Lifestyle diseases
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What are they

- A 100 years ago, the main causes of death in the US were infectious diseases such as tuberculosis (TB) and the flu.
- Today we are winning this fight, protected from infections due to good hygiene, better living conditions, and medical advances.
- The top causes of death in the US today are **lifestyle diseases**: which are diseases that are caused partly by unhealthy behaviors and partly by other factors.

What causes these?

- Lifestyle diseases are called this because a person's lifestyle habits, behaviors, and practices largely determine whether they develop them or not. The choices we make.
- Cardiovascular disease, many cancers, and 2 types of diabetes.
- Personal habits, behaviors, practices are not the only factor whether or not a person develops a lifestyle disease.

Cont.

- Other factors that we cannot control: age, gender, genes also contribute.
- **Risk factors fro lifestyle diseases**: anything that increases the chance of injury, illness, disease, or other health problem.
- Controllable and Non-controllable risk factors

Cont.

- **Controllable:** Taking charge of the risk factors that you can control may greatly decrease your chances of developing a lifestyle disease.
- 1. your diet and body weight
- 2. your daily level of exercise/activity
- 3. your level of sun exposure
- 4. smoking and alcohol use/abuse

Cont.

- **Uncontrollable:** Some risk factors that contribute to your chances of developing a lifestyle disease are out of your control.
- 1. **age-** as you age, your body begins to change, as a result the body has a harder time protecting itself, thus the chances of developing a lifestyle disease increases as you age.

- 2. **gender-** certain diseases are more common among members of one gender. Men have a greater risk of heart disease than women and women have a greater chance of breast cancer than men.
- 3. **ethnicity-** African Americans are more likely to develop high blood pressure than Europeans. Mexican Americans have a higher risk of developing diabetes than Europeans. Asian Americans have a lower incidence of heart disease than Europeans. Maybe diet?

Cont.

- 4. **heredity-** Genes can also determine your chances of developing certain diseases. Family history, etc…things passed down.
- Just because someone in your family has a disease does not mean you will get it. making healthy lifestyle choices will help.

What are cardiovascular diseases?

- Together, the heart and blood vessels make up the cardio system. The diseases that result from progressive damage to the heart and blood vessels is called **cardiovascular disease.** Heart attacks, stroke, atherosclerosis, and high blood pressure are examples.
- Cardio disease is the leading cause of death in the US. Nearly all are over the age of 40. So why should you worry about it now?

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- The damage that leads to CD builds up over many years and begins in childhood. So the sooner you start taking care of yourself, the easier it is to avoid later on in life.
- Why do people die from CD while others never have any problems?
- Genetic differences are one reason. But it does depend on **how you live.**

cont

- For example: smoking, being overweight, having high blood pressure, having high cholesterol, or having diabetes greatly increases your chance of developing CD.
- Types of CD's: about 60 million Americans have some form of CD's.
- 1. **heart attacks**: the narrow arteries that cover the heart deliver nutrients and oxygen. If these get clogged, or things get stuck, there is the problem. The result of reduced blood flow is called a heart attack.

Heart attack cont

- Symptoms:
- Uncomfortable pressure, squeezing, or pain in the center of chest that lasts more than a few min.
- Pain spreading to shoulders, neck, and arms
- Chest discomfort combined with light-headedness, fainting, sweating, nausea, or shortness of breath.

Cont.

- 2. **stroke**- each year about 160,000 die from strokes. They are sudden attacks of weakness or paralysis that occur when blood flow to an area of the brain is interrupted. It clogs an area of the brain, it cuts off circulation. The cells begin to die if it is not removed. Causes severe bleeding into the brain.

Strokes cont

- Symptoms: sudden numbness or weakness of face, an arm, or a leg
- Trouble seeing in one or both eyes.
- Sudden dizziness or loss of concentration.
- Sudden, severe headache with no known cause.

Types of CD's cont.

- 3. **High blood pressure-** Also called *hypertension, and the silent killer.* People don't know that their blood pressure is high until they have a heart attack or stroke. **Blood pressure** is the force that blood exerts against the inside walls of a blood vessel.
- When blood pressure is too high it puts extra strain on the walls of the vessels and heart. High blood pressure can injure the walls which leads to CD's

CD's cont

- 4. **Atherosclerosis-** if you looked inside an old water pipe, you might find it clogged with buildup. Not much water can flow through it. This is very similar to what happens inside an artery. Fatty deposits known as *plaques* build up on the inside walls and interfere with blood flow. This is called **atherosclerosis.**

Atherosclerosis cont

- It is dangerous for 2 reasons: First, it can reduce or stop blood flow to certain parts of the body. Second, these deposits can break free and release clots into the bloodstream. If one of these clots gets stuck in one of the arteries, the result is a heart attack. If it is in the brain, a stroke.

Detecting and treatment

- Doctor's can diagnose CD earlier and more accurate now.
- 1. blood pressure. There are 2 #'s that show up: One is the *systolic pressure,* which is the maximum blood pressure when the heart contracts. The 2nd # is the *diastolic pressure*, which indicates the blood pressure between heart contractions. Normal blood pressure falls between 80/50 and 130/85. 140/90 is considered high.

Detecting cont.

- 2. Electrocardiogram- This is one of the most common, sometimes called and *EKG or ECG.*
- 3. Ultrasound- Takes pictures of babies during pregnancy. Doctor's can see the heart as well and the action of the heart valves.
- 4. Angiography- a test in which dye is injected into the coronary artery. They look to see where the dye clogs or blocks.

Treating CD

- 1. Diet and exercise-low fat, low salt, and low cholesterol. Exercise is carried under a doctor's care.
- 2. Medicines- some meds keep the blood vessels from constricting (tightening). This keeps blood pressure down.
- 3. Surgery- If the arteries are blocked, doctor's often perform a *coronary artery bypass operation.* They remove a length of vein from the patient and transplant it to the heart. Thus, blood can detour around the blockage.

Treating cont

- 4. Angioplasty- A doctor inserts a tube with a balloon at the tip into a blood vessel in the patient's leg. Once the balloon is in place, it is inflated to flatten the plaque and open the artery. Sometimes a metal cage called a stent is left in the artery to prop open the artery walls.
- 5. Pacemakers- Sometimes the heart needs help to keep beating. If the heart cannot keep a steady rhythm, surgeons may implant an artificial pacemaker in the chest. They are small, battery powered devices that stimulate the heart to contract.

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- 6. Transplants- If the heart becomes so weak or diseased that it can't do its job, surgeons may need to replace it. They use artificial hearts or hearts taken from people who have given permission after death. This is called a *heart transplant*.

Preventing CD

- The following are things you can do to prevent CD
- 1. Trim the fat, and hold the salt. Eat more fruits/veggies, lean meats, whole grain
- 2. Keep your weight near recommended levels. Being overweight increases the risk
- 3. Don’t smoke. Smoking speeds up atherosclerosis and increases your risk of having a stroke or heart attack.

Cont.

- 4. get moving. Regular exercise benefits your cardiovascular system in many ways. Less stress, keeps weight under control, keeps arteries clear.
- 5. watch those #’s. Have your blood pressure/cholesterol checked regularly.
- 6. relax. Stress, feelings of aggression, hostility, and anger have been shown to increase the risk of CD.

Cancer

- **Cancer** is a disease caused by uncontrolled cell growth. More than 1 million people in the US are diagnosed with cancer each year. It is the 2nd leading cause of death, after CD.
- Cancer begins when the way that the body normally repairs and maintains itself breakdown. To replace cells that have died or are worn out, your body makes new ones. This process is usually carefully controlled to produce only a limited #. Sometimes these controls break down and some cells continue to divide again and again.

Tumors

- As the body produces more and more of these faulty cells, they form a clump known as a *tumor*. A **malignant tumor** is a mass of cells that invade and destroy healthy tissue.
- A **benign tumor** is an abnormal, but usually harmless cell mass. They usually do not invade or destroy and do not spread, but can get in the way or be painful if attached to an organ.

Cancer cells

- Cancer cells are very destructive to the body. They tear and crush neighboring tissues, strangle blood vessels, and take nutrients that are needed by healthy cells.
- What makes them dangerous is that the cells travel. This is called *metastasis.*
- The cancer cells get into the blood or lymph and move to other parts of the body. They settle and grow into tumors, an ex is lung cancer cells travel to the brain, breast cancer cells travel to the bones.

What causes cancer?

- Uncontrolled cell growth comes from damage to the genes that regulate the making of new cells. A person can inherit “damaged” or mutated genes from his or her parents.
- Cancer causing agents or substances known as carcinogens can also be responsible for damaging genes.
- Examples include:

Cont.

- 1. certain viruses, such as HPV
- 2. radioactivity and ultraviolet (UV) radiation, an invisible type of radiation from the sun, also in tanning beds.
- 3. Chemicals found in tobacco smoke (arsenic, benzene, formaldehyde)
- 4. Asbestos (a material used to make fireproof materials, electrical insulation)

Types of cancers

- 1. breast
- 2. prostate
- 3. respiratory (lung)
- 4. colon
- 5. urinary
- 6. lymphoma (lymph nodes)
- 7. skin
- 8. leukemia (cancer of tissues that produce blood) more common in males
- 9. ovarian
- 10. nervous system (brain, spinal cord)
- 11. cervical

Detecting and treating

- 1. self-exams- look for abnormal growths, lumps, sores, etc.….
- 2. *biopsy*- a biopsy is a sample of tissue taken from the body that is looked at under a microscope. Can tell if a tumor is malignant or benign.
- 3. x-rays- *mammograms* are used to detect breast cancer. Women over age 40 should get one each year.

Cont.

- 4. MRI- magnetic resonance imaging, uses a massive magnet and computer to gather images of the body.
- 5. blood and DNA tests- certain blood tests can check for certain types of cancers.

CAUTION

- C- change in bowel or bladder habits
- A- sore that does not heal
- U- unusual bleeding or discharge
- T- thickening or a lump somewhere
- I- indigestion or difficulty swallowing
- O- obvious change in a wart or mole
- N- nagging cough or horseness

Treating cancer

- Cancer is most treatable when caught early. Doctor's use these weapons to fight it:
- 1. Surgery
- 2. **Chemotherapy**: the use of drugs to destroy cancer cells. It has side effects: nausea, fatigue, vomiting and hair loss.
- 3. Radiation therapy: a beam of radiation is fired at the tumor from outside the body.

Preventing cancer

- 1. **no butts about it, don't smoke-** tobacco use is responsible for 1/3 of the cancer deaths in the US.
- 2. **Safeguard your skin-** do not use tanning beds.
- 3. **eat veggies, cut the fat-** the more saturated fats you eat the more chance of colon and rectal cancers.
- 4. **Stay active, maintain a healthy weight-** you should get 60 min. of activity a day!
- 5. **get regular checkups**

Living with diabetes

- When you eat, the nutrients in foods are broken down to provide your cells with energy. Carbohydrates are broken down to glucose which then enters your bloodstream where it can circulate to the rest of the body.
- Once glucose reaches the cells, it moves from the bloodstream into the cells. The cells use the glucose for energy.

Insulin

- The body cannot use glucose without insulin. **Insulin** is a hormone that causes cells to remove glucose from the bloodstream. The insulin lowers the amount of glucose traveling free in the blood. Insulin is produced by special cells in the pancreas. When blood glucose is high, insulin is released into the blood, when it is low, insulin no longer is released into blood.

Insulin and diabetes

- Sometimes the pancreas does not produce enough insulin. The result is diabetes. **Diabetes** is a disorder in which cells are unable to obtain glucose from the blood such that high glucose levels result.
- The kidneys excrete water, resulting in increased urination and thirst. Cells then use the body's fat and protein for energy which causes a buildup of toxic substances in the blood. If this continues, a diabetic coma results.

Cont.

- A **diabetic coma** is a loss of consciousness that happens when there is too much blood sugar and a buildup of these toxic substances in the blood.
- Can result in death if not treated quickly.
- Types of diabetes: There are 3 main types: type 1, type 2 and gestational

Type 1 diabetes

- Accounts for only 5 to 10% of diabetes cases. It develops when the immune system attacks the insulin-producing cells of the pancreas. Once these cells are destroyed, the body is unable to make insulin. Caused by genetic factors and viruses.
- Sometimes called *insulin-dependent* or *juvenile diabetes.* It is treated with daily injections of insulin and is usually diagnosed before the age 18. Common symptoms: increased thirst, frequent urination, fatigue and weight loss

Type 2

- The most common form, sometimes called *non-insulin dependent diabetes.*
- Unlike type 1, type 2 is most common in adults over the age of 40 and people who are overweight. The pancreas makes insulin, but the body's cells fail to respond to it. The result is a buildup of glucose in the blood and the inability of the body to use the glucose as a source of fuel. Common symptoms: frequent urination, fatigue, unusual thirst, blurred vision, frequent infections, and slow healing sores.

Gestational diabetes

- Occasionally a pregnant woman can develop diabetes near the end of the pregnancy. Usually it goes away after the baby is born. Gestational diabetes can increase the chance of complications during pregnancy. Symptoms are similar to those of type 2, but milder.
- Chances increase if mother has family history, is obese, is over 25 years old, or has given birth to a child that weighed more than 9 lbs. at birth.

Detecting diabetes

- Patients risk blindness, kidney disease, strokes, and amputations of the lower limbs.
- Your doctor can test for diabetes.
- Treating type 1: Goal is to keep blood glucose levels as close to normal as possible. They must test several times a day, and may need several doses of insulin a day. They must learn to give themselves shots.

Cont

- Treating type 2: more common control measures focus on diet and exercise. This helps control the amount of glucose they eat and can help them with their weight control. Foods that contain sugar do not need to be avoided completely, but in moderation.

Preventing diabetes

- Genes play a role. People in certain ethnic groups, particularly African Americans, Hispanics and Native Americans are at a higher risk for developing type 2.
- There is no certain way to prevent type 1, but exercise, healthy diet, and insulin injections as needed allow someone to live a healthy life.

Cont

- There are several things you can do to reduce the risk:
- 1. maintain a healthy weight, exercise regularly, and eat right.
- 2. Avoid tobacco products
- 3. reduce the amount of stress in your life.