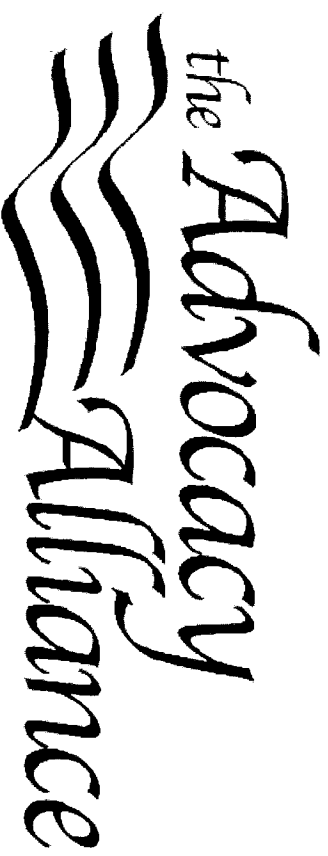


DIABETES



HEALTH CARE QUALITY UNITS

Disclaimer

- The information presented to you today is intended to increase your ability to recognize Diabetes.
- The information is not intended to replace medical advice.
- If you are in need of medical advice, please contact your physician.

Objectives

- The Participant will learn to identify the following:
 - Definition of Diabetes
 - Types of Diabetes
 - Risk Factors
 - Symptoms
 - Diagnosis
 - Treatment
 - Health Complications
 - ABC's of Diabetes

Introduction

- Diabetes is a disorder of metabolism, the way our bodies use digested food for growth and energy.
- Most of the food we eat is broken down into glucose, the form of sugar in the blood, or blood sugar.
- Glucose is the main source of fuel for the body.

Introduction (continued)

- After digestion, glucose passes into the blood stream where it is utilized by cells for growth and energy.
- Insulin must be present for glucose to enter the cells.

Introduction (continued)

- Insulin is a hormone produced by the pancreas, a large gland behind the stomach.
- When we eat, the pancreas is supposed to produce enough insulin to move glucose from the blood into the cells.
- In people with Diabetes, the pancreas either produces little, or no insulin, or the cells do not respond properly to the insulin that is produced.

Introduction (continued)

- The body loses it's main source of fuel even though the blood contains large amounts of glucose.
- Glucose builds up in the blood stream, overflows into the urine and passes out of the body.

Types of Diabetes

- Three Main Types of Diabetes:
 - Type 1
 - Type 2
 - Gestational Diabetes

Type 1 Diabetes

- Type 1 Diabetes is an auto-immune disease, thought to be caused by an environmental factor, such as a viral infection, that causes the immune system to attack itself.
- Accounts for about 5-10% of diagnosed diabetics in the United States.
- Develops most often in children and young adults, but can appear at any age.

Type 2 Diabetes

- Type 2 diabetics, when diagnosed, are usually producing enough insulin from the pancreas.
- For unknown reasons, the body cannot use the insulin effectively. This condition is called insulin resistance.
- After several years, the insulin production decreases.

Type 2 Diabetes (continued)

- Glucose builds up in the blood and the body cannot make efficient use of it's main source of fuel.
- Type 2 diabetics compromise 90-95% of individuals diagnosed with Diabetes.
- Usually develops in adults age 40 and older, and is most common in adults over age 55.

Type 2 Diabetes

- Eighty percent of Type 2 diabetics are overweight.
- Type 2 Diabetes is often part of a metabolic syndrome that includes obesity, elevated blood pressure, and high levels of blood lipids.

Gestational Diabetes

- Develops only during pregnancy
- Usually disappears after delivery
- Mother has increased risk of getting Type 2 Diabetes later in life

Risk Factors

- Family history of Diabetes
- Low activity level
- Poor diet
- Excess body weight
(especially around the waist)
- Age greater than 45 years

Risk Factors (continued)

- High blood pressure
- High blood levels of triglycerides (a type of fat molecule)
- High blood cholesterol levels
- Impaired glucose tolerance (previously identified by your doctor)

Risk Factors (continued)

- Previously having Gestational Diabetes or having given birth to a baby weighing more than 9 pounds.
- Certain ethnicities have higher rates of Diabetes (e.g., African-Americans, Hispanic-Americans, or Native Americans).

Symptoms

- Type 1 Diabetes:
 - Increased thirst
 - Increased urination
 - Weight loss, in spite of increased appetite
 - Fatigue
 - Nausea and/or vomiting

Symptoms (continued)

- Type 2 and Gestational Diabetes:
 - Increased thirst
 - Increased urination
 - Increased appetite
 - Fatigue
 - Blurred vision
 - Slow healing infections
 - Impotence in men

Diagnosis

- A diagnosis of Diabetes is made from any one of three positive tests, with a second positive test on a different day.
- A fasting plasma glucose test (FPG) is the preferred method of diagnosing Type 1 or 2 Diabetes.
 - Individual must fast 10-12 hours before blood is drawn.

Diagnosis (continued)

- Casual plasma glucose test:
 - Blood glucose is tested without regard to time of last meal.
 - Individual is not required to abstain from eating prior to having blood drawn.

Diagnosis (continued)

- Oral glucose tolerance test is usually only done during pregnancy to diagnosis Gestational Diabetes, or for someone suspected of having Type 2 Diabetes who has a normal fasting glucose level.
- Individual must fast 8 hours before test.
- Blood is drawn before, and 2 hours after, drinking liquid containing 75 grams of glucose dissolved in water.

Treatment

- Individualizing treatment
- Evolving around controlling the blood sugar
- Monitoring blood sugar
- Stabilizing blood sugars using food and nutrition
- Exercising and being physically active
- Maintaining healthy weight

Treatment (continued)

- Type 1 Diabetes is treated with medications.
- Type 2 Diabetes is treated with medications and insulin.
- Medications include:
 - Sulfonylurea drugs stimulate pancreas to produce and release more insulin (e.g., Glucotrol, Diabeta, or Amaryl).
 - Biguanides inhibits the release and production of glucose from the liver (e.g., Glucophage).
 - Thiazolidinediones helps the insulin get the glucose into the cells of the body (e.g., Avandia or Actos).

Possible Complications of Diabetes

■ Hypoglycemia

- Low blood glucose – 60mg/dl or below
 - Causes: Delaying or skipping a meal, eating too little food at a meal, getting more exercise than usual, taking too much Diabetes medicine (e.g., insulin or sulfonylureas), and/or drinking alcohol.
 - Symptoms: Shaking, nervous, tired, sweaty, cold, hungry, confused, irritable, impatient, fast heartbeat, dizzy, impaired vision, anxious, and/or headache.

Possible Complications of Diabetes (continued)

- Treatment: Eat or drink 15 grams of carbohydrates quickly (e.g., half of a glass of juice, half of a glass of regular soft drink, 1 glass of milk, 5-6 pieces of hard candy, or glucose tablets to add up to 15 grams of carbohydrates).
- Retest blood sugar 15 minutes after treatment.
If blood sugar is still low, eat another 15 grams of carbohydrates. If blood sugar is not low, but meal time is an hour away, have a snack with starch and protein.

Possible Complications of Diabetes (continued)

- Hyperglycemia

- High blood sugar – above 200mg/dl
 - Causes: Not enough insulin, too much food, infection, fever, illness, and/or emotional stress.
 - Symptoms (may be noticed within hours up to several days): Increased thirst and urination, large amounts of sugar in the blood, ketones in urine, and/or fatigue.

Possible Complications of Diabetes (continued)

- Ketoacidosis, a diabetic coma
 - High blood sugar, if left untreated, can lead to a diabetic coma.
 - Symptoms: Shortness of breath, breath that smells fruity, nausea, vomiting, and/or a very dry mouth.
 - Treatment: Talk to your doctor about how to handle this condition, while continuously monitoring consciousness and glucose levels.

Possible Complications of Diabetes (continued)

- Long term complications of Diabetes include:
 - Diabetic Retinopathy and cataracts
 - Diabetic Nephropathy or damaged kidneys
 - Thirty to forty percent of Type 1 diabetics, and twenty to thirty percent of Type 2 diabetics, will develop moderate to advanced kidney disease.

Possible Complications of Diabetes (continued)

- Diabetic neuropathy or nerve damage
 - Almost always starts in the feet, which are the longest nerves in the body fed by the longest blood vessels in the body.
 - Found in the presence of high blood sugar levels.
 - Appears to be caused by damage to small blood vessels resulting in loss of feeling, pain, or burning sensations that bother the legs and feet.

Possible Complications of Diabetes (continued)

- Peripheral vascular disease
 - Refers to diseases of blood vessels outside the heart and brain.
 - Narrowed arteries reduce blood flow to limbs.
 - Examples include Intermittent Claudication and Atherosclerosis.

Possible Complications of Diabetes (continued)

- Hyperlipidemia
- Hypertension
- Athlerosclerosi
- Coronary Artery Disease

ABC's of Diabetes

- **A** is for A1C, a blood test that measures average blood glucose over 2 to 3 months.
- **B** is for blood pressure.
- **C** is for cholesterol.
- By managing the ABC'S of Diabetes, you can help lower your risk for heart attack or stroke.

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