



HEALTH AND MEDICATION ADMINISTRATION MANUAL

FOR PERSONS WITH INTELLECTUAL/DEVELOPMENTAL DISABILITIES

A STUDY GUIDE AND REFERENCE MANUAL
Section 3B, Appendix 2024



DEPARTMENT OF
**PUBLIC HEALTH &
HUMAN SERVICES**



Table of Contents

• Appendix 13. DIABETES MELLITUS	1
A. GLUCOSE	1
B. SYMPTOMS OF DIABETES MELLITUS.....	3
C. COMPLICATIONS OF DIABETES	4
D. AVOIDING FOOT PROBLEMS IN THE PERSON WITH DIABETES - TOENAIL CARE	5
E. BLOOD SUGAR MONITORING:.....	6
F. PROCEDURE FOR INJECTABLE GLUCAGON	9
G. INTRANASAL GLUCAGON (BAQSIMI®).....	10
H. EFFECT OF FOODS ON BLOOD GLUCOSE.....	11
• Appendix 14. DEHYDRATION	12
A. DETERMINING FLUID REQUIREMENTS.....	12
B. CAUSES OF EXCESS WATER LOSS	14
• Appendix 15. GASTROINTESTINAL SYSTEM.....	15
A. SWALLOWING	15
B. GASTROESOPHAGEAL REFLUX	16
C. CONSTIPATION	17
D. HEMORRHOIDS.....	18
E. FEEDING TUBES	20
1. Nasogastric tube (NG tube).....	20
2. Gastrostomy tubes	21
3. Jejunostomy tubes (J-tube).....	22
4. General instructions regarding all feeding tubes	22
F. CARE OF FEEDING TUBE AND INSERTION SITE	23
G. OSTOMY CARE	25
• Appendix 16. ASPIRATION PNEUMONIA	33
A. PREDISPOSING CONDITIONS OR RISKS FOR ASPIRATION.....	33
B. CLASSIFICATION OF ASPIRATION SYNDROMES	34
C. PREVENTION.....	34
1. Swallowing evaluations	34
2. Diets	34
3. Thickeners.....	34
4. Chin tuck	35

HEALTH AND MEDICATION ADMINISTRATION MANUAL

Table of Contents

5. Tube feedings	35
6. Oral hygiene.....	35
• Appendix 17. SLEEP APNEA	37
A. STEPS FOR USE OF CPAP/BIPAP MACHINE	37
B. CLEANING AND MAINTAINING CPAP/BIPAP EQUIPMENT	38
C. POTENTIAL PROBLEMS.....	38
• Appendix 18. ALLERGIES.....	39
A. ALLERGIES.....	39
B. TREATMENT	39
7. Emergency treatment – EpiPen®.....	40
• Appendix 19. SKIN PROBLEMS	41
A. SHINGLES.....	41
B. INTERTRIGO	44
C. PRESSURE SORES, ULCERS	44
D. METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS.....	48
• APPENDIX 20: VITAL SIGNS.....	49
A. PULSE OXIMETRY	49
B. BLOOD PRESSURE	49
• Appendix 21. FALLS.....	52
A. FACTORS THAT INCREASE THE RISK FOR FALLING	52
• Appendix 22: DIETS.....	53
A. TEXTURES	53
1. Regular Diet	53
2. Chopped/soft Diet	53
3. Ground Diet.....	53
4. Pureed Diet	53
5. Mechanical Soft Diet	54
B. DIET TEXTURE TABLES	55
C. RESTRICTED DIETS.....	59
1. Lactose restricted.....	59
2. Gluten or wheat restricted	59
D. THERAPEUTIC DIETS	59
1. Specific Medical Conditions	59
2. Clear Liquid Diets.....	59

HEALTH AND MEDICATION ADMINISTRATION MANUAL

Table of Contents

3. Full Liquid Diet	60
E. SPECIFIC DIET GUIDELINES.....	60
1. “BRAT” Diet.....	60
2. Low Sodium Diet	60
3. GERD Diet	61
4. Vitamin K Restrictions	61
• Appendix 23: SAMPLE TEST	62
• Appendix 24. ANSWERS TO SAMPLE TEST	67

Appendix 13. DIABETES MELLITUS

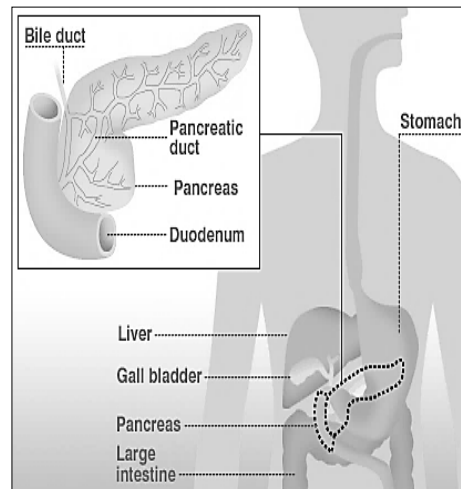
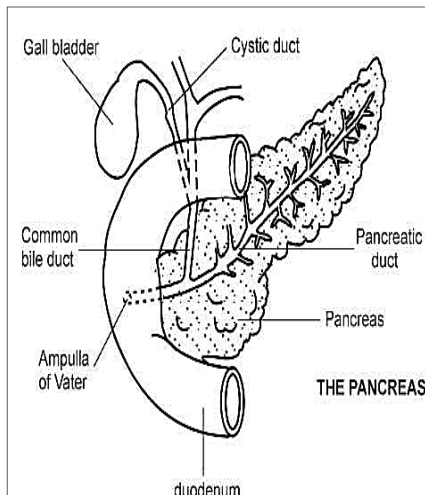
A. GLUCOSE

Glucose is the chief fuel for the body. The source of this fuel/energy is carbohydrates.

Glucose is a form of sugar. Often the word sugar is used when referring to glucose levels in the blood. Other sources of fuel for the body include protein and fats. Glucose is the only fuel that produces enough energy for brain function. Glucose levels must stay within normal limits to keep the body functioning normally and to its fullest capacity.

1. The Pancreas

- a. The pancreas is the organ in the body primarily responsible for making sure blood glucose levels remain within normal limits.
 - The pancreas is located below the liver and behind the stomach
 - The pancreas contains cells called the Islets of Langerhans. Some of these cells secrete glucagon and other hormones to help with digestion. Some cells secrete insulin.

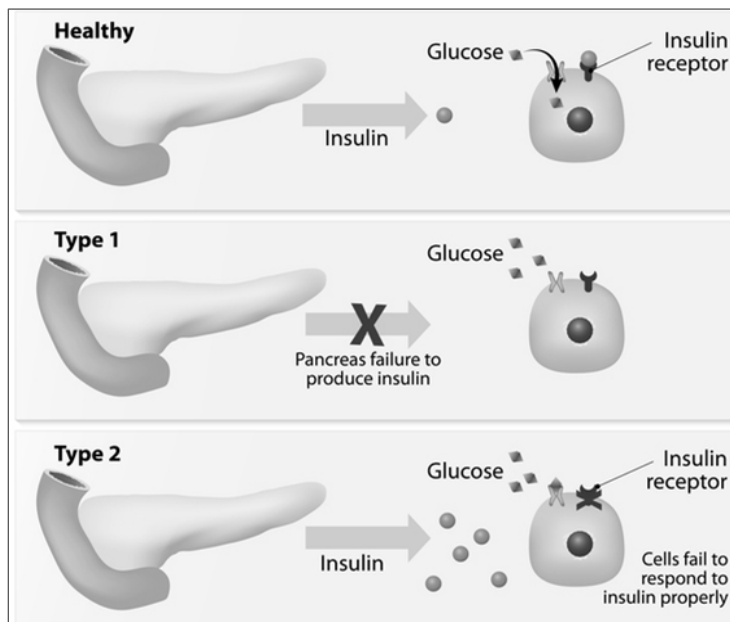


- To regulate blood glucose levels, when the body senses a rise in blood glucose, it sends a signal to the pancreas. In response, the pancreas sends more insulin into the blood stream.
- Insulin lowers the glucose level in the blood by acting like a key to open up cells in the body that allow glucose to pass from the blood into the cells. The glucose can then be used for fuel/energy.
- The pancreas produces insulin and releases it into the blood stream all during the day to keep blood glucose levels in balance.

- b. When the body gets too low on glucose, such as during hard work, exercise or between meals, a signal is sent throughout the body which causes the pancreas to produce glycogen. Glycogen can then supply the body with fuel/energy.
- c. When the body cannot detect enough sugar sources in the blood stream, it begins to breakdown fats for fuel.
 - When this happens, there are substances left in the blood from the fat burning process. These substances are called ketones.
 - If too many ketones accumulate in the bloodstream, the person can become very ill.
- d. When the body has no sugar and/or no fat to use for fuel, it will start to break down protein from the muscles in the body including the heart muscle. This cause significant illness and is a medical emergency.

2. Insulin deficiency

- a. Hormonal regulation of glucose is lost due to insulin deficiency. When a person has diabetes, the pancreas either cannot supply enough insulin or the cells in the body are unable to use the insulin produced. This causes a rise in blood glucose levels (hyperglycemia).



- Absolute insulin deficiency is when the pancreas no longer produces any insulin.
- Insulin deficiency is due to the pancreas either not producing enough insulin or the insulin produced cannot unlock the cells to allow glucose to enter and be used as fuel.

3. Predisposing factors for developing diabetes:

- **Genetics**
- **Viruses** – the cells in the pancreas that produce insulin can be attacked by a virus and destroyed.
- **Abnormal immune response** – a person’s body may produce antibodies against the cells in the pancreas which destroy the cells or attack the insulin that the pancreas produces.
- **Gestational** – during pregnancy, some women have temporary diabetes that corrects itself after the baby is born but sometimes the diabetes does not go away.
- **Medications** – certain drugs, especially certain psychotropic drugs, can affect blood glucose levels and lead to the development of diabetes.
- **Obesity** – being overweight predisposes a person to develop diabetes.

B. SYMPTOMS OF DIABETES MELLITUS

1. Symptoms may begin slowly and usually are recognized by the way the body reacts to a lack of fuel which can cause weakness and tiredness.
2. An individual may feel hungry all the time because the cells are “starved” for fuel and cannot use the glucose that is in the blood stream.



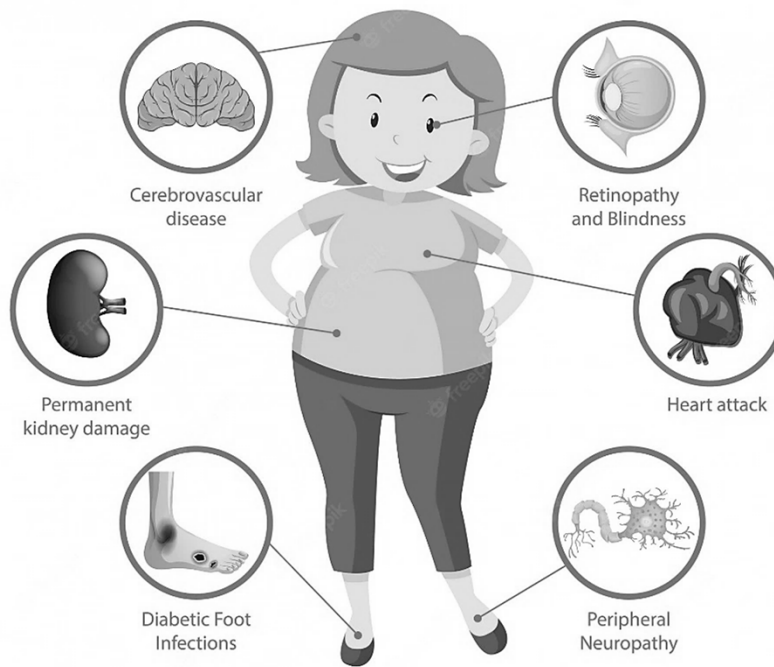
3. When the blood glucose levels are too high and cells cannot absorb the glucose for fuel, the extra glucose accumulates in the blood. This circulates through the body and reaches the kidneys which normally filter out the glucose and use it for fuel. But when the body tries to get rid of “extra” glucose by increasing fluid to the kidneys to dilute the glucose, the person has extra fluid to get rid of which is done by urinating. This accounts for the frequent urination seen in diabetes.
4. Because of frequent urination, the body loses extra fluid and becomes dehydrated which triggers the thirst response.
5. Other signs and symptoms include:
 - Unexplained weight loss
 - Blurred vision
 - Slow-healing cuts or sores
 - Frequent infections.

SYMPTOMS OF DM

- ◆ Thirst
- ◆ Hunger
- ◆ Tiredness
- ◆ Weight loss
- ◆ Frequent urination
- ◆ Slow wound healing
- ◆ Severe irritation and itching (especially vaginal or rectal)
- ◆ Fruity smelling breath (like overly ripe apples or newly mown hay)

C. COMPLICATIONS OF DIABETES

Diabetes affects many organ systems, especially if not well controlled.

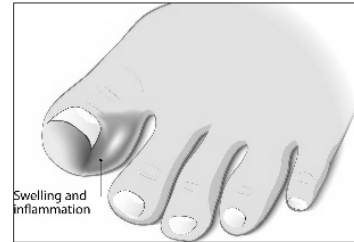


freepik.com/free-vector/diabetes

D. AVOIDING FOOT PROBLEMS IN THE PERSON WITH DIABETES - TOENAIL CARE

Toenail care is essential for everyone but especially for diabetics to prevent serious foot problems. Toenails that are too long, too short, or jagged pose a risk for foot health. These guidelines are appropriate for everyone, not just diabetics.

- Sharp, long toenails can scratch or cut the skin of the feet and legs without the person being aware of this happening if diabetic neuropathy is present.
- Toenails that are too short increase the risk of ingrown toenails. Ingrown toenails develop when the corner of the nail grows into the skin at the side of the nail. These can be very painful and become infected.



healthxchange.sg/diabetes

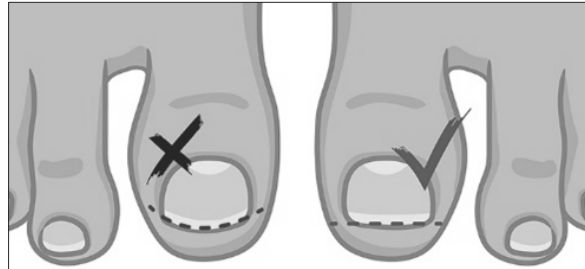
1. Procedure:

- a. In general, the nails need to be trimmed or at least checked weekly for trimming needs.
- b. Gather supplies: toenail clipper or nippers, nail file, emery board, and orange stick. Be sure that instruments used are sharp, as dull clippers or nippers can damage the nail.
 - Before and after each use, sanitize toenail clippers and nippers with rubbing alcohol and a Q-tip. This helps prevent transfer of bacteria or fungi from the instruments to any open wounds on the foot.
- c. Put on gloves and clean the feet gently but thoroughly with soap and warm water. Soaking the foot will soften the nails making them easier to bend but can lead to tearing and fraying of the nails, reducing the likelihood of getting a clean, smooth cut.
 - Clean under each toenail with the orange stick, wiping it on a clean washcloth between each toe. Do not use anything sharp to clean under the toenails.
 - Dry between each toe after washing.

Note: if the toenails are exceedingly thick due to a fungal infection, psoriasis, etc., soaking them may be the only way to soften the nails enough to clip. In this case, let the toes sit in a warm water and soap mixture for 10 to 30 minutes before drying and making small, incremental cuts to avoid splintering.

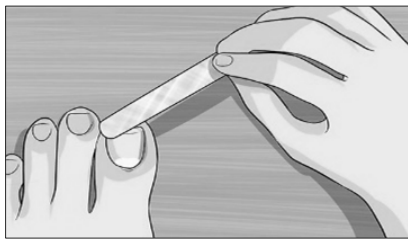
d. Hold the foot steady with one hand while trimming each nail with your other hand. Start trimming the little toe and work medially to great toe.

- Trim the nail level with the tip of the toe, but never so short as to break the seal between the nail and the nailbed.
- Trim straight across and then use a nail file or emery board to slightly round the edges.



<https://www.sportsinjuryclinic.net/toe-pain/how-to-avoid-ingrown-toenail>

- Make several small cuts making sure not to cut the skin. Never cut the nail in one clip all the way across the nail.
- Be very careful at the corners of the nails as if these are clipped short, ingrown toenails can result.



healthxchange.sg/diabetes

- When filing nails, use long strokes in one direction. Avoid using a back and forth sawing motion.
- Never cut cuticles.

e. Once you are done, change gloves and apply lotion to the top and bottom of the person's feet rubbing it in thoroughly. Wipe off excess lotion with a towel.

E. BLOOD SUGAR MONITORING:

1. Monitoring sugar levels helps fine-tune diabetes control.
2. Type 1 diabetics may need to test 4+ times daily.
 - a. Levels are often checked:
 - Fasting (nothing to eat or drink for 8 to 12 hours).
 - Before or after meals and/or bedtime.
 - 1 to 2 hours after an "as needed" insulin injection is given.



3. Hemoglobin A1c testing:

- a. Measures average blood sugar level over the past 2 to 3 months.
- b. The goal is generally a level of 7% or less.

4. Non-invasive or minimally invasive glucose monitoring:

- a. Non-invasive glucose monitoring refers to the measurement of blood glucose levels without drawing blood, puncturing the skin, or causing pain or trauma.
- b. Some devices are simply held up to the skin, such as a fingertip, and are able to read glucose levels.
 - Most of these devices use some sort of light (infrared waves, radiofrequency waves) to assess glucose levels.



<https://gluco-wise.com/>

5. Continuous glucose monitoring (CGM):

- a. For most, interstitial fluid is accessed by an electrochemical enzymatic sensor inserted subcutaneously by the patient and changed every 7 or 14 days.
- b. Glucose readings are automatically transmitted to a device-specific receiver, smartphone, smart watch, or other smart device.
- c. Alternatively, a fluorescence-based sensor can be implanted subcutaneously by a health care professional. A transmitter (placed on the skin) is attached to the sensor (or worn over the sensor), and it transmits the glucose data to a receiver/smartphone. The implanted sensor needs to be replaced after 90 days.

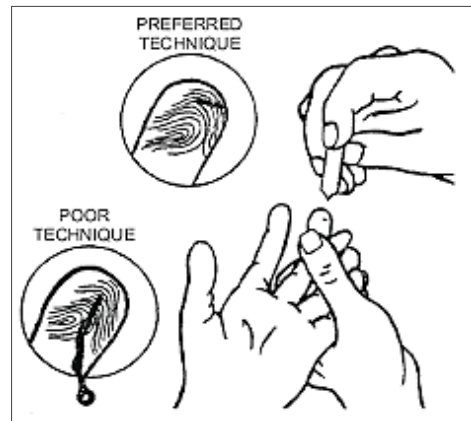
**6. Invasive glucose monitoring: use of a glucometer:**

- a. There must be an order from the medical provider in order to do glucose testing.
- b. The order should include when to test and response to the results obtained.
- c. Follow instructions provided by the manufacturer for proper use and care of glucometer and lancets.
- d. The glucometer and lancet pen (if used) can only be used by the person for whom it was purchased.



Sample collection:

- a. **Selection of puncture site:** The middle or ring finger are ideal as they are generally less calloused and less sensitive to pain than the index finger. Be sure to apply the lancet slightly off center but not at the very side of the finger. Rotate finger sites to avoid callus formation.



- The presence of any redness, bruising, or callus requires use of a different finger or site.
- There are alternate sites that can be used but they are not as accurate. Only use alternate sites at the direction of the medical provider.

- b. **Cleaning and disinfection:** essential to remove any contaminants. Dry completely to remove remnants of alcohol solution that could affect the reading.

- c. **Massaging the site:** the finger can be massaged gently before and after the puncture to stimulate blood circulation.
- Pressing the finger too hard will push fluid from the tissue into the blood and cause false low readings.
 - If it is difficult to obtain a good drop of blood from the fingertip, rinse fingers with warm water, then shake the hand below the waist.

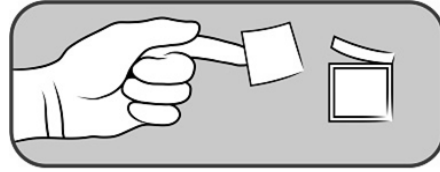
7. Protocol and results:

- a. You must have an order from a medical provider in order to do glucose testing. The order should include the following items that are listed for a glucose testing protocol.
- b. A protocol for glucose testing should include:
- **When to check** levels and what the target levels should be.
 - **What to do if** a level is too high or too low.
 - **When to notify** the medical provider with results.
 - **When to call 911** for an abnormal result.

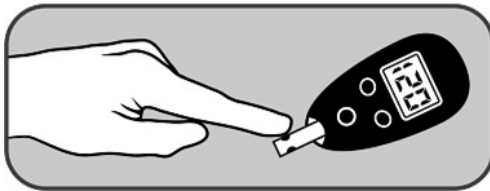
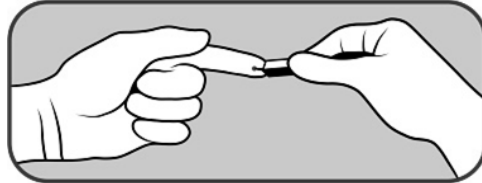


8. Procedure: steps for using a glucometer:

- a. Gather equipment, supplies. Perform hand hygiene, put on gloves.
- b. Have person wash hands.
- c. Cleanse area to be pricked with an alcohol pad. Be sure finger is dry before using lancet.
- d. Place lancet in pen (if a lancet pen is used). Lancets must never be used more than once.
- e. Turn glucometer on, insert strip (if needed for this glucometer).
- f. Puncture the side of the finger with the lancet.
 - Point finger downward and gently massage to get adequate sample.



clipart.me/free-vector/blood-sugar-test



clipart.me/free-vector/blood-sugar-test

- g. Gather the blood onto the strip.
- h. Using a gauze pad or cotton ball, wipe the finger and hold in place until bleeding stops.

- i. Read and record the blood sugar level on the appropriate form.
 - If the reading is low or high, check the parameters in place for notifying the appropriate healthcare professional.
 - Follow appropriate protocol steps for treating abnormal levels.
- j. Clean equipment, store supplies and dispose of used lancet and gloves.



<http://pennstatehershey.adam.com>

F. PROCEDURE FOR INJECTABLE GLUCAGON

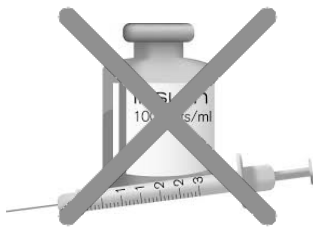
Glucagon is needed when blood sugar levels are very low, and the person is not able to safely swallow. There should be a protocol in place as to when glucagon should be given and there must be a medical provider order. Note: some kits require mixing glucagon from powder.

Procedure:

1. Remove needle protector and inject the entire contents of the syringe into the glucagon powder. Do not remove the plastic clip on the syringe.
2. Remove the needle from the bottle.
3. Swirl the mixture gently until the powder dissolves. The solution should be clear (do not use if discolored).
4. Hold the bottle upside down and withdraw the contents into the syringe to the 1 mg mark on the syringe for adults and for anyone weighing over 44 pounds. The reconstituted solution is 1 mg/mL glucagon.
5. With your thumb and forefinger about two inches apart on either side of the injection site, pinch up on the back of the upper arm, abdomen, thigh, or buttock.
 - a. Insert the needle using one quick motion at a 90-degree angle (straight up and down).
 - b. Press the plunger to inject; when empty pull it straight out.
 - c. Turn the person onto their side as they may vomit after the injection.
 - d. Call 911 immediately after injection.
 - e. Symptoms should resolve in 10 to 15 minutes.
 - f. If the person doesn't regain consciousness in 10 minutes, administer a second glucagon injection.



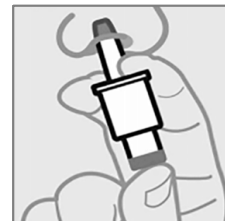
Ohio DDD med manual.



Remember – though med certified DSPs are allowed to inject glucagon per protocol and if trained to do so, non-licensed staff (ie DSPs) may not inject insulin.
























G. INTRANASAL GLUCAGON (BAQSIMI®)

1. Insert the tip of the intranasal device into one nostril and fully depress the plunger until the green line is no longer visible.
2. Call 911 immediately after use.
3. May repeat in 15 minutes if needed.



baqsimi.com

H. EFFECT OF FOODS ON BLOOD GLUCOSE

Increases Blood Glucose	Little or No Increase in Blood Glucose	
<p>Carbohydrates</p> <p>bread, crackers, tortilla </p> <p>cereals </p> <p>grains (rice, barley, corn) </p> <p>pasta, noodles </p> <p>potatoes, corn, yams </p> <p>fruits, juices </p> <p>milk, yogurt </p> <p>sweet foods, snacks </p>	<p>Protein</p> <p>fish </p> <p>poultry </p> <p>meat </p> <p>eggs </p> <p>cheese, plain Greek yogurt </p> <p>beans, lentils </p> <p>tofu </p> <p>nuts, seeds </p>	<p>Fats</p> <p>oils </p> <p>salad dressings </p> <p>butter margarine, </p> <p>Most vegetables </p> <p>Extras water </p> <p>coffee, tea </p> <p>sugar-free soda </p>

Appendix 14. DEHYDRATION

A. DETERMINING FLUID REQUIREMENTS

1. Recommendations:

- a. On average a healthy adult needs one quart of fluid for every 50 pounds of body weight, an easy calculation to use is:

- Divide body weight (in pounds) by 50 = quarts needed per day.
- Then convert to cups (1 quart = 4 cups) to get an estimate of cups of fluid needed per day.



- b. These recommendations cover fluids from water, other beverages, and food. About 20% of daily fluid intake comes from food.

2. How much water is needed also varies by:

- a. Where you live: you need more water if you live in hot, humid, or dry climates as well as if you live in the mountains.
- b. Your diet: a diet high in salty, spicy, or sugary foods requires more fluids.
- c. The season or temperature: more water is needed during hot weather due to loss from perspiration.



Cups of fluid needed per day based on weight

Weight (lb)	Quarts needed per day	Approximate cups needed/day
100	2	8
110	2.2	8 ³ / ₄
120	2.4	9 ¹ / ₂
130	2.6	10 ¹ / ₂
140	2.8	11 ¹ / ₄
150	3	12
160	3.2	12 ³ / ₄
170	3.4	13 ¹ / ₂
180	3.6	14 ¹ / ₂
190	3.8	15 ¹ / ₄
200	4	16
210	4.2	16 ³ / ₄

3. Special diets:

- a. If someone is on a pureed diet, the fluid requirements per day will be quite different from those for people eating a regular diet.
- b. Pureed foods are high in water, typically 70 to 90%.
- c. For a thickened liquid diet, rather than adding a thickening agent, substituting foods high in water content or pureed foods is preferred.

Water content of common pureed foods and beverages

Food	Serving size	Water content
Dairy: Milk 2%	1 cup (250 ml)	89% or 223 ml
Chocolate milk, reduced fat	1 cup (250 ml)	82% or 205 ml
Yogurt, plain, low fat	$\frac{3}{4}$ cup (375 ml)	85% or 319 ml
Pureed cottage cheese, 2%	$\frac{1}{2}$ cup (125 ml)	81% or 101 ml
Pudding, vanilla, ready to eat	$\frac{1}{2}$ cup (125 ml)	72% or 90 ml
Vegetables: Beets, canned, pureed	$\frac{1}{2}$ cup (125 ml)	91% or 114 ml
Carrots – cooked, pureed	$\frac{1}{2}$ cup (125 ml)	90% or 113 ml
Creamed corn, canned, pureed	$\frac{1}{2}$ cup (125 ml)	79% or 99 ml
Peas, cooked, pureed	$\frac{1}{2}$ cup (125 ml)	82% or 103 ml
Mashed potatoes with butter/milk	$\frac{1}{2}$ cup (125 ml)	76% or 95 ml
Sweet potato, canned, mashed	$\frac{1}{2}$ cup (125 ml)	74% or 93 ml
Squash, cooked, mashed	$\frac{1}{2}$ cup (125 ml)	90% or 113 ml
Fruits: Apple juice	$\frac{3}{4}$ cup (375 ml)	88% or 330 ml
Applesauce	$\frac{1}{2}$ cup (125 ml)	88% or 110 ml
Avocado, pureed	$\frac{1}{4}$ cup (60 ml)	60% or 50 ml
Banana, mashed	$\frac{1}{2}$ cup (125 ml)	84% or 105 ml
Orange juice	$\frac{3}{4}$ cup (375 ml)	88% or 330 ml
Peach puree	$\frac{1}{2}$ cup (125 ml)	89% or 111 ml
Protein: Baked beans	$\frac{1}{2}$ cup (125 ml)	72% or 90 ml
Chicken, canned	$\frac{1}{2}$ cup (125 ml)	67% or 84 ml
Refried beans, pureed	$\frac{1}{2}$ cup (125 ml)	78% or 98 ml
Egg, scrambled	$\frac{1}{2}$ cup (125 ml)	76% or 95 ml
Tuna, canned	3 oz (89 ml)	78% or 69 ml
Grains: Cream of wheat	1 cup (250 ml)	88% or 220 ml
Oatmeal	1 cup (250 ml)	84% or 210 ml
Pasta, pureed	$\frac{1}{2}$ cup (125 ml)	86% or 108 ml

B. CAUSES OF EXCESS WATER LOSS

1. Lack of access:

- a. Some individuals are unable to get a drink themselves or communicate thirst.
- b. During travel, access may be limited.



2. Illness/injuries:



- a. Vomiting and diarrhea; fever.
- b. Increased urination (infection, diabetes)
- c. Lung or kidney disease.
- d. Burns (water is lost through damaged skin).



3. Medications:

- a. Diuretics, antihistamines, anti-inflammatory drugs such as ibuprofen.
- b. Some psychiatric medications with side effects causing diarrhea, vomiting, and loss of appetite.



4. Activities and environment:

- a. Hot, dry windy days increase water loss.



- b. Alcohol consumption (causes excessive urination and sweating).



5. Diets:

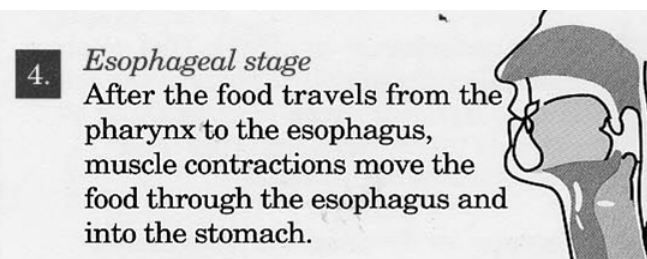
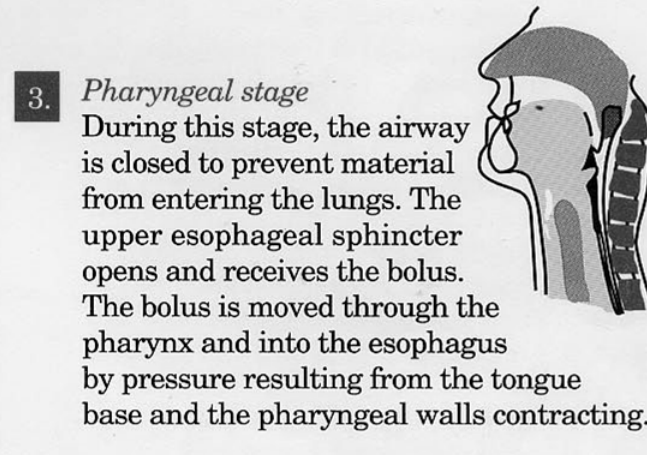
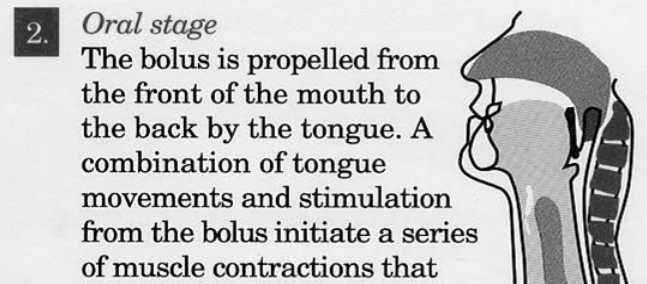
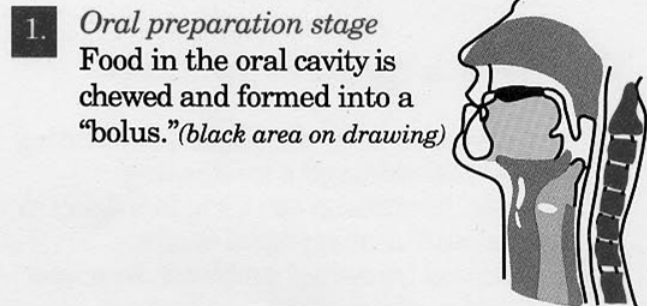
- a. Some diets use laxatives and diuretics to shed “water weight”.

Appendix 15. GASTROINTESTINAL SYSTEM

A. SWALLOWING

Problems during any of the four phases of swallowing can cause dysphagia.

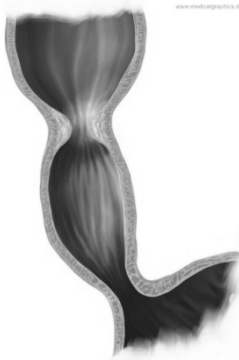
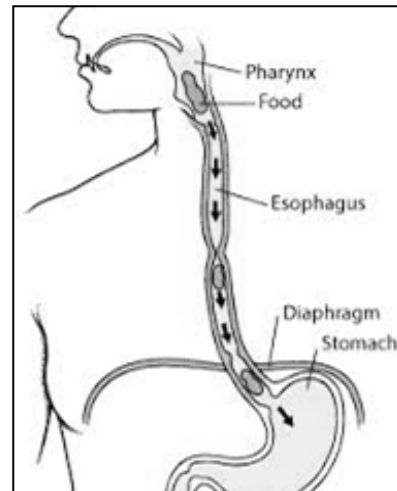
- 1/2. **Oral phase (includes oral preparation phase):** occurs in the front part of the mouth and includes chewing and mixing food with saliva. This phase can take up to a minute.
3. **Pharyngeal phase:** Occurs as the bolus moves from the pharynx into the esophagus. This normally takes only a fraction of a second but can take longer and may require multiple tongue retractions in older people and those with neuro-motor disabilities.
4. **Esophageal phase:** Covers the journey from the top of the esophagus to the stomach and generally takes 10 to 20 seconds.



B. GASTROESOPHAGEAL REFLUX

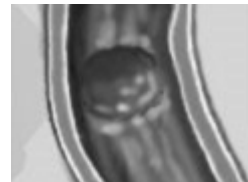
1. Mechanism:

- a. Food goes from the mouth to the stomach through the esophagus.
- b. The LES (lower esophageal sphincter) is a ring of muscle at the end of the esophagus.
 - During swallowing, the LES relaxes to allow food into the stomach.
 - Then it tightens to stop food and acid from backing up.
 - If the LES relaxes inappropriately, stomach contents can back up into the esophagus.



2. Serious complications:

- a. Ulcers in the esophagus which may bleed. —▶
- b. Barrett's esophagus: a precancerous condition.
- c. Narrowing of the esophagus due to scarring.
 - Food and pills may get stuck.
- d. Aspiration pneumonia and permanent lung damage.
- e. Dental problems (repeated episodes of acid reflux erode the enamel).



www.MedicalGraphics.de" license (CC BY-ND 4.0 EN)

3. Treatment:

a. Medications:

- 1) **Antacids:** neutralize acid for short term relief of symptoms. Examples: Tums®, Maalox®, Mylanta®.
- 2) **Surface agents:** Sucralfate (Carafate®) adheres to the surface of esophagus/stomach, promotes healing, and offers protection.
- 3) **Histamine 2 receptor antagonists (H2 blockers):** decrease acid production but have a slow onset of action. Example: Pepcid®.
- 4) **Proton pump inhibitors (PPIs):** stronger and more effective than H2 blockers. Examples: omeprazole (Prilosec®), pantoprazole.

- b. **Surgical treatment:** includes repair of hiatal hernias and strengthening the lower esophageal sphincter.

C. CONSTIPATION

1. Causes:

a. Medical conditions:

- Neurological disorders: multiple sclerosis, spinal cord injury, Parkinson's disease, diabetes mellitus.
- Metabolic disorders: hypothyroidism, low potassium levels, pituitary problems, etc.
- Irritable bowel syndrome.
- Psychiatric disorders such as anorexia nervosa.
- Obstructing lesions in the GI tract such as colon cancer.

b. Medications:

- Opioids (narcotics such as hydrocodone).
- Anticholinergic drugs:
 - Antihistamines
 - Muscle relaxers
 - Antipsychotics
 - Drugs used for urinary incontinence
 - Some antidepressants
- Iron supplements, benzodiazepines, and even ibuprofen.
- Some blood pressure medications such as Verapamil®.
- Aluminum containing medications such as antacids and sucralfate.

2. Treatment:

There are many treatments for constipation from stool softeners to laxatives. Fiber and water are the two most important components for preventing and treating constipation.

a. Fiber:

- Recommended amount of daily fiber is 20 to 35 grams.
- Breakfast cereals, citrus fruits and prunes are excellent sources.
- Psyllium powder (e.g., Metamucil®), if taken with fluids is a good source of fiber. It works by absorbing water, increasing stool mass.
- Adding fiber can cause bloating and gas. Start with small amounts and increase gradually.

b. Fluids:

- Extremely important in preventing and treating constipation
- A person weighing 150 lbs. and on a regular diet, needs about 12 cups of fluids daily. About 20% comes from fluid contained in food.
- Fluid requirements increase with:
 - Sweating, fever, illness (vomiting, diarrhea).
 - Activities, hot weather.
- Caffeine and alcohol may act as diuretics and contribute to dehydration.



D. HEMORRHOIDS

Hemorrhoids are enlarged or swollen veins in the lower rectum. They are common, occurring in both men and women. Although they do not usually cause serious health problems, they can be annoying and uncomfortable.

1. Internal hemorrhoids:

- Form in the lining of the anus and lower rectum.
- Usually painless but can be painful if pushed through the anal opening during a bowel movement.
- Tend to bleed during bowel movements.

2. External hemorrhoids:

- Form under the skin around the anus and bulge outside the anus.

3. Thrombosed hemorrhoids:

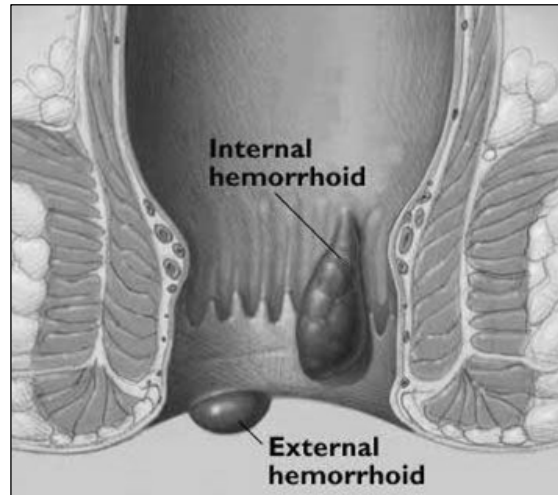
- Occur when blood pools in an external hemorrhoid and forms a clot (thrombus).
- Cause severe pain, swelling, inflammation, and a hard lump near the anus.

4. Causes include:



As well as:

- Being obese or pregnant.
- Regular heavy lifting.
- Having anal intercourse.



5. Signs and symptoms:

- Painless rectal bleeding - the amount of blood is usually small but can cause the water in the toilet to appear bright red.
- Leakage of feces. **PLUS:**

Dr.Jockers.com

**6. Common treatments:**

- Treat constipation.
- Pain relief in the form of foams, ointments, or wipes. Some contain numbing medicine such as lidocaine.
- Steroid creams to reduce swelling and pain.
- Medicines such as Preparation H® can help shrink swollen hemorrhoids and relieve itching.
- Sitz bath – soaking the rectal area in warm water for 10 to 15 minutes three times daily improves blood flow and relaxes the muscle around the anus.

7. Prevention:

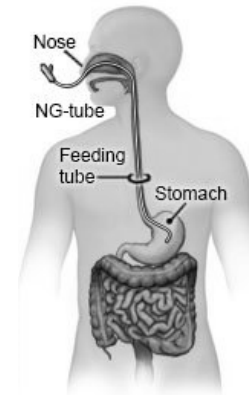
- Eating high-fiber foods such as fruits, vegetables, and whole grains will soften the stool and increase bulk, and thus help avoid straining.
- Drinking plenty of fluids daily will help keep stools soft.
- Avoid straining as that creates greater pressure in the veins.
- Don't delay going to the restroom when the urge is felt. Waiting will allow the stool to dry out and be harder to pass.
- Exercise prevents constipation and reduces pressure on the veins which can occur with long periods of standing or sitting.
- Avoid sitting for extended periods as that increases the pressure on the veins in the anus.

E. FEEDING TUBES

Insertion of a feeding tube (nasogastric, gastrostomy or jejunostomy) occurs when someone cannot take adequate food or liquids by mouth to maintain health. A feeding tube may be used to provide part or all of a person's nutritional intake. It may be used to provide supplements and medications.

1. Nasogastric tube (NG tube):

- a. A nasogastric tube is a thin, soft tube that is inserted through the nose, down the throat and esophagus, and into the stomach.
- b. It can be used to give medications, liquids, and liquid food. It is generally used for a short amount of time such as after abdominal surgery.
- c. Problems associated with NG tube feedings include diarrhea, nausea, vomiting, abdominal cramps, swelling, injury to areas it travels through, and aspiration.



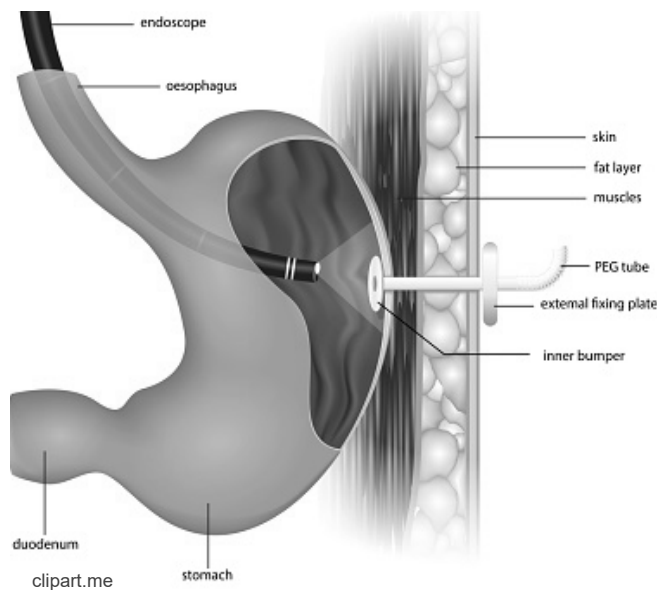
Location of Feeding Tubes

<p>NG Tube Feedings (Nasogastric)</p> <p>The feeding tube passes through the nose, down the throat and esophagus and ends in the stomach.</p> <p>NI Tube Feedings (Nasointestinal)</p> <p>The feeding tube passes through the nose, throat and esophagus, continues through the stomach, and ends in the first section of the small intestine.</p> <p>G Tube Feedings (Gastrostomy)</p> <p>The feeding tube is inserted directly into the stomach.</p> <p>J Tube Feedings (Jejunostomy)</p> <p>The feeding tube is often surgically inserted into the jejunum – the middle section of the small intestine – via endoscopy. Alternatively, a J tube can be threaded through a G tube into the small bowel.</p>	
---	--

peptamen.com/understanding-tube-feeding

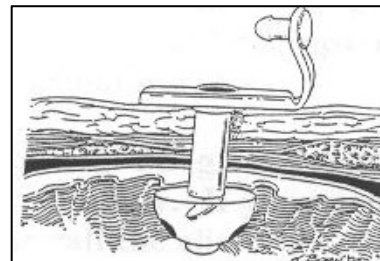
2. Gastrostomy tubes:

- a. A gastrostomy tube is commonly referred to as a G-tube or a PEG.
- b. G-tubes are placed into the stomach through an opening in the abdominal wall.
- c. Reflux often occurs when a G-tube is in place thus **it does not prevent aspiration pneumonia**. Plus, the person is still producing saliva which can be aspirated.
- d. **Advantages of gastric feeding:**
 - **More physiological:** food goes directly into the stomach the same as when it is swallowed, thus undergoes the same processing.
 - **More convenient** as boluses can be given at mealtime which does not interrupt other normal activities.
- e. **Types of gastrostomy tubes:**
 - Percutaneous endoscopic gastrostomy (PEG) tubes are placed using an endoscope.



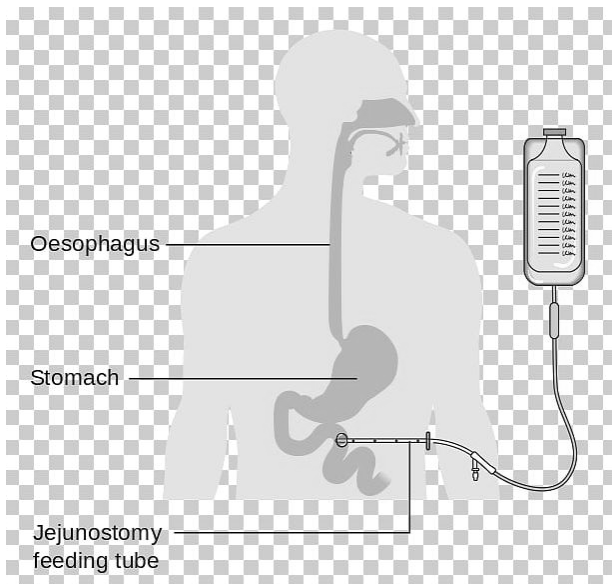
- Surgical gastrostomy tubes are inserted by surgical procedures under anesthesia.
- Replacement balloon gastrostomy tubes are used after an initial tube has created a tract between the stomach and the abdominal wall (this usually takes a month). If the tube is pulled out, the tract will begin to close within 2 hours unless a new tube is inserted.

- Feeding buttons are T-shaped plastic devices held in place by a mushroom shaped dome inside the stomach. The button remains in place and is capped by an attached safety plug between feedings.



Ohio DD Med Manual

3. Jejunostomy tubes (J-tube):



<https://imgbin.com/>

- A J-tube is placed in the small bowel (jejunum).
- Medications are rarely administered through a J-tube due to clogging and problems with absorption in the small intestine.
- There is less reflux seen than with a PEG as food is delivered farther from stomach.
- J-tubes are smaller thus feeding time is longer and should be given by continuous infusion with a feeding pump.

- Boluses are seldom tolerated as they can cause abdominal pain, diarrhea and dumping syndrome.
- J-tubes clog more easily and require more frequent flushing.
- J-tube feedings require nurses for administration.

NOTE: DSPs can administer feedings through a G-tube. With special training, DSPs can administer medications through a G-tube. DSPs **cannot** administer feedings or medications through a **J-tube, nasogastric, or nasointestinal tube.**

4. General instructions regarding all feeding tubes:

- Before and after a bolus or feeding, flush tube with 30-60 cc warm water.
- Be sure to kink the tubing before removing cap or disconnecting a syringe to prevent backflow.
- Leave the person at a 45-degree upright position for at least 30 to 60 minutes after feeding.



youralsguide.com/feeding-tubes



- Provide mouth care** to the person. Drinking fluids washes bacteria out of the mouth so there are higher concentrations in the mouth when someone cannot drink orally. This can easily cause pneumonia if the person aspirates saliva.

- Provide care to the insertion site – see below.

5. Potential complications:

- a. Reflux of tube feeding from stomach to esophagus.
- b. Aspiration of refluxed feeding and aspiration of saliva from the mouth.
- c. Clogging of the tube.
- d. Cellulitis – infection of the skin around the feeding tube opening.
- e. Narrowing or closure of the opening through the abdominal wall.
- f. Ileus – the bowel stops working causing constipation, dehydration, abdominal pain, fever.
- g. Diarrhea.
- h. Nutritional concerns.

F. CARE OF FEEDING TUBE AND INSERTION SITE

1. General care of insertion site:

- a. Check skin for redness, irritation, or leakage of stomach fluid or contents.
- b. Use a gauze or clean cloth to clean skin with mild soap and water using a circular motion, moving outward from the tube to the outer skin area. Make sure G-tube is not becoming embedded and that it can be rotated within the stoma (the hole through the skin into the stomach).

2. General care of feeding tube (daily):

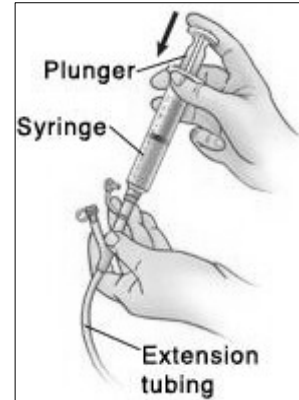
- a. Using gauze or a clean cloth, clean the tube with mild soap and water moving from the stoma site outward.
- b. The bolster: rotate a quarter turn every day to relieve pressure on the skin and allow aeration.
- c. An external bolster that is too tight can lead to skin breakdown.
- d. Be sure to clean thoroughly under the external bolster with water and a cotton swab daily.



abdominalkey.com

3. Flushing the tube:

- a. Tube flushing helps to keep the tube from clogging. It should be done before and after every feeding and medication administration.
- b. Flush the tube with warm tap water unless otherwise directed, using the amount ordered by the medical provider or per manufacturer.
- c. Do not use mildly acidic liquids (i.e., carbonated beverages such as soda or cranberry juice). Research has demonstrated that these acids can cause some formulas to coagulate and clog the tube.
- d. Do not flush the tube if feeding is interrupted by vomiting, abdominal pain, nausea, bloating, or fever. Stop using the tube immediately and notify the medical provider.



Ohio DDD med manual

4. Accidental G-tube removal:

- a. If a tube accidentally comes out, the person should be seen immediately as a G-tube tract begins to close within a couple of hours. Call the medical provider for instructions or have the person seen at the emergency department. Cover the stoma with a clean dressing.
 - If this is a recurrent problem, develop a protocol with the medical provider to follow.

5. Tips for unclogging a feeding tube:

- a. Attach a 60 mL syringe to the tube and pull back on the plunger to remove as much fluid as possible.
- b. Draw up at least 15 mL of warm water into the syringe, or enough to fill the part of the tube that is seen.
- c. Push the water into the tube. Do not use carbonated beverages or cranberry juice.
- d. Gently push and pull the plunger to loosen clog.
- e. If the clog doesn't release right away, clamp the tube and let the water "soak" for 15 minutes.
- f. Try gently massaging the tubing with fingertips.
- g. Unclamp the tube and repeat steps a through e until the tube is clear.

G. OSTOMY CARE

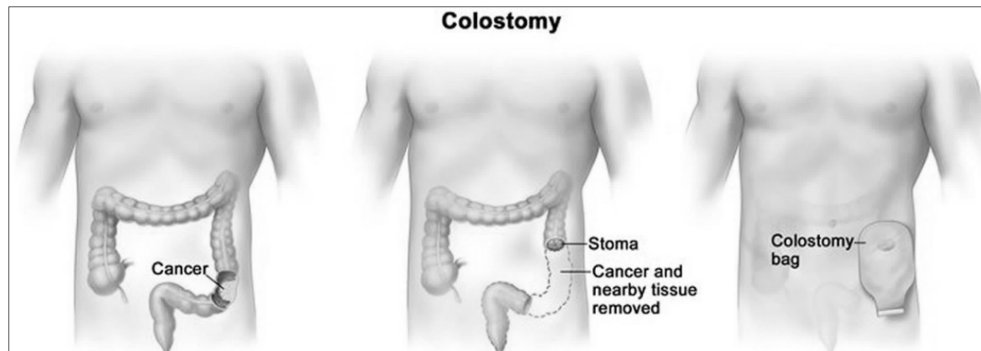
An ostomy causes a change in the way urine or stool exits the body as a result of a surgical procedure. Bodily waste is rerouted from its usual path because of malfunctioning parts. It can be temporary or permanent.

The stoma is the opening created by ostomy surgery. It is located on the abdomen and is dark pink in color. When you are looking at a stoma, you are actually seeing the lining (mucosa) of the intestine. For most ostomies, a pouch is worn over the stoma to collect urine or stool.

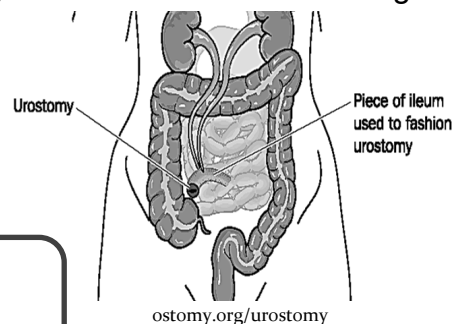


ostomy.org/wp-content.png

- An **ileostomy** is when the end of the lowest part of the small intestine (the ileum) is surgically brought through an opening of the abdominal wall and attached to the skin to form the stoma. This occurs if the colon was taken out or is not able to be used normally.
- A colostomy is when the end of the large intestine is brought through a surgical opening to the skin of the abdomen to form the stoma.



- A **urostomy** is a surgically created opening in the abdominal wall through which urine passes. Usually, it is done using what is called an ileal conduit or a colonic conduit. These are done when the bladder is no longer working properly or has to be removed.



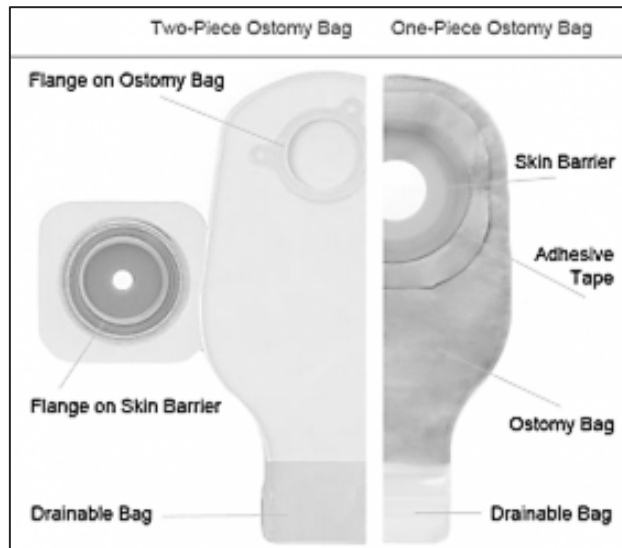
ostomy.org/urostomy

As a caregiver, you may need to know how to care for the stoma site as well as empty and change the ostomy pouch.

1. Types of pouches:

a. Two-Piece System:

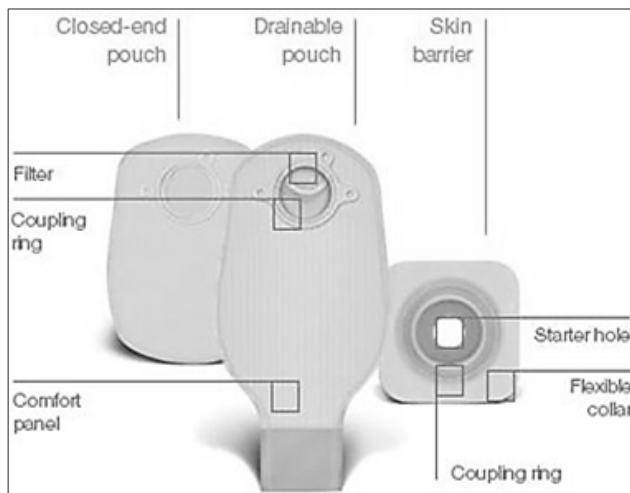
- Ostomy pouch and skin barrier are separate items.
- The skin barrier (wafer or back plate) is fitted first, then the pouch is fitted to the landing area of the wafer. The method of attachment varies but may be either a press on/click type coupling or a sticky adhesive.
- The 2-piece system allows pouches to be exchanged without removing the wafer.
- A 2-piece system is made up of pouch, skin barrier, and a flange.
 - The skin barrier has an adhesive back and a hole in the center. It attaches to the abdomen to protect the skin.
 - The flange is a plastic ring on both the pouch and the skin barrier that provides a secure attachment.
 - Systems are available with closed or open ends.



australianstoma.com.au/about-stoma/stoma-product-guide

b. One-piece pouching system:

- In a 1-piece system, the ostomy pouch and skin barrier are joined together as one complete product.
- Systems are available with closed ends, drainable ends, or tap/plug ends.



convatec.co.in/ostomy/ostomy-product-information/colostomy-bag-care

2. Skin Care:

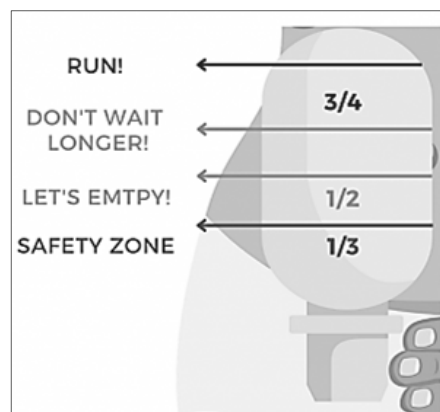
- The skin around the stoma should look the same as everywhere else on the abdomen.
- Output through the stoma can irritate skin and make it tender and sore.

For prevention of skin problems, follow the guidelines below:

- Using the right sized pouch is important as an opening that is too small can cut or injure the stoma and may cause it to swell. If the opening is too large, output could cause irritation to the skin.
- Change the pouch regularly to avoid leaks and skin irritation but don't change more than once a day unless there is a problem.
- Be careful when pulling the pouch away from the skin as the skin barrier is sticky and can injure the skin if pulled too fast. It is best to remove the skin barrier by pushing the skin away from the sticky barrier rather than pulling it off.
- Clean the skin around the stoma with water and dry the skin completely before putting on the skin barrier or pouch. If soap must be used, use one that does not contain lotions as those can cause problems with the barrier sticking well.
- Watch for sensitivities to the adhesive, skin barrier, paste, tape, or pouch. They can develop at any time. If the skin is irritated where the plastic pouch touches the skin, a pouch cover or different brand of pouch may be needed.

3. Emptying a colostomy or ileostomy pouch:

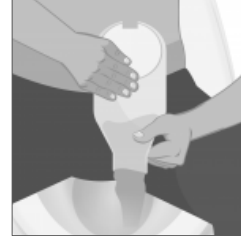
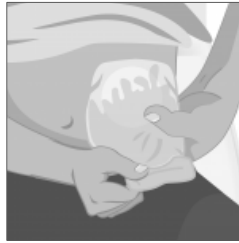
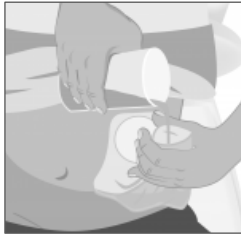
- When is it time to empty an ostomy bag?
 - Empty the pouch when it is about **1/3 to 1/2 full** to keep it from bulging and leaking.
- Have client sit on toilet as far back as possible or sit on a chair facing the toilet. Put on gloves. Place strip of toilet paper in toilet bowl to decrease splashing.



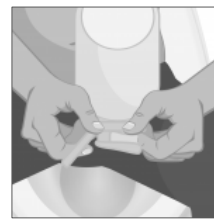
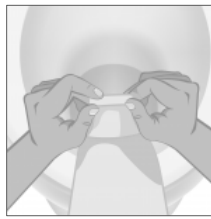
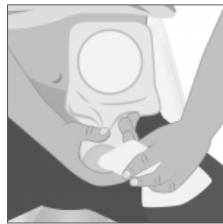
farmoderm.it/en/emptying-an-ostomy.bag

- Hold the bottom of the pouch up and open clip on the end of pouch.
- Slowly unroll the end of pouch (also called the tail) over the toilet.

- e. Gently empty the contents.
 - Press the sides of the stoma bag opening to widen it.
 - The contents will spill out.
 - With your fingers, press the bag to empty any residual contents.
- f. After clearing out all the contents, the bag may be rinsed, or wipes may be used to clean any residue.



- h. Clean the outside and inside of the bag tail with toilet paper.
- i. Roll up tail of pouch slowly and fasten Velcro or re-apply plastic clip.



Clipart on this and previous page from <https://farmoderm.it/en/emptying-an-ostomy-bag/>

4. When to change the pouching system

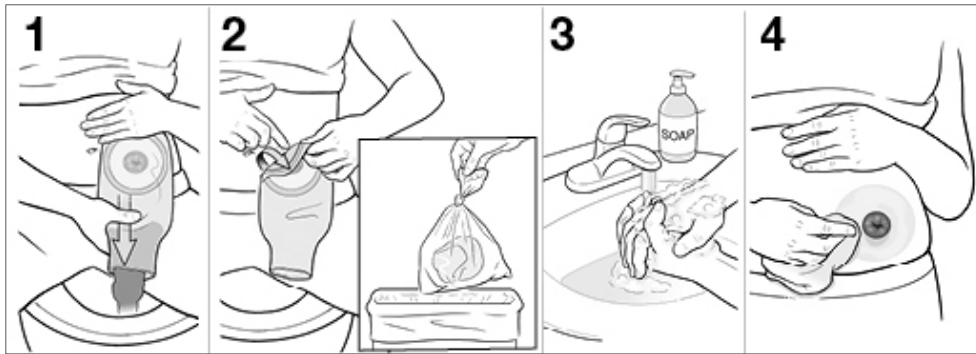
- a. It is best to have a regular schedule for changing the pouching system so that problems don't develop.
- b. Different pouching systems are made to last different lengths of time. Some are changed daily, others every three or four days, and some are changed just once a week.
- c. There is usually less bowel activity at certain times of the day, so it is easiest to change the pouch during those times. First thing in the morning before eating or drinking is often best.

5. Changing the ostomy bag:

Collect all supplies needed including a new ostomy pouch, barrier supplies, scissors, and supplies needed to clean and dry skin.

- 1) Empty the pouch into the toilet before removing. Wear gloves.
- 2) Remove pouch and barrier carefully to avoid pulling skin. Keep the clip. Put pouch into plastic bag, place in trash.

3) Remove gloves, clean hands, and put on a clean pair of gloves.



demo.staywellhealthlibrary.com/Content/healthsheets-v1/step-by-step-stoma-care-changing-the-pouch

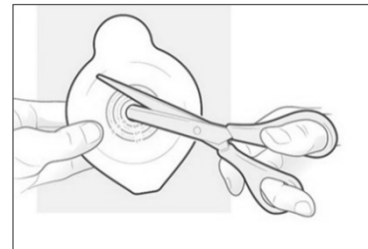
4, 5, 6) Clean the skin around the stoma and dry with a clean towel.

Check the skin around the stoma

- Spots of blood are normal as cleaning around the stoma when changing the pouch can cause slight bleeding because the blood vessels in the tissues of the stoma are very delicate at the surface.
- The skin should be pink or red, not purple, black, or blue. If there is a change in color, notify the medical provider.

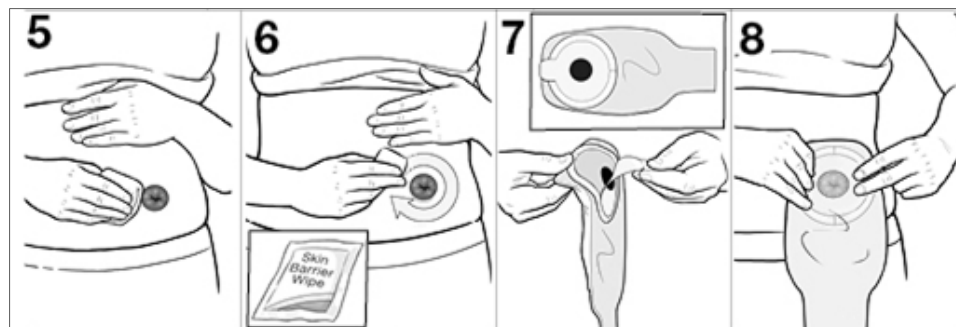
Trace the shape of the stoma to the back of the new pouch and barrier or wafer (wafers are part of a 2-piece pouch system) and carefully cut out the shape.

- Use a stoma guide with different sizes and shapes if available, or
- Draw the shape of the stoma on a piece of paper. Cut out the drawing and hold it up to the stoma to check the size and shape. The edges of the opening should be close to the



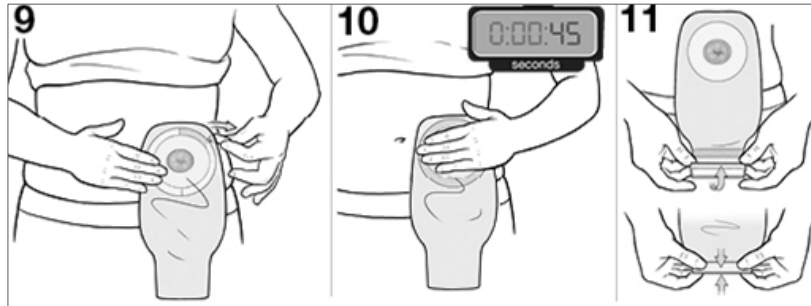
<https://diogoguerra.com/ostomy>

stoma but should not touch the stoma itself. Then use this to trace onto the back of the new pouch or wafer.



demo.staywellhealthlibrary.com/Content/healthsheets-v1/step-by-step-stoma-care-changing-the-pouch

- 7) Use skin barrier powder or paste around the stoma if this has been recommended. Remove the backing from the pouch. Make sure the opening of the new pouch is centered over the stoma.
- If the stoma is at or below the level of the skin, or if skin around the stoma is uneven, using the paste will give a better seal.
 - Skin around the stoma should be dry, smooth, without wrinkles.
- 8, 9, 10) Press firmly onto the skin.
- Hold your hand over the pouch and barrier for about 45 seconds to help it seal better. Sometimes tape is used around the sides to help seal better.



demo.staywellhealthlibrary.com/Content/healthsheets-v1/step-by-step-stoma-care-changing-the-pouch

- 11) Fold bag and secure it.

6. Factors that affect the pouching system seal:

The pouching system must stick to the skin to prevent leakage. The length of time the pouch will stay sealed to the skin depends on many things including:

- Weather.
- Skin condition.
- Scars.
- Weight change.
- Diet.
- Activity.
- Body shape near the stoma.
- Nature of the ostomy output.

Other things that may affect how long a pouch sticks include:

- Sweating will shorten the number of days the pouch will stick. Body heat, added to warmer outside temperature, will cause skin barriers to loosen more quickly than usual.
- Diet may affect the seal because foods that cause watery output are more likely to break a seal than a thicker discharge.
- Physical activities such as swimming, strenuous sports, or anything that makes a person sweat may shorten the time.

7. Bathing:

- Water will not hurt the ostomy. Normal exposure to air or contact with soap and water won't harm the stoma and water will not flow into the stoma.
- Soap will not irritate it, but soap may interfere with the skin barrier sticking well to the skin. It is best to only use water while cleaning the skin around the stoma.
- The pouch can be removed during a shower, but it is not necessary and not usually recommended.
- It is recommended that the pouch stay in place during a bath.

8. Hair around the stoma:

- Having a lot of hair around the stoma can make it hard to get the skin barrier to stick well. It can also cause pain when removing the barrier.
- Shaving with a razor or trimming hair with scissors is helpful. After shaving, rinse the skin well and dry completely before attaching the pouch.

9. Managing ostomy problems:

- a. **Gas (flatulence)** is normal but can be embarrassing for the person with a colostomy. Certain foods cause more gas, such as eggs, cabbage, broccoli, onions, fish, beans, milk, cheese, and carbonated drinks. Eating regularly helps to prevent gas.

- Burping the bag: when a lot of gas collects in the bag, "burping" the bag can be done to release the gas. This needs to be done carefully as the escaping gas can cause stool to splatter and there will certainly be odor escaping as well.
- If the person has a two piece bag with a mechanical opening, the top part of the two piece coupling can be opened just enough to let gas escape. Do not let stool get between the plastic rings as it can cause leaks.
- For a one piece system with an outlet at the bottom, open outlet to allow gas to escape. Do so with the bottom of bag held higher than stoma so stool doesn't escape.



veganostomy.ca/ostomy-pouch-ballooning

- b. **Odor:** many factors such as foods, normal bacteria in the intestine, illness, certain medications, and vitamins can cause odor. Ways to reduce odor include:
 - Avoid foods that cause more odor. These include eggs, cabbage, cheese, cucumber, onion, garlic, fish, dairy, and coffee.
 - Use an odor resistant pouch or place special deodorant liquids or tablets into the pouch.
 - Make sure the skin barrier is stuck securely to the skin.
 - Empty the pouch often.
- c. **Blockage**
 - There may be times when the ostomy has no output for short periods of time. This is normal. However, if there is no output for 4 to 6 hours and this is accompanied by cramps, pain, and/or nausea, the intestine could be blocked or obstructed. This must be reported to a medical provider immediately.
 - It is important to keep waste products moving along the gut with diet and hydration.
 - Watch for swelling of the stoma and adjust the opening of the wafer as needed until the swelling goes down.

10. When to call the medical provider.

The medical provider or ostomy nurse should be called if the client has:

- Cramps that last for more than two to three hours.
- Continuous nausea and vomiting.
- No ostomy output for 4 to 6 hours with cramping and nausea.
- Severe watery discharge lasting for more than 5 to 6 hours.
- Bad odor lasting longer than a week as this may indicate an infection.
- Pus draining from the stoma.
- A cut or injury to the stoma.
- Bad skin irritation or deep sores around the stoma.
- A lot of bleeding from the stoma opening.
- Continuous bleeding where the stoma meets the skin.
- Any unusual change in stoma size or color.

Appendix 16. ASPIRATION PNEUMONIA

A. PREDISPOSING CONDITIONS OR RISKS FOR ASPIRATION

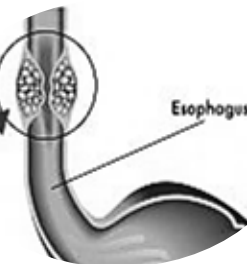
1. **Reduced consciousness** - decreases the ability to cough and close off airways. Factors include:

- a. Seizures.
- b. Head trauma.
- c. Anesthesia.
- d. Excessive fatigue.
- e. Sedating drugs:
 - Alcohol or illicit drug use
 - Sleeping pills
 - Antihistamines
 - Antidepressants and antipsychotics



2. **Dysphagia** - swallowing disorders may be due to:

- a. Narrowing of the esophagus (strictures).
- b. Gastric reflux.
- c. Tumors or cancer.
- d. Head and neck injuries.
- e. Surgery of the upper airways or esophagus.
- f. Loss of muscle tone or coordination.



wdrfree.com/

3. **Neurological deficits** that cause swallowing problems:

- a. Stroke.
- b. Parkinson's disease, multiple sclerosis, ALS (Lou Gehrig's Disease).

4. **Mechanical disruption:**

- a. Tracheostomy, endotracheal intubation.
- b. Bronchoscopy.
- c. Upper endoscopy.
- d. Nasogastric feeding tube.

5. **Miscellaneous:**

- a. Eating or drinking too fast.
- b. Lying down or slouching.
- c. Prolonged vomiting.
- d. Near-drowning.
- e. Large volume tube feeding or feeding via G-tube.



B. CLASSIFICATION OF ASPIRATION SYNDROMES

1. Chemical pneumonitis:

- a. From acid or other toxic substances (bacteria do not play a role).
- b. Causes swelling and reduced oxygen delivery.
- c. Clinical features:
 - Acute shortness of breath with low O₂ levels.
 - Rapid heart rate, fever.
 - Cyanosis (bluish color to skin and lips).



2. Bacterial infection:



- a. Most often from bacteria in the mouth.
- b. Clinical features include:
 - Slow onset of symptoms (may take days).
 - Cough, fever, sputum production, shortness of breath.
 - Low oxygen levels and fatigue.
 - Chest pain with coughing or taking deep breaths.

C. PREVENTION

1. Swallowing evaluations:

- a. Swallowing evaluations should be done on anyone with a history of choking or aspiration to help determine the best food texture or diet.

2. Diets:

- a. Diets include regular, soft/chopped, ground and pureed.
- b. Everyone should have a diet protocol, and each protocol should be very specific as to how the food is prepared including the exact size to cut up food when on a chopped diet.

3. Thickeners:

- a. Thickeners can help. There is evidence that honey-thick liquids are less likely to be aspirated than thin liquids by a small degree, but they are still aspirated over 50% of the time by persons with swallowing problems.
- b. **Problems with thickeners include:**
 - Often lead to a decrease in drinking fluids due to texture and taste thus contribute to **dehydration**.
 - Most commercial thickeners are **constipating**.
 - Thickening agents are difficult to clear from lungs if aspirated.

4. Chin tuck:

The “chin tuck” or “chin down” position is when individuals are told to tuck their chins down to their chest when swallowing. This is used as an attempt to decrease aspiration but can cause problems:

- It is difficult to swallow in this position and it may not prevent aspiration. A very slight chin tuck is best when eating but not to the extreme of tucking down to the chest.
- Most people aspirate on thin liquids using the chin-down position (68% of the time) and also aspirate with nectar thick liquids (63%) and honey thick (53%).
- For anyone with a history of dysphagia and aspiration, a consultation and evaluation by a Speech Language Pathologist should be done to determine the best position of the head for swallowing. This can be determined during a video swallowing evaluation.



www.saraholiverosteopathy.com

5. Tube feedings:

- a. Gastric or nasal tube feedings are more efficient for delivering nutrition and oral medications in people with dysphagia but **have not been shown to reduce the incidence of aspiration pneumonia and may contribute to worse problems.**

6. 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 can cause an increase in mouth flora and pathogens that migrate to the back of the mouth and throat. When aspirated, pneumonia develops.
- c. Individuals with feeding tubes who do not take anything by mouth are at an increased risk for aspiration pneumonia.
 - They often have a dry mouth which increases bacteria.
 - Oral care is often neglected because they are not eating, and this increases bacterial loads
 - Not taking in fluids through the mouth means that normal flora is not rinsed away and swallowed regularly.
 - Saliva, if present, can still be aspirated.
 - Feeding tubes can increase reflux which can be aspirated.



d. Daily oral hygiene is very important in reducing the risk for aspiration pneumonia:

- Brush teeth with toothpaste after all meals and before bed.
- Rinse mouth with an antiseptic mouthwash.
- Inspect mouth frequently for sores, bleeding, or signs of infection.
- Do not use sponges to swab the mouth as they do not decrease the bacterial load.
- Lemon-glycerin swabs may moisten the mouth for a short time, but do not clean it and the lemon may dry the mouth even more.
- Encourage fluid intake to keep mouth moist.
- Encourage smoking cessation as smoking causes dry mouth.



7. Medications:

a. Medications can increase the risk for aspiration through numerous mechanisms. They can:

- 1) Increase the risk for bacterial overgrowth by suppressing acid production:
 - Proton pump inhibitors (PPI's) such as omeprazole.
 - H2 Blockers such as Pepcid®.
- 2) Impair the ability to swallow:
 - Neuroleptics (Seroquel®, Abilify®, etc.).
 - Antiepileptics (seizure medications).
 - Anticholinergic medications such as those used for urinary incontinence (Detrol®, etc.).
 - Narcotics.
 - SSRIs.
- 3) Cause dry mouth:
 - Diuretics (furosemide, HCTZ, etc.).
 - Antihistamines (Benadryl®, etc.).
 - Decongestants.
 - Some antihypertensives.



Appendix 17. SLEEP APNEA

A. STEPS FOR USE OF CPAP/BIPAP MACHINE

1. Place the machine on a level surface:
 - a. near the bed and at least 12 inches away from anything that could block the vents (curtains, etc.).
 - b. lower than the level of the bed so any accumulation of water will drain back toward the machine, not the mask.
2. Plug the machine into an outlet. Do NOT use an extension cord.
3. Fill water well with distilled water only.
4. Position face piece (mask, nose pillow, etc.) on the person's face.
5. Adjust headgear so the device fits snugly and fasten into place.
6. Put the hose of face device into the hose port of machine.
7. Turn on unit. If using oxygen, turn on unit first, then turn on oxygen flow.
8. Have the person breathe deeply until pressured air begins to flow; then have the person breathe normally.
9. Make sure no air is leaking out of mask or nasal pillows; readjust as needed to stop leaks.
10. Document CPAP/BiPAP use.
11. In the morning, after the person awakens, turn off the machine. If oxygen is being used, turn it off first.
12. Remove face gear and clean per manufacturer's instructions.



freepik.com

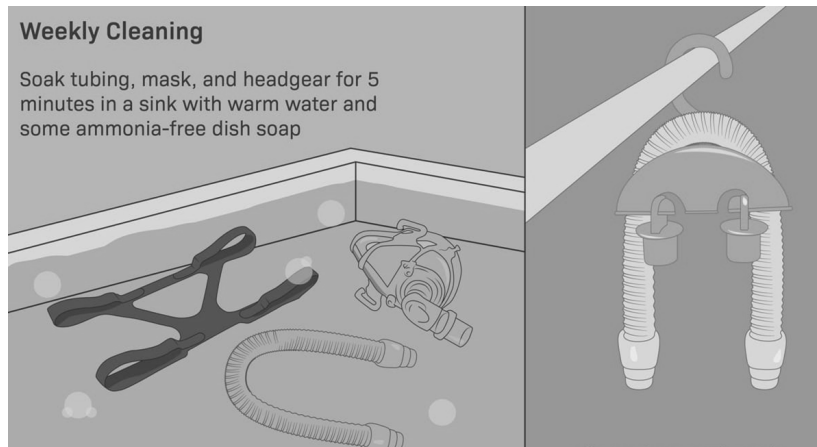


B. CLEANING AND MAINTAINING CPAP/BIPAP EQUIPMENT

1. Follow manufacturer's or supplier's instructions.
2. Always hang hose over a hook to allow air to flow freely (do not coil).
3. Wipe the outside of the unit daily with a damp cloth.
4. Clean the face equipment daily.
5. Replace any worn or non-working parts as directed by manufacturer.
6. Only use distilled water in the water well. Empty the water well daily, clean and let air dry.
7. Change filter per manufacturer's instructions.



sleepapnea.sleep-disorders.net/clean-cpap



C. POTENTIAL PROBLEMS

1. Interruption in the air flow from clogged filter.
2. Fire hazard or electrical shock from frayed electrical cords.
3. Mineral deposits in the system from failure to use distilled water in the humidifier.
4. Growth of bacteria or mold in hoses that are improperly stored.
5. Irritated skin from an improperly fitting mask or other face device.



Appendix 18. ALLERGIES

A. ALLERGIES

1. Allergies occur when the immune system reacts to a foreign substance
2. The immune system:
 - a. produces antibodies that identify that allergen as being harmful.
 - b. reacts by causing inflammation of skin, sinuses, airways, or digestive system with severity ranging from minor irritation to anaphylaxis.

Symptoms Caused by Allergens


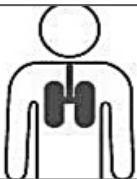



 SKIN	 RESPIRATORY	 GASTROINTESTINAL	 CARDIOVASCULAR	 NEUROLOGICAL
hives, swelling, itching, warmth, redness	coughing, wheezing, shortness of breath, chest pain or tightness, throat tightness, trouble swallowing, hoarse voice, nasal congestion or hay fever-like symptoms, (sneezing or runny or itchy nose; red, itchy or watery eyes)	nausea, stomach pain or cramps, vomiting, diarrhea	dizziness/ lightheadedness, pale/blue colour, weak pulse, fainting, shock, loss of consciousness	anxiety, feeling of "impending doom" (feeling that something really bad is about to happen), headache
				OTHER uterine cramps

Chart taken from <https://foodallergycanada.ca/>

B. TREATMENT

1. **Nasal irrigation:** rinsing out allergens/irritants relieves symptoms.
2. **Nasal glucocorticoids** such as Flonase®.



3. Antihistamines:

- a. Relieve itching, sneezing, and runny nose, not congestion.
- b. Many are sedating such as Benadryl®.
- c. Less-sedating: loratadine, cetirizine, fexofenadine.



4. Decongestants:

- Topical or oral decongestants such as pseudoephedrine (Sudafed®) or phenylephrine may temporarily relieve congestion. Limit use to 2-3 days because of **REBOUND SYNDROME**:
 - occurs after 72 hours of use of topical decongestants (Afrin®),
 - symptoms of congestion and drainage that the decongestant was treating return and are possibly worse (rebound effect).

- a. Oral decongestants (Sudafed®) are combined with antihistamines which increase blood pressure and make it difficult to urinate.
- b. The purchase of pseudoephedrine-containing cold medications is limited due to their use in the manufacture of amphetamine drugs.
- c. Phenylephrine, found in cold preparations, is not very effective.
- d. Decongestants can cause nosebleeds, agitation, insomnia, and hypertension.

5. Leukotriene modifiers (Singulair):

- a. Singulair® is currently not recommended except in severe cases due to neuropsychiatric side effects such as agitation, aggression, and sleep disturbances as well as suicidal thoughts and behavior.

6. Allergy shots:

- a. Injections used to reduce sensitivity to allergens.
- b. Usually given weekly for several months, then monthly.
- c. Carries a small risk of severe allergic reaction that usually occurs within 30 minutes of injection.
- d. Long-term therapy and benefits may lessen when stopped.



7. Emergency treatment – EpiPen® How to give an injection:

1	Form fist around EpiPen® and PULL OFF BLUE SAFETY CAP.	
2	POSITION ORANGE END about 10cm away from outer mid-thigh*. <small>* Either clothed, or unclothed, avoiding seams and pocket areas.</small>	
3	SWING AND JAB ORANGE TIP into thigh at 90° angle and hold in place for 10 seconds.	
4	REMOVE EpiPen® Massage injection site for 10 seconds*. <small>*After use the orange needle cover automatically extends to cover the injection needle.</small>	

- a. Injection of epinephrine is generally effective in 5-10 minutes.
- b. If symptoms aren't improving or are worsening after 5 minutes, or if symptoms return, a second dose may be given.
- c. Following the injection of epinephrine, seek emergency medical attention as a second reaction to the allergen can occur within hours.
- d. Take used pen to hospital to show what was injected.
- e. It works by: relaxing muscles, reversing swelling, stimulating the heart.
- f. Side effects Include: pounding heartbeat, trembling, nervousness, headache, dizziness, nausea, and shortness of breath.

Appendix 19. SKIN PROBLEMS

A. SHINGLES

1. Herpes zoster (shingles):

- After a person has chicken pox, the varicella-zoster virus resides in a nerve but may never cause symptoms.
- If the virus becomes active, it causes shingles.

2. Increased risk for shingles with:

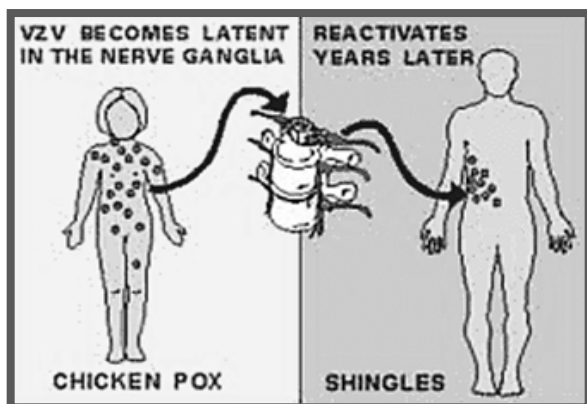
- Increased age (especially after age 50).
- Stress.
- Decreased immune status from such things as chronic lung or kidney disease, cancer, rheumatoid arthritis, etc.

3. Signs and symptoms of shingles

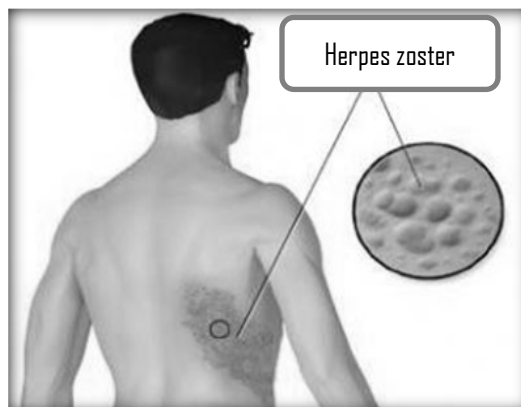
- Tingling, itching, pain which may occur before the rash is visible.
- Blistering rash.
- Headache, fatigue, sensitivity to light.

4. Characteristics of the rash:

- Red spots which then progress to fluid filled blisters.
- Blisters crust over in 7-10 days (no longer infectious at this stage).
- Rash disappears within 3-4 weeks.
- Scarring and changes in skin color can occur.
- Can affect anywhere on the body but most frequently seen on the chest and back. If it occurs near an eye, it can affect vision.
- Sharp, stabbing or burning pain is often associated with it.



<https://commons.wikimedia.org/>



BruceBlaus, CC BY-SA 4.0 <<https://creativecommons.org/licenses/by-sa/4.0/>>, via Wikimedia Commons

5. Complications:

- a. Post-herpetic neuralgia: pain remains after rash has resolved.
- b. Skin infections.
- c. Eye complications: inflammation of retina which can lead to vision loss.

6. Spread:

- a. You cannot catch shingles from someone else.
- b. You can develop chickenpox from someone with shingles.
 - Anyone who has never had chickenpox (or the vaccine) can develop chickenpox after direct contact with a shingles blister or by inhaling the virus in the air near someone with shingles.



7. Treatment:

- a. Early treatment with antiviral medication is key to speed healing, reduce pain and decrease risk for developing post-herpetic neuralgia.
 - Treatment should be started within 48 to 72 hours from the start of symptoms.
 - If a suspicious rash occurs, a medical provider should be contacted immediately to avoid delay in treatment.
 - Once lesions have started to crust over, antiviral medications have minimal effect.
- b. Antiviral medications:
 - Acyclovir (Zovirax®).
 - Famciclovir (Famvir®).
 - Valacyclovir (Valtrex®).
- c. Other treatment:
 - Keep rash clean and dry.
 - If possible, cover the rash to prevent the virus from spreading.
 - Avoid putting cream or other products on it as those can increase the chance for developing an infection.
 - Avoid scratching the rash to prevent infection and scarring.
 - Wear loose clothing.
 - Cool compresses may ease soreness.

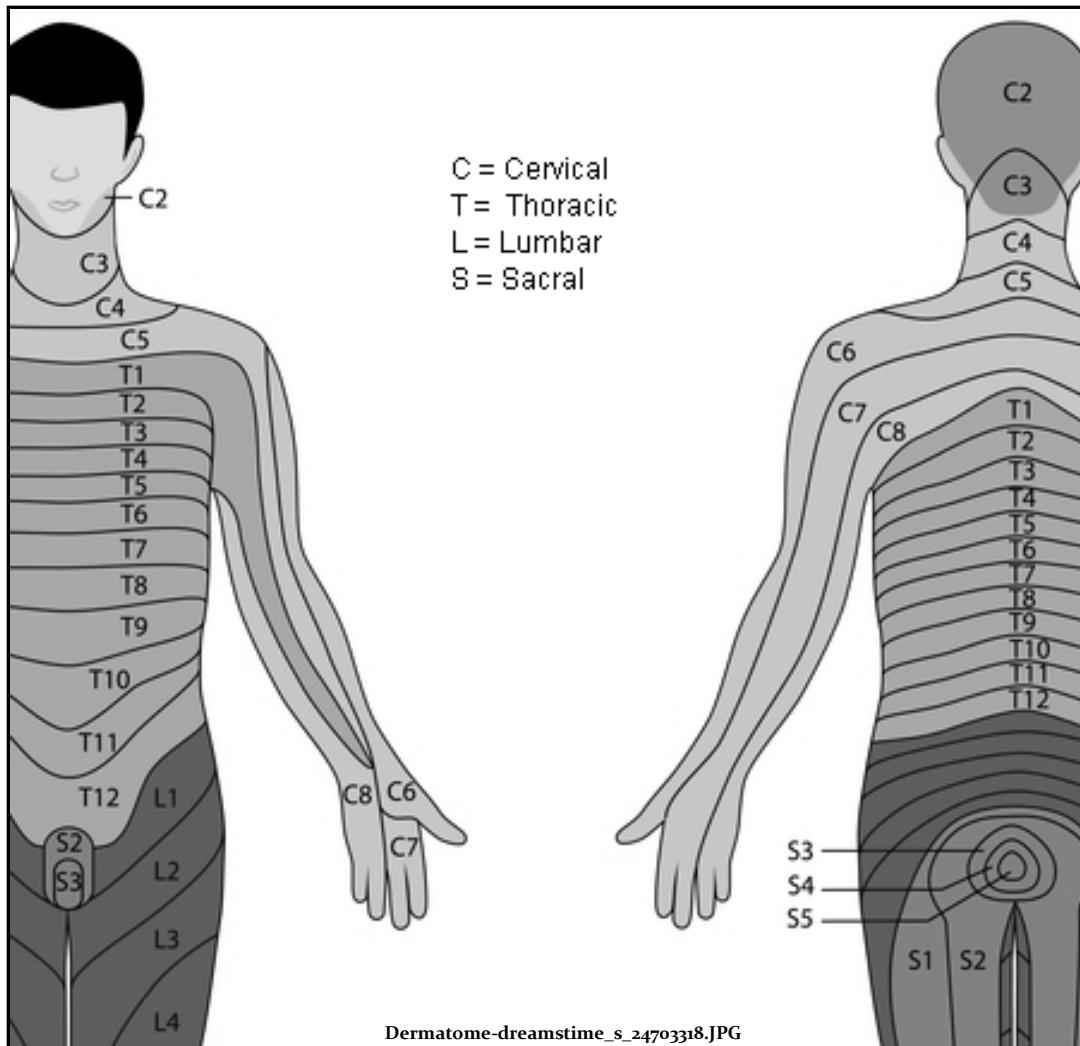
8. Prevention:

- Immunization for chicken pox as a child.
- Shingles vaccine (Shingrix®) as an adult.

9. Dermatome:

- a. A dermatome is an area of skin supplied by a single nerve coming out of the spine.
- b. There are 8 cervical, 12 thoracic, 5 lumbar, and 5 sacral nerves (depicted by letters and numbers). For example:
 - 1) C3 is the third cervical nerve.
 - 2) L3 is the third lumbar nerve.
- c. The first cervical nerve does not have a dermatome associated with it.
- d. Each nerve runs from one side of the spine in the back to the middle of the front of the body and does not cross the midline.

Dermatomes

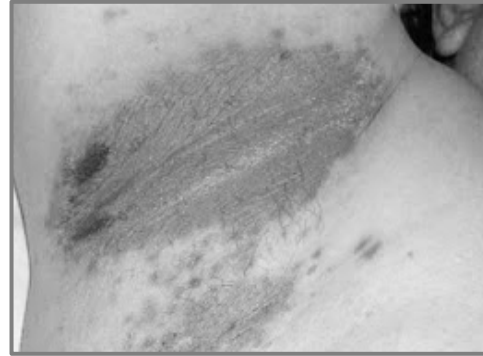


Each dermatome is abbreviated.
For example, T1 is the first thoracic nerve

B. INTERTRIGO

1. Treatment:

- a. Minimize predisposing factors.
- b. Antifungal powders work well for prevention.
- c. Topical antifungal creams are used frequently.
- d. Oral antifungal medications are sometimes needed.



2. Causes:

- a. Can be caused by bacteria but most often caused by yeast (Candida).
- b. Warm and moist environments help yeast to grow and multiply.

<http://nursingfile.com>

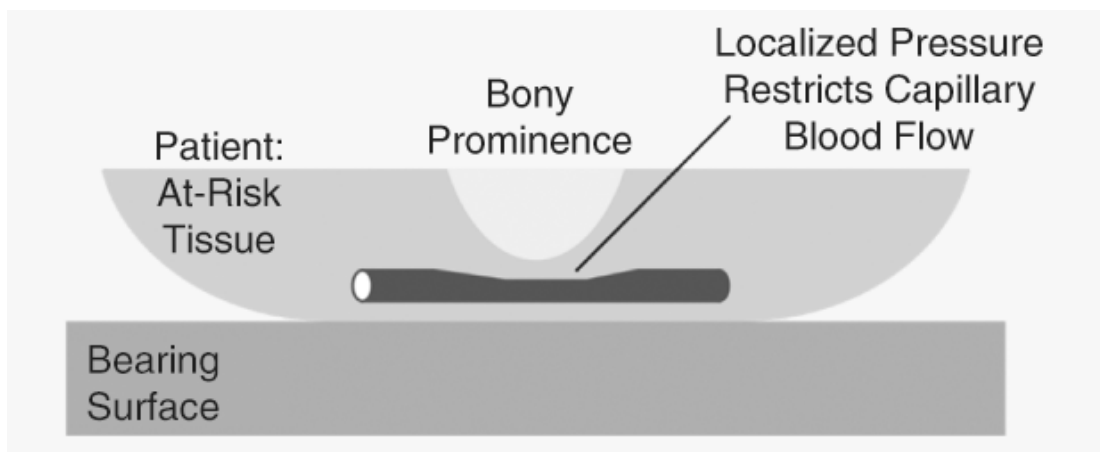
3. Risk factors:

- a. Increased skin friction/rubbing due to obesity, tight fitting clothing, and activities.
- b. Increased moisture from obesity, occlusive clothing, excessive sweating, and incontinence.

C. PRESSURE SORES, ULCERS

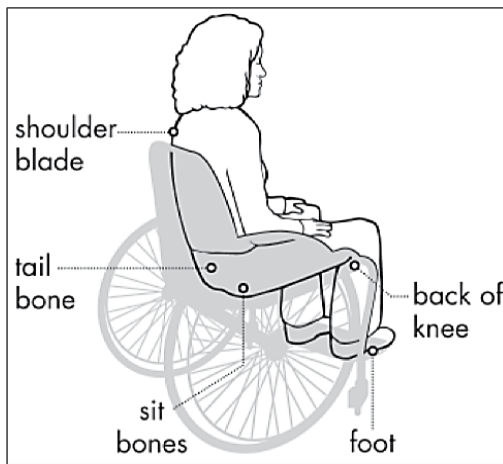
1. Pressure sore = pressure ulcer = bed sore = decubitus ulcer:

- a. All of the above are names used to describe localized injury to the skin and other underlying tissue, usually over a bony prominence, due to prolonged pressure.



<https://www.embs.org/pulse/articles/a-new-vision-for-preventing-pressure-ulcers>

2. Common sites (bony prominences):



<https://msktc.org>

a. **Tailbone**

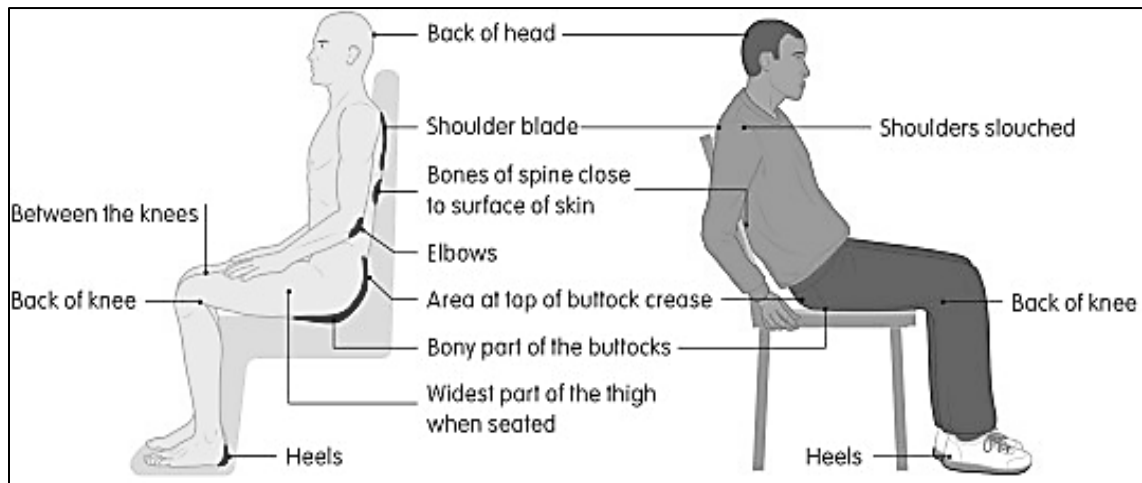
b. **Back**

c. **Hips**

d. **Heel**

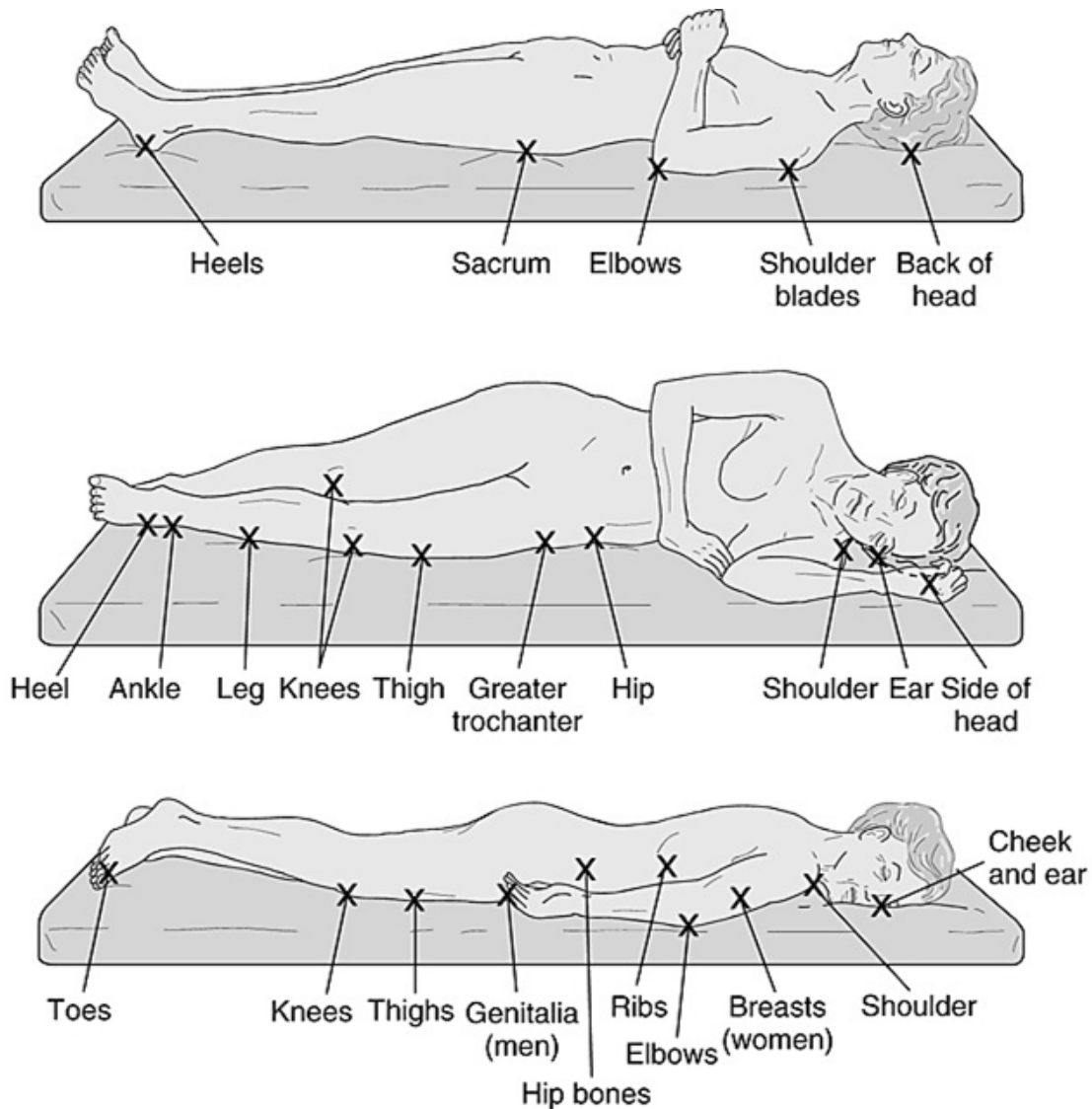
e. **Ankle**

f. **Elbow**



<https://www.sciencedirect.com>

- When slouching in a chair, the pressure on many bony prominences is increased and pressure sores may develop.



<https://nursekey.com/pressure-ulcers-3/>

3. Common sources of pressure:

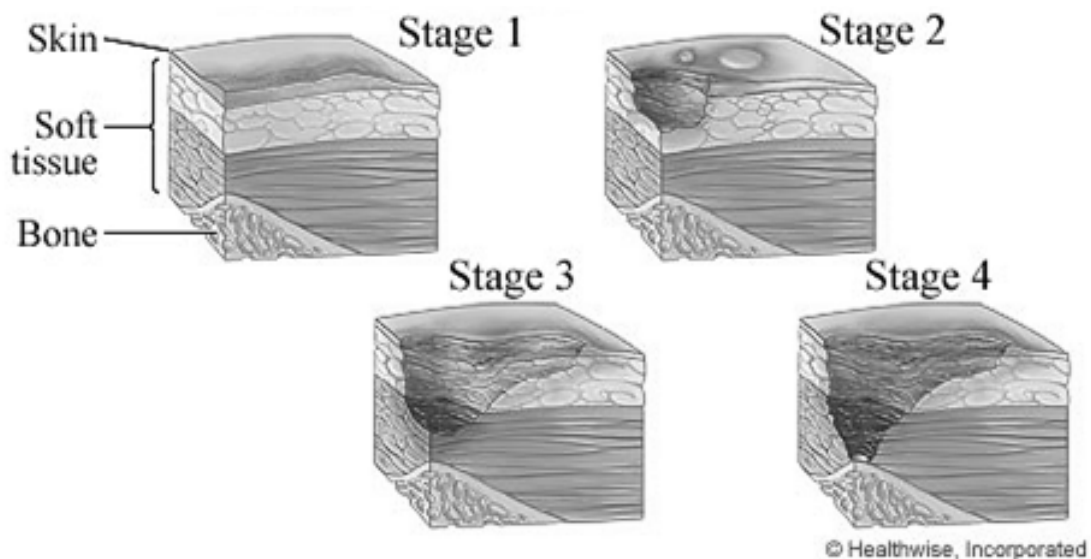
- a. Sitting or lying in one position for too long.
- b. Casts, braces, or crutches that rub.
- c. Tight bandages that rub.
- d. Oxygen masks.
- e. Wrinkled bed linens and poorly fitting clothes.
- f. Moisture or other skin irritants.

4. Risk factors:

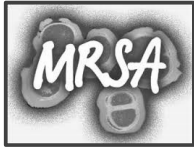
- a. Impaired ability to shift position.
- b. Impaired sensory perception (cannot feel that they are getting sore from being in one position for too long).
- c. Altered level of consciousness.
- d. Incontinence.
- e. Malnutrition.
- f. Dehydration.
- g. Excessive body heat.
- h. Advanced age.
- i. Chronic medical conditions: diabetes, heart disease, etc.

**5. Stages of pressure ulcers:**

- **Stage 1** has unbroken skin, but it has pink or ashen (in darker skin) discoloration with possibly a slight itch or tenderness. May look bruised but is intact.
- **Stage 2** has red, swollen skin with a blister or open wound.
- **Stage 3** has a crater-like ulcer extending beneath the skin surface. Risk of tissue death is high.
- **Stage 4** shows extensive damage to deeper tissues, including muscle and bone. Risk of infection spreading to bone (osteomyelitis), or blood (sepsis) is high.



D. METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS



Staphylococcus aureus (or “Staph”) is a bacterium that is carried on the skin or nasal lining of up to 30% of healthy people. Usually, it will not cause symptoms. However, when the skin is damaged, Staph can cause problems which can range from a mild pimple to a severe illness. Initially most Staph infections were sensitive to penicillin but over time, many infections became resistant to penicillin and methicillin (a drug related to penicillin). Thus, the term methicillin-resistant Staphylococcus aureus (MRSA) was derived.

1. Colonization

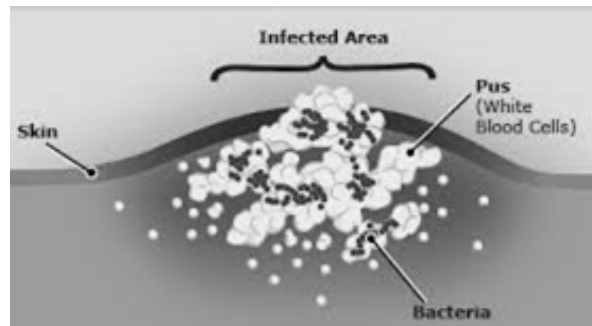
- People become “colonized” with MRSA, meaning they carry the bacteria on their skin or in their nose but have no signs or symptoms of illness. This occurs from:
 - Touching the skin of another person who is colonized with MRSA.
 - Touching a contaminated surface.

2. Infection

- An infection occurs if the skin or nose is colonized with MRSA and the bacteria enter an opening in the skin or mucous membrane through a small cut, scrape, etc.
- If the bacteria enters the bloodstream, it can cause an infection in other parts of the body such as a joint, heart valve, etc.

3. MRSA signs and symptoms

- The first sign may be a single raised red lump that is tender, or a cluster of “pimples”, or a large, tender lump that drains pus.
- The area may enlarge and become progressively more tender, red, and swollen.



4. Prevention

- Keep hands clean by washing thoroughly with soap and water or by using an alcohol-based hand sanitizer.
- Keep cuts and scrapes clean, dry, and covered with a bandage until healed.
- Avoid touching other people’s wounds or bandages.
- Avoid sharing personal items such as towels, washcloths, razors, clothing, brushes and combs, and makeup.

APPENDIX 20: VITAL SIGNS

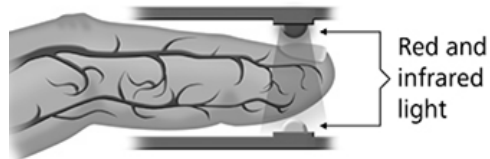
A. PULSE OXIMETRY

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



freepik.com

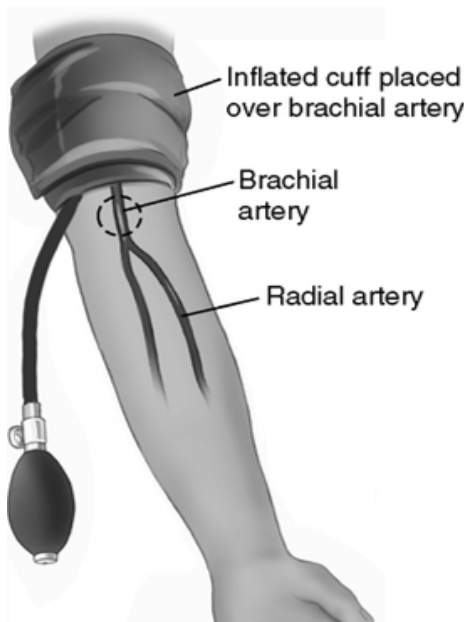
2. How does it work?
 - The oximeter measures the amount of oxygen in the blood by shining two beams of light into capillaries in the finger. The light beams reflect the amount of oxygen in the blood.



nonin.com/What-is-Pulse-Oximetry

B. BLOOD PRESSURE

1. Devices for taking blood pressures:
 - a. **Over the elbow blood pressure devices:**



- With automatic blood pressure devices, the cuff is automatically inflated to the correct amount and automatically gives the blood pressure reading.
- With manual blood pressure cuffs, the cuff should be inflated to about 180 mm Hg and then allowed to deflate slowly.
- As the cuff is slowly deflated, listen for the pulse over the brachial artery using a stethoscope.
 - When the pulse is first heard, that is the systolic pressure reading.
 - As the air escapes the cuff, the sound of the pulse will disappear. The point that the sound disappears is the diastolic pressure reading.

b. **Wrist devices:**

- Devices that take blood pressures at the wrist are often used, especially in obese people.
- Wrist readings are often **falsely elevated** and should be avoided if possible.



freepik.com

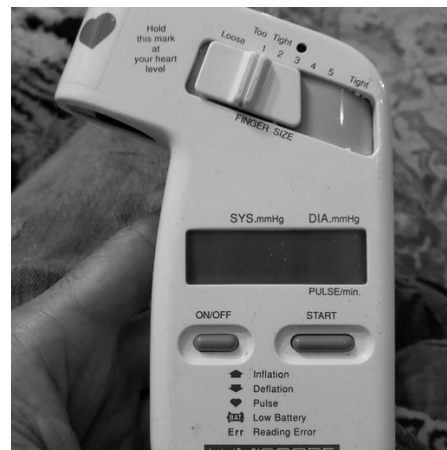


c. **Finger devices:**

- Blood pressure measurements on the finger are not recommended as these readings are quite inaccurate.



semantic scholar.org

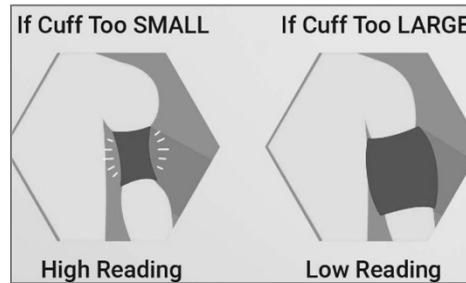


mercari.com

2. Taking blood pressures:

a. Before you start, you will need to pay attention to the size and placement of the cuff, the person's position, and your technique.

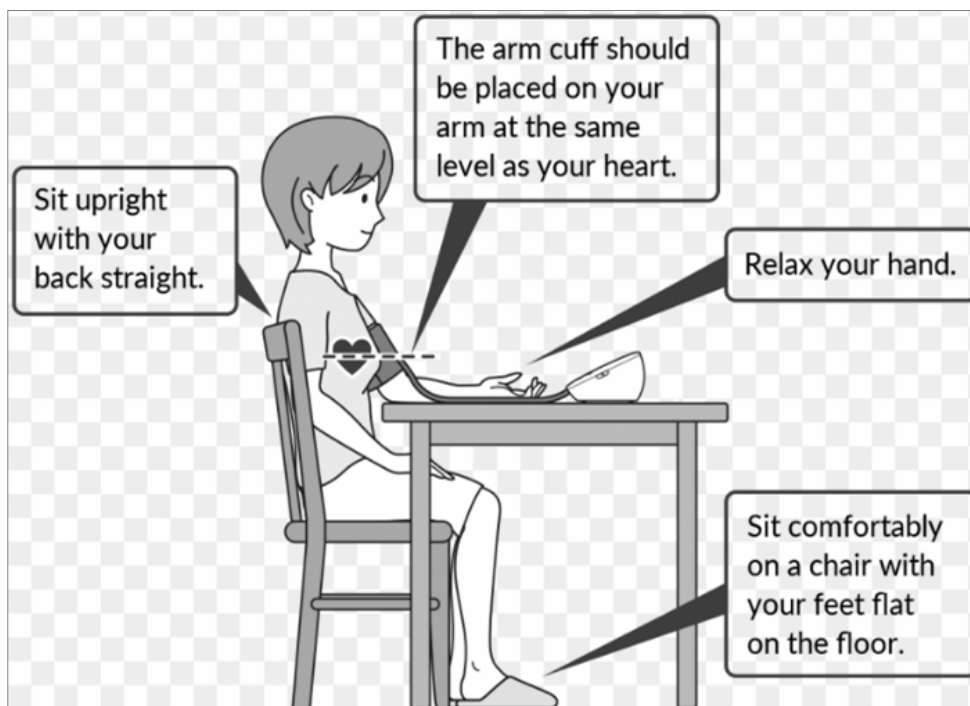
- **Cuff size:** incorrect sized cuff causes inaccurate readings.
- **Cuff placement:** ideally above elbow over bare arm.



- It is ok to take a blood pressure reading over thin clothing, but thick clothing needs to be removed.
- **Do not roll up a sleeve** as this causes pressure around the arm and an incorrect reading.

▪ **Body position:**

- **Crossing legs or sitting without a back support can cause a pressure to be higher.**
- The arm should be supported at the level of the heart, not allowed to hand down as that will cause higher readings.



toppng.com/free-image/blood-pressure

Appendix 21. FALLS

A. FACTORS THAT INCREASE THE RISK FOR FALLING

1. History of previous falls and fear of falling.

2. Use of certain medications such as:

- Benzodiazepines.
- Antihistamines.
- Muscle relaxants.
- Some antidepressants.
- Antiseizure medications.

3. Chronic medical conditions such as:

- Parkinson's disease.
- Complications of diabetes.
- Seizures disorders.



- Vertigo.
- Cerebral palsy.
- Arthritis.
- Sleep disturbances.
- Dementia.

- Low blood pressure.
- Osteoporosis.
- Low eyesight or hearing.
- Unsteady gait or balance.
- Muscle weakness.

4. Environmental factors including:

- Poor lighting.
- Uneven, slippery floors and surfaces.



- Clutter.
- Unstable furniture.
- Inappropriate, poor quality or ill-fitting clothing or footwear.
- Improper, broken, or damaged adaptive equipment.
- Absence of environmental adaptations such as grab bars



Appendix 22: DIETS

A. TEXTURES

1. Regular Diet:

- No specific preparation or adjustment to texture.
- The person should be able to chew and swallow without problems.

2. Chopped/soft Diet:

- Food is cut into prescribed sizes such as 1-inch, $\frac{1}{2}$ inch, or $\frac{1}{4}$ inch or into bite sized pieces which are about the size of a sugar cube.
- Food is soft and easy to chew.



3. Ground Diet:

- Sometimes referred to as “minced and moist”, food is ground so that it is moist and soft.
- Different types of food are prepared separately.
- Meats should be finely chopped or ground.
- Vegetables should mash easily with a fork.
Remove tough skins, seeds, membranes, and strings.
- Sauces and gravies should be added, when possible, to increase moisture.
- Cheese should be shredded or grated; avoid melted cheese.
- Sandwiches should have fillings that are ground and have mayonnaise or mustard for added moisture. The sandwich should be cut into at least 16 or more very small pieces.
- Noodles and pasta should be well cooked.
- Fruits should be soft and fork-mashed to an applesauce-like texture.



4. Pureed Diet:

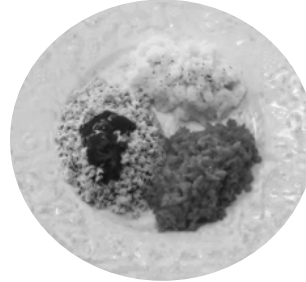
- Food is blended smooth and soft and should be pudding-like.
- It should hold its shape on a plate and not spread out. It should hold its shape on a spoon and not run off.
- It should not be dry, sticky, or have lumps.
- Foods should not be mixed together in the food processor to puree.
 - Keep foods separate so that they retain specific tastes and appearance.
 - For example, beef stroganoff: puree the noodles, then puree the meat sauce separately and spoon over the pureed noodles.



- e. Avoid stringy, high pulp fruit and fruits and vegetables that have seeds.
- f. Avoid solid cheeses. It is ok to use pureed cottage cheese, ricotta cheese, cheeses melted and blended into sauces, as well as yogurt without pieces of fruit.



1-inch
chopped



Ground



1/2-inch
chopped









Pureed

5. Mechanical Soft Diet:





- a. This diet is commonly ordered when someone has difficulty chewing and swallowing. It is not as clear-cut as the diets listed above but in general, food should:
 - Be physically soft and moist.
 - Require little chewing.
 - Be mashed or chopped into small pieces, sometimes ground.
- b. **Foods that are difficult to chew are avoided. The include:**
 - Meats.
 - Nuts and seeds.
 - Chewy foods such as caramel.
 - Sticky foods such as peanut butter.

B. DIET TEXTURE TABLES



Soft and chopped (bite sized) diets:

Food Group	Foods Allowed	Foods NOT Allowed
<p>Meats and proteins</p>	<ul style="list-style-type: none"> • Moist ground or finely diced meats • Solid tender cuts of meat that can be cut with side of a fork (fish, etc.) • Meatloaf, hamburger, cheeseburger • Sausage patty • Deli-thin sliced lunch meat  • Chicken, egg, or tuna salad sandwich • Sloppy joe • Shredded cheese, cottage cheese, cheese slices • Eggs prepared any way 	<ul style="list-style-type: none"> • Dry or tough meats • Dry fish or fish with bones • Nuts • Seeds 
<p>Starches, breads, and cereals</p>	<ul style="list-style-type: none"> • All hot cereals • Cold cereal such as corn flakes or crisp rice cereal with ¼ cup milk (or just enough to moisten if thin liquids are restricted)  • Well moistened bread, biscuits, muffins • French toast, waffles moistened with syrup or jelly • Soft bread products • Macaroni and cheese, casseroles • Pasta and canned pasta, moist rice 	<ul style="list-style-type: none"> • Bagels, dry bread, toast, crackers • Course or dry cereal such as shredded wheat or All Bran • Granola • French bread or baguettes • Crispy, fried food such as grilled cheese  • Popcorn, chips
<p>Soups</p>	<ul style="list-style-type: none"> • All cream or broth-based soups (also depends on allowed liquid thickness) • Chili • Strained corn or clam chowder  	<ul style="list-style-type: none"> • Soups with tough meats • Soups with meat or vegetables in pieces over 1 inch
<p>Fruits</p>	<ul style="list-style-type: none"> • All canned and cooked fruit • Ripe bananas • Soft, peeled fresh fruits like peaches, nectarines, kiwi, mango, cantaloupe, honeydew, and watermelon (no seeds)  	<ul style="list-style-type: none"> • Hard to chew fruit such as apples, pears • Grapes, raisins • Pineapple, oranges, or other stringy, high pulp fruit. Coconut. • Fruit leather, roll-ups









Soft and chopped (bite sized) diets (continued):

Food Group	Foods Allowed	Foods NOT Allowed
Vegetables	<ul style="list-style-type: none"> Soft, cooked vegetables that are fork tender Shredded lettuce Tender fried potatoes 	<ul style="list-style-type: none"> Raw vegetables, salads Corn, broccoli, cabbage, asparagus, or other fibrous cooked vegetables Tough, crisp-fried potatoes or skins
Desserts	<ul style="list-style-type: none"> Soft cookies, moist cakes Fruit pies Jell-O, sherbet, sorbet, ice cream Pudding, custards, yogurt 	<ul style="list-style-type: none"> Hard cookies/candies Chewing gum Chewy candy or desserts such as caramel. Anything with nuts, seeds, dry fruits, coconut, or pineapple 
Condiments	<ul style="list-style-type: none"> Margarine, butter, sugar, honey Syrup, jelly, herbs, spices Sour cream, cream cheese Gravy, steak sauce, barbecue sauce Mustard, ketchup, mayonnaise 	<ul style="list-style-type: none"> Olives Pickles Peanut butter 







Ground Diet

Food Group	Foods Allowed	Foods NOT Allowed
Meats and proteins	<ul style="list-style-type: none"> Ground meats such as hamburger or ground turkey with gravy Meat loaf, meatballs Soft fish, tuna fish Chicken, tuna, egg salad (no large chunks) Poached, scrambled, soft-cooked eggs Well-cooked slightly mashed beans Hummus, bean dips Soft cheeses: cream cheese, cottage cheese 	<ul style="list-style-type: none"> Dried meats, jerky, bacon, fried food, pizza, salami, hotdogs, bratwurst Tough meat, stringy or crumbly cheese Dry/hard beans Fried eggs Large cubes of meat in casseroles 

Ground Diet:(continued)

Food Group	Foods Allowed	Foods NOT Allowed
<p>Starches, breads, and cereals</p>	<ul style="list-style-type: none"> Pancakes, French toast, waffles  Hot cereals or moistened cereals such as corn flakes, crisp rice cereals, cheerios (all milk must be absorbed) Moist muffins, soft breads-no crusts Toast with butter and jelly minced into ¼ inch pieces Sticky rice with soft beans, sauce Well-cooked past with sauce 	<ul style="list-style-type: none"> Bagels, English muffins, French bread Granola Cold, dry cereals with milk  Dry, crumbly rice
<p>Fruits</p>	<ul style="list-style-type: none"> Soft fruit like ripe bananas, mashed Strawberries Canned or cooked fruits (peaches, pears)  	<ul style="list-style-type: none"> Pineapple, fruit cocktail; fruits w/seeds Fruits containing juice: melon, oranges, Watermelon, grapes, Fruits with skins unless removed
<p>Vegetables</p>	<ul style="list-style-type: none"> Well-cooked, soft vegetables such as carrots Squash, stewed tomatoes Potatoes without skins, served soft and moist with butter, gravy, or sauce 	<ul style="list-style-type: none"> Corn, peas, string beans  Cole slaw, mixed salads Raw vegetables, celery
<p>Soups</p>	<ul style="list-style-type: none"> Blended smooth to avoid chunks  	<ul style="list-style-type: none"> Soups with meat or vegetable chunks 
<p>Dessert</p>	<ul style="list-style-type: none"> Pudding, custard, mousse Fruit pie with soft crust  Moist soft cake with icing Soft cookies 	<ul style="list-style-type: none"> Desserts that are dry, hard, crumbly, contain nuts or are too chewy
<p>Condiments</p>	<ul style="list-style-type: none"> Butter, margarine, syrup, sour cream, mayonnaise, cream cheese, whipped cream Smooth jelly (no seeds, chunks) 	<ul style="list-style-type: none"> Nuts, seeds  Peanut butter

Pureed Diet:

Food Group	Foods Allowed	Foods NOT Allowed
Meats and proteins	<ul style="list-style-type: none"> • Strained or pureed meat, fish, poultry – add gravy or broth • Smooth chicken, tuna, or egg salad (no celery or onion) • Scrambled or soft-cooked eggs processed to a pureed consistency 	<ul style="list-style-type: none"> • Bacon, hot dogs, sausage links  • Cooked eggs • Cubed or sliced cheese • Dried beans
Fruits	<ul style="list-style-type: none"> • Fruit juices and nectars (depends on thickness of liquids allowed) • Pureed fruits: either raw or cooked • Smooth applesauce  • Baby food fruit 	<ul style="list-style-type: none"> • Fruits such as mashed bananas, mashed canned fruit unless blended smooth • Pineapple, oranges, other stringy high pulp fruit; fruit with seeds, dried fruit
Vegetables	<ul style="list-style-type: none"> • Vegetable juices like V8, tomato (depends on thickness of liquids allowed) • Pureed cooked vegetables • Whipped or smooth mashed potatoes • Baby food vegetables 	<ul style="list-style-type: none"> • Vegetables with seeds • Salads 
Soups	<ul style="list-style-type: none"> • Depending on thickness of liquids allowed: broth, bouillon • Soups with strained or pureed vegetables, pureed creamed soups 	<ul style="list-style-type: none"> • Soups with chunks of food in it 
Desserts	<ul style="list-style-type: none"> • Smooth custard, pudding, mousse • Sherbet, ice cream, frozen yogurt (not allowed if on thickened liquids as become too thin with melting) • Flavored fruit whips, gelatins 	<ul style="list-style-type: none"> • Anything with nuts, coconut, whole or dried fruits
Condiments	<ul style="list-style-type: none"> • Salt, pepper, ketchup, mustard (no seeds), mayonnaise, sauces  • Honey, sugar, syrups  	<ul style="list-style-type: none"> • Nuts, coconut, seeds • Olives, pickles • Peanut butter

C. RESTRICTED DIETS

1. Lactose restricted:

- For a lactose intolerant person (cannot tolerate milk products).



2. Gluten or wheat restricted:

- For those with gluten intolerance or celiac disease.
- A gluten free diet eliminates wheat, rye, and barley in the diet. Those ingredients are replaced by potato, corn, or rice products.



D. THERAPEUTIC DIETS

1. Specific Medical Conditions:

a. Diabetic diet (ADA):

- Controls calories, carbohydrates, protein, and fat intake in balanced amounts to control diabetes and weight.
- Portion control is used at mealtimes (look up ADA “Exchange List for Meal Planning”).

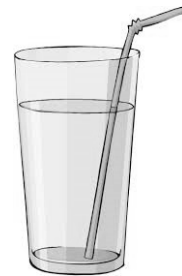
b. Sodium restricted for those with heart failure or hypertension.

2. Clear Liquid Diets:

a. Often used for fluid and electrolyte replacement in people with severe diarrhea.

b. Consists of fluids that you can see through such as:

- Water and Kool-Aid.
- Juices without pulp (apple, grape, cranberry).
- Strained lemonade, limeade, or fruit punch.
- Clear sodas (Ginger Ale, Sprite) and sports drinks.
- Tea or coffee without milk or cream (may add sugar or lemon juice).
- Broth.



- Plain flavored gelatin (no added fruit).
- Popsicles (without bits of fruit or fruit pulp).



3. Full Liquid Diet:**a. Includes fluids that are creamy:**

- Fruit juices or pureed fruit without seeds.
- Vegetable juices or pureed vegetables in broth.
- Strained cream soups or cooked cereals thinned with milk.
- Flavored gelatin without chunks of fruit.



- Ice cream, milk shakes, sherbet, popsicles.
- Yogurt, pudding, soft custard, butter, cream.
- Milk or liquid nutrition supplements.
- Coffee, tea, sodas, water, sports drinks.

E. SPECIFIC DIET GUIDELINES**1. “BRAT” Diet:**

- a. Often recommended for someone with viral gastroenteritis.
- b. “BRAT” stands for **b**ananas, **r**ice, **a**pplesauce, and **t**oast.
- c. There is little evidence that this diet is beneficial while someone is ill.
- d. When someone is ill, encourage them to eat as tolerated.
 - Smaller meals are less likely to cause vomiting.
 - Bland food is tolerated better than spicy foods.
- e. Sports drinks, diluted fruit juices, and other drinks along with saltine crackers and broths or soups can meet the needs for fluids and salt.

**2. Low Sodium Diet:**

- a. Often needed for people with heart, liver, and kidney disease.
- b. Contains fewer than 2.3 grams (2300 milligrams) of sodium each day. Usually, 2 grams is used for the allowed amount.
- c. Sodium (salt) is quite common in all diets and is mainly found in packaged or processed foods as well as restaurant foods.
 - Processed foods include prepared frozen meals, canned foods, pickled foods, snack foods, lunch meats, cheese, sauces, dressings, breads, cereals, and soda along with others.
 - Sodium in the form of salt is added to foods during cooking and eating and can add up to be quite a large amount during each day.
 - **One teaspoon of table salt** contains 2300 milligrams of sodium – the entire allowed amount for one day.



- d. The sodium content of packaged foods is listed on food labels.
- e. A low-sodium diet is most easily attained by avoiding processed foods; eliminating the addition of salt to foods during cooking and consumption; and eating more fresh fruits and vegetables.



3. GERD Diet:

- a. To reduce symptoms of reflux, avoiding foods that trigger those symptoms is important.
- b. Foods recognized to trigger symptoms include:
 - Coffee (with or without caffeine) and caffeinated beverages.
 - Chocolate. Carbonated beverages.
 - Peppermint, garlic, onions, tomatoes.
 - Fatty, spicy, or fried foods.
 - Citrus fruits and juices.



4. Vitamin K Restrictions:

- a. Warfarin (Coumadin®) is a medication that makes blood clot more slowly thus preventing blood clots from forming in legs or elsewhere.
- b. It is often prescribed after someone has had a deep vein thrombosis (DVT) or pulmonary embolus (PE).
- c. Vitamin K in our body, helps blood to clot, but warfarin works by making it harder for the body to use vitamin K.
- d. Changes in the amount of vitamin K that is consumed each day can affect how warfarin works and can affect the blood test (protime/INR) used to guide the dose of warfarin being prescribed.
- e. About the same amount of vitamin K should be consumed daily:
 - A big increase in how much vitamin K is consumed makes it easier for clots to form thus can lead to developing a DVT.
 - A big decrease in how much vitamin K is consumed makes it harder for the blood to clot at all which can result in bleeding.
- f. To keep a consistent amount of vitamin K in the diet, it is important to know which foods contain the most vitamin K:



- Dark green leafy vegetables contain the highest amounts. Foods highest in vitamin K include spinach, kale, and broccoli.
- Cabbage, green leaf lettuce, and romaine lettuce are also high.
- Other foods to consider include asparagus, kiwi, peas, rhubarb, grapes and blackberries or blueberries.



Appendix 23: SAMPLE TEST

A. SECTION 1:

1. List the Seven Rights of Medication Administration: Worth 7 points:

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____
- 7) _____

B. SECTION 2: MAR QUESTION (16 POINTS)

Ricky was seen by his physician for a regular follow up appointment. Dr. Thompson decided to start Ricky on Depakote for seizures. You pick up the prescriptions from the pharmacy at 4 pm and must now set up the MAR and help Ricky take his evening medications.

Using the prescription, fill out the MAR using no abbreviations (except you may abbreviate "mg").

Physician's Clinic 25 West 10 th Street Helena, MT 59601 406-447-9812	
May 3, 2022	
Ricky Beck	DOB: 4/8/82
Rx :	
Depakote 500 mg	
Sig: one po nightly for one week, then one po BID	
Disp: 60	Refill x 11
Signed:	
<i>Jack Thompson, MD</i>	
Jack Thompson	

Section 2: MAR Question (16 points) continued:

Medication	May	HR	1	2	3	4	5	6	7	8	9	10	11	12
	start													
	start													

Diagnosis: seizures

Allergies: none		IN	Name:	IN	Name:
Ricky Beck	Dr Jack Thompson	ii	Ingrid Inez	TJ	Tim Jacobs
DOB: 4/8/82	Phone: 447-9812	CP	Carol Peters		

C. SECTION 3: MAR ERROR QUESTION: (12 POINTS)

Carol was seen by her physician on February 3 and prescribed the following medications. Carol has CHF and is allergic to penicillin. On February 6, as you start to prepare medications, after looking at Carol's MAR, you have some concerns. Here is the prescription and the MAR. Find 6 errors – describe them on the black lines and place the corresponding number onto the MAR where the error occurred.

<p>February 3, 2022 Carol Frasier</p> <p>RX: Coreg 3.125 mg Sig: one po twice weekly for a week starting tomorrow morning, then two po BID Disp 120 Refill x 11</p> <p>Lasix 40 mg Sig: one po BID starting tonight Disp: 60 Refill x 11</p>	<p>Physician Clinic 25 West 10th Street Helena, MT 59601 406-447-9812</p> <p>DOB: 9/11/49</p> <p>Signed: <i>Jack Thompson, M.D.</i> Jack Thompson</p>
---	--

HEALTH AND MEDICATION ADMINISTRATION MANUAL

Appendix 22. Diets

2. Section 3: MAR error question (12 points) continued:

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____

Medication	May	HR	1	2	3	4	5	6	7	8	9	10	11	12
Coreg 3.125 mg po daily for one week then	start	8am												
	2/3/22													
		8pm	X	X	cp	cp	cp					X	X	X
Coreg 3.125 mg two tablets twice daily	start	8am	X	X	X	X	X	X	X	X	X			
	2/10/22													
		8pm	X	X	X	X	X	X	X	X	X			
Lasix 40 mg one BID	start	8am	X	X	X	ii	ii							
	2/3/22													
		8pm	X	X	cp	cp	cp							

Diagnosis: CHF

Allergies: Penicillin		IN	Name:	IN	Name:
Carol Frasier	Dr Jack Thompson	ii	Ingrid Inez	TJ	Tim Jacobs
DOB: 9/11/49	Phone: 447-9812	cp	Carol Peters		

D. SECTION 4: SAMPLE TEST QUESTIONS:**1. True/false: usually at least 20 T/F questions on a test:**

1.	True	False	If a medication is to be given on an empty stomach, it should be given either 1 hour before, or 2 hours after eating.
2.	True	False	It is ok to mix liquid medications together before taking.
3.	True	False	PRN medications can be given without a prescription.
4.	True	False	During a generalized seizure, the entire brain is affected.
5.	True	False	When someone is having a seizure, place something between their teeth.
6.	True	False	During a seizure, place a small pillow or soft clothing under the person's head.
7.	True	False	Aspiration can occur with improper positioning during and after eating.

2. Fill in the blank: usually 2 or 3 of these on each test:

1. List 2 things to avoid when storing medications:

1) _____

2) _____

3. Matching: at least one or two matching sections on each test:

1.	_____	is a complication of diabetes.	a. dry mouth, thirst
2.	_____	is an early sign of low blood sugar.	b. insulin
3.	_____	is a medication used to treat diabetes.	c. glucagon
4.	_____	is a medication used to treat very low blood sugar levels (hypoglycemia).	d. peripheral neuropathy
5.	_____	is a symptom of high blood sugar levels	e. anxiety

4. Multiple choice: usually 15+ of these. Only one answer is correct.

1. Common allergens include:
 - a. nuts
 - b. latex
 - c. insect bites
 - d. all the above
 - e. a and c
2. Complications of chronic constipation include:
 - a. hemorrhoids
 - b. abdominal pain
 - c. anal fissures
 - d. nausea and vomiting
 - e. all the above
3. If someone is having a seizure while in the water such as in a bathtub:
 - a. the person is not at risk for aspiration of water
 - b. you do not need to have him seen by a physician afterwards
 - c. begin artificial respiration while in the water
 - d. get him out as fast as possible
 - e. b and d
 - f. all the above
4. Which of these can trigger seizure activity:
 - a. talking
 - b. video games
 - c. cool weather
 - d. reading a book
 - e. flashing lights
 - f. b and e
 - g. b, c, and e
5. Conditions making someone susceptible to aspiration pneumonia include:
 - a. dysphagia
 - b. stroke
 - c. diabetes
 - d. seizure disorder
 - e. a, b, and c
 - f. a, b, and d

Appendix 24. ANSWERS TO SAMPLE TEST

A. SECTION 1:

1. List the Seven Rights of Medication Administration: Worth 7 points:

- 1) The right person
- 2) The right medication
- 3) The right dose
- 4) The right time and date
- 5) The right route
- 6) The right position
- 7) The right form

(chapter 5, pg. 20)

B. SECTION 2: MAR QUESTION (16 POINTS)

(chapter 7, pg. 33)

Medication	May	HR	1	2	3	4	5	6	7	8	9	10	11	12
Depakote 500 mg 1 one by mouth 3 nightly for one week 5 then	start	8pm	X	X	16							X	X	X
	5/3/22	9	11									11		
	7													
Depakote 500 mg 2 one by mouth 4 twice daily 6	start	8am	X	X	X	X	X	X	X	X	X			
	5/10/22	10	12								12			
	8	8pm	X	X	X	X	X	X	X	X	X			

Diagnosis: seizure disorder

Allergies: none		IN	Name:	IN	Name:
Ricky Beck	Dr Jack Thompson	ii	Ingrid Inez	TJ	Tim Jacobs
DOB: 4/8/82	Phone: 447-9812	CP	Carol Peters		

1, 2. Medication: must have correct medication and dose

3, 4. PO: must write out "by mouth", "orally", or something similar

5, 6. Schedule: must write out the dose schedule: nightly, then twice daily

7, 8. Start date: must indicate the start date- first dose given the night the prescription was picked up which would be 5/3, then after one week (7 nights), the second dosing schedule starts on 5/10.

9, 10. Times: must have reasonable times for taking the medications such as 6, 7, or 8 am and 6, 7, 8, or 9 pm.

11, 12. "X" out the days the medication is not given

HEALTH AND MEDICATION ADMINISTRATION MANUAL

Appendix 24. Answers to Sample Test

C. MAR ERROR QUESTION (WORTH 12 POINTS): (chapter 8, pg. 46)

1. Did not write out “by mouth” or something similar
2. Wrong instructions: should be twice daily
3. Wrong start date: was supposed to start the morning of 2/4
4. Did not write out “by mouth” or something similar
5. Wrong start date: should have started 2/11 if it had correctly started on 2/4
6. Did not write out “by mouth” or something similar
7. Did not write out twice daily or something similar

Medication	May	HR	1	2	3	4	5	6	7	8	9	10	11	12
Coreg 3.125 mg po 1 daily 2 for one week then	start	8am				3								
	2/3/22													
	3	8pm	X	X	cp	cp	cp					X	X	X
Coreg 3.125 mg 4 two tablets twice daily	start	8am	X	X	X	X	X	X	X	X	X		5	
	2/10/22													
	5	8pm	X	X	X	X	X	X	X	X	X			
Lasix 40 mg 6 one BID 7	start	8am	X	X	X	ii	ii							
	2/3/22													
		8pm	X	X	cp	cp	cp							
Diagnosis: CHF														
Allergies: penicillin					IN	Name:			IN	Name:				
Carol Frasier DOB: 9/11/49		Dr Jack Thompson Phone: 447-9812			ii	Ingrid Inez			TJ	Tim Jacobs				
					cp	Carol Peters								

D. SECTION 4:**1. True/false:**

1.	True		If a medication is to be given on an empty stomach, it should be given either 1 hour before, or 2 hours after eating. (chapter 3, pg.12)
2.		False	It is ok to mix liquid medications together before taking. (chapter 3 pg. 12)
3.		False	PRN medications can be given without a prescription. (chapter 3, pg. 8)
4.	True		During a generalized seizure, the entire brain is affected. (chapter 11, pg. 66)
5.		False	When someone is having a seizure, place something between their teeth. (chapter 11, pg. 68)
6.	True		During a seizure, place a small pillow or soft clothing under the person's head.(chapter 11, pg. 68)
7.	True		Aspiration can occur with improper positioning during and after eating.(chapter 16, pg. 29)

2. Fill in the blank:

1. List 2 things to avoid when storing medications:

ANY TWO OF THE FOLLOWING ARE ACCEPTABLE: (chapter 3, pg. 9)

- Temperature too cold or too warm
- Moist, damp places
- Bright light if medication not in an opaque container
- Open to the air
- Using past the expiration date

3. Matching: (all from chapter 13)

1.	<u> d </u>	is a complication of diabetes. (pg. 3)	a. dry mouth, thirst
2.	<u> e </u>	is an early sign of low blood sugar. (pg. 8)	b. insulin
3.	<u> b </u>	is a medication used to treat diabetes. (pg. 2)	c. glucagon
4.	<u> c </u>	is a medication used to treat very low blood sugar levels. (pg. 10)	d. peripheral neuropathy
5.	<u> a </u>	is a symptom of high blood sugar levels. (pg. 8)	e. anxiety

4. Multiple choice:

1. Common allergens include: (chapter 18, pg. 33)
d. all the above
2. Complications of chronic constipation include: (chapter 15, pg. 25)
e. all the above
3. If someone is having a seizure while in the water such as in a bathtub:
d. get him out as fast as possible (chapter 11, pg. 68)
4. Which of these can trigger seizure activity: (chapter 11, pg. 61)
f. b and e
5. Conditions making someone susceptible to aspiration pneumonia include:
f. a, b, and d (chapter 16, pg. 28)

Your test will have sections as described above but will have more questions for a total of 100 points. You are required to score at least 85 points in order to pass.

When taking the test, you will not be given any help with reading or understanding questions. You will fill in your name on all pages of the test as indicated. All pages of the test must be handed in – if they are not received, your test will not be graded, and you will automatically fail.