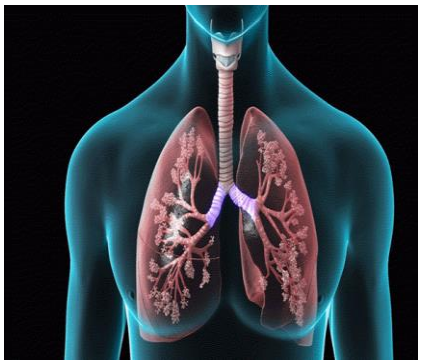
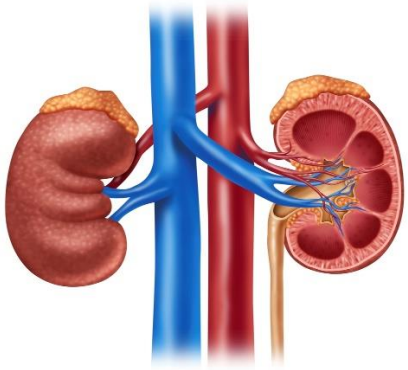
CHRONIC DISEASES EDUCATION MANUAL





Created by: Kimiko Cheeley, MFT

In this manual, you will be equipped with the basic tools to help those who have a chronic condition. This manual includes a brief description of each disease. This will enable you to educate those with the disease and help them learn how to manage their health.

Table of Content

Introduction of self

When working with client/patients, it is important to connect with them and build rapport. This process begins as soon the first encounter occurs. Thus, it is important to give a proper introduction. During the introduction, you should include your name, role and expectation. Below is an example of how you may introduce yourself:

Hello my name is Jane Doe and I am a _____. I am here to educate you on your chronic disease. By the end of this conversation, my goal for you is to not only know more about your condition but also know how to manage it as well.

Heart Failure

Heart Failure is a condition that causes the muscle cells in the heart's wall to weaken and the heart can no longer pump enough oxygen rich blood throughout the body. This causes symptoms such as shortness of breath or swelling in the stomach, hands, legs, and feet.

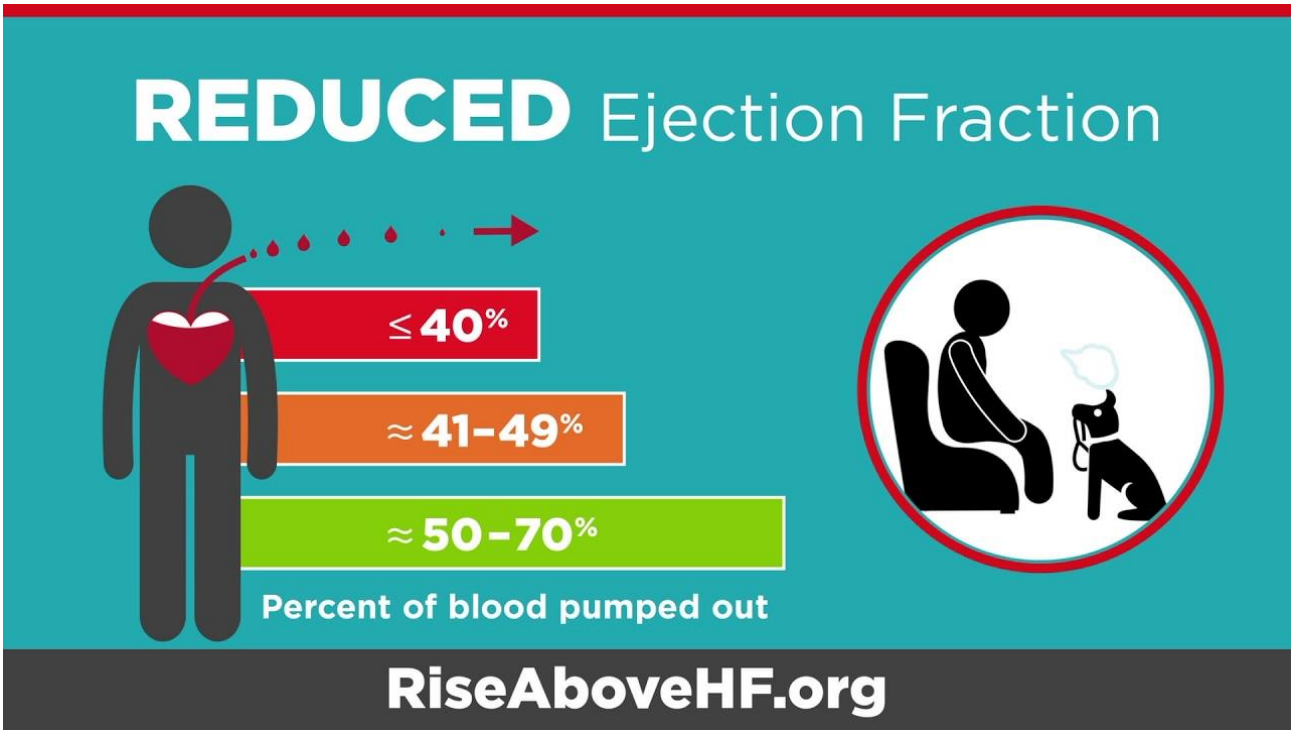
There are different types of heart failure:

- **Left-sided heart failure** happens when the heart fails to pump out blood to the body. There are two types of left-sided heart failure.
    - Systolic failure: the left ventricle loses its ability to contract normally. The heart can't pump with enough force to push enough blood into circulation.
    - Diastolic failure: the left ventricle loses its ability to relax normally because the muscle is stiff. Thus, the heart cannot fill properly with blood.
- **Right-sided heart failure** occurs when the right side loses pumping power and the blood backs up in the body's veins. This usually causes swelling in the legs, ankles and ascites (fluid) in the liver or GI track.
    - Right-sides heart failure usually occurs because of left-sided heart failure.
- **Congestive Heart Failure**- a term that can be used interchangeably. When blood flow out of the heart slows, blood returning to the heart gets backed up, which causes congestion in the body's tissue. The swelling is referred to as edema.
    - Heart failure also affects the kidneys, where they are unable to expel salt and water through the urine. Thus, the body retains the water and increases edema.

Heart Failure Testing

The doctor may order an echocardiogram (ECHO) to test for heart failure. This is an ultrasound of the heart. The test will show if there are problems with the muscular wall of the heart, how well it pumps and the condition of the heart valves and the sac around the heart.

The ECHO also measures the ejection fraction (EF), which is an estimate of how strong the heart pumps. A normal EF is 50% or more.



Source: American Heart Association

Heart Failure Medical Treatment

Most daily treatment of heart failure includes:

- Taking medication and weigh daily to watch for fluid buildup
- Eating less salt and limiting fluids
- Balancing low-level exercise and rest
- Reducing demands on the heart when possible

Medication commonly used with heart failure

1. **Diuretics:** It causes you to pass urine. This helps rid the heart of extra fluids to help it pump blood better.
2. **ACE inhibitors and ARB's:** these medications relax the blood vessels and make the heart workload easier over time.
3. **Beta** or a **beta-and alpha-blocker:** offer long term benefits to make the heart's workload easier
4. **Digoxin:** help to control the heart rate

Medication should be taken as prescribed and do not stop without talking to the doctor.

It helps to keep a written schedule, pill box, and set timers to remember to take medication.

Weighing

Weighing should be done every day on the same scale. The scale should remain on a hard surface. A record of the weight should also be kept and taken to doctor's appointments.

The doctor should be notified if a person is gaining 2 pounds overnight or 5 pounds in a week

Salt and Fluid

The American Heart Association recommends no more than 2,300 milligrams (mgs) a day and **an ideal limit of no more than 1,500 mg per day for most adults**

- 1/4 teaspoon salt = 575 mg sodium
- 1/2 teaspoon salt = 1,150 mg sodium
- 3/4 teaspoon salt = 1,725 mg sodium
- 1 teaspoon salt = 2,300 mg sodium

To help stay within the limit, do not cook with salt, add salt at the table, and read the food labels. It is also helpful to keep track of salt intake by keeping a log.

SODIUM TRACKER

American Heart Association | American Stroke Association.

When recording your sodium intake, be sure to keep in mind that different brands and restaurant preparation of the same foods may have different sodium levels so ask your server or look online for sodium content of restaurant foods. To track your sodium intake check the nutrition labels of the foods you eat and prepare. When preparing homemade foods, check the sodium content in individual ingredients, then add up the totals. Sodium levels of the same food can vary widely, so it is important to educate yourself by reading labels and looking for low-sodium options.

The American Heart Association's Heart-Check mark—whether in the grocery store or restaurant helps shoppers see through the clutter on grocery store shelves to find foods that help you build a heart-healthy diet.
Visit heart.org/sodium for more information.

MEAL	FOOD	SODIUM	NOTES
Breakfast	coffee 8oz.	15mg	made at home w/ cream and sugar
	1 bowl of cereal	120-400 mg 50 mg	1 serving w/ milk
Snack	low fat blueberry muffin	250-800mg	found sodium level online
Lunch	broccoli leftovers from dinner	30 mg	1 cup steamed, no salt
	chicken sandwich	160-460 mg 40-330 mg	2 pieces whole wheat bread 4oz. chicken breast
	diet soda	28 mg	
Snack	potato chips	50-200 mg	1 oz. bag - got hungry
Dinner	spaghetti	530-980 mg	1 cup canned pasta with meat sauce
	white bread	80-230 mg	1 slice
	salad w/ dressing	200-250 mg	2 cups romaine 1 tbsp italian dressing
Snack			
	DAILY SODIUM TOTAL	1551-3773 mg	

Source: American Heart Association

The doctor may limit fluid intake to 2 quarts (64 ounces) a day. This includes all beverages, high-moisture foods/fruits, Jell-O, ice cream and ice cubes.

Small amounts of hard sugar free candy can help with dry mouth.

Exercise/Rest

Rest throughout the day

Put your feet up for a few minutes

Consider taking a nap at lunch.

Speak to the MD about taking walks or other exercises

Reduce Demands

- Reduce blood pressure
- Get rid of excess body fat
- Control diabetes
- Stop smoking
- Reduce stress
- Reduce cholesterol
- Stay away from people with colds or flu
- Avoiding being too hot or cold

Chronic Obstructive Pulmonary Disease (COPD)

COPD is a condition that happens when lung disease blocks air from flowing easily within the lungs. There is no cure for COPD and the damage it causes is not reversible. Symptoms may include shortness of breath, coughing, wheezing and too much mucus in the lungs.

COPD is used to describe many types of lung diseases:

- **Emphysema** occurs when the air sacs in the lungs lose their ability to relax and let air out of the lungs. If the air is trapped in the lungs and have shortness of breath when the sacs lose its elasticity it may cause coughing.

- **Chronic Bronchitis** comes from swollen or inflamed lining of the bronchial tubes. Inflammation causes more mucus, and the extra mucus causes coughing and wheezing.

- **Asthma** occurs when the windpipe (trachea) and the bronchial tubes are sensitive. Exposure to certain things causes the bronchial tubes to tighten.
    - An asthma attack occurs when the bronchial tubes responds to things like dust, animal dander, smoke, and cold air. The attacks can last from minutes to several hours

- **Cystic Fibrosis** is a hereditary disease that makes children prone to having a defect in the glands that affect the respiratory and digestive systems.

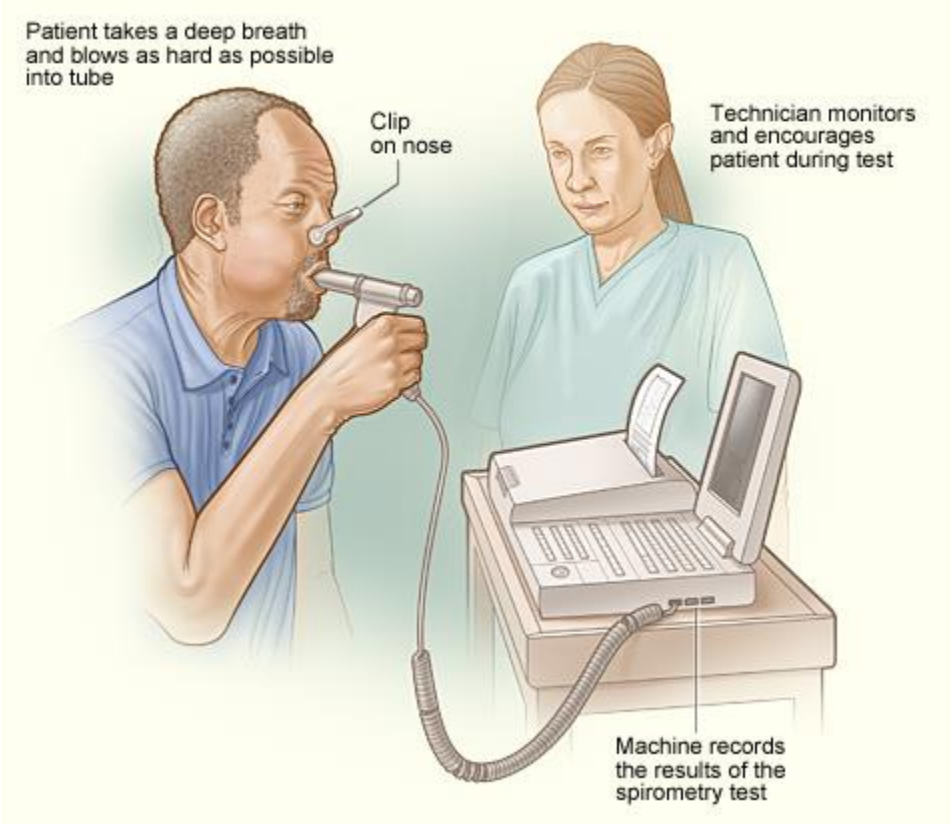
- **Bronchiectasis** occurs when the bronchial tube walls become inflamed, enlarged, and swollen. This weakens the tube walls and forms scar tissue. People with cystic fibrosis are more likely to develop bronchiectasis.

- **Pulmonary Fibrosis** is when tissue deep in the lungs becomes thick, stiff and scarred. The scaring is called fibrosis and it makes it difficult for a person to breath.

- **Sarcoidosis** happens when a white blood cell that protects the body from disease triggers a buildup of inflammatory cells in the body. The building up of the cells causes damage to the bronchial tubes and air sacs. This causes normal tissue to become stiff.

COPD Testing

The doctor may diagnose COPD based on symptoms, medical history and testing. A lung function test may be done. The test measures how much air you can breathe in and out, how fast you can breathe air out, and how well your lungs deliver oxygen to the blood. The main test for COPD is spirometry. During this test, the patient takes a deep breath and blows as hard as possible into a tube connected to a machine called a spirometer.



Source: National Heart, Lung, and Blood Institute

COPD Medical Treatment

Treatment is based on individual needs but may involve:

- Breathing exercise
- Physical exercise
- Taking medicine
- Managing extra mucus
- Eating nutritious foods
- Avoiding things that may cause breathing problems

Breathing exercise

Pursed lip breathing is used to help ease shortness of breath

How to do pursed lip breathing:

1. Inhale through your nose (as if smelling something) for about 2 seconds
2. Purse you lips together as if you are going to whistle
3. Exhale through your mouth with your lips pursed
4. Gently and slowly push the air out
5. Exhale 3 times as long as you inhale (for about 2 seconds)

The diaphragm is the hardest-working breathing muscle. Diaphragmatic breathing is an exercise to strengthen your diaphragm and stomach muscles that help you breathe out.

How to do diaphragmatic breathing:

1. Sit in chair with your back and shoulders straight or you can lie on your back with your head and knees supported by pillows.
2. Feel for the movement of your chest or accessory muscles by placing one hand on your upper chest.
3. Feel the movement of your diaphragm by placing your other hand on the center of your stomach.
4. Inhale slowly through your nose or mouth. You should let your stomach muscles relax and move outward.
5. Tighten and pull your stomach muscles in as you exhale slowly through pursed lips.

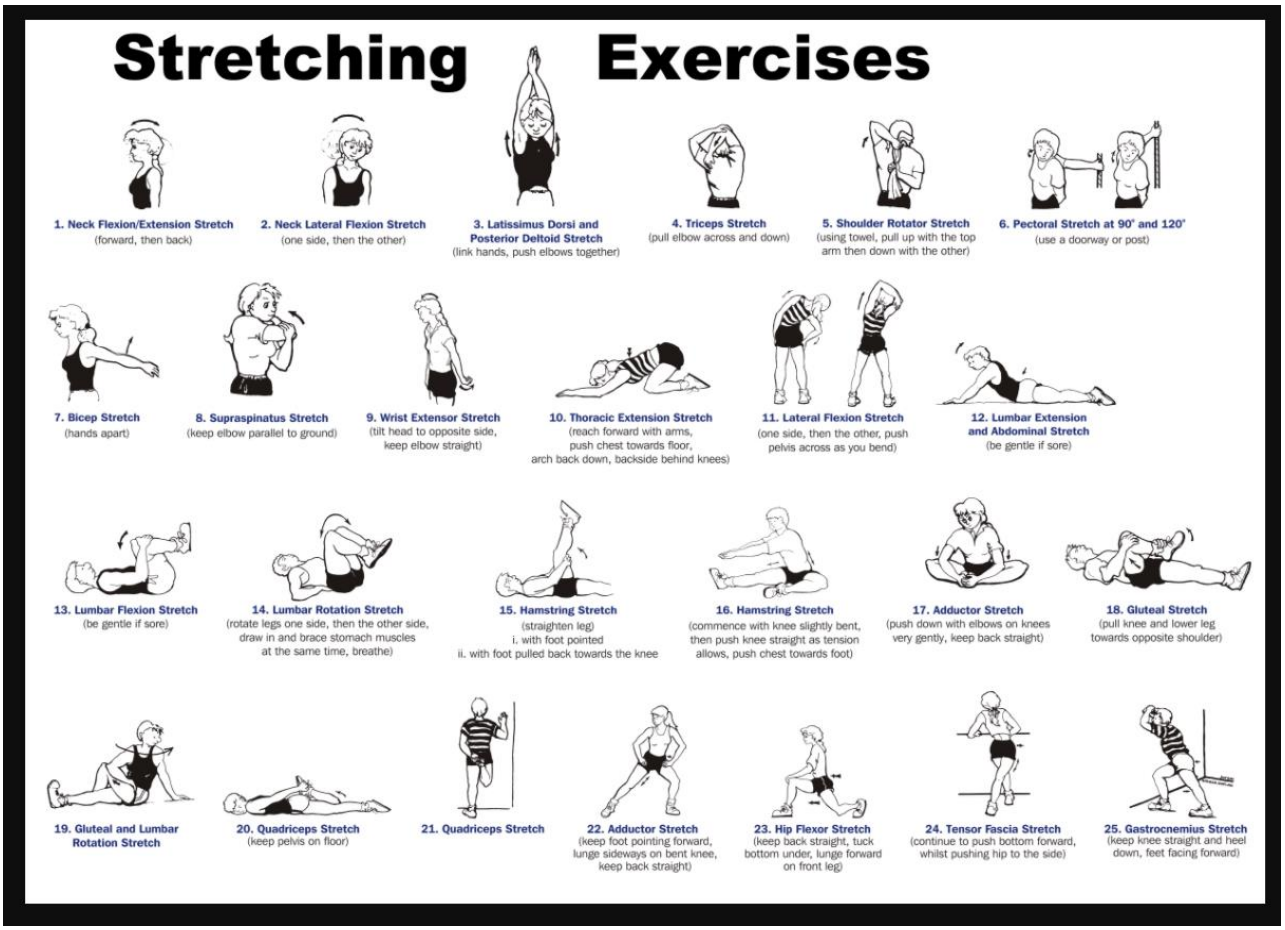
This breathing exercise should be done for 10 minutes every day with rest periods as needed between breaths.

Physical Exercise

Before you do any type of exercise, check with the doctor. Staying active prevents muscle weakness. Using pursed-lip and diaphragmatic breathing while exercising helps with shortness of breath.

One of the best ways to strengthen the heart and muscles is walking. Every exercise period should include 5 to 10 minutes of warm up and cooling down activity. This helps prevents injuries by getting the heart and muscles ready for activity.

Possible warm-up exercise



Source: Sport Science

Medication

Types of medication used for COPD

1. **Bronchodilators:** relaxes the muscles which tighten around the airways. They help relieve shortness of breath and chest tightness.
2. **Corticosteroids:** reduces swelling in the lining of the airways; decreases the inflammation and mucus production. Must be used regularly and does NOT have an immediate effect.
3. **Water pills (diuretics):** increase the rate at which you make urine. When you have less fluid on the body, the heart and lungs do not have to work as hard.
4. **Antihistamines:** help block allergic reaction to things that causes breathing problems.
5. **Decongestants:** help reduce swelling in nasal passages.

Managing Mucus

- Drink plenty of liquid to help thin the mucus
  - Your doctor will tell you how much to drink
  - It will take about 2 to 4 days before the mucus begins to thin
  - Although you can drink other fluids, water is best
- Drink very little caffeine
- Don't take antihistamines or diuretics unless your doctor tells you to.

Diet

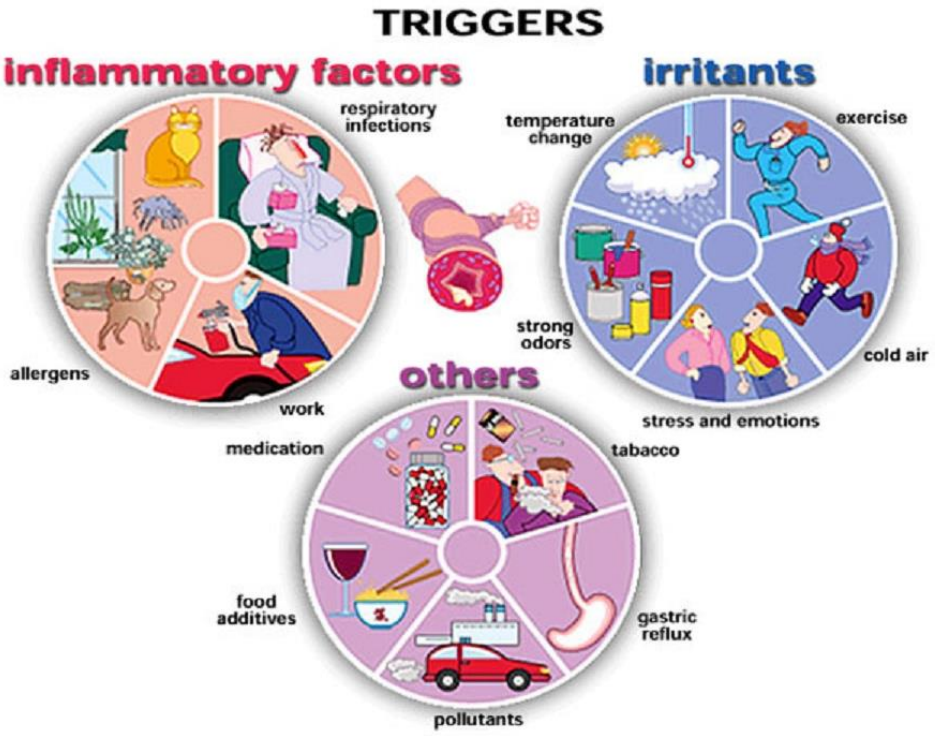
A balance diet helps increase energy levels, maintain weight, and helps your body fight off illness. It takes extra oxygen to digest food. When a person has a lung disease, they may be short of breath when trying to digest large amounts of food. This process also creates more carbon dioxide which will need to be exhaled through the lungs. Certain foods produce a higher amount of carbon dioxide than others do. Not all people with lung disease need to follow the same diet. Use the plan the doctor or nutritionist provides.

Preventing Infection

- ✓ Wash hands often
- ✓ Stay away from sick people
- ✓ Take medication
- ✓ Exercise
- ✓ Eat a balanced diet
- ✓ Ask the doctor about getting a pneumonia shot
- ✓ Keep a waterless hand cleaner handy
- ✓ Get 7 to 8 hours of sleep nightly
- ✓ Conserved energy
- ✓ Keep lungs clear of mucus
- ✓ Get a flu short every year
- ✓ Don't smoke and don't allow smoking in the home

Exposure to Triggers

A trigger is something that causes breathing to get worse. It can be smoke, being too hot or cold, air pollution, strong odors, dust, perfumes and allergens. Stay away from anything that causes breathing to get worse.



Source: Immunoehealth

DIABETES

Diabetes is a problem with the body that causes blood glucose (sugar) levels to rise higher than normal. This is also called hyperglycemia. When a person eats, the body breaks down food into glucose and sends it into the blood. Insulin then helps move the glucose from the body into the cells. When glucose enters the cells it either utilizes the fuel for energy or stores it for later. When a person is diabetic, it is something wrong with their insulin.

There are two types of diabetes:

Type 1- This type is usually diagnosed in children and young adults, and was previously known as juvenile diabetes. The body treats the cells that make insulin as invaders and destroys them, thus the body eventually does not produce insulin. Only 5% of people with diabetes have this form of the disease.

Type 2- This is when the body does not uses insulin properly. This is called insulin resistance. At first, the pancreas makes extra insulin to make up for it. However, over time it cannot keep up and make enough insulin to keep the blood glucose at normal levels.

Diagnosing Diabetes

There are several ways to diagnose diabetes.

- **A1C:** The A1C test measures the average blood glucose for the past 2 to 3 months. Diabetes is diagnosed at an A1C of greater than or equal to 6.5%
- **Fasting Plasma Glucose (FPG):** This test checks the fasting blood glucose levels. Fasting means not having anything to eat or drink (except water) for at least 8 hours before the test. Diabetes is diagnosed at fasting blood glucose of greater than or equal to 126 mg/dl
- **Oral Glucose Tolerance Test (OGTT**): a two-hour test that checks the blood glucose levels before and 2 hours after drinking a special drink. It tells the doctor how the body processes glucose. Diabetes is diagnosed at 2-hour blood glucose of greater than or equal to 200 mg/dl
- **Random(Casual) Plasma Glucose Test**: This test is a blood check at any time of the day when severe diabetes symptoms are present. Diabetes is diagnosed at blood glucose of greater than or equal to 200 mg/dl

Diabetes Medical Treatment

Daily treatment of diabetes includes:

- Monitoring blood glucose
- Creating a meal plan
- Exercising
- Taking medication
- Maintaining overall health

Monitoring Blood Glucose

This first step in managing diabetes in measuring blood sugar. This is done by a blood glucose meter. The reading should be within target range which is established by the doctor. It is also important to keep track of the readings. This will show how food, activity, stress, and medication affect the blood glucose.

Once the glucose is checked, if it is high (hyperglycemia) a person may have increased thirst, increased need to urinate, increased tiredness and/or blurred vision.

If high a person may:

- ✓ drink water or other sugar free liquids to stay hydrated.
- ✓ if the person takes insulin, they may need an extra dose but need to check with their health care provider.
- ✓ Check every 4 hours to make sure it is going down. If not down by the second check, call the healthcare provider.

Once glucose is checked and it is low (hypoglycemia), a person may have sweaty or cold, clammy skin, dizziness, shakiness or tingling feeling, hard fast heartbeat or headache, confusion or irritability.

If low a person may:

- ✓ Eat or drink 15 grams of fast acing carbohydrate
  - 3 or 4 glucose tablets
  - ½ cup (4oz.) of fruit juice
- ✓ Check blood glucose after 15 minutes. If it's still low, repeat step 1. Check again 15 minutes later. If it's still too low, call the health care provider right away.
- ✓ Once the glucose rises, eat a small snack if the next planned meal is over half an hour away.

Meal Plan

The key to controlling blood glucose is eating healthy foods every day. Ask to meet with a registered dietitian. They will teach the skills needed to plan a healthy, diabetes-friendly meals. It is better to eat from all food groups to give the body the nutrients needed to work properly.

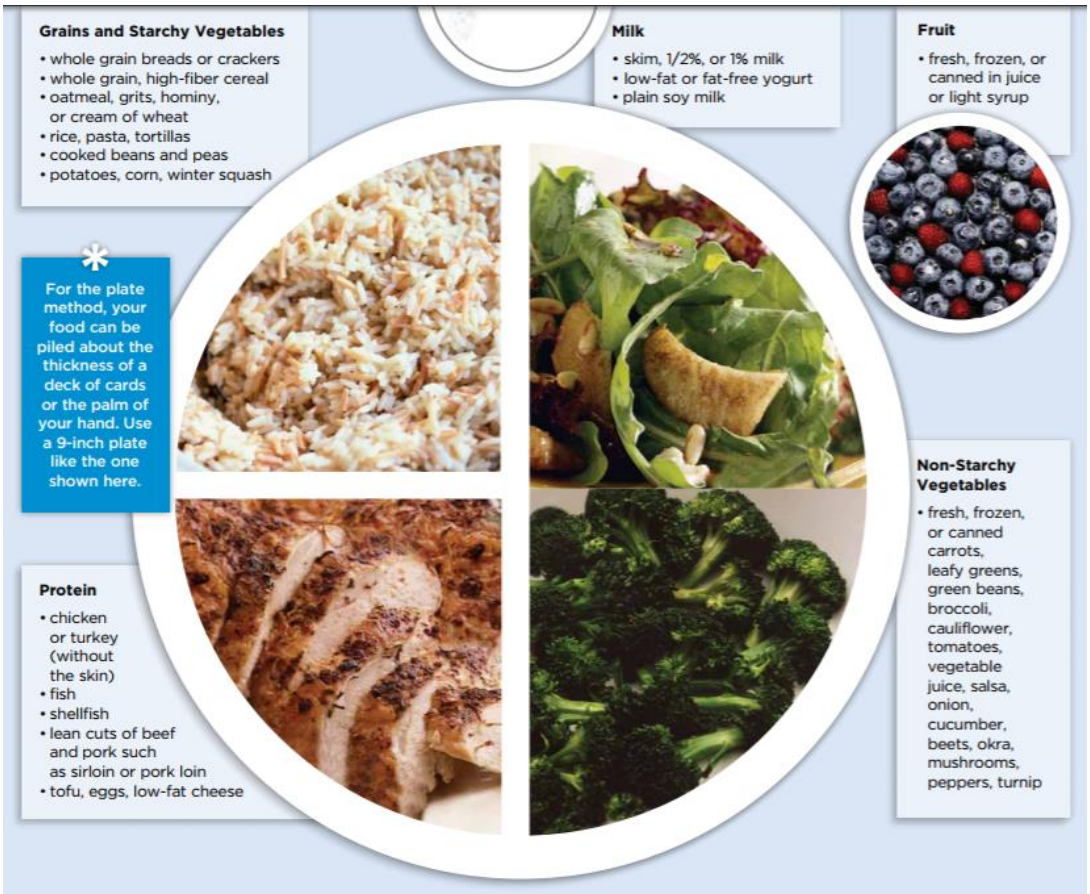
To sustain energy, the body needs carbohydrates. However, the more carbohydrates eaten, the higher the blood glucose may rise.

Types of carbs are: starches, sugars, and fibers

Tips

The plate Method

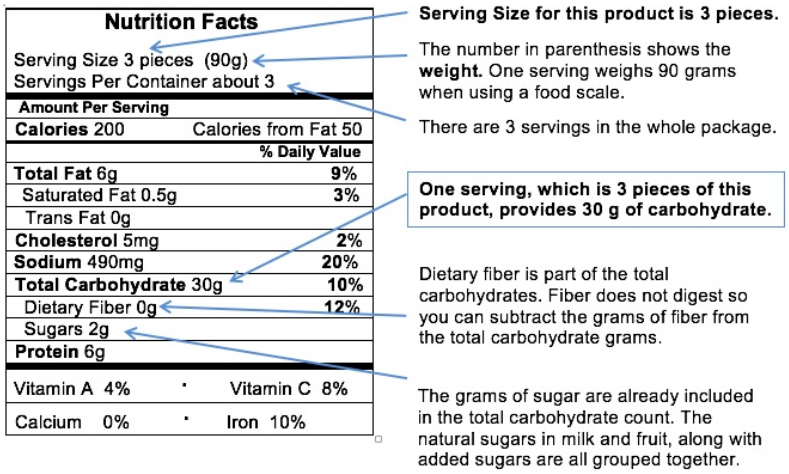
This will help with portion sizes



Source: American Diabetes Association

Count carbs

This system helps keep track of the carbohydrates eaten at each meal



***Source:** Diabetes Teaching Center at the University of California*

Exercise

Being physically active every day helps manage blood glucose, blood pressure, and cholesterol. This is because an active lifestyle can improve the body's ability to use insulin, and reduce the risk of complication of diabetes.

If daily activity is new, start slowly and steadily. Try to do a total of at least 150 minutes per week of face pace walking, spread over 3 or more days a week. If a person is new to walking, they can start with 5 minutes a day and add time as they go.

Medication

Some people with type 2 diabetes can manage their diabetes with healthy eating and exercise. However, the doctor may need to also prescribe oral medications (pills) and/or insulin to help meet the target blood glucose levels.

Maintain overall health

Emotional health

- Deal with stress by talking to friend, family or counselor, making time to do enjoyable things
- Taking time to relax: try yoga, deep breathing and meditation
- Setting priorities to prevent from being overwhelmed

Physical Health

- Regular Checkups
- Vaccinations
- Stop smoking
- Foot care: inspect foot every day for cuts, cracks and sores, don't soak feet, keep clean and don't go barefoot.
- Eye care: report eye pain or pressure, poor vision and new dark spots
- Gum care: report bleeding, red, swollen or tender gums. Report loose teeth or those that have shifted position.

End Stage Renal Disease (ESRD)

When the kidneys become damaged, they stop working properly. Waste products and fluid will begin to build up in the body causing swelling, vomiting, weakness, poor sleep, and shortness of breath. This stage of kidney disease is called **Acute Kidney Injury** (AKI) or **Acute Renal Failure** (ARF).

The final stage of chronic kidney disease is kidney failure. The kidneys stop working and the body will not function properly without dialysis or a kidney transplant. In most cases, kidney failure is permanent and is called **End Staged Renal Disease**.

Common test for kidney function

- **BUN:** Blood Urea Nitrogen measures waste in the blood that would be otherwise filtered into urine with normal kidney function. Normal range is 7-20 mg/dL
- **Creatinine:** a creatinine blood test measures the amount of creatinine in the blood. Normally, the kidneys will filter creatinine, and it will be released in the urine. The normal range is .7-1.3 mg/dL.
- **Microalbumin:** this is a urine test to check the level of albumin, or protein, in the urine. In a person with normal kidney function, there should be little to no albumin in the urine.
- **GFR:** The Glomerular Filtration Rate blood test measures how much blood can pass through the kidney in one minute. It is used to stage kidney disease.

Table 1. Stages of Chronic Kidney Disease

Stage	Description	GFR (mL/min/1.73 m²)
1	Kidney damage with normal or ↑ GFR	≥90
2	Kidney damage with mild ↓ GFR	60-89
3	Moderate ↓ GFR	30-59
4	Severe ↓ GFR	15-29
5	Kidney failure	<15 (or dialysis)

Source: National Kidney Foundation

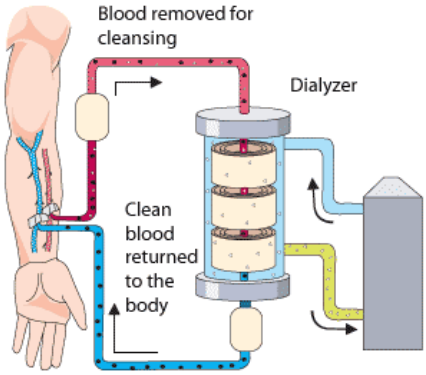
- **Ultrasound:** this procedure is used to find problems with the kidney size and other problems such as cysts or kidney stones.
- **Biopsy:** is procedure that uses a needle to remove a tiny piece of kidney to look at under a microscope. It is used to determine the amount of damage the kidneys may have.

Treatment

Dialysis is a treatment to filter waste and water from the blood, allowing people with kidney failure to feel better and continue doing the things they enjoy. It is important to take an active role by talking to the health care provider. It is also important to remember the dialysis does not cure kidney failure but helps with feeling better and living longer.

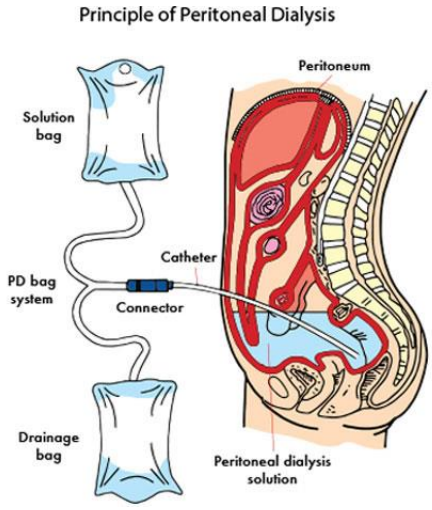
There are two types of dialysis:

Hemodialysis: it is the most common dialysis. It uses a filter to remove waste and clean the blood before returning it back to the body. Treatment takes 3 to 4 hours and done 3 times a week.



Source: Lucenxia

Peritoneal Dialysis: this dialysis uses the lining in the abdomen to filter the blood. It works by putting special fluid in the abdomen to absorb waste produced from the body as it passes through the small blood vessels. The fluid with the waste products is then drained away. This can be done anywhere such as home or work. It is done every day.



Source: National Kidney Foundation

Tips for healthy living

- ✓ **Do not smoke**
- ✓ **Do not drink too much alcohol**
    - Drinking too much often increases the risk of health problems
- ✓ **Exercise regularly**
    - Improves mood
    - Helps manage weight
    - Boosts energy levels
    - Promotes better sleep
- ✓ **Keep blood cholesterol levels normal**
- ✓ **Avoid spreading germs**
- ✓ **Get vaccinations**

Stroke

Blood vessels that carry blood to the brain from the heart are called arteries. A stroke occurs when one of the arteries to the brain is either blocked or bursts. As a result, part of the brain does not get the blood it needs, so it starts to die.

Types of strokes:

- **Ischemic-** the most common type of stroke. This occurs when an artery in the brain is blocked. There are two main types of ischemic strokes:

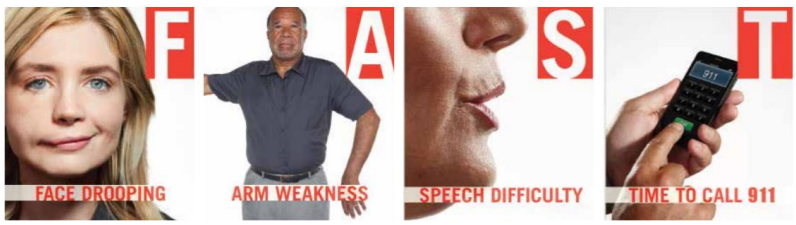
Embolic Stroke: A blood clot or plaque piece forms, usually in the heart or the large arteries leading to the brain, and then moves through the bloodstream to the brain. In the brain, the clot blocks a blood vessel and leads to a stroke.

Thrombotic stroke: a blood clot forms inside an artery that supplies blood to the brain. The clot interrupts blood flow and causes a stroke.

- **Hemorrhagic-** this occurs when a blood vessel in the brain bursts. Blood leaks out and can injure or irritate the brain tissue, or cause damage by pushing into other areas. High blood pressure is the most common cause of this type of stroke.
- **Transient Ischemic Attack (TIA)-** this sometimes is referred to as "mini-stroke." A person can have stroke like symptoms that go away and leave no permanent damage.
-

Warning signs of a stroke

- **Sudden numbness or weakness of the face, arm, or leg**
- **Sudden confusion, trouble speaking, or understanding**
- **Sudden trouble seeing in one or both eyes**
- **Sudden trouble walking, dizziness, loss of balance, or loss of coordination**
- **Sudden severe headache with no known cause**



FACE DROOPING — Does one side of the face droop or is it numb? Ask the person to smile. Is the person's smile uneven?

ARM WEAKNESS — Is one arm weak or numb? Ask the person to raise both arms. Does one arm drift downward?

SPEECH DIFFICULTY — Is speech slurred? Is the person unable to speak or hard to understand? Ask the person to repeat a simple sentence, like "The sky is blue." Is the sentence repeated correctly?

TIME TO CALL 9-1-1 — If someone shows any of these symptoms, even if the symptoms go away, call 9-1-1 and get the person to the hospital immediately. Check the time so you'll know when the first symptoms appeared.

Source: American Stroke Association

TEST

CT Scan (Computerized Tomography) called a CAT scan. This takes pictures of the inside of the body. CT scan will be taken to determine if a person has had a hemorrhagic stroke.

MRI (Magnetic Resonance Imaging). The MRI machine uses large magnets and computer to make pictures of the body.

Carotid Ultrasound- this uses sound waves to look at the blood flow in the carotid arteries in the neck. These are the main arteries that take blood to the brain.

Echocardiogram (Echo) is a test that takes pictures of the heart using sound waves. This test shows if there are any problems with the heart that caused the stroke.

Arteriogram or Angiogram- this test uses dye to look at blood flow in the brain or other parts of the body.

Medication

Anticoagulants (blood thinners)- are medicines that slow the clotting of the blood. Anticoagulants make it harder for clots to form or keep existing clots from growing. Examples are: heparin, warfarin and dabigatran

Antiplatelet medicines-keep blood clots from forming by stopping blood platelets from sticking together.

Hypertension (High Blood Pressure)

Blood pressure is the force of the blood pushing against the blood vessel walls. So, when the pressure in the arteries are higher than is supposed to be, you have high blood pressure, which is also called hypertension. There are two numbers that make up your blood pressure. The top number, which is called the systolic number, is the pressure when the heart beats. The bottom number, which is the pressure when the heart rest between beats. Normal blood pressure should be below 120/80 mm Hg. High blood pressure is a pressure that stays high over time at 130/80 or higher. Untreated high blood pressure can lead to stroke, heart attack, angina, heart failure, kidney failure, or peripheral arterial disease.

Hypertension Testing

The best way to test for hypertension (high blood pressure) is to have blood pressure measured. This is done by taking the reading with a pressure cuff (sphygmomanometer), which is placed on your upper arm before manually or electronically inflated. Once inflated the cuff compresses the brachial artery, which briefly stops blood flow. Finally, the air is slowly released and the measurement is recorded.

Source: American Heart Association

Hypertension Medical Treatment

Treatment for hypertension includes:

- Taking medication
- Weight management
- Diet
- Physical activity
- Moderation of alcohol consumption

Medication commonly used for hypertension

5. **Diuretics:** causes you to pass urine to get rid of extra salt (sodium) and water to help control blood pressure.
6. **Beta-blockers:** lower the heart rate, the work load of the heart and the amount of blood put out, which lowers blood pressure.
7. **ACE inhibitors:** helps the body produce less angiotensin (a chemical that causes the arteries to become narrow), which helps the blood vessels relax and open up, thus lowering your blood pressure.
8. **Calcium channel blockers:** prevents calcium from entering the smooth muscle cells of the heart and arteries. They relax and open narrowed blood vessels, reduces heart rate and lower blood pressure.
9. **Alpha blockers:** reduces the arteries' resistance, relaxing the muscle tone of the vascular walls.
10. **Alpha-2 Receptor Agonists:** reduce blood pressure by decreasing the activity of the sympathetic (adrenaline-producing) portion of the involuntary nervous system.
11. **Combined alpha and beta-blockers:** used as an IV drip for patients in a hypertensive crisis. Prescribed outpatient for patients at risk for heart failure.
12. **Central agonists:** helps decrease the blood vessels' ability to tense up
13. **Peripheral adrenergic inhibitors:** reduces blood pressure by blocking neurotransmitters in the brain.
14. **Blood vessel dilators (vasodilators):** can cause the muscles in walls of the blood vessels to relax. This allows the vessels to open up wider (dilate) so blood can flow through better.

Medication should be taken as prescribed and do not stop without talking to the doctor.

Weight management

- Maintain a healthy weight, because it provides many health benefits
- Even losing a small amount of weight can help manage or prevent high blood pressure
- Weight loss reduces the strain on your heart
- Slowly increase your level of physical activity, lower your calorie intake and eat a healthy diet.

Diet

You can manage your diet by using the DASH eating plan. DASH stands for Dietary Approaches to Stop Hypertension. This eating plan is designed to help manage blood pressure. The diet includes limiting salt, red meat, sweet and sugar-sweetened beverages. DASH also includes having a diet that is rich in fruits, vegetables, whole-grains, low-fat dairy products, skinless poultry and fish, nuts, legumes and non-tropical vegetables oils.

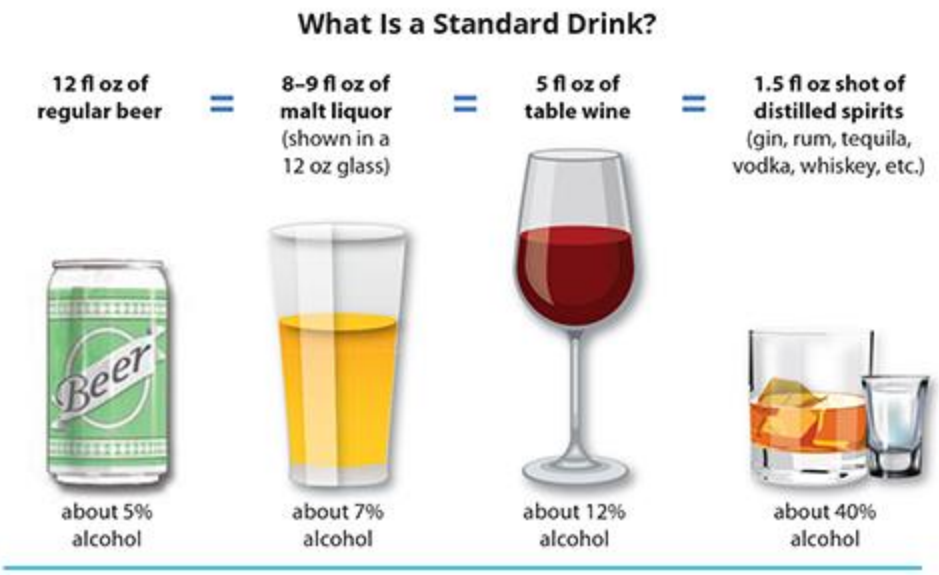
Physical Activity

According to the American Heart Association

- Aim for 40 minutes of moderate to vigorous physical activity three to four times a week to help lower your blood pressure or cholesterol
- Include stretching exercise
- Warm up before exercising and cool down afterwards.
- Find something you like: walking, hiking, jogging, running, bicycling, swimming, sports, dance, rowing, etc.

Alcohol

- Drinking too much alcohol can raise your blood pressure.
- American Heart Association suggest that alcohol is limited to no more than two drinks per day for men and no more than one for women. A drink is one: 12 oz. beer, 4 oz. of wine, 1.5 oz. of 80-proof spirits or 1 oz. of 100-proof spirits.



Source by: National Institute on Alcohol Abuse and Alcoholism

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