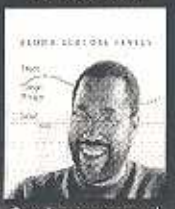
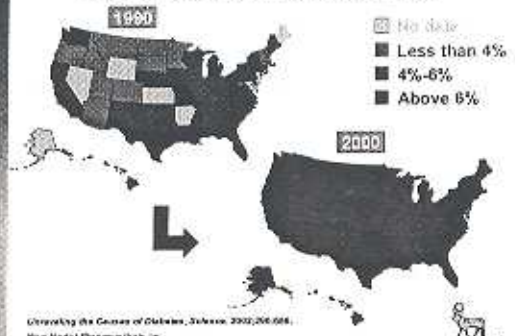
Take Action

A Diabetes Self -Management Program

Diabetes Is...

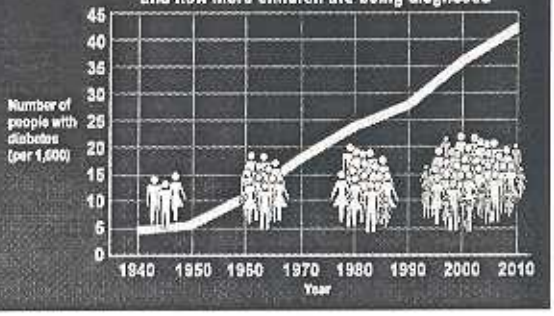
Common	Chronic	Controllable
		
Affects 1 in every 16 people	A lifelong condition	Good management depends on YOU!

Prevalence of Diabetes Mellitus



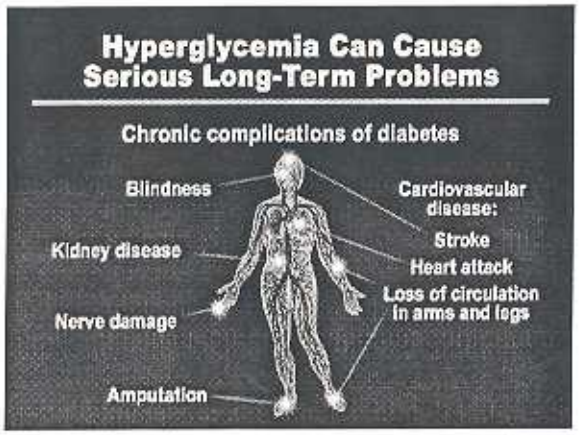
The Type 2 Diabetes Epidemic

Type 2 diabetes occurs mainly in adults — and now more children are being diagnosed



Hyperglycemia Can Cause Serious Long-Term Problems

Chronic complications of diabetes



Risk Factors

- A family history of diabetes (mother, father, brother or sister)
- Obesity
- Sedentary lifestyle
- High Blood Pressure
- High Blood Cholesterol
- Diabetes during pregnancy or a baby weighing more than 9 pounds
- If you are African American, Hispanic/Latino, Asian American Native American

This product was developed by the Galveston: Take Action project at the Galveston County Health District in Texas City, TX with support from the Robert Wood Johnson Foundation® in Princeton, NJ.

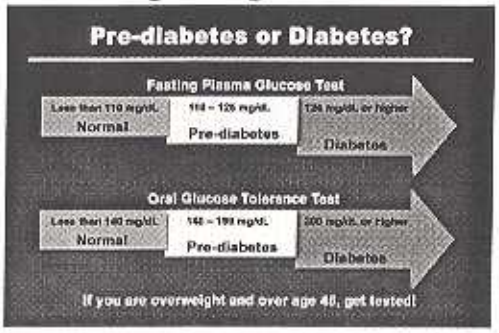
Signs and Symptoms of Diabetes type 2

- Increased thirst
- Increased urination
- Hunger
- Sudden weight loss
- Feeling tired or weak
- Very dry skin
- Frequent infections
- Cuts and sores that are slow to heal

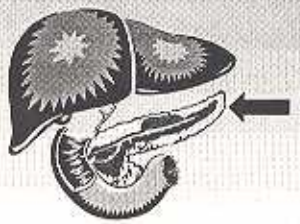
Who should be screened for diabetes?

- ADA recommends screening for people who are overweight and age 45 or older and for those who have risk factors
- American College of Endocrinology and American Association of Clinical Endocrinologist recommend the screening for diabetes be reduced to age 30 for people with risk factors
- People with overt symptoms should see their health care provider for a diagnostic evaluation

Diagnosing Diabetes



Where does insulin come from?



The Pancreas makes Insulin.

The Pancreas is located behind the stomach.

What happens when we eat?

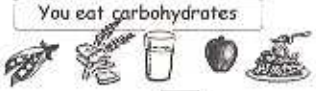
- After eating the food is digested and the carbohydrates are absorbed into the blood stream, causing high blood glucose (sugar)
- The pancreas releases insulin
- The insulin is the key that unlocks the receptor on the cell to allow the glucose to enter the cell

How does your body work?

What happens when you have diabetes?

How does your body work?

You eat carbohydrates

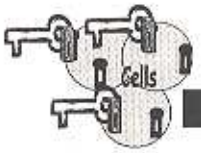


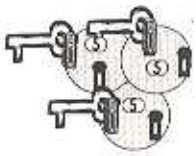
The Carbohydrates become sugar and the sugar goes into the blood stream and your blood sugar goes up

The high blood sugar sends a message to the pancreas

The pancreas sends insulin into the blood stream

The Insulin is the KEY that opens the Lock on the cell.





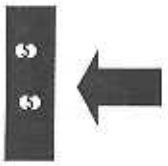
Blood Sugar returns to normal

What happens if you do not eat?

Your blood sugar gets low

Your low blood sugar sends a message to the liver

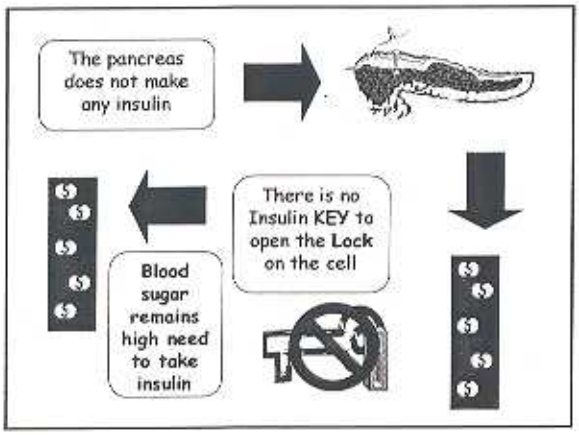
The liver makes and stores sugar



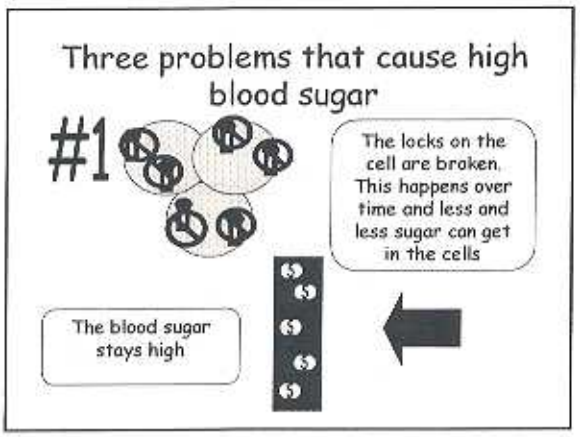
The liver sends sugar until the blood sugar returns to normal

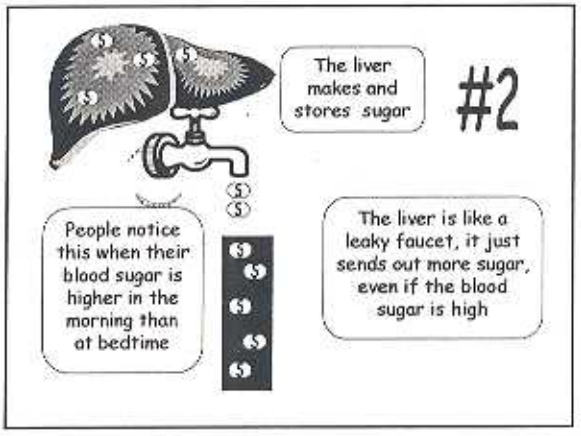
What happens when you have diabetes?

type 1 Diabetes



type 2 Diabetes





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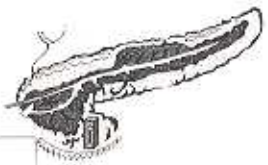


Over time the pancreas is not able to make enough insulin to bring the blood sugar back to normal

How do you know if the blood sugar is under control?

HEMOGLOBIN A1c

Hemoglobin A1c is the average of the blood sugar for the last 3 months. The goal is to have it at 7 or below

Pre-Diabetes

- Insulin resistant, glucose intolerant, touch of diabetes and borderline diabetes are terms that are now grouped in Pre-diabetes
- Recommendations are to modify the meal plan, exercise and weight loss
- Treating pre-diabetes may prevent or delay type 2 diabetes

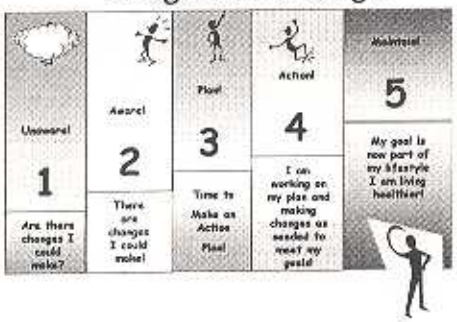
Can Type 2 Diabetes Be Prevented?

Diabetes may be avoided or delayed by:

My Diabetic Record

- Workbook
- Medical record
- Tablet

Stages of Change



Taking Control of Diabetes

Taking Control of Diabetes

Learning new habits

- My Diabetic Day
- Eating to keep your blood sugar under control
  - Food Mood Diary
- Exercise
- Weight Control
  - BMI

A1c

My Action Plan

- Skills you need to deal with diabetes
- Skills you need to live a normal life
- Skills you need to deal with emotions

Steps to an Action Plan

- Step 1- decide what you will do

Instruction: Using your Ready to Change Worksheet are there some things you are ready to change about how you take care of your diabetes?

- Step 2 - Write your steps as a behavior

Make a specific plan
Your plan should contain:
- o WHAT you are going to do
- o HOW MUCH you will do
- o WHEN you will do it
- o HOW OFTEN you will do it

- What - I will walk
- How much - 15 minutes
- When - @9 AM
- How often - 3 x/week

- Step 3 - How confident or sure am I that I can follow my plan

On a scale of 0 to 10 how confident are you that you can carry out your plan

0 1 2 3 4 5 6 (7) 8 9 10

7 or above CONGRATULATION you have an Action Plan

- Step 4 - Is there someone who can help you with your plan

- Step 5 -What barriers are there to keep you from carrying out your Action Plan

- Step 6 - Monitor or chart your progress

Action Item	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
Walk for 15 min 3 x/week at 9AM		X		X		X	

Checking your blood sugar

Testing your Blood Sugar

- 70-110 mg/dl before meals
- 140 mg/dl or less at 2 hour after meal
- 100-140 mg/dl at bed time

You may be asked to check your blood sugar

- Fasting - first thing in the morning, before you eat
- Before meals
- 1 - 2 hours after meals
- At bedtime
- At 3 AM
- When you do not feel well

When should you check your blood sugar if strips are a problem?

- Monday before breakfast
- Wednesday 2 hours after lunch
- Friday at bedtime
- When you have symptoms of high or low blood sugar
- When you are sick or feel bad

Blood sugar log

- Record date, time and blood sugar
- If high or low make notes as to why
- Use the results to plan your day

Complications

Short term
Long Term

Short Term Complications

- Hypoglycemia
- Hyperglycemia

What is high blood sugar?

- Hyperglycemia
- High Blood sugar is more than 180 mg/dl. You should be worried about your blood sugar if it is above 200.
- *You should call your provider if your blood sugar is above 200 and you have symptoms or if it is 400 or more

Signs and Symptoms of High Blood Sugar:

- Increased thirst
- Hunger
- Frequent urination
- Dry mouth
- Feeling tired
- Blood sugar higher than 140 before meals
- Blurry vision
- Irritable and grouch

Treatment of High Blood Sugar:

- Exercising can help
- Cutting down on the amount of food you eat
- If your blood sugar is more than 200mg/dl for 2 days call your doctor

Determine why blood sugar was high

- You forgot to take your insulin or diabetes medicine
- You ate more than usual
- You exercised less than usual
- You are not feeling well
- You have increased stress in your life

Is high blood sugar dangerous?

YES!

- High Blood sugar can cause electrolyte imbalance, seizures and coma
- Over time High Blood Sugar can cause problems with your heart, eyes, nerves and kidneys
- Hyperosmolar Hyperglycemic Nonketotic Syndrome
- If not treated it can cause Ketoacidosis (Diabetic Coma) in people with Type 1 Diabetes

Ketoacidosis

Ketoacidosis happens when your body does not have enough insulin

Your body needs insulin to change glucose (sugar) to fuel for the cells

Without this fuel the body breaks down fats to use as energy

When the body breaks down the fats, then ketones are made

Your body tries to get rid of all the ketones through your kidneys and urine

Your body can not get rid of all the ketones and they build up in your blood

This causes Ketoacidosis

Ketoacidosis is a life threatening condition it can lead to diabetic coma or death

Usually this is a problem only for people with type 1 diabetes

Symptoms

- Thirst or very dry mouth
- High blood sugar level
- High ketones in the urine
- Frequent urination
- Then other symptoms appear:
- Feeling very tired
- Dry or flushed skin
- Heard time breathing
- Breath that smells fruity
- Nausea, vomiting and abdominal pain
- Unable to pay attention

What is low blood sugar?

- Hypoglycemia
- When your blood sugar is below 70 or you have symptoms of low blood sugar

Signs and Symptoms of Low Blood Sugar:

- Shaky
- Dizzy
- Tired/sleepy
- Grouchy/moody
- Sweaty
- Fast heart beat
- Hunger
- Headache
- Pale skin
- Numbness and tingling around mouth
- Confusion
- Clumsy or jerky movements

HbA1c and Complications

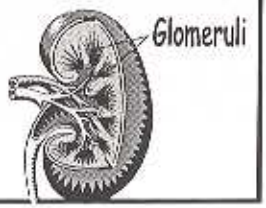
A study of people with Type 2 diabetes shows that as the HbA1c go up so does the occurrence of complications. For example if your HbA1c is 9% your risk of developing complications goes up 6 times, compared to an HbA1c of 7 %. If your HbA1c is 10 your risk increase by 10 times

Long Term Complications

- Kidney Disease
- Heart and Blood Vessel Disease
- Eye Disease
- Mouth, teeth and gums
- Skin
- Infections
- Nerve damage

Kidney Disease

- High blood sugar over time causes damage to the filters in the kidney
- Protein in the urine is the first sign
- Have urine checked once a year
- Kidney Failure
- End Stage Renal Disease



How Kidneys Work

The ARTERY brings blood and waste from the body into the KIDNEY

The GLOMERULI cleans the blood

Then the waste and extra fluid go out through the URETER to the bladder as urine. The clean blood goes out of the kidney and back into the blood stream through the vein

Can my doctor check for kidney damage?

Your doctor should do a urine test every year to check for microalbumin (protein) in your urine.

Is there anything my doctor can do if I have microalbumin in my urine?

Your doctor may ask you to take an ACE inhibitor, this is a medicine that is used to control blood pressure and in people with diabetes it can slow down kidney damage.

Will I know if I have kidney problems?

When kidney problems start you will not feel sick. You may not feel until your kidneys are damaged Once you have kidney damage y cannot undo it.

Will I know if my kidneys fai

You will feel sick to your stomach and feel tired all the time. Your skin my turn yellow. Extra fluid may cause you to feel puffy, your hands and feet may swell.

Heart Disease and Blood Vessel Disease

- High blood sugar over time causes damage to the blood vessels
- High cholesterol adds to the problem
- Heart attack
- Stroke
- High blood pressure
- Peripheral vascular disease

Heart attack	Stroke
• Chest Pain or pressure	• Feeling dizzy
• Trouble breathing	• Sudden headache
• Pain or discomfort in one or both arms, jaw, neck, indigestion	• Loss of balance or coordination
• Cold sweat, lightheaded	• Sudden loss of sight in one or both eyes
	• Slurred speech
	• Numbness, weakness in face, arm or leg

Peripheral vascular disease

Signs of problems

- Color or temperature change in feet
- Loss of hair on toes, feet, and lower legs
- Dry, cracked skin on feet
- Numbness in one arm or leg
- Thick yellow nails
- Trouble breathing
- Sudden loss of sight

Problems of the eye

- Glaucoma
- Cataract
- Retinopathy
- Detached retina

Mouth, teeth and gum Problems

Good mouth care

- Brush teeth 2 -3 times a day
- Brush tongue
- Use soft toothbrush
- Floss daily
- See dentist twice a year

- Plaque
- Gingivitis
- Periodontal disease
- Dry mouth
- Thrush

Skin Problems

- Skin protects the body from bacteria
- Any break in the skin is a place for an infection
- Keep skin clean
- Use lotion to keep skin moist
- Drink plenty of water

Treatment of skin problems

- Wash cuts and scrapes with warm water and mild soap
- Apply antibiotic ointment and clean dressing
- Do not use harsh chemicals on the skin
- If injury becomes warm, red or infected call your provider immediately

Infections

- Infections are harder to treat when you have diabetes
- Infections include
  - Thrush and gum disease
  - Fungal infections
  - Bladder and kidney infections
  - Yeast infections
  - Ulcers of the feet
  - Boils

Foot Care

- Never go bare foot!
- Check your feet every day
  - For red areas
  - Blisters
  - Cuts
  - Infections
- Early signs of infection
  - Swelling
  - Redness
  - pain

Shoes and socks

- Wear shoes that fit well!
- Canvas or leather
- Low shoes with wide toes
- Wear thick, white cotton socks
- Wear clean socks every day

Be careful with your feet

- Always wear shoes and socks
- Keep feet warm and dry
- Keep feet away from open fires and radiators
- Do not use hot water bottles, heating pads and hot water bottles
- Do not soak your feet

Nail Care

- Do not cut cuticles
- Cut nails straight across
- Smooth the edges of nails with emery board
- See a podiatrist if you have problems cutting your nails
- Do not have a professional pedicure

An ounce of prevention...

- Keep blood sugar under control A1c = 6 to 7
- Keep blood pressure under control 130/80 of less
- Stop smoking
- See your health care provider regularly
- Eat Healthy

Nutrition

Nutrition

- Eating healthy
  - Good food selection
  - Good portion size
  - Three meals a day
  - Eat a balance of starches, vegetables, fruit, milk, meat and fat

Diabetic Exchange List

- Groups of foods having about the same number of
  - » Calories
  - » Portion size
  - » Carbohydrates
  - » Fats
  - » Proteins
- You can pick any food within a group and "exchange it with any other food in the group

Six Basic Food Groups

- Bread, starch and grain
- Fruit
- Milk
- Vegetables

} Carbohydrates

- Meat/protein
- Fats

Free foods

Portion Size

- Measuring

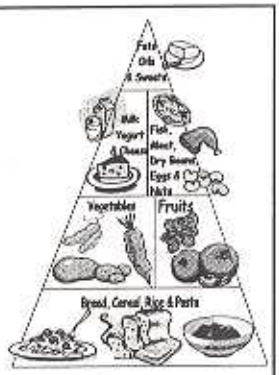
- Handy measuring tips

Serving size is important to compare products

15 grams of carbohydrates is one serving

5 grams of fat is one serving of fat

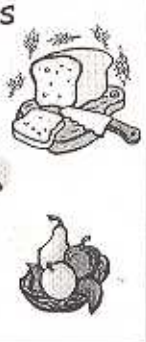
Diabetic Food Pyramid



Regular Food Pyramid

Carbohydrates

- 15 Grams of carbohydrates is 1 serving
- Bread, grain and starches
- Starchy vegetables
- Fruit
- Milk



Meat, eggs and cheese

- 3 ounces is a serving
- 1 ounce of cheese equals 1 ounce of meat
- 1 egg is equal to 1 ounce of meat
- 2 tablespoons of peanut butter equals 1 ounce of meat
- ¼ cup of cottage cheese equals 1 ounce of meat

Fats

- Good fats
  - Monounsaturated
  - Polyunsaturated

Examples:

- Nuts
- Avocado
- Olives
- Oil (corn, cottonseed,safflower, etc)

Fats

- Bad Fats
  - Saturated

Examples

- Butter
- Bacon
- Sour cream
- Cream cheese
- Fat from red meat

Cholesterol

- A fat like substance in all animal foods like meat, poultry, fish, milk,and egg yolks
- If you have high cholesterol then use low fat foods
- Organ meats are very high in cholesterol

Hidden Sugars

Sugar by any other name is still sugar

- Brown sugar
- Corn syrup
- Molasses
- Glucose
- Lactose
- Malt syrup
- Sorbitol
- Raw sugar
- Honey
- Sugar alcohol
- Fructose
- Dextrose
- Dextrin
- Mannitol

Sugar Free

- Does not have refined sugar
- Still has carbohydrates
- 15 grams of carbohydrates is 1 serving

=

2 regular cookies equals 3 sugar free cookies

Salt and Sodium

- 2,400 mg of sodium or less is th. recommended daily intake
- If you have high blood pressure your provider may recommend you have less
- Fast foods, Chinese foods, cured meats and lunchmeats are high in sodium
- Packaged foods are high in sodium
- Processed foods are high in sodium

Healthy Eating

- Plan meals
- Use grocery shopping lists
- Use healthy cooking methods

- Healthy portion sizes
- Avoid second helpings
- Eat at the table not in front of the TV

Dining Out

- Plan ahead
  - Skip the chips and other snack before meals
  - Share a meal or take half home
  - Look out for fats (sauces, butter, cheese, fried)
  - Ask for food broiled, baked, stir fried, grilled or steamed, avoid fried
  - Ask for sauce and dressings on the side
  - If you are unsure how a dish is prepared, ask
  - Decide what you will eat before going out
  - Beware of the salad bar

Fast Foods

- Choose grilled
- Tried open faced sandwiches

- Do Not Super size
- Order child or Jr. size
- Have water, milk, diet soda or tea without sugar

Super size lunch at McDonalds

Food item	Carbs	Total fat	Sodium
Big Mac	45 Grams	31 Grams	1070 mgs
Super size fries	68 Grams	26 Grams	350 mgs
Large coke	86 Grams		30 mgs
Total	199 Grams	57 Grams	1450 mgs
# servings	13	11	½ tsp

What is on your plate?

- Some times you do not realize what you eat
- Take 3 days to write down everything you eat
- Look at your target, where can you make changes

My meal plan worksheet

- Use the worksheet to plan meal for a day
- Make sure you look at nutrition as well as just servings
- Make a shopping list
- Follow your meal plan

Sick Days

When you are sick:

- Your stress level goes up.
- This causes your body to release a hormone to help fight the disease.
- The hormones also keep the blood sugar high by keeping the insulin from working.

Sick Day Plan

- What should you keep on hand?
- When should you check your temperature and blood sugar
- What foods should you eat?
- Prevent dehydration
- Call your provider

Things to have on hand:

- An extra week's supply of insulin or diabetes pills
- Sugar-free cough medicine
- Aspirin and non-aspirin pain medicine (ask your provider which ones you can take)
- Antacids
- Medicine for diarrhea and vomiting
- Thermometer
- Your glucometer and strips

Things to monitor:

- People with type 1 diabetes should monitor their blood sugar and ketones every four hours.
- People with type 2 diabetes should check their blood sugar every two to four hours and check for ketones if the blood sugar is over 240mg/dl.
- Check your temperature every four hours
- Continue to monitor until you feel better

Should you take your medicine?

- Talk with your provider about taking your diabetes medicine when you are sick
- The general rule is to take your medicine when you are sick, unless your provider tells you not to
- If you are unable to take your medicine talk to your provider, you may need insulin until you feel better

What should you eat?

- If you can eat your regular meal plan this is best
- If you can not eat your regular meal plan then you need 15 grams of carbohydrate every hour
- If you are sick to your stomach drink clear liquids

Food with 15 grams of Carbs

- ½ cup low-fat ice cream
- ½ cup yogurt
- ¼ cup sherbet
- ½ cup Jell-O®
- 1 cup cream soup
- 1 cup milk
- ½ cup pudding
- ½ cup cooked cereal
- 1 Tlbs honey
- ½ cup regular soda
- ½ cup juice
- ½ twin Popsicle®

Use sugar free foods after the 15 grams of carbs each hour

Dehydration

- Dry mouth
- Thirst
- Decreased urination
- Dry, flushed skin
- Dry lips
- Higher then normal temperature

When to call your provider:

- Blood sugar between 200 and 400 mg/dl and you have symptoms of high blood sugar
- Blood sugar of 400 mg/dl or more
- Blood sugar under 70 mg/dl for two readings in a row
- Vomiting and diarrhea for 4 or more hours
- If you can not keep liquids down
- Temperature of 101 or more for 24 hours
- Symptoms of dehydration
- Pain that does not go away
- If you are not getting better in 2 days
- If you have questions

Sick Day Record

Keep accurate records:

- Temperature
- Blood sugar
- Medicine you have taken and time
- What you have had to eat and drink
- How many times you have vomited or had diarrhea

Coping with Diabetes

How can you cope?

- Let friends and family help you
- Set small goals and work toward the bigger goal
- Do not feel guilty when you slip up
- Congratulate yourself when you successfully meet a goal
- Ask your provider to help you

Emotions can get in the way

- Denial
- Anger
- Depression

Denial

A good thing:

- Short term
- Helps you to adjust to bad news a little at a time

A bad thing:

- When it is not short term
- Keeps you from taking care of your diabetes
- When it allow you to pretend diabetes is not serious

You may not deny that you have diabetes but:

- You do not exercise
- You do not check your blood sugar
- You do not take your medicine
- You do not lose weight
- You do not change your eating habits
- Do not see your provider regularly

This is also denial

What can you do about denial?

- Identify the parts of your diabetes care you are denying
- Understand why it is important to plan meals, exercise, take medication on time, lose weight, and check blood sugar

Depression

- Everyone is depressed from time to time but it passes in a couple of weeks, this is normal
- Depression that lasts more than 2 weeks needs treated
- You may feel alone or different from other people
- Depression can interfere with taking care of your diabetes

Spotting Depression

- Loss of pleasure
- Change in sleep patterns
- Change in appetite
- Trouble concentrating
- Loss of energy
- Morning sadness
- Thoughts of suicide

Could it be a medical problem?

Some medical problems may have the same symptoms as depression.

- High or low blood sugar
- Side effects of medications
- Thyroid problems
- Alcohol or drug abuse

Treating Depression

- Setting small goals
- Volunteering or getting a job
- Medication
- Counseling or psychotherapy
- Support groups

Anger

- May start at time of diagnosis
- It is UNFAIR
- You may feel your life is threatened
- You may feel out of control

Learn about your anger

- What makes you angry?
- How do you feel when you start to get angry?
- What do you do when you get angry?

What can you do?

- Use the energy to think positive
- Learn the early signs and have a strategy to change your anger to something positive

Sharing Experiences

Let the class talk about their experiences, they may find that others feel the same way they do

Stress

- Stress is a natural part of life
- Stress is a good thing in emergencies
- Too much stress can be a bad thing

- Stress Causes changes to our emotions and our bodies
- Each person handles stress differently

Fight or Flight

Our bodies prepare to fight or run

- Blood pressure and Heart rate rise
- Breathing rates rise
- Blood sugar go up

Symptoms of stress

- High blood pressure
- Depression
- Fatigue
- Insomnia
- Headaches
- Anxiety
- Upset stomach
- Constipation or diarrhea
- Weight gain or loss
- Back and neck pain

We can not remove all the stress from our life

But.....

We can change how we react to stress

Ways to look at life to reduce stress

- Look at change as a challenge not as a threat
- Do not worry about the things you can not change
- Think positive thoughts

Negative ways to deal with stress

- Caffeine
- Alcohol
- Nicotine
- Poor diet

Positive ways to deal with stress

- Meditation
- Prayer
- Music
- Exercise
- Relaxation training
- Stretching exercises
- Deep breathing
- Talk to your provider or religious leader

Are there ways to prevent stress?

- Set realistic goals
- Prepare for stressful times
- Good nutrition
- Exercise
- Join a support group
- Do something you enjoy every day
- Say NO

Exercise

Benefits of exercise

- Decreases blood sugar
- Decreases blood pressure
- Lowers cholesterol
- Helps with weight loss
- Increased energy level
- Prevent heart and blood vessel diseases

Before starting to exercise

Always talk with your provider before starting an exercise program.

Blood Sugar and Exercise

- Less than 80 mg/dl - eat as large snack
- Between 80 to 120 mg/dl - eat a small snack
- Between 120 and 250 mg/dl - exercise
- 250 mg/dl or more monitor your blood sugar closely when exercising
- 400 mg/dl or more do not exercise, call your provider

Prevent Low Blood Sugar

- Do not drink alcoholic beverages before or during exercise
- Do not inject insulin in a part of the body you are exercising
- Do not exercise when your insulin is at its peak.

Always have:

- A quick sugar
- Diabetes ID
- Water
- Sun screen and insect repellent

All exercise is activity but all activity is not exercise

Exercise Safely

- Check your feet before and after exercising
- Warm up before exercising
- Do not exercise during the heat of the day
- Do not over do it, start slow and work up to your goal. Push yourself a little, You want work up a light sweat.

If you:

- Feel very tired
- Fell dizzy or lightheaded
- Have nausea or vomiting
- Have unusual joint or muscle pain

Stop exercising and talk to your provider

- Have chest pain, pain in your teeth, jaw, arms or ears
- Irregular pulse
- Trouble breathing

GO to the EMERGENCY Room

Be active every day

Be Active every day

- Park at the back of the parking lot
- Take the stairs instead of the elevator
- Walk a dog
- Dance to music
- Exercise with programs on TV

Medication and Insulin

Ask your provider:

- When should I take the medicine?
- What should I do if I forget to take my medicine/insulin
- Should I take my medicine/insulin when I am sick
- What are the side effects

Metformin/Glucophage

- Controls blood sugar by preventing the liver from releasing too much sugar
- It helps muscles and liver cells use insulin

Side effects - G I upset, abdominal discomfort and diarrhea

Does not cause hypoglycemia

Glipizide/Glyburide/Glimepiride

- Controls blood sugar by helping the pancreas release insulin
- Should be taken with meals

Side effects - weight gain, G I upset and skin reactions

Can cause hypoglycemia

Avandia/Actos

- Controls blood sugar by helping the muscle and liver cells better use insulin and decrease the amount of sugar the liver makes

Side effects - may cause edema or swelling

Liver function should be monitored

Does not cause hypoglycemia

Glucovance

- Is a combination of Metformin and Glipizide
- Controls blood sugar by keeping the liver from releasing too much sugar and helps the pancreas make more insulin

May cause hypoglycemia

Insulin

- History of insulin
- Where does insulin come from?
  - Animal: Beef, pork or a combination
  - Human: Biosynthetic

Insulin

Why does insulin not come in a pill?

Insulin is a protein. Your body would digest it like any food that is protein and it would not get to your blood to lower the blood sugar level.

What does Insulin do?

- It helps convert the food we eat into fuel for energy for the cells
- It helps to store glucose (sugar) as glycogen in the liver
- It helps with the breakdown of protein and helps the body store fat
- Insulin lowers your blood sugar even if you do not eat, so eat on a regular schedule when taking insulin

Who needs Insulin?

- Everyone with type 1 diabetes
- Women with gestational diabetes (diabetes when you are pregnant) if diet does not control their blood sugar
- Anyone with type 2 diabetes who can not control their blood sugar with diet, exercise and oral medicine
- Sometimes when a diabetic has surgery

How do you store Insulin?

- If insulin is not kept in the refrigerator mark it with the date you started to use it and throw it out in 30 days
- Vials you are using do not need to be stored in the refrigerator
- Avoid extreme temperatures
- Prefilled syringes

Types of Insulin

- **Quick acting insulin is Lispro (Humalog):**

  It starts to act in less than 15 minutes; it lowers the blood sugar the most in 30 to 90 minutes and finishes working in 3 to 4 hours.

- **Short acting, Regular (R) insulin:**

  It starts to act in 30 minutes to 2 hours; it lowers the blood sugar the most in 2 to 5 hours and finishes working in 5 to 8 hours.

Types of Insulin

- **Intermediate acting, NPH (N) or Lente (L):**

  It starts to act in 4 to 6 hours; it lowers the blood sugar the most in 8 to 14 hours and finishes in 16 to 20 hours.

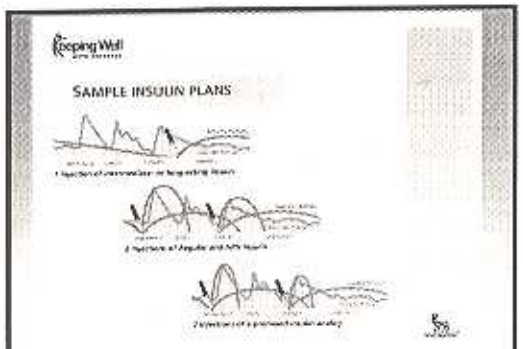
- **Long acting, Ultralente (U)**

  It starts to work in 6 to 10 hours; it lowers the blood sugar the most in 8 to 20 hours and finishes in 18 to 20 hours.

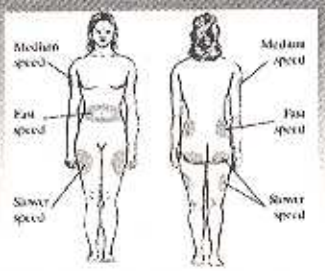
Types of Insulin

- **NPH and Regular insulin mixture:**

  Two types of insulin are mixed in one bottle. It starts to work in 30 minutes; it lowers blood sugar the most in 7 to 12 hours and finishes working in 16 to 24 hours.



Where Insulin shots can be given



Tips

- Always wash your hands before drawing up and giving insulin
- Rotate the sites
- Use a new syringe and needle each time
- Keep extra insulin on hand
- If you have difficulty seeing, have some one help to draw up the insulin
- Check your blood sugars as the doctor tells you