyspnea)

3. **Symptoms of severe hypoxia:**

   a. Slow heart rate

   b. Blue skin (cyanosis)
   c. Extreme restlessness

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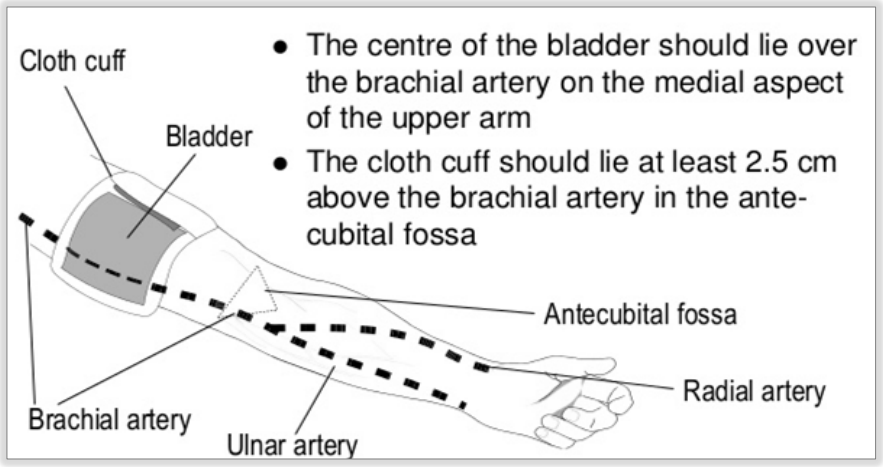
D. BLOOD PRESSURE

1. **Taking blood pressures:**
   a. Remember proper body position. Readings can be <u>higher</u> if:
      - The legs are crossed or if sitting without a back support.
      - The arm is below the level of the heart.



slideshare.net/meducationdotnet/basics-of-taking-a-blood-pressure

   b. The cuff size is important:
      - If the cuff is too small, the reading will be high
      - If the cuff is too large, the reading will be low

2. **The Blood Pressure Reading:**

120/70

Read as *"one twenty over seventy millimeters mercury" (mm/Hg)*

Systolic:

The top number, which is the higher of the two numbers, measures the pressure in the arteries when the heart beats (the heart muscle squeezes or contracts).

Diastolic:

The bottom number, which is the lower of the two numbers, measures the pressure in the arteries between heart beats (when the heart muscle relaxes).

NORMAL AND ABNORMAL BLOOD PRESSURE READINGS

Blood Pressure Category	***Systolic*** mm Hg		***Diastolic*** mm Hg
Normal	less than **120**	and	less than **80**
Prehypertension	**120 – 139**	or	**80 – 89**
High Blood Pressure (Hypertension) Stage 1	**140 – 159**	or	**90 - 99**
High Blood Pressure (Hypertension) Stage 2	**160 or higher**	or	**100 or higher**
Hypertensive Crisis (Emergency Care Needed)	**Higher than 180**	or	**Higher than 120**
Hypotension	less than **90**	or	less than **60**

3. **High blood pressure (hypertension):**
   a. Elevated blood pressure is associated with:
      - heart disease including congestive heart failure (CHF)
      - strokes
      - kidney disease
   b. Hypertension usually occurs with no symptoms
      - Symptoms such as headaches, nervousness, sweating, or flushing are seldom seen.
      - Studies show that people with high blood pressure often have fewer headaches than those with normal blood pressures.
      - Nosebleeds are not a reliable indicator of high blood pressure though they can occur with extremely high blood pressure readings.
   c. **Hypertensive crisis:** Requires emergency medical treatment.
      - Symptoms that occur with very high blood pressure include:

- severe headaches
- severe anxiety
- shortness of breath

4. **Low blood pressure (hypotension):**
   a. Defined as a systolic pressure less than 90, diastolic pressure less than 60.
   b. Blood pressure is generally not considered too low unless the person is having symptoms.
   c. Many athletes have quite low blood pressures = a sign of their fitness.
   d. **Symptoms** of low blood pressure:

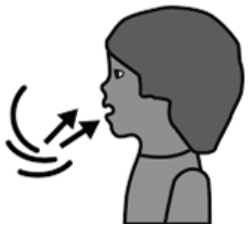
- dizziness, lightheadedness, fainting
- blurred vision
- fatigue
- nausea
- depression

E. RESPIRATION RATE

Respiration rate = number of breaths taken per minute.

PROCEDURE

1. Count how many times the chest rises over a minute.
2. To get an accurate reading, do this without the person knowing it is being done so they don't change their breathing rate.



Normal and Abnormal Respiratory Rates

Normal	12 to 20 breaths per minute • Rate increases with fever, illness, lung disease
Respiratory distress	**Seek immediate medical attention if:** • Struggling to breath or pain with breathing • Turning blue • Irregular or very shallow breaths

F. WEIGHT

1. While not a vital sign, weights should be monitored regularly.
   a. Many individuals with IDD are overweight due to a combination of medications and lifestyle. This, unfortunately, can lead to developing metabolic syndrome and other health issues.
   b. Others have unexplained or unintentional weight loss which can indicate a serious medical problem.
      - Unintentional weight loss is generally defined as losing 10 pounds or 5% of body weight over 6 to 12 months without a change in activities or diet, or without trying to lose weight.

Weight Status Classification According to Body Mass Index (BMI)

Classification	BMI
Underweight	Less than 18.5
Normal	18.5 to 24.9
Overweight	25 to 29.9
Obese	30 or greater

See **Appendix 20. VITAL SIGNS** for more information.

Chapter 21. FALLS

Persons with an intellectual or developmental disability can be at a greater risk of falling than the general population. A fall, even one that doesn't result in injury, can lead to a fear of falling and thus cause the individual to limit activities. See Appendix 21 for a list of factors that increase the risk for falling.

A. ASSESSMENT AFTER A FALL

1. Do not move the person until you have checked for signs of injury.
2. Offer reassurance.
3. Check vital signs (BP, pulse, oxygen saturation) & for breathing problems.
4. Check for signs of injury.
   a. Observe for unusual body posture.
      - A leg that looks shortened, rolled outwards could indicate a broken hip.
      - A deformed wrist or arm could indicate a fracture.

5. Check for active bleeding or bruising.
   a. Bruising or bleeding around the head could indicate a concussion/head injury.
6. Check for pain or pain behavior.
7. Check for a change in the person's usual demeanor/behavior.
   - Confusion, disorientation, agitation, restlessness could indicate a head injury.

8. Check carefully for possible fractures if someone has a diagnosis of osteoporosis.
9. Check blood sugar if the person is diabetic.

ARRANGE FOR MEDICAL ASSESSMENT (I.E. TRANSPORT TO EMERGENCY DEPARTMENT) IF TAKING ANTICOAGULANTS

B. TRANSPORT TO EMERGENCY DEPARTMENT IF THERE IS:

1. Severe head or facial bleeding.
2. Bleeding/fluid leakage from nose or ears.
3. Severe headache.
4. Change in level of consciousness for more than a few seconds.
5. Black and blue discoloration below the eyes or behind the ears.
6. Cessation of breathing.
7. Confusion.

C. ONGOING ASSESSMENT/MONITORING

1. If there is no indication of potential head injury and the assessment is normal, observe the client for several minutes to make sure that:
   - The client's eyes are open and functioning as usual.
   - The client appears to be moving head, neck, and extremities in the usual manner.
   - The client's level of consciousness and mental function are at baseline.
   - There are no indications or expressions of pain.

Your agency may have its own protocol that should be followed, but in general you would continue to:

1. Monitor vital signs every 15 minutes for one hour. If VS remain at baseline, then
2. Monitor vital signs every hour for 3 more hours. If they remain at baseline, then
3. Monitor vital signs every 6 hours for 12 hours.
4. If vital signs remain at baseline, take them once daily for the next 2 days.
5. Continue to monitor for delayed signs of injury:
   - Increase or new onset of pain.
   - Inability to bear weight.
   - New swelling or bruising.
6. Continue to monitor for signs of a head injury:
   - Dizziness, blurred vision, headaches.
   - Confusion, disorientation, agitation, restlessness, changes in behavior.

D. HEAD INJURIES

Head injuries can occur after a fall but can also occur with self-injurious behavior or from another client hitting the person. Staff should treat any blow to the head the same.

E. ASSESSMENT OF KNOWN OR SUSPECTED HEAD INJURY

1. For anyone with known or suspected head injury, monitor for the following changes. Transport to the Emergency Department if there is:
   - Severe head or facial bleeding
   - Bleeding or fluid leakage from the nose or ears.
   - Severe headache, confusion, or loss of balance.
   - Change in level of consciousness for more than a few seconds.

   If no concerning changes, perform neurological assessments using the Glasgow Coma Scale (GCS) every 4 hours for 24 hours, then every 8 hours until 48 hours has passed since the fall or injury.
2. Rate each of the 3 signs (behaviors) according to the response scale and add those results together to obtain the score. (Remember that the Glasgow Coma Scale is based on a normal score prior to the fall.)
   - **Score: 13 to 15** indicates a mild injury, continue to monitor.
   - **Score: 9 to 12** indicates moderate injury – have person reassessed.
   - **Score: 3 to 8** indicates severe injury and 911 should be called.
   - For someone who normally (prior to the fall) has a lower GCS, perform whatever parts of the exam are possible and note any changes from the person's baseline. Monitor for changes from the first observation.

Glasgow Coma Scale

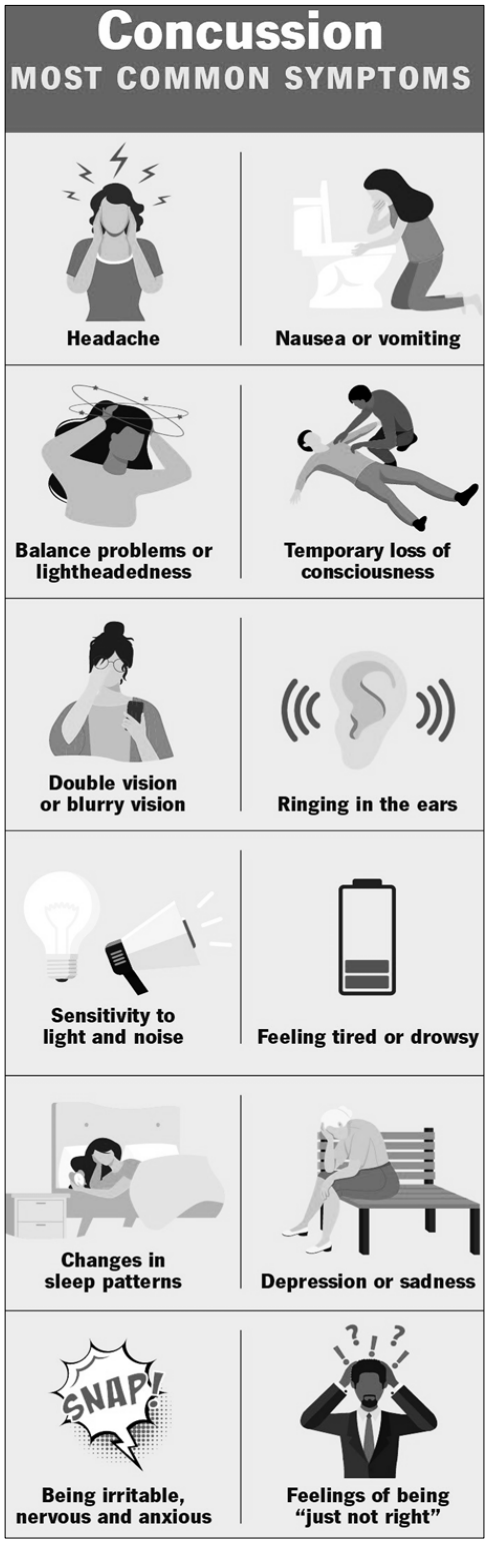
Behaviour	Response
 Eye Opening Response	4. Spontaneously 3. To speech 2. To pain 1. No response
 Verbal Response	5. Oriented to time, person and place 4. Confused 3. Inappropriate words 2. Incomprehensible sounds 1. No response
 Motor Response	6. Obeys command 5. Moves to localised pain 4. Flex to withdraw from pain 3. Abnormal flexion 2. Abnormal extension 1. No response

F. SYMPTOMS OF CONCUSSION

1. Confusion and amnesia:
   - Often occurs without preceding loss of consciousness.
   - May take several minutes for symptoms to become apparent.
   - The amnesia almost always involves loss of memory for the traumatic event and can include loss of recall of events immediately before and after the head trauma.
2. Headache, dizziness, nausea.
3. Lack of awareness of surroundings.
4. Over the next hours to days may see:
   - Changes in mood and ability to think or perform usual activities.
   - Sensitivity to light and noise.
   - Sleep disturbances.

G. SIGNS OF CONCUSSION

1. Vacant stare (befuddled expression).
2. Delayed verbalization (slower to answer questions or follow instructions).
3. Inability to focus attention (easily distracted and unable to follow through with normal activities).
4. Disorientation (walking in the wrong direction, unaware of time of day, etc. that is different from baseline).
5. Slurred speech or speech that is different from baseline.
6. Memory problems (may repeatedly ask the same question).
7. Any loss of consciousness is a sign of concussion but there does not need to be loss of consciousness in order for a concussion to be diagnosed.



See **Appendix 21. FALLS** for more information.

Chapter 22. DIETS

It is important to have knowledge about diets as you may be expected to prepare meals and must know how to provide the appropriate textures per the person's diet order and eating protocol.

A. DIET TEXTURES

1. **Regular Diet**
2. **Chopped/soft Diet**
   a. The protocol should describe exactly how big to chop the food such as ½ inch square pieces or sugar cube size, M&M size, etc.

mypricechopper.com/

3. **Ground Diet**
4. **Pureed Diet**
   a. Never mix all food together and place in blender (especially sandwiches). Each food should be pureed separately.
   b. To serve the ingredients of a sandwich, puree each ingredient separately and serve. Do not serve the bread as bread carries a high risk for choking.
   c. **REMEMBER: If you would not eat it yourself, do not serve it.**

B. THERAPEUTIC DIETS

Therapeutic diets are those served due to specific medical conditions and needs such as: (see Appendix 22 for descriptions of various diets)

1. **Gluten Free Diet**
2. **Diabetic Diet**
3. **Low Sodium Diet**
4. **Clear Liquid Diet**

C. THICKENED LIQUIDS

1. When someone cannot swallow thin liquids without aspirating, they are often placed on "thickened liquids" which means that all liquids are served at a specific thickness ordered by a medical provider or speech therapist.
2. Reasons for ordering thickened liquids includes:
   - Thin liquids move fast and can spill out of the mouth or into the throat before swallowing. Thickened liquids flow more slowly.
   - Thin liquids are more difficult to control in the mouth but thickening a liquid keeps the sip of fluid together making it easier to control when swallowing.

3. **Levels of thickness:**
   a. These were previously classified into three levels: Nectar thick, Honey thick, and Pudding thick.
   b. This classification system has been expanded to the 5 levels listed below:
      0) **Regular thin liquids** are at level 0
      1) **Slightly thick:**
         - Similar to V8 juice or Ensure
      2) **Mildly thick:** (previously designated Nectar thick)
         - Coats the glass, beads on the end of a fork, or pours like cream.
         - Same consistency as eggnog or fruit nectar.
         - You can buy some products with this level of thickness, including mango nectar juice and some juice smoothies.
      3) **Moderately thick:** (previously designated Honey thick)
         - Looks like honey pouring off a spoon.
         - The spoon should stand up in a glass of moderately thick liquid, but you should still be able to drink it out of the glass.


Ohio DDD med manual

         - This level of thickness can be made up naturally in a blender with bananas, smooth yogurt, or an avocado used as "thickening agents". Fruits, protein powders, Ensure, Boost, Carnation Instant Breakfast, etc. can be added to improve taste and increase calorie count.
      4) **Extremely thick** (previously designated Pudding thick)
         - Requires "drinking" it with a spoon. You cannot drink it out of a glass.
         - It will stay on a spoon like whipped cream.


freepik.com

4. **Cautions regarding thickened liquids:**
   a. If a thickened liquid diet is ordered, all liquids, even soups need to be thickened.
   b. Soups that are of a mixed consistency (have chunks of meat, vegetables, rice, etc.) are challenging as the broth (if left thin) can spill into the throat and airway while chewing the solid food. These should not be served. To be safe, puree and adjust to the required thickness.

   c. Ice cream in the form of malts, shakes, etc. will turn into a thin liquid as they melt in the mouth therefore would need a thickening agent such as a thickening powder, mashed banana, or yogurt.
   d. The thickness of a liquid can change depending on the temperature.
5. **Thickening agents:**
   a. Most are either starch- or gum-based.

thickit.com

   - Starch based thickeners expand by capturing the fluid. They keep absorbing more liquid and get thicker after they are prepared and when refrigerated. They cannot be made up ahead of time.
   - Gum-based thickeners must be vigorously shaken or blended with the fluid to appropriately get into solution and thicken it.

   b. **Thickening agents** are easy to use, however, they:
      - Are poor at quenching thirst.
      - Can alter the taste of the beverage, leading to refusals and less fluid consumed by the person which can lead to dehydration.
      - Are very constipating.
      - Can affect absorption of medications depending on the type of thickener and how much is used.
      - Cause the person to feel full faster contributing to inadequate nutrition and weight loss.

See **Appendix 22. DIETS** for more information.

All clipart images in Section 2, except where indicated, were obtained from clipart-library.com