The following slides were developed and produced by Jo Marie Reilly, MD, MPH from the Keck School of Medicine of USC for use within the Primary Care Program.

Please reach out to Dr. Reilly for access to the PowerPoint slide (.ppt) format for educational purposes only.

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Nutrition for Prevention and Chronic Illness Management

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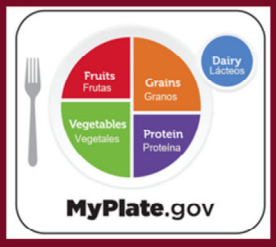
MyPlate / MiPlato



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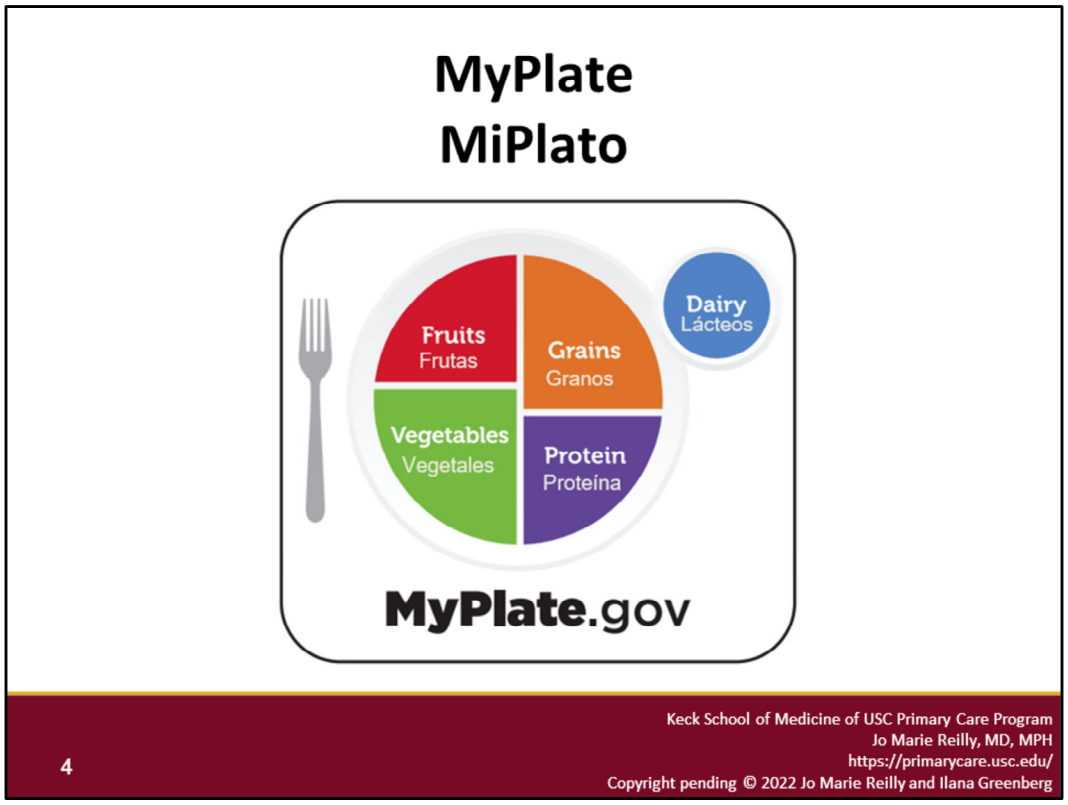
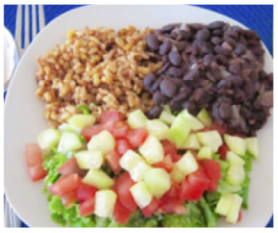


How do we group the foods that we eat into categories? What is MyPlate.gov?
What foods belong in each category?
How much should we eat of each food in a given category each time we eat ?
What does your plate look like when you eat?
What is your favorite category? What do you eat too much of? What are your “trigger foods”?
Note some cultures don’t eat foods on plates (i.e. bowls) and may need to discuss different cultures use of utensils (some cultures may not use forks/knives /spoons or any utensils to eat with).

Purpose of MyPlate
Propósito de MiPlato

- Balancing calories
- Foods to increase
- Foods to reduce

- Balance de calorias
- Alimentos para aumentar
- Alimentos para reducir



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How does My plate concept help you look at the foods you eat most of? Things to cut down or increase? Sie of the plate you eat on?

Portions of foods you eat?
What areas do you struggle with?
How may you consider changing that?

Balancing Calories
Equilibrio de Calorías

- Enjoy your food but eat less
- Avoid oversized portions
- It takes 20 minutes for your stomach to tell your brain you're full
- Balance the macronutrients

- Disfruta tu comida pero come menos
- Evite las porciones grandes
- Toma 20 minutos para que tu estómago diga a tu cerebro que estás lleno
- Mantiene un equilibrio de nutrición

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How can you best balance your portions?
How can you slow down the pace of your eating enough for your stomach to tell your brain "I am full now?"

What size is your plate?
What size is your bowl?
What size is your glass?
How many times do you refill your plate and bowl and glass?
Do you have measuring cups at home?
How are you with your portion sizes?

Food To Increase
Alimentos Para Aumentar

- Make half of your plate fruits and vegetables
- Make at least half your grains whole grains (wheat, brown rice)

- Hacer la mitad de su plato frutas y verduras
- Hacer al menos la mitad de los granos de cereales integrales

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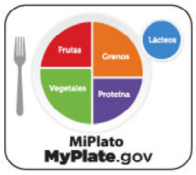
How many fruits and vegetables do you eat a day?
Is it half your plate?
What fruits and vegetables do you like?
What are whole grains?
What whole grains do you like?
How can you make half your grain intake whole grains?

Questions/Preguntas

1. What is one change you will try to make in your eating habits?
2. What part of your diet is hardest for you to change? How can we support you in this?
3. What is a treat you don't want to give up? How will you try to limit it but still enjoy it?

1. ¿Cuál es un cambio que intentará hacer en sus hábitos alimenticios?
2. ¿Qué parte de su dieta le resulta más difícil de cambiar? ¿Cómo podemos ayudarle?
3. ¿A qué comida no quiere renunciar? ¿Cómo puede limitarla sin dejar de disfrutarla?



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Let's review our lecture material
Work on motivational interviewing with specific behavior changes .
Have patients leave the class with a specific change they will make between now and the next class ?
Consider realistic changes.
Consider how to reduce/limit less healthy habits

Protein and Dairy / Proteina y Lacteos



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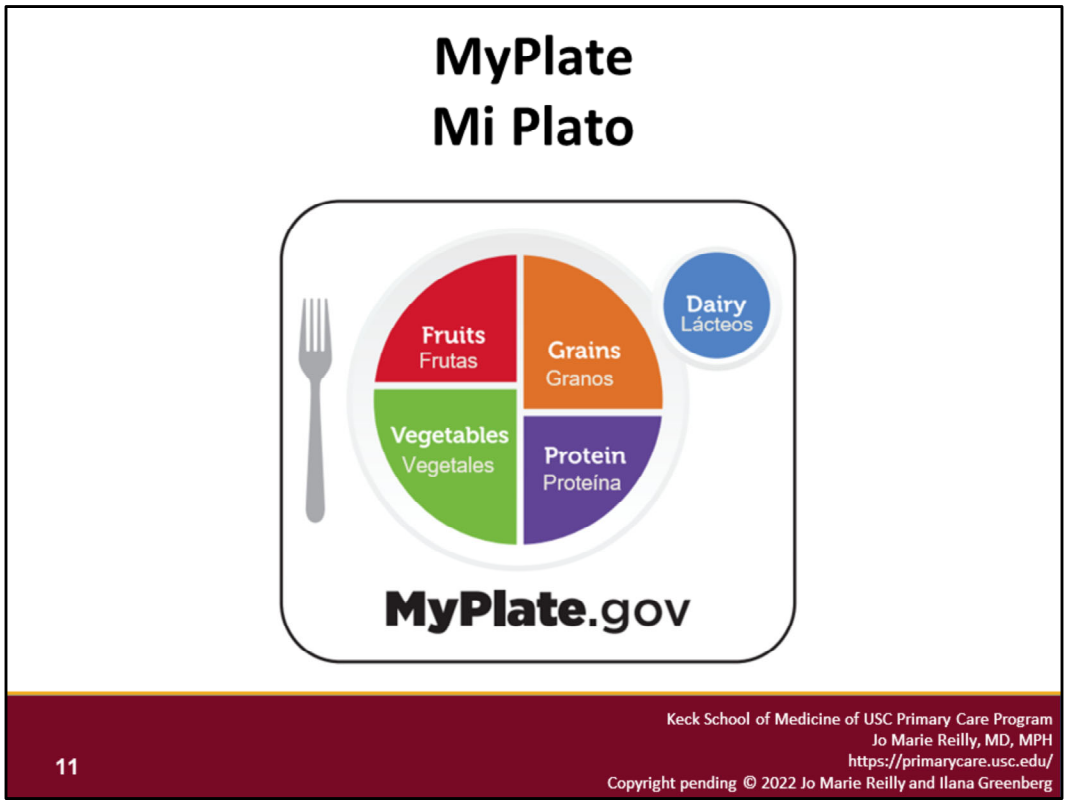

How much of each of our meal plates should contain protein?
¼ of our plates , on average, should have a protein food source

Healthy Protein-Meat/Fish
Proteína Sana-Carne y Pescado

- Grilled Chicken/turkey
- Baked Chicken/turkey
- Fish
- Pork

- Pollo a la parrilla/pavo
- Pollo al horno/pavo
- Pescado
- Puerco

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White meat not dark-take off skin; Watch portion size

Canned tuna-in water not oil-6 oz

Limit red meat
Bake , grill, steam and don't fry meats.

Less Healthy Protein
Proteína Menos Sana

- Chicken Nuggets
- Hamburger
- Fried Food
  - Bacon, sausage

- Nuggets de pollo
- Hamburguesa
- Comida Frita
  - Tocino, salchica, chorizo



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People eat at fast food. It is cheap. It is accessible. Many live in food deserts. Help people know what they “can eat” if they eat fast foods. Help them understand portions. If I eat at a fast food place, what are the best choices there (i.e. grilled chicken sandwich) . Can people ask for a “lettuce wrap” instead of two pieces of bread?

Non Meat Protein
Proteína sin Carne

Beans	Frijoles
Lentils	Lentejas
Eggs-whites	Huevos-claros
Cheese	Queso
Green Vegetables	Verduras verdes
Nuts	Nueces
Yogurt	Yogur

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Not all proteins are meat based.
What are healthy protein options that are not meat?
How can I prepare nonmeat protein options in a healthy way?

Dairy
Lacteos

- Milk
- Cottage Cheese
- Yogurt
- Cream Cheese
- Sour Cream

- Leche
- Queso Cottage
- Yogur
- Queso Crema
- Crema Agria

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People need more calcium as they age, especially women as they become postmenopausal to avoid osteoporosis
Teens and pregnant and breastfeeding women also need more calcium-know the numbers and help patients quantify how much calcium they get daily and if they can't tolerate milk products, what substitute foods they can use to get enough calcium (i.e. almond milk, goat milk, greens, lentils, etc.)

Milk is also fortified with Vitamin D. Not enough vitamin D is also a source of bone abnormalities. Take vitamin D supplements an check patient vitamin D levels and supplement as needed.

Buy milk products with less fat-2 % or less-nonfat if possible. After 2 years of age you no longer needs full fat milk for growth. Before two years of age, you need full fat milk to opsonize the brain and nerve sheaths.

People get lactose intolerance as they age. Certain racial groups have more lactose intolerance than others-more Asians and Latinos

Questions/Preguntas

1. Tell me one food you can eat to get more protein in your diet that is not meat.
2. Why is it important to consume calcium?
3. What are some dairy options if someone is lactose intolerant?

1. Dime una comida que puedes comer para obtener más proteína de tu dieta que no es carne.
2. ¿Por qué es importante consumir calcio?
3. ¿Cuáles son algunas alternativas lácteas si alguien es intolerante a la lactosa?



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Let's review our lecture material
Review meat and non meta based proteins
Review foods with calcium. Note that milk products are an efficient source of calcium and are Vitamin D fortifies but there are other calcium sourced foods.
Review calcium sources for someone who is lactose intolerant. Review the best dairy sources for someone who is lactose intolerant (i.e. yogurt better than straight milk)

Healthy Fats / Grasa Saludable



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Healthy Fats
Grasa Saludable

- Olive Oil
- Vegetable Oil
- Omega 3 (fish)

- Aceite de Oliva
- Aceite Vegetal
- Omega 3 (pescado)

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What are the sources of fat intake in your diet?
What are healthy fats and why?
What is the difference between a saturated, polyunsaturated and monounsaturated fat?)

Unhealthy Fats
Grasa Mala

- Saturated fats-trans
- Margarine
- Grasas Saturadas-trans
- Margarina

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Watch how much we use (portions) and what kind of fats we use?
What kind of fast do you use?
What are the “healthiest fats?”

Butter vs. Lard
Mantequilla vs. Manteca

Lard

- Less saturated fat (bad fat)
- More unsaturated fat (good fat)
- Less cholesterol
- Still worse than vegetable oils

Manteca de cerdo

- Menos grasa saturada (grasa mala)
- Más grasa insaturada (grasa saludable)
- Menos cholesterol
- Todavía peor que los aceites vegetales

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Discuss fats that are often used by our Latino cultures.
What are “good vs. bad fats?”
If it is solid on the sink, it is solid in your arteries!

Fat Foods
Comida con Grasa

- Nuts
- Avocado
- Cheese-low fat
- Dark Chocolate
- Eggs
- Fish (Salmon, Trout, Sardines)
- Extra Virgin Olive Oil

- Nueces
- Aguacate
- Queso –menos grasa
- Chocolate Negro
- Huevos
- Pescado (salmón, trucha, sardinas)
- Aceite de Oliva Virgen Extra

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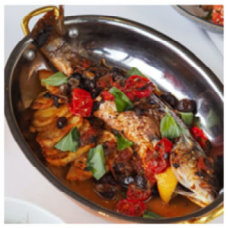
Discuss some healthier fat options that contain more omega 3 oils, monounsaturated sources of fats

Questions/Preguntas

1. Are all fats bad?
2. Are fats that are solid at room temperature healthy?
3. What are healthy sources of fat?

1. ¿Son malas todas las grasas?
2. ¿Son saludables las grasas que están sólidas en temperatura ambiente?
3. ¿Cuáles son fuentes saludables de grasa?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Let's review our lecture material.
Rediscuss and review healthy fats, sources of healthy fats with audience examples

Carbohydrates / Carbohidratos



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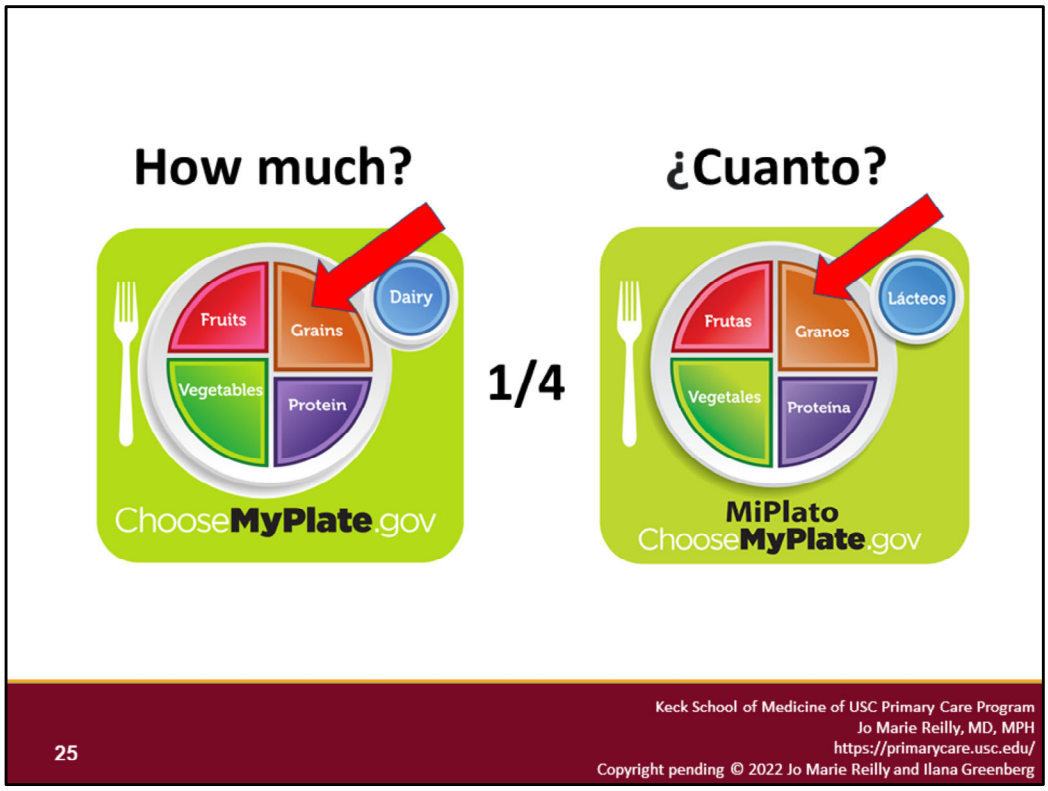
Carbohydrates
Carbohidratos

Potatoes	Papas
Rice	Arroz
Pasta	Pastas
Corn	Maíz
Bean	Frijol
Grains	Granos
Bread-bagels, rolls, tortillas	Pan-bolillos, pan dulce, tortillas



Discuss common carbohydrate sources
Assess portions and quantity for an entire day
Have people “halve” the number they are eating (i.e. go from 8 tortillas a day to four)- 1 piece of toast instead of two-1/2 sandwich instead of a whole, a lettuce wrap instead of a bun
Encourage people to use utensils instead of bread to serve and scoop their food
Corn tortillas instead of flour
Whole wheat pasta and rice instead of “white”



Review My plate and “where carbs fit on MyPlate” and how much of the plate they should “take up”

Types of Bread
Tipos de Pan

- Bread Roll
- Tortilla
- Sweet Bread
- Bagel
- Pita
- Roll
- Pizza

- Bolillo
- Tortilla
- Pan Dulce
- Rosquilla
- Agave
- Royos de pan
- Pizza

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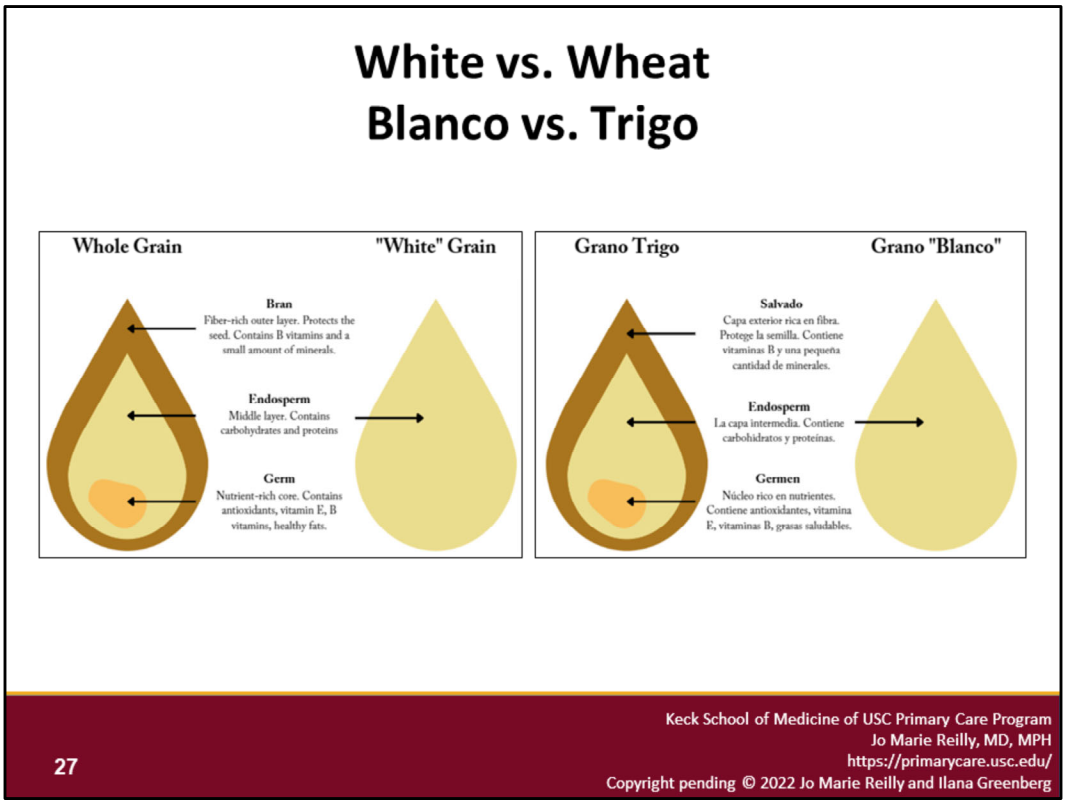
People need you to be very specific about “what a bread” is and the quantity they should eat
You need to go through each type of bread with them to help them come up with a plan they can implement that makes sense for their life and is not so restrictive they won’t do it.
Review whole grain bread sources



Help people understand why whole grains are healthier.
Review the bran outer fiber is healthier, has more nutrients, reduces constipation, helps aid n a sense of fullness to prevent overeating.
Review the endosperm “starch” has the least fiber and the least nutrients. Is more calorie dense.

Questions/Preguntas

1. What is one way you can be mindful of your portion sizes?
2. Which food has more nutrients, brown rice or white rice?
3. What portion of our plates should be carbohydrates?

1. ¿Cual es una estrategia para controlar su porción de carbohidratos?
2. ¿Cual tiene más nutrientes? El arroz blanco o el arroz integral?
3. ¿Que fracción de nuestros platos deberían ser los carbohidratos?

Let's review our lecture material.
Re Review portion sizes
Ask participants to recall the differences between whole grain and "white" carbohydrates and why one is better for you than another.

Fruits & Vegetables / Frutas y Verduras



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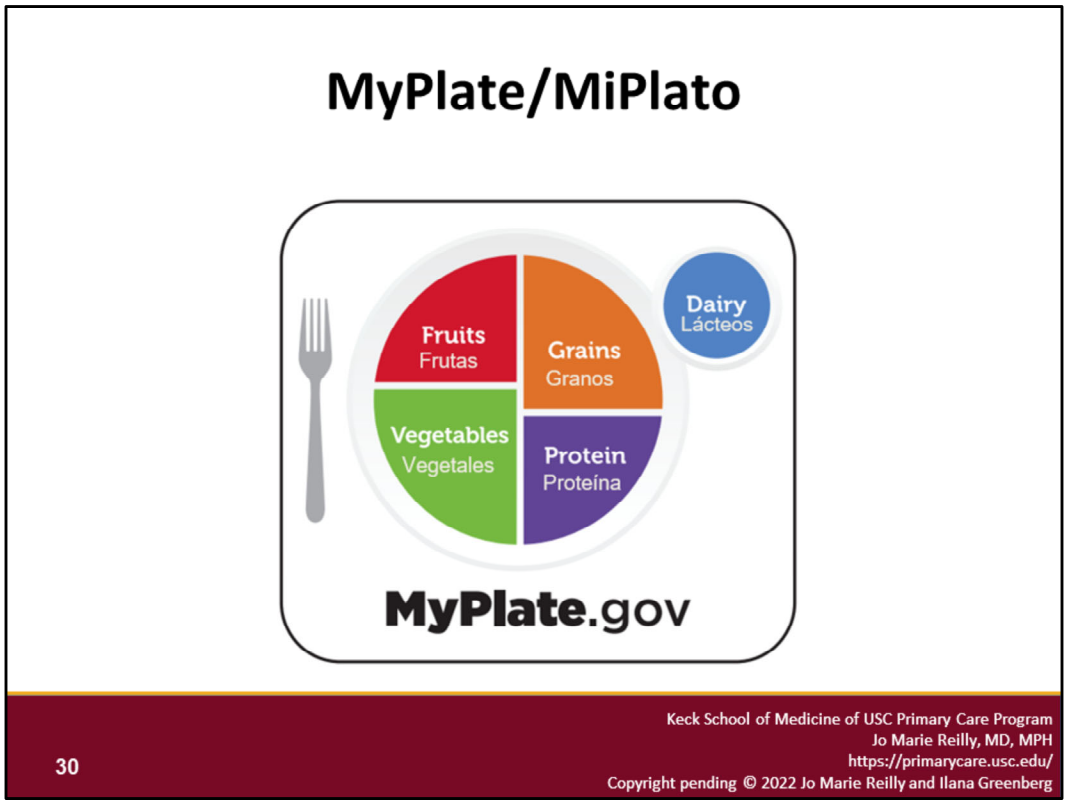


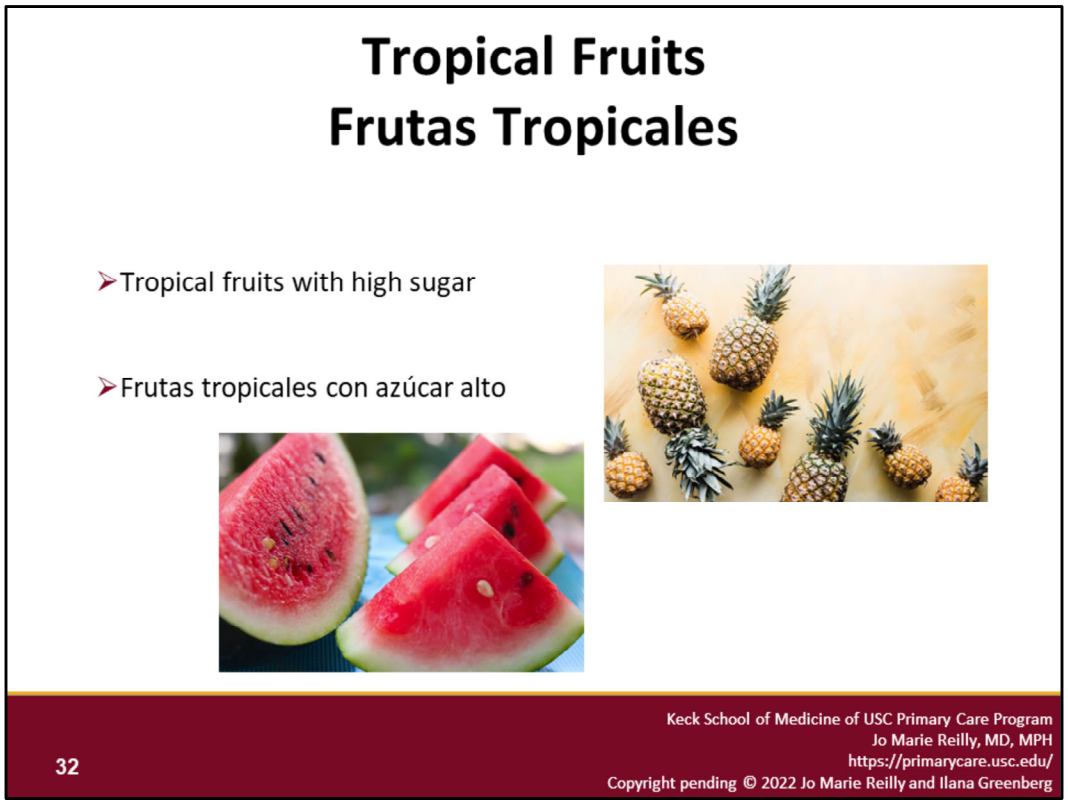
How much of our plates should consist of fruits and vegetables at each serving?
In general, ½ of a plate should be fruits and vegetables with a little more vegetables than fruit.

Always better to eat the fruit or vegetable than to drink the juice.

It takes 6-8 apples or oranges to make one 8 oz glass of juice. We will never eat 8 oranges or apples in one sitting! High sugar load.

Keep the skin on the fruits and vegetables. It has the fiber. Many people peel it. Constipation is a huge problem with our populations and many could improve it by eating sufficient fiber in their diet rather than taking stool softeners.

Ask patients what are their favorite fruits and vegetables and try to make sure the patients are eating at least a couple of servings of each daily.



Watch portion control with tropical fruits and avoid them if possible. These fruits really spike the blood sugar of our diabetic patients= a high glycemic index. Try less than ½ cup daily if "need these fruits"
What are other tropical fruits [people like to eat (i.e. mangos, guavas, pineapple, papaya, watermelon, cantaloupe)

Bananas are high in potassium and cheap but a high source of sugar. Consider small bananas or ½ banana a day.

Citrus Fruit
Fruta Cítrica

- Citrus fruits are better choices
- Berries are good choices

- Las frutas cítricas son mejores opciones
- Los Moros son buenas opciones

These fruits have a lower glycemic index
We need 2-3 servings daily of fruits
Avoid the juices. Eat the whole fruits.

What is Glycemic Index?
¿Que es Indice Glucemico?

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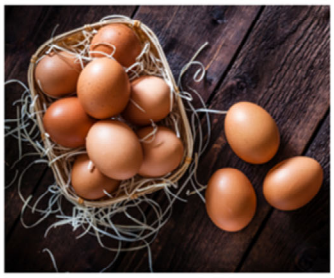
Want to eat foods with a low glycemic index.

These are food that are broken down slowly by the body and do not cause sugar spikes. In general, these are foods with higher fiber and lower sugar content

Low Glycemic index foods
Comidas con Indice Glucemico Baja

- Eat more of these foods
- Come mas de estas comidas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Increase the lower glycemic index foods to avoid sugar spikes and maintain a steady blood sugar level

High Glycemic Index Foods
Comidas con Indice Glucemico Alta

- Eat less of these foods
- Come menos de estas comidas



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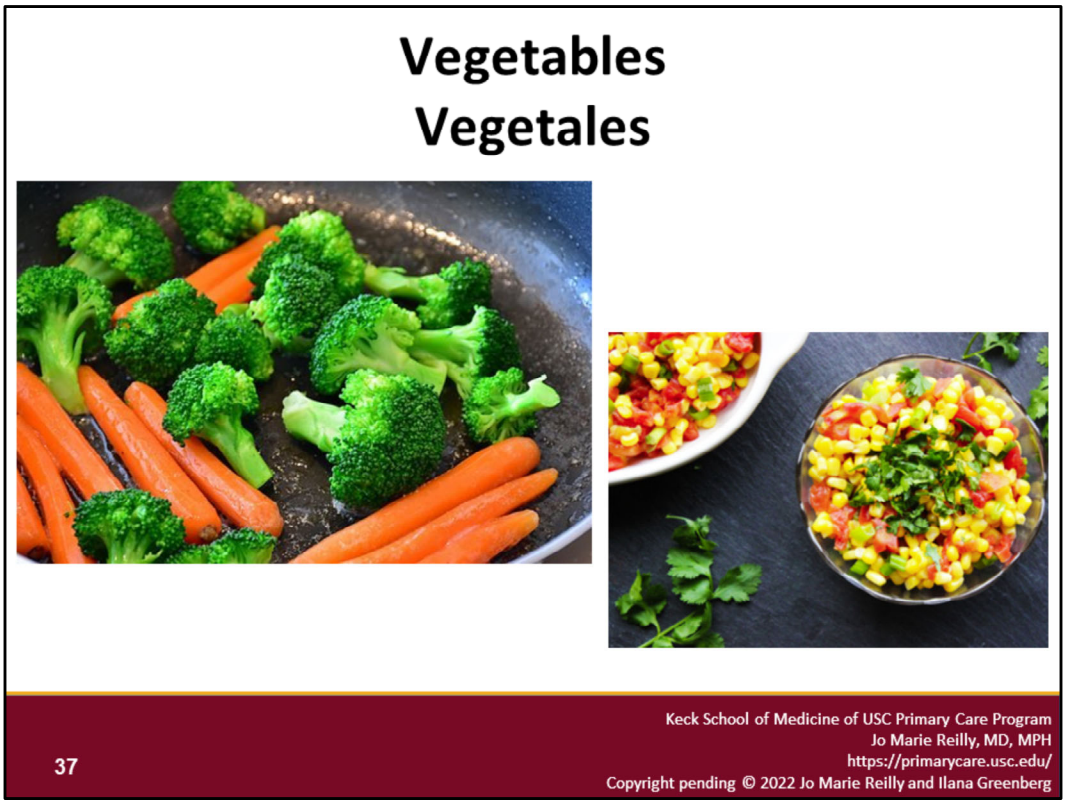
Decrease the higher glycemic index foods to avoid sugar spikes and maintain a steady blood sugar level



Green vegetables have a lower sugar content; “orange and yellow” vegetables (ie carrots and squash have more sugar)
Celery has a lot of natural salt
Bitter squash (typical to the Asian communities and some Latino communities) and nopales (cactus) have known sugar reducing properties in the diabetic communities

Even fast food serves salads and apples ; Consider getting these instead of fries if you eat fast food

Whole Fruit/Vegetables vs. Juices
Frutas/Vegetales Enteros vs. Jugos

- Whole fruits and vegetables have healthy **fiber**, which is **lost** during most juicing.
- More Fruits and vegetables are needed to create a cup of juice **increasing sugar intake**.

Many people like to put all their daily fruits and veggies in a blender and then drink their “energy drinks”.
This has its limits as fiber is lost
Also, more fruit is eaten so higher sugar load

Whole Fruit/Vegetables vs. Juices
Frutas/Vegetales Enteros vs. Jugos

- Frutas y verduras integrales tienen **fibra** sana, que se **pierde** durante la mayoría de jugo.
- Más Frutas y verduras son necesarias para crear una taza de jugo que **aumenta la ingesta de azúcar.**

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Many people like to put all their daily fruits and veggies in a blender and then drink their “energy drinks”.
This has its limits as fiber is lost
Also, more fruit is eaten so higher sugar load

Questions/Preguntas

1. How many oranges are in one (8oz) glass of juice?
2. What kinds of vegetables have the most sugar?
3. Should you leave the skin on fruits and vegetables? Why?

1. ¿Cuántas naranjas hay en un jugo de naranja de 8 oz?
2. ¿Que tipo de vegetales contienen mas azúcar?
3. ¿Deberíamos dejarle la piel a las frutas y vegetales? Si o no? Y porque?



Let's review our lecture material
How can you eat fruits and vegetables in the healthiest ways?
What is the adequate number of fruits/veggies one should consume in a day (4-6 servings)?
How can you increase the fiber in the fruits and vegetables you consume?

Sugary Beverages / Bebidas Azucaradas

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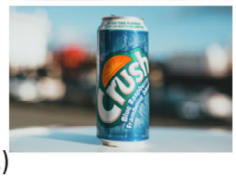
Sugar in Drinks
Azúcar en las Bebidas

- Coffee/tea/iced tea
- Juice- 8 oz. orange juice = 6-8 pieces of fruit
- Soda
- Vitamin/flavored waters
- Energy drinks
- Sports drinks
- Punch and “ades” (lemonade, etc.)
- Alcohol

- Café / té / té helado
- Jugo- 8 oz. jugo de naranja = 6-8 piezas de fruta
- Soda
- Vitaminas / Aguas Aromatizadas
- Bebidas energizantes
- Bebidas deportivas
- Punch y "ades" (limonada, etc.)
- Alcol



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What is the healthiest drink of all= WATER!

Consider the calories and sugar you get from what you drink. What do you like to drink and how much daily?

Ways to make water more interesting if people dislike water- cut up cucumbers, lemons, strawberries and oranges ; “crystal light” packets

watch calories from drinks and sugar content

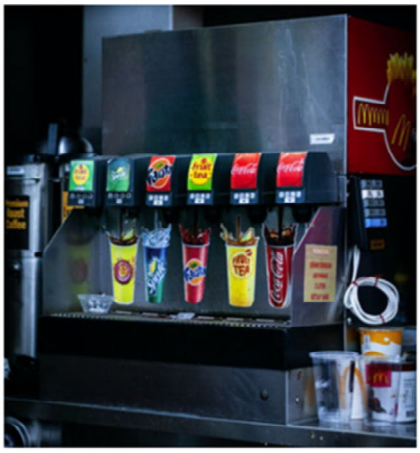
watch sizes
Consider diet drinks

consider increased phosphorus in sodas which impact bone growth even if you drink diet drinks.

Sugar in Drinks
Azúcar en las Bebidas

Drink (12-ounce serving)	Teaspoons of Sugar	Total Drink Calories
Tap or Unsweetened Bottled Water	0	0
Unsweetened Tea	0	0
Lemonade, powder, prepared with water	3	55
Sports Drinks	5	97
Brewed Sweet Tea	7	115
Energy Drink	9	162
Regular Soda	10	155
Fruit Juice Drink	10	186
Regular Orange Soda	13	195

Sugar content derived from US Department of Agriculture Food Data Central



Sugar is in your drinks-
sugar is in alcohol
Sugar is in the creamers for coffee

10 teaspoons of sugar in a coke-6 oz
How to lower your sugars in what you drink?

Sugar in Drinks
Azúcar en las Bebidas

Bebida (porción de 12 onzas)	Cucharaditas de azúcar	Calorias
Agua del grifo o embotellada sin azúcar	0 cucharaditas	0
Té sin azúcar	0 cucharaditas	0
Bebidas deportivas	2 cucharaditas	75
Limonada	6 ¼ cucharaditas	105
Té dulce	8 ½ cucharaditas	120
Soda	10 ¼ cucharaditas	150
Ponche de frutas	11 ½ cucharaditas	195
Cerveza de raíz (root beer/ sin alcohol)	11 ½ cucharaditas	170
Soda de naranja	13 cucharaditas	210

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Consider the sugar that is in alcohol
Sugar is in your drinks-
sugar is in alcohol
Sugar is in the creamers for coffee

10 teaspoons of sugar in a coke-6 oz
How to lower your sugars in what you drink?

Artificial Sugar
Artificial Sugar

- Equal-blue
- Sweet and Low-pink
- Splenda -Yellow
- Stevia (natural)

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What are the kinds of artificial sugars are out there? What are their pros and cons?

Can use artificial sugars to bake. What is the best one?
Honey is a sugar- even if it comes from bees!

Alcohol
Alcol

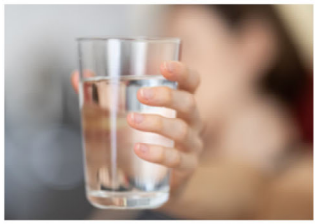
How much sugar is in your drink? ¿Cuánto azúcar hay en tu bebida?	
Drink	**Teaspoons/ Cucharillas**
Vodka Diet Coke	Sugar Free Sin Azúcar
Wine / Vino Prosecco	0.25
Rose Wine / Vino Rosado	1
Guinness (Pint)	5
Vodka Red Bull	7
Real Ale (Pint)	Up to 9

There is a good amount of sugar in alcohol. If we mix it with soda it is even higher. Be thoughtful about alcohol intake.

Water
Agua

- General recommendation is eight 8-ounce glasses of water
- Varies based on weight, half an ounce to an ounce for every pound you weigh

- En general, se recomienda ocho vasos de agua de 8 onzas.
- Varía según el peso, de media onza a una onza por cada libra que pesa



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Water has no calories!
How much water a day do we need 8 8 oz glasses.
What can we do to make water more interesting?

Questions/Preguntas

1. What are the healthiest beverages?
2. True or false: sugar is in alcohol.
3. How much water should adults drink in a day?

1. ¿Cuáles son las bebidas más saludables?
2. Cierto o falso: hay azúcar en alcohol.
3. ¿Cuánta agua deben beber las adultas en un día?



Let's review our lecture material.
Review how to best drink healthy options daily and enough eater daily and the sugar content in what we drink.

Portion / Porciones

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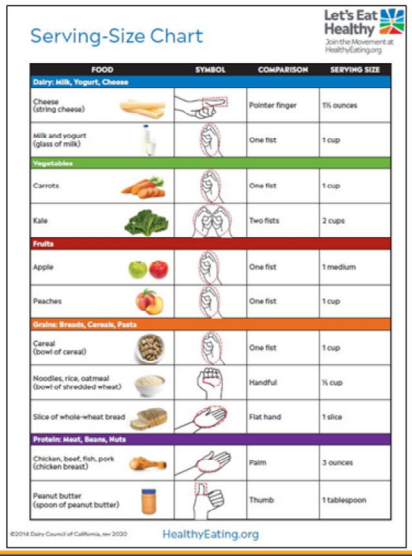
What is a Portion?
¿Qué es una Porción?



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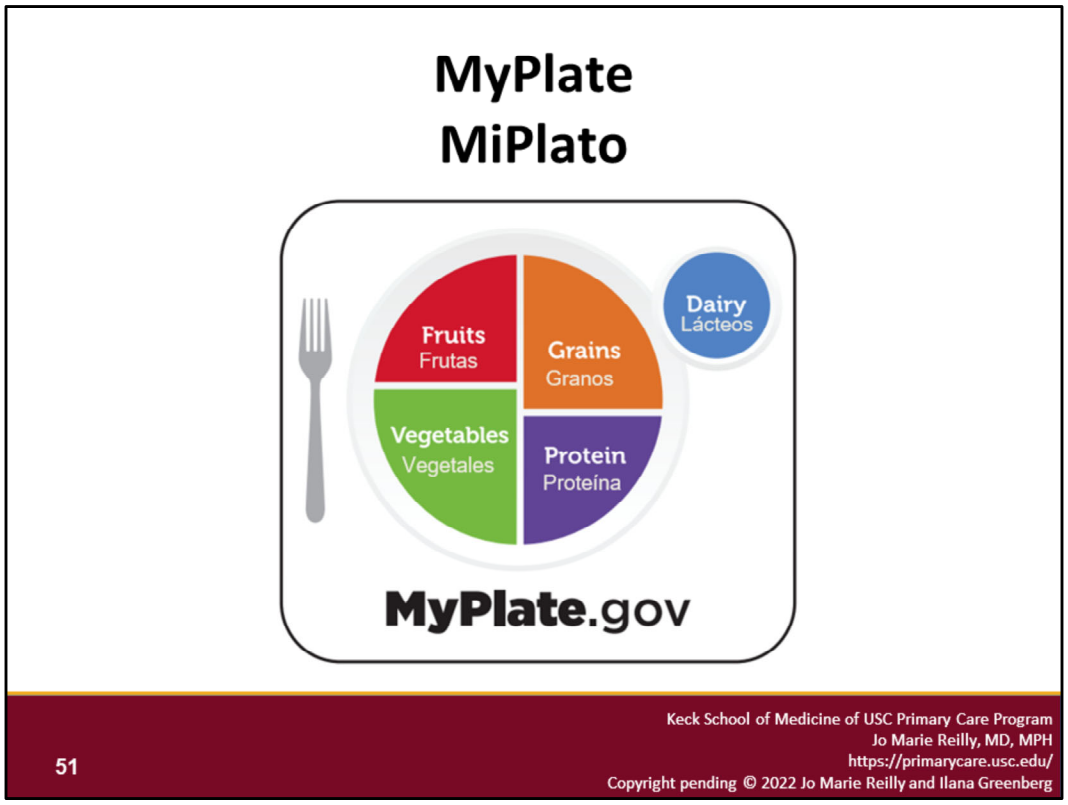
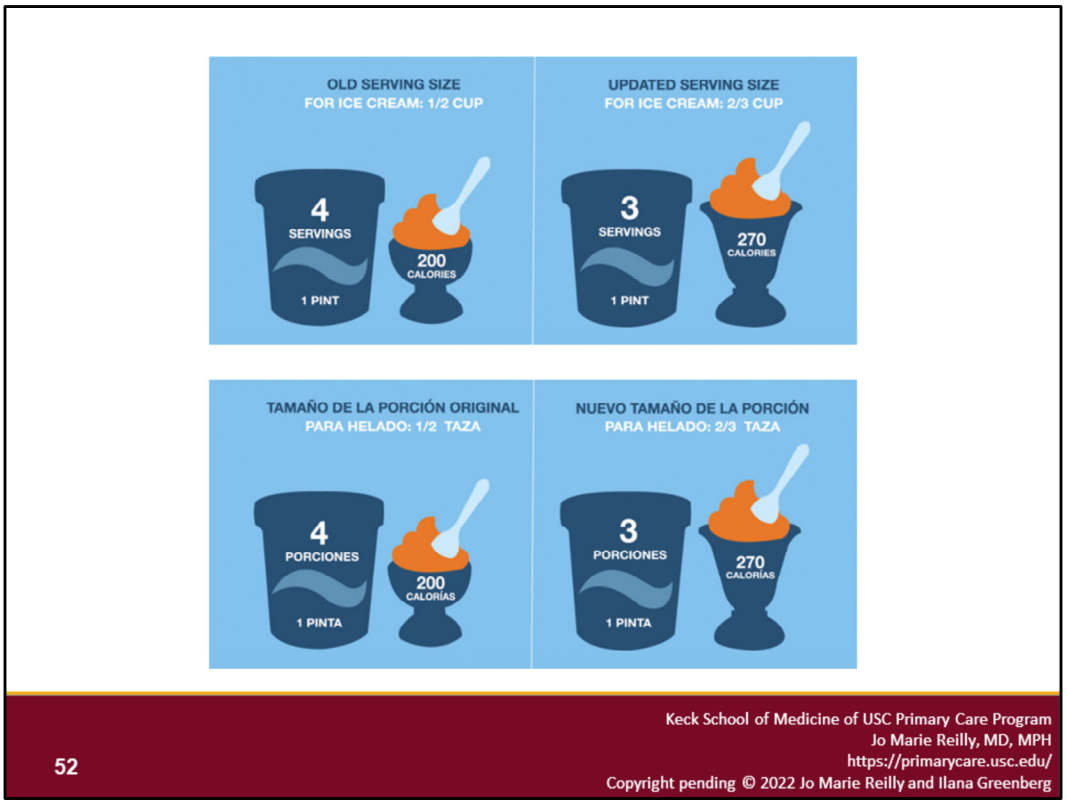
Know your portions and help patients understand them by using cups and measuring spoons and encouraging them to buy them
Can buy a cheap set at 99 cent stores and dollar stores.

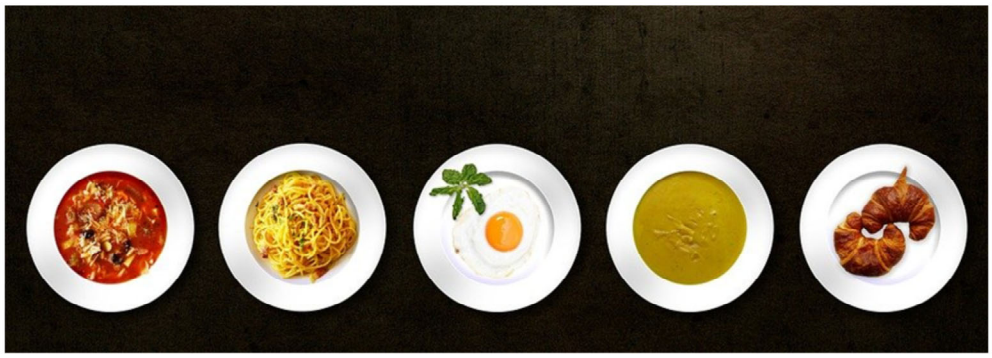


Re review MyPLate and portions of each macronutrient (proteins, carbohydrates, fats)on a plate



Portion sizes change and updated serving sizes may include larger amounts of food

Limiting Portions
Limitación de Porciones



Be mindful of limiting portions

Questions/Preguntas

1. What foods should you consume in smaller portions?
2. What are some tips for controlling portion sizes?
3. What foods should half your plate be? Why are they important?

1. ¿Cuales comidas deberías consumir en porciones pequeñas?
2. ¿De cual manera puede usted controlar sus porciones?
3. ¿Cuales comidas deberían cubrir mitad de su plato? Por que son importantes?

Let's review our lecture material.
Rediscuss plates, glass and bowl sizes and the importance of measuring foods on plates to reduce overeating.

Healthy Snacks / Bocadillos Saludables



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Try to encourage good snack choices and also be mindful of portions for calorie control
What are some healthy snacks we can choice that are fruits and vegetables and are healthier?

Which snacks are best?
¿Cual meriendas son mejores?

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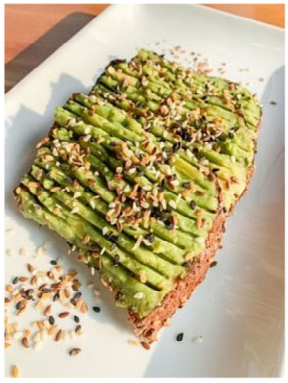
What snacks do we buy and have in our homes?
Prepackages snacks are less healthy for us.

Portion Control
Control de Porciones



Examples of some good and less good snacks
What snacks do we have in our houses?
What are the healthiest snacks to eat and the potions of them.

Moderation Is Important
La moderación es importante

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Consider putting chips in a plate instead of eating from the bag. Moderation is important
Consider what snacks we chose, and how we can measure the amounts of them to eat less.
Many pre packaged snacks are also high in salt (ie chips, crackers) which is not healthy for those who struggle with high blood pressure and kidney problems.
Many prepackaged snacks are also high in sugar (ie bags of cookies, candy) which are also not healthy.

How Much Do Our Food Choices Cost?
¿Cuanto Cuesta Las Opciones?

Important to consider that often healthier options are more expensive than less healthy options.
How can we continue to make healthy food choices and still pay our bills?
Many dollar stores are also selling fruits and vegetables at cheaper prices.
Can we go to where house stores and by quality food at cheaper prices, package and freeze it and defrost as we need it to reduce food costs?

Questions/Preguntas

1. What are some healthy snacks you can try?
2. How can you eat in moderation?
3. What are some ways to practice portion control?

1. ¿Cuáles son algunas meriendas saludables que pueden probar?
2. ¿Como se puede comer con moderación?
3. ¿Cuáles son algunos modos de practicar la moderación?



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Let's review our lecture material

Food Labels / Etiquetas De Los Alimentos

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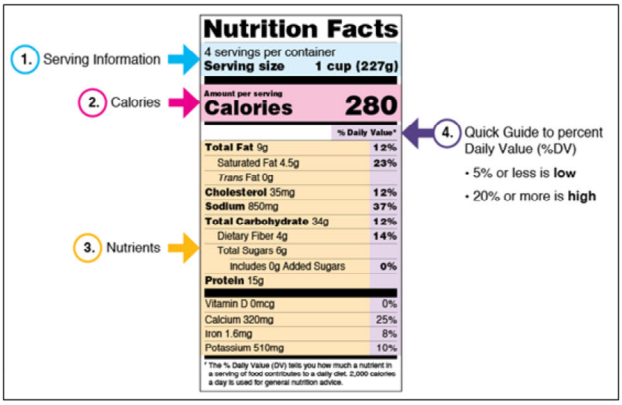
Food Label
Etiqueta De Los Alimentos

Sample of Macaroni and Cheese

Muestra de Macarrones con Queso



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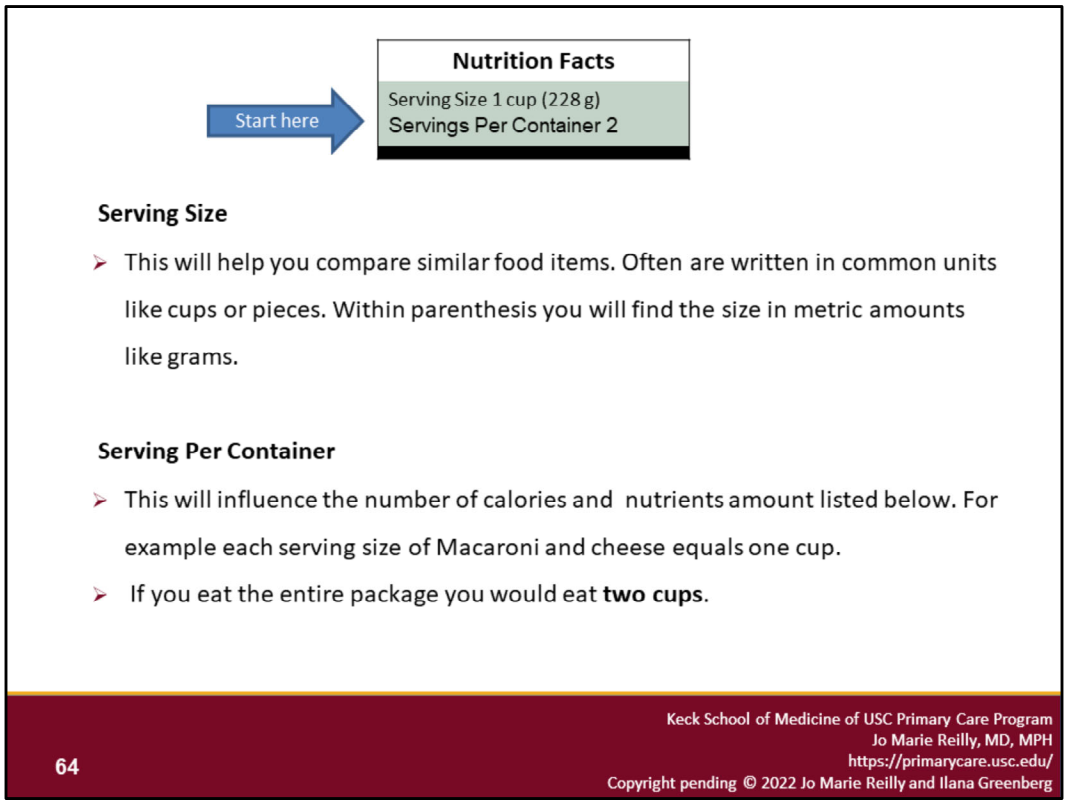
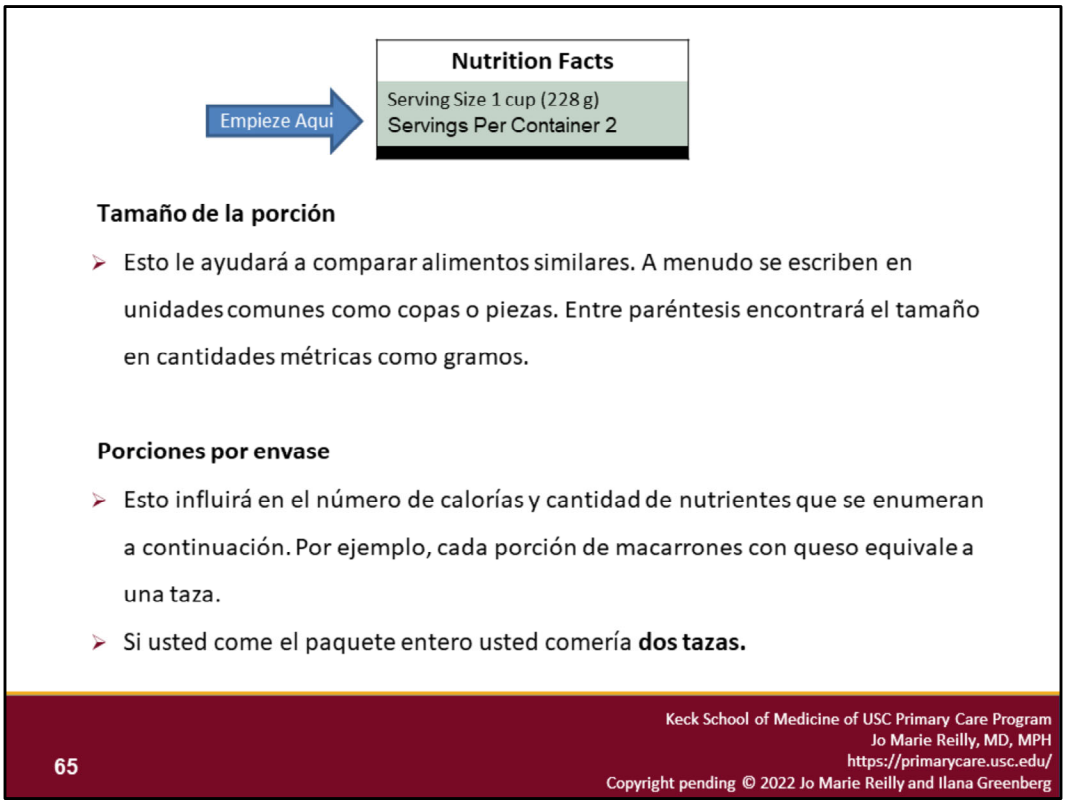
Teach how to read a food label:

Look at serving size- people often eat a serving size that is too big
Goal is less “than 5” for everything, noting that 20 is particularly high:
1.Concentrate on total fat-especially watching for trans fats (ie less than 5 grams of total fat”
2. Total fiber-want > 20 –helps maintain water, aid digestion, avoid constipation
3. Total cholesterol <20
4. Watch sodium <20
5. Carbohydrates-watch amounts of sugars



Review serving size in how to read a food label.
Emphasize that one container isn't necessarily for on person and one serving size!



Review serving size in how to read a food label.
Emphasize that one container isn't necessarily for on person and one serving size!

What To Look For?
¿Qué Buscar?

- **Focus on both Getting Less and Enough:**
  - Total Fat
  - Saturated and trans fat
  - Sodium
  - Carbohydrates-Sugars
  - Fiber
- 5% or less is low
- 20% or more is high

- **Concéntrese en obtener menos y lo suficiente:**
  - Grasa total
  - Grasas saturadas y trans
  - Sodio
  - Carbohidratos-Azúcares
  - Fibra
- 5% o menos es bajo
- 20% o más es alto

Summary points on how to read a food label- key take aways in “too much” and “what is considered a low amount”.

Questions/Preguntas

1. Which categories do we want to be **HIGH**?
2. Which categories do we want to be **LOW**?
3. On this food label, how many servings would you eat if you ate all of it?

1. ¿Cuales categorías deben ser **ALTAS**?
2. ¿Cuales categorías deben ser **BAJAS**?
3. En esta etiqueta de los alimentos, ¿cuantas porciones comerían si lo comieran entero?

Nutrition Facts

8 servings per container

Serving size **2/3 cup (55g)**

Amount per serving

Calories **230**

	% Daily Value*
Total Fat 8g	**10%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**13%**
Dietary Fiber 4g	**14%**
Total Sugars 12g	
Includes 10g Added Sugars	**20%**
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 240mg	6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

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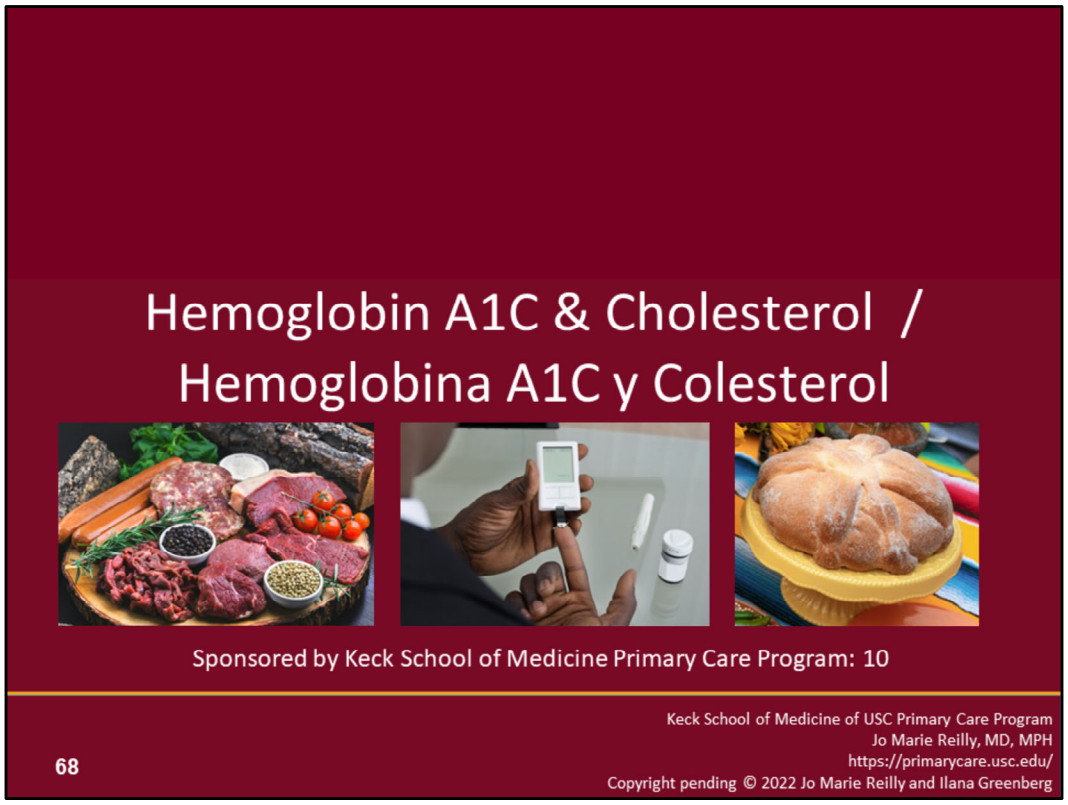
Let's review our lecture material
Key take away points of how to read a food label
Practice reading a label together
Best to eat foods that don't need food labels- they are fresh, they are whole foods and healhiest



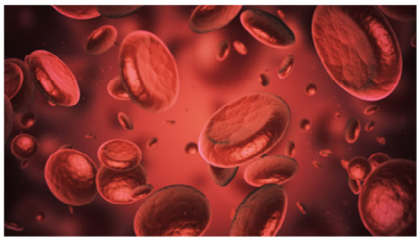
What is a hemoglobin A1C and how do doctors use it to help manage and assess for diabetes and prediabetes?
What is a cholesterol and how do doctors use it to help manage and assess for high cholesterol and risks for heart disease?

Test Regularly
Pruebe Regularmente

Diabetics are asked to check their sugar daily by their doctor and record the level

What is Hemoglobin A1C?
¿Que es Hemoglobin A1C?

- It is the measurement of the total sugar in your blood over the last 2-3 months
- Es un medido del azúcar en su sangre sobre las últimas 2-3 meses



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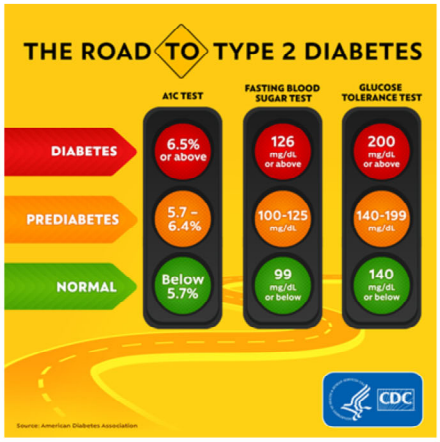
Doctors also check a special test called the hemoglobin A1C to see how well your blood sugar has been controlled over time

Test Levels
Niveles de Prueba



Resultado*	Prueba de A1C	Prueba de azúcar en la sangre en ayunas	Prueba de tolerancia a la glucosa
Normal	Menor a 5.7 %	99 mg/dl o menor	140 mg/dl o menor
Prediabetes	5.7 – 6.4%	100 – 125 mg/dl	140 – 199 mg/dl
Diabetes	6.5 % o mayor	126 mg/dl o mayor	200 mg/dl o mayor

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-If you have diabetes and your sugar is in good control, we test hemoglobin A1C every 6 months at a doctor's office
-If hemoglobin A1C is not in good control we test it every 3-4 months

-Relationship between blood sugar on machine and HGA1C levels
-High levels of HGA1c are linked to negative effects on eyes, kidneys, nervous system in legs-cramps/burning and tingling
High HGA1C can leads to blindness, heart attacks, strokes and end stage kidney disease requiring dialysis.
No your numbers and your doctors goals for you to stay healthy

If you have pre diabetes, you are on the border of diabetes. Take action in your diet and exercise to avoid “crossing the line”.

Cholesterol
Colesterol

- Fat-like substance found in many meat products and naturally made in the body
- Sustancia similar a la grasa encontrada en muchos productos cárnicos y naturalmente hecha en el cuerpo
- Is divided into “good” (HDL) and bad” (LDL) cholesterol
- Se divide en colesterol "bueno" (HDL) y malo "(LDL)



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What is cholesterol and why is it concerning?
What is HDL, LDL and total cholesterol.?
Your best level of cholesterol depends on your other health problems.
If you have no health problems and risks, doctors like the total level to be < 200 with HDL >40 and LDL < 130.
If you have health problems, like diabetes, doctors like your levels to be lower to protect your heart
Ask your doctor what your levels are and what they should be.

Cholesterol
Colesterol

- Too much cholesterol can lead to atherosclerosis (hardening of the arteries) and lead to peripheral vascular disease

- Demasiado colesterol puede conducir a la arteriosclerosis (endurecimiento de las arteries) y conducir a la enfermedad vascular periférica



What are the health effects of high cholesterol?
Atherosclerosis can lead to heart attacks and strokes and blockages of arteries in the legs which can lead to amputations.
In addition to diet, smoking can also cause your cholesterol to be elevated.

Cholesterol Levels
Niveles de Colesterol

	Low Bajo	Borderline Al límite	High Alto
Total Cholesterol Colesterol Total	Less than 200 200 o menos	200-239	More than 240 240 y más alto
LDL	Less than 130 130 o menos	130-159	160 and higher 160 y más alto
HDL	50 and higher 50 y más alto	40-49	Less than 40 40 o menos
Triglycerides Triglicéridos	Less than 200 200 o menos	200-399	400 and higher 400 y más alto

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"normal" Cholesterol levels vary according to people's underlying health problems. Discuss with your doctor what your cholesterol levels are and what they should be.

Questions/Preguntas

1. What is the target level for HbA1C?
2. Which type of cholesterol is 'good' cholesterol?
3. What is the max amount of cholesterol you should eat in a day?

1. ¿Que es el nivel recomendado de hemoglobina a1c?
2. ¿Que tipo de colesterol es considerado el colesterol bueno?
3. ¿Cuantos mg de colesterol es el máximo que debe comer en un día?



Let's review our lecture material
Review HGA1C and cholesterol types and numbers with patients.
What are their numbers?
How can they improve their numbers?
What is the impact of having high numbers on their health?

Diabetes and Pre-Diabetes / Diabetes y La Prediabetes



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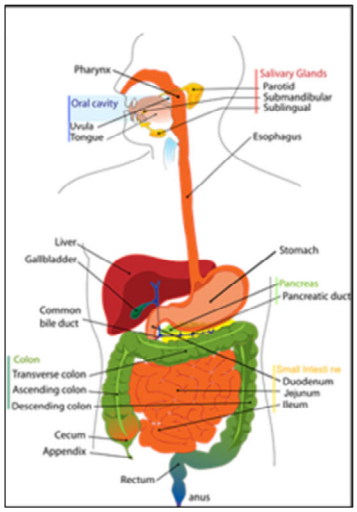
My Body
Mi Cuerpo



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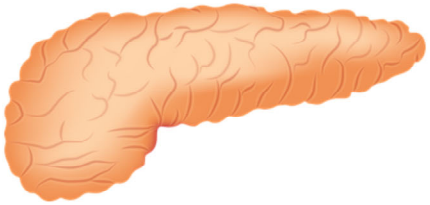
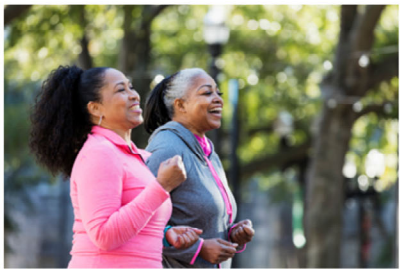
Diabetes is a chronic disease that impacts the body's ability to breakdown the sugars in our body.
Much of our sugar regulation is controlled by the pancreas gland, which is part of our digestive system.

The Pancreas
El Pancreas

- A healthy pancreas produces insulin
- El pancreas saludable produce insulina





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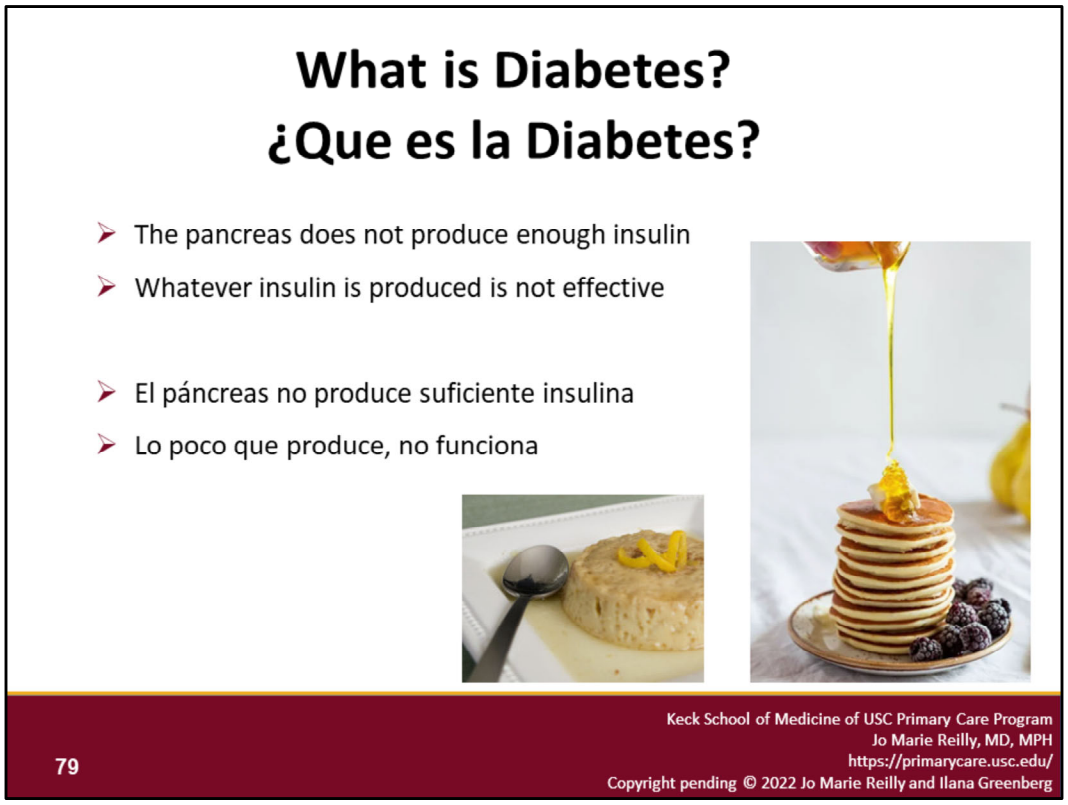
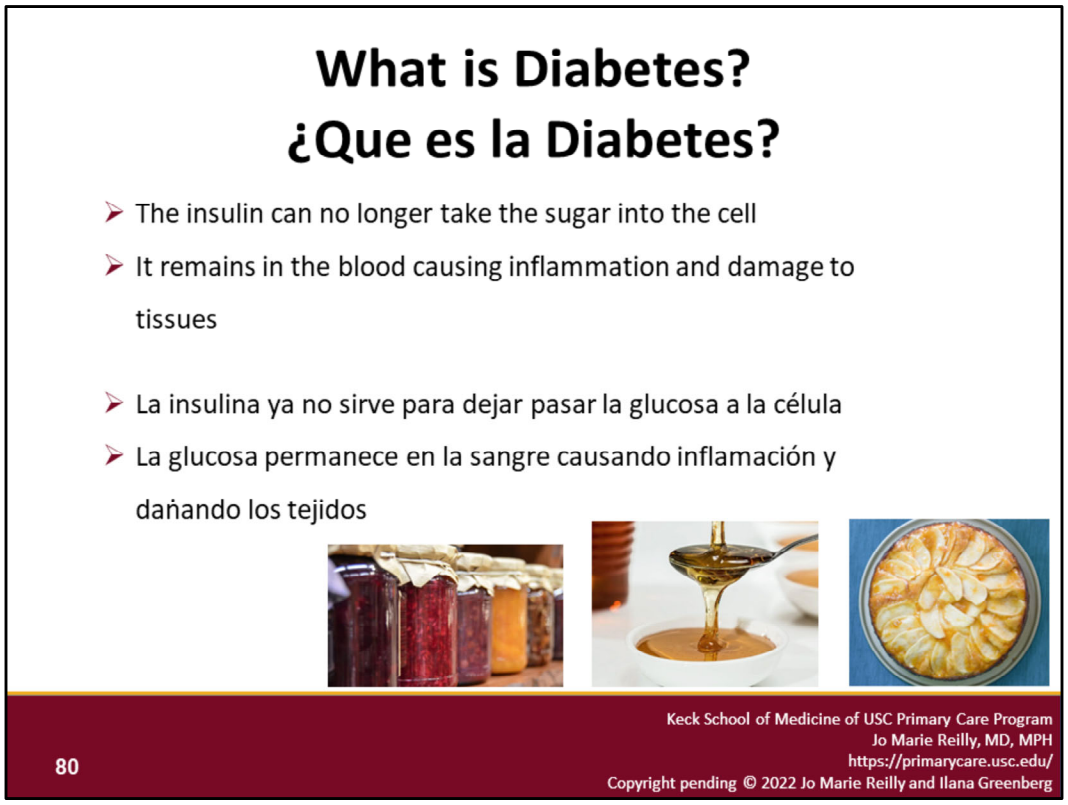
A healthy pancreas produces insulin.
Insulin is the key that is needed to move the glucose into the cell so it can be converted to energy.
The cells are able to receive the glucose and turn it into energy for the body to use.



In diabetes the pancreas is worn out. It cannot make enough insulin.
As a result, the sugar levels in the body are higher than they should be; thus, it remains in the blood causing damage and inflammation to tissues and organs.

People are more vulnerable to this problem if they have a family history, a genetic history, or they are overweight.



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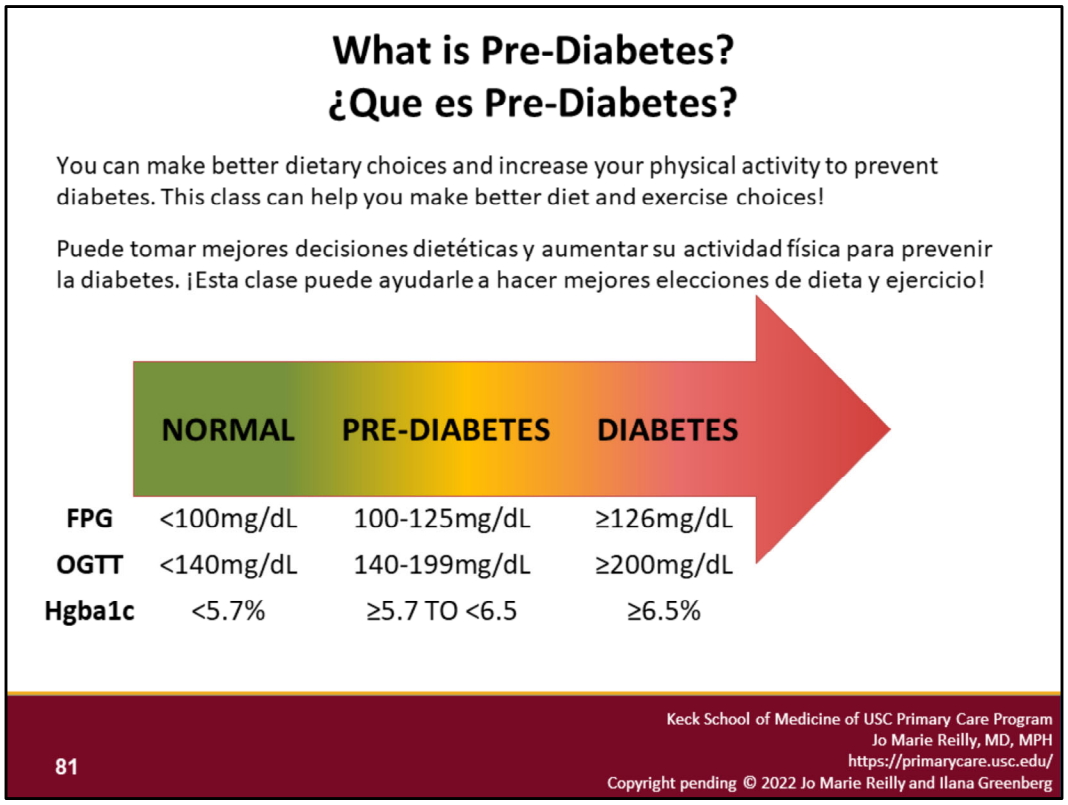


If you have prediabetes, your sugar is on the borderline of diabetes and your pancreas is overworking, but you do not yet have diabetes .

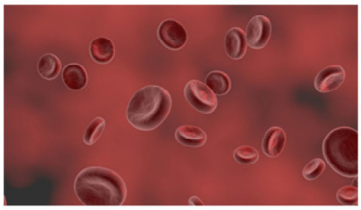
We measure blood sugar in the laboratory by looking at fasting blood sugar levels, blood sugar levels after drinking a sweet soda , and blood sugar levels over the past three months, called a hemoglobin A1C.

If you have prediabetes, you can make better dietary choices and increase your physical activity to prevent from becoming diabetic. Conversely, not changing your dietary and physical activity habits may lead to diabetes. This class can help you make those changes!

What is Hgb A1C?
¿Que es el Hgb A1C?

This test determines how much sugar has accumulated on the cell over the last 3 months. If your daily blood sugars are high, then the Hgb A1c will be high too.

Esta prueba determina la cantidad de azúcar que se ha acumulado en la célula durante los últimos 3 meses. Si sus niveles diarios de azúcar en la sangre son altos, entonces la Hgb A1c también será alto.



Rather than check the glucose at one point in time like the OGTT and FPG, the Hgb A1c is look back on the last 3 months.
This test helps us monitor the control of a person with diabetes.
There is no need to fast for this test.

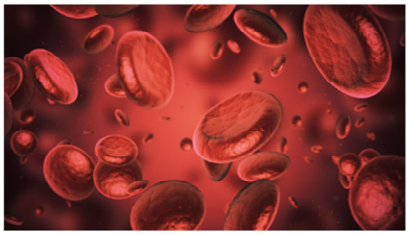
What's My A1C?
¿Cuál es Mi A1C?

The A1C is a blood test you get at the doctor's office or health clinic. It shows:

- Your average blood sugar level for the last 3 months
- Your risk (chance) of having other health problems because of diabetes

Why do I need it!

Your A1C test results are the best way to know if your blood sugar is under good control over time



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What's My A1C?
¿Cuál es Mi A1C?

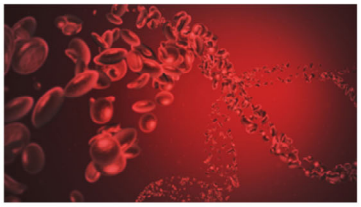
A1C es una prueba de sangre que se hace en la oficina del médico o en una clinica de salud.

Ésta muestra:

- El promedio de su nivel de azúcar en la sangre por los pasados 3 meses
- Sus riesgos (probabilidades) de tener otros problemas de salud a causa de la diabetes

¿Por qué la necesito?

Sus resultados de la prueba de A1C son la major manera de saber



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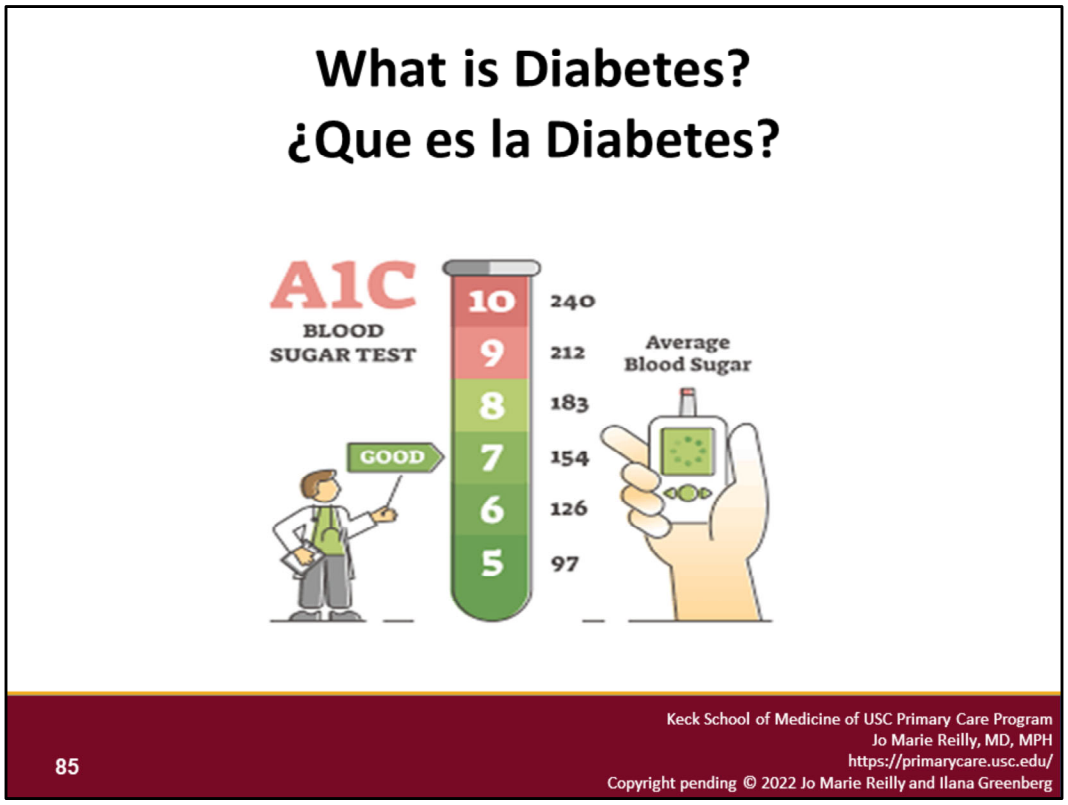

What are good levels of HGA1C?

This chart helps is see what levels we should aim for to best help our body not suffer the effects of diabetes.

The chart also tells us how our blood sugar levels match up to an A1C level

What is Diabetes?
¿Que es la Diabetes?

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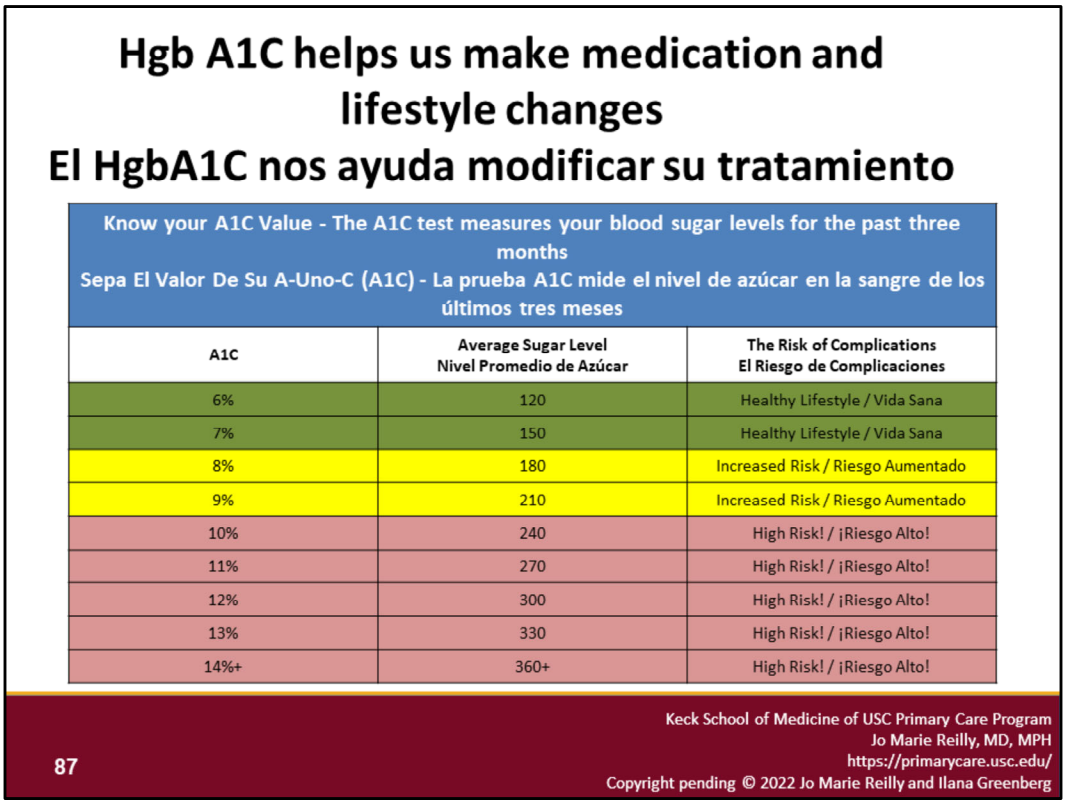
Eating food in the “red Zone” increase our A1C
Eating foods in the “yellow zone” may be ok, but we need to watch the amounts and how often we eat them
Eating foods in the “green zone” foods are ok and will generally not increase our A1C



Hgb A1C helps us make medication and lifestyle changes
El HgbA1C nos ayuda modificar su tratamiento

Know your A1C Value - The A1C test measures your blood sugar levels for the past three months Sepa El Valor De Su A-Uno-C (A1C) - La prueba A1C mide el nivel de azúcar en la sangre de los últimos tres meses		
A1C	**Average Sugar Level Nivel Promedio de Azúcar**	**The Risk of Complications El Riesgo de Complicaciones**
6%	120	Healthy Lifestyle / Vida Sana
7%	150	Healthy Lifestyle / Vida Sana
8%	180	Increased Risk / Riesgo Aumentado
9%	210	Increased Risk / Riesgo Aumentado
10%	240	High Risk! / ¡Riesgo Alto!
11%	270	High Risk! / ¡Riesgo Alto!
12%	300	High Risk! / ¡Riesgo Alto!
13%	330	High Risk! / ¡Riesgo Alto!
14%+	360+	High Risk! / ¡Riesgo Alto!

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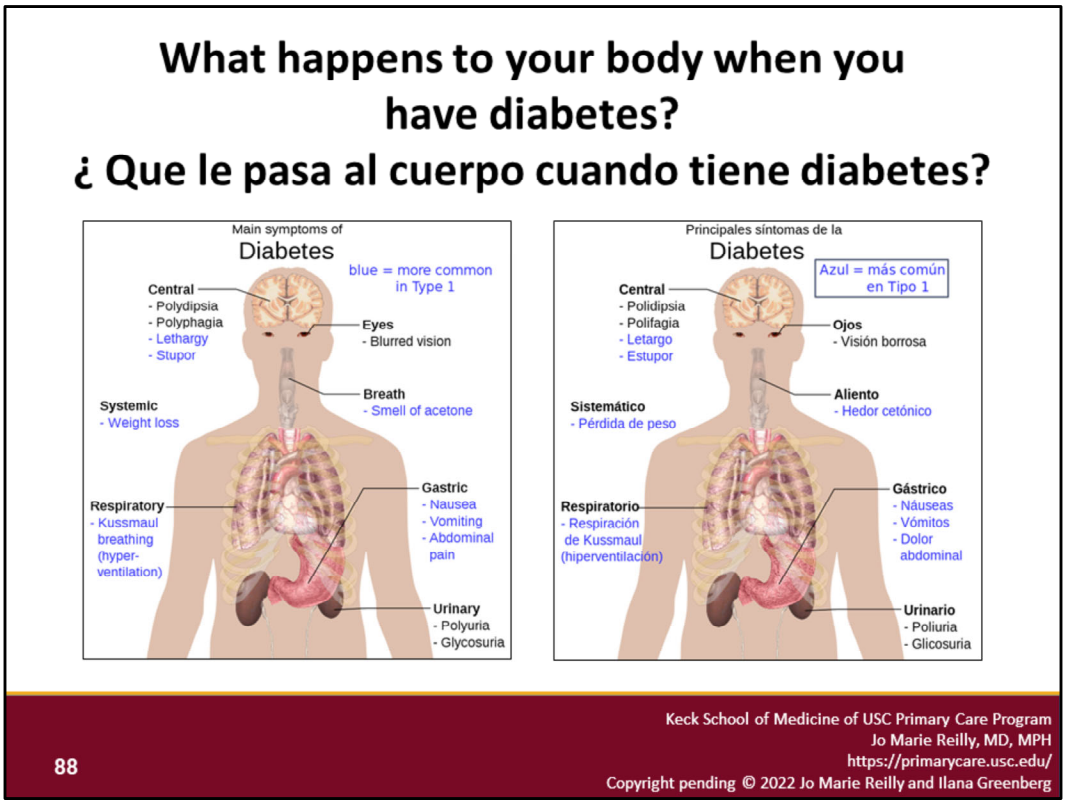
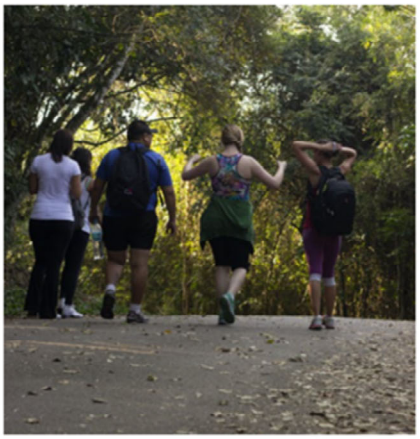
Ask your doctor what your A1C level is so that you can monitor it and know what dietary changes you need to make



Diabetes can affect many organs in the body.
It can impact vision, the kidneys, the heart, and be a cause of heart attacks, and strokes.
It case also cause increased thirst and urination, and cause nausea, vomiting and abdominal pain.
If sugars are very high , they cause cause a fruit breath smell and problems with breathing and weight.

Take control. You can do it!
Tóme control. ¡Si se Puede!

- Hgb A1c ≤ 7
- Blood pressure <130/80
- Annual foot exam by your doctor
- Annual eye exam
- Vaccines
- Have your doctor check for cholesterol
- Have your doctor check for protein in your urine
- Take your medications as directed
- Avoid foods high in carbs and fats
- Appropriate portion sizes
- Exercise



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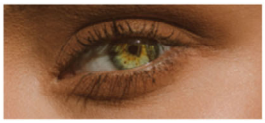
Let's review the ways you can take control of your health and lower your blood sugar.

Take control. You can do it!
Tóme control. ¡Si se Puede!

- Hgb A1c ≤ 7
- Mantenga la presion <130/80
- Chequeo annual de sus pies
- Chequeo annual de los ojos
- Vacunas
- Revise su cholesterol
- Revise si hay proteína en la orina
- Tome sus medicinas como le diga su doctor(a)
- Evite consumir comidas altas en carbohidratos y grasas
- Consuma porciones adecuadas
- Ejercicio



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Let's review the ways you can take control of your health and lower your blood sugar.

Vaccines
Vacunas

- Yearly Influenza Vaccine
- Pneumococcal-protects against a severe pneumonia
- Tdap-protects against tetanus, diphtheria and whooping cough
- Zoster-protects against shingles
- Hepatitis B
- Covid

- Influenza Anual
- Neumococo-protege contra una neumonía severa
- Tdap-protege contra el tétano, difteria y tos ferina
- Zoster- protege contra la culebrilla
- Hepatitis B
- Covid

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If you have diabetes, your immune system is lower and your body needs extra protection to help fight against infection.
It is important to make sure you are current on your vaccinations.
Important vaccines to receive are listed on this slide.

Questions/Preguntas

1. What happens when the pancreas does not make enough insulin?
2. How do you find out if you have diabetes?
3. What can you do now to take control of or prevent diabetes?

1. ¿Qué sucede cuando el páncreas no produce suficiente insulina?
2. ¿Como puedes saber si tienes diabetes?
3. ¿Qué puede hacer ahora para controlar o prevenir la diabetes?



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Let's review the material from this lecture

High Blood Pressure / Presion Alta



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"An ounce of prevention is worth a pound of cure"
"Una onza de prevención vale una libra de cura"
- Benjamin Franklin

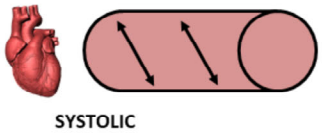
"Better to prevent than to regret"
"Más vale prevenir que lamentar"
- La Abuelita Sabia

94

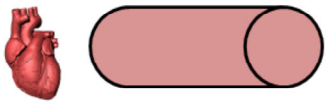
There are some chronic diseases that are very much affected by our nutrition. We can do a lot to prevent these diseases.

What is Hypertension/high blood pressure?
¿Que es Hipertensión/presion alta?

- The heart pumps blood into the blood vessels putting force against them.
- Overweight, age and other diseases can cause this force to be too high.
- When blood pressure is too high, it causes the vessels to become damaged and can lead to heart attacks and strokes.



SYSTOLIC



DIASTOLIC

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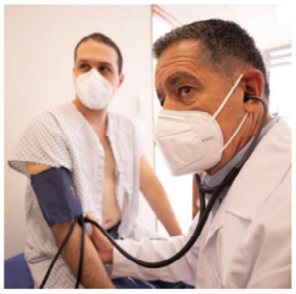
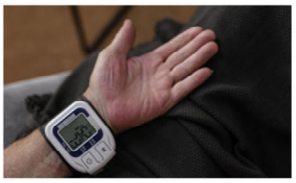
The heart pumps blood into the blood vessels putting force against them.
This is systolic blood pressure. Diastolic blood pressure is when it relaxes.
When blood pressure is too high, it causes the vessels to become damaged and can lead to heart attacks and strokes.

What is Hypertension/high blood pressure?
¿Que es Hipertensión/presion alta?

- El corazón bombea sangre a todos los vasos sanguíneos, poniendo fuerza sobre ellos.
- El sobrepeso, la edad, y otras enfermedades pueden causar que esa fuerza sea demasiado alta, dañando los vasos sanguíneos.
- Esto puede resultar en un embolio, infarto al corazón, o falla de riñones.





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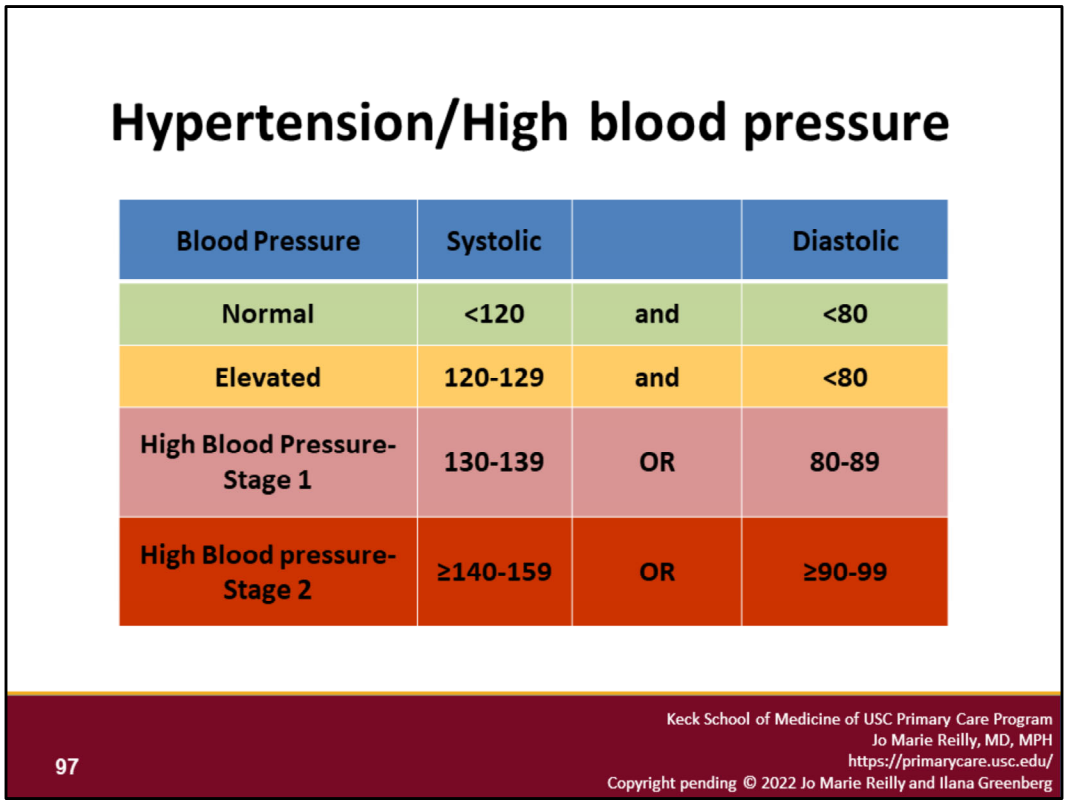
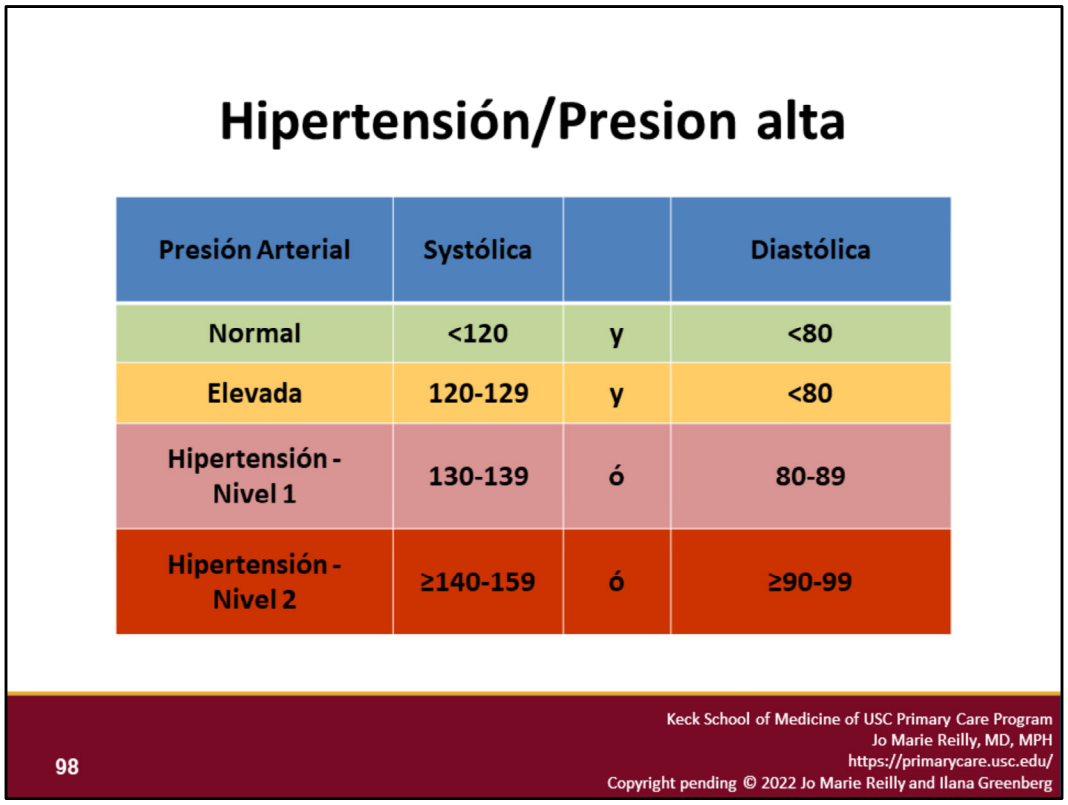


Let's review the levels for high blood pressure.
Most insurances now cover a blood pressure cuff and you can take your own blood pressure and monitor it in your home.

If you have two or more blood pressure readings of 140/90 at least 6 hours a part, you may have high blood pressure.



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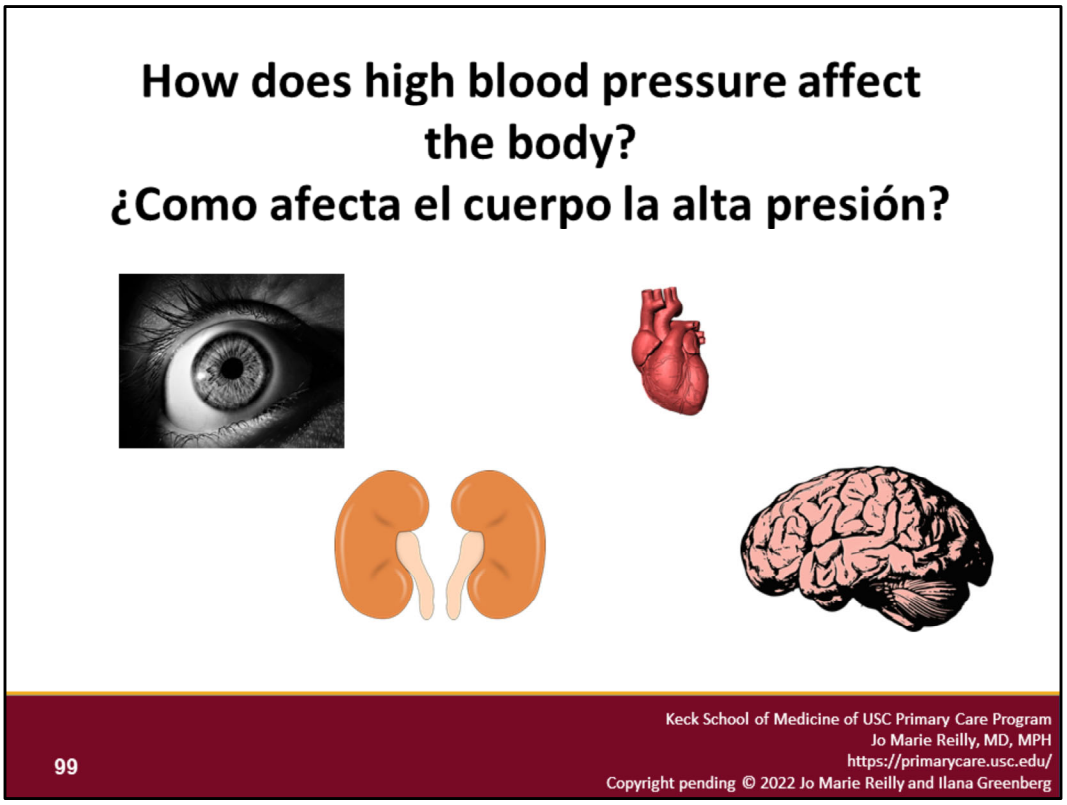

Blood pressure that is not well controlled can cause problems to your body. These problems include Blindness, renal failure, heart attack, stroke

Best Diet For High Blood Pressure
Mejor Dieta por Presion Alta

- Low salt diet
- Eat more veggies
- Avoid high fat foods
- Avoid alcohol and tobacco
- Exercise daily
- Lose weight

- Dieta baja en sodio
- Consumir mas verduras
- Evitar comidas altas en grasa
- Evitar beber alcohol y tabaco
- Hacer ejercicio
- Perder peso

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What are some ways you can control your blood pressure?

How to lower salt in your food
Como Bajar Sal en su comida

- **DASH diet:** ¾ of a teaspoon of salt a day
- Avoid canned foods
- Avoid prepackaged meals
- Avoid fast food/careful at restaurants
- Read food labels: Avoid foods with salt in top 2-3 ingredients
- Watch condiments- ketchup, mustard, soy sauce, salsas

Watching salt may help lower blood pressure.
Some people are more sensitive to salt than others.

How to lower salt in your food
Como Bajar Sal en su comida

- **DIETA DASH:** ¾ de una cucharidita de sal al dia
- Evita Las Comidas en lata
- Evita Las comidas preparadas en paquetes
- Evita comida corriente y cuidanse a las restaurantes
- Lee las etiqietas : Evitan las comidas que tienen “sal” en las primeras ingridientes
- Cuidense el tomar de condimentos ketchup, mustard, soy sauce, salsas

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Watching salt may help lower blood pressure.
Some people are more sensitive to salt than others.

How to lower salt in your food
Como Bajar Sal en su comida

Nutrition Facts
Serving Size 1 cup (240mL)
Servings Per Container about 8

Amount Per Serving	
Calories 150	Calories from Fat 70
	% Daily Value*
Total Fat 8g	**12%**
Saturated Fat 5g	**25%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 2g	
Cholesterol 30mg	**10%**
Sodium 120mg	**5%**
Potassium 350mg	**10%**
Total Carbohydrate 12g	**4%**
Dietary Fiber 0g	**0%**
Sugars 11g	
Protein 8g	
Vitamin A 4% •	Vitamin C 0%
Calcium 30% •	Iron 0%
Vitamin D 25%	

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Potassium		3,500mg	3,500mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

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Follow previous recommendations and review salt content on food labels.
Try to reach for low sodium options.

Questions/Preguntas

1. What change(s) do you want to make in your diet to control/prevent HTN?
2. How do you plan to increase your exercise levels?
3. What challenges do you see coming up in doing so?

1. ¿Qué cambio cree que podría hacer hoy en su dieta para empezar a bajar su presión arterial?
2. ¿Cuáles cambios pueden hacer para aumentar su nivel de actividad física?
3. ¿Cuáles son algunas dificultades que podrían ocurrir en camino a esta meta?



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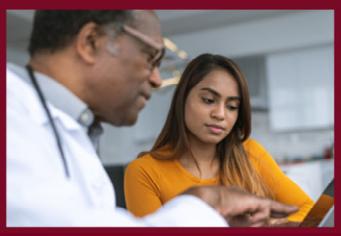
Let's review the material we have learned in this lecture.

Chronic Diseases / Enfermedades Crónicas



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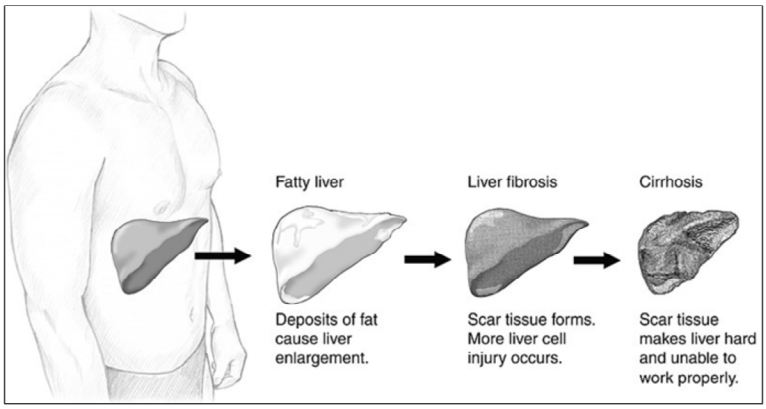
Fatty Liver
Hígado Graso



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Fatty liver is a condition where extra fatty deposits build up in the liver

https://www.gastroconsa.com/patient-education/fatty-liver-disease/
Why do we care about fatty liver?
Fatty liver can lead to inflammation of the liver if not addressed. Further damage to the liver can lead to cirrhosis and death from liver failure.

Fatty Liver
Hígado Graso

- When you have high cholesterol, diabetes and overweight, fat accumulates in the liver
- This fatty change causes inflammation of the liver
- Eventually, this inflammation can scar the liver causing severe damage to it

Fatty liver, if not addressed, can cause serious health implications

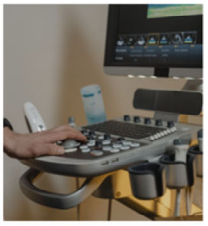
Fatty Liver
Hígado Graso

- Cuando tiene colesterol alto, diabetes, y sobrepeso, la grasa se acumula en el hígado
- Ésta grasa causa inflamación
- La inflamación causa el cirrhosis, cual significa daño grave al hígado

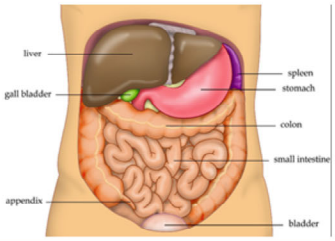
Fatty liver, if not addressed, can cause serious health implications

Fatty Liver
Hígado Graso

- Fatty liver is diagnosed when your liver enzymes are elevated and an ultrasound reveals changes to your liver



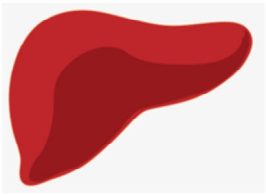
- Symptoms include fatigue and pain on the right side of your abdomen, but often there are no symptoms early in the disease



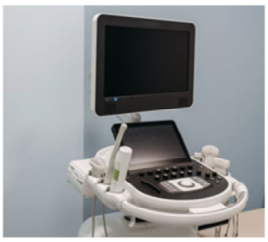
Doctors can test for it by looking at liver blood tests and getting an ultrasound of the liver
Generally people have no symptoms

Fatty Liver
Hígado Graso

- El hígado graso se diagnostica cuando las enzimas hepáticas están elevadas, y cuando el ultrasonido del hígado lo revela



- Los síntomas incluyen fatiga, dolor del lado derecho del abdomen, y en veces no hay ningún síntoma cuando empieza a desarrollar



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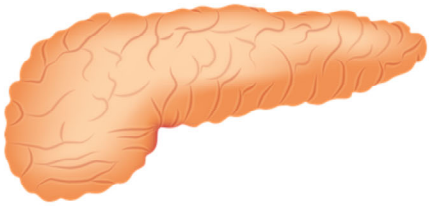
Doctors can test for it by looking at liver blood tests and getting an ultrasound of the liver
Generally people have no symptoms

Diabetes Mellitus

- The pancreas produces insulin so that the cells can convert glucose to energy
- El páncreas produce insulina para que la célula convierte la glucosa a energía



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A healthy pancreas produces insulin.
Insulin is the key that is needed to move the glucose into the cell so it can be converted to energy.
The cells are able to receive the glucose and turn it into energy for the body to use.

Acanthosis Nigricans

- Darkening of the skin around the neck is a sign your body is no longer responding to the insulin in your body.
- This is known as **insulin resistance** and is a risk factor for developing diabetes.
- Weight loss, low-fat and low-carb diets, and exercise will help your body make better use of insulin.

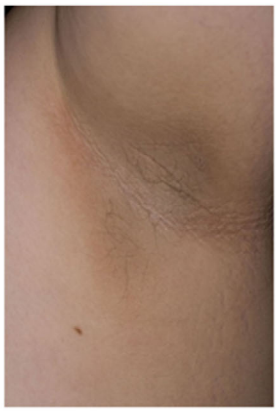


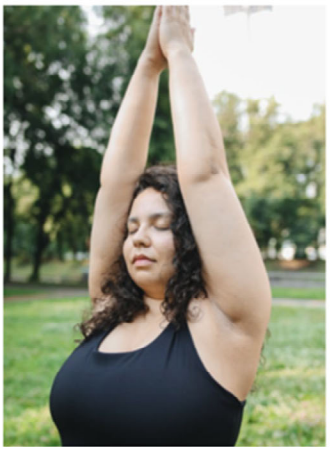
Image Link: https://commons.wikimedia.org/wiki/File:Acanthosis-nigricans4.jpg

This is a skin condition that is often a sign that your body has insulin resistance.
It may be associated with overweight/obesity and also diabetes and hypothyroidism.

It has darkening of the skin in body folds like the neck, armpits, groin, and navel.

Acanthosis Nigricans

- El oscurecimiento de la piel alrededor del cuello es una señal de que el cuerpo ya no responde a la insulina del cuerpo.
- Esto se conoce como **resistencia a la insulina** y es un factor de riesgo para desarrollar diabetes.
- Pérdida de peso, dietas bajas en grasas y bajas en carbohidratos, y ejercicio ayudará a su cuerpo a hacer un mejor uso de la insulina.



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It has darkening of the skin in body folds like the neck, armpits, groin, and navel.

Metabolic Syndrome
Syndrome Metabólico

You have the metabolic syndrome if you have any THREE of the following:	
Risk Factor*	**Problem Level**
Large waist (stomach) Men Women	Waist Size 40 in (>102 cm) or more 35 in (>88 cm) or more
High Triglycerides	150 mg/dL or higher
Low HDL-C (Good Cholesterol) Men Women	 Less than 40 mg/dL Less than 50 mg/dL
High Blood Pressure	130/85 or higher
Diabetes or Prediabetes	126 mg/dL or higher (fasting) 100 to 125 mg/dL (fasting)
*Also count as a risk factor if you are being treated for any of these conditions	

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Credit: Learning About Diabetes, Inc. 2014

This is a health condition which includes: a large waist/overweight, high blood pressure, high fats in the body (high triglycerides) and diabetes/prediabetes

Metabolic Syndrome
Syndrome Metabólico

Tiene el syndrome metabólico si tiene TRES de los siguientes:	
Factores de Riesgo*	**Nivel del Problema**
Cintura grande (Estómago) Varones Mujeres	Tamaño de la cintura 40 pulgadas (>102 cm) o más 35 pulgadas (>88 cm o más)
Triglicéridos altos	150 mg/dL o más
HDL-C bajo (Colesterol Bueno) Varones Mujeres	 Menos de 40 mg/dL Menos de 50 mg/dL
Presión de la sangre alta	130/85 o más
Diabetes o Prediabetes	126 mg/dL o más (en ayunas) 100 a 125 mg/dL (en ayunas)
*También cuenta como factor de riesgo si usted recibe tratamiento por cualquiera de estas condiciones	

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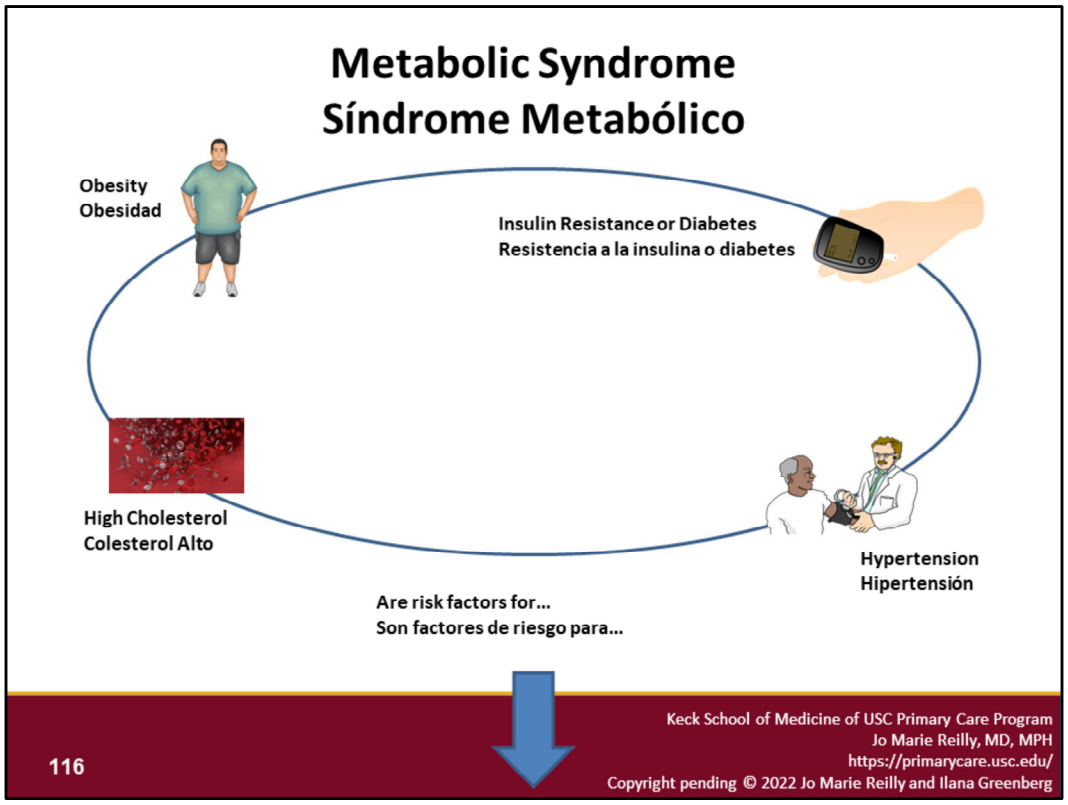
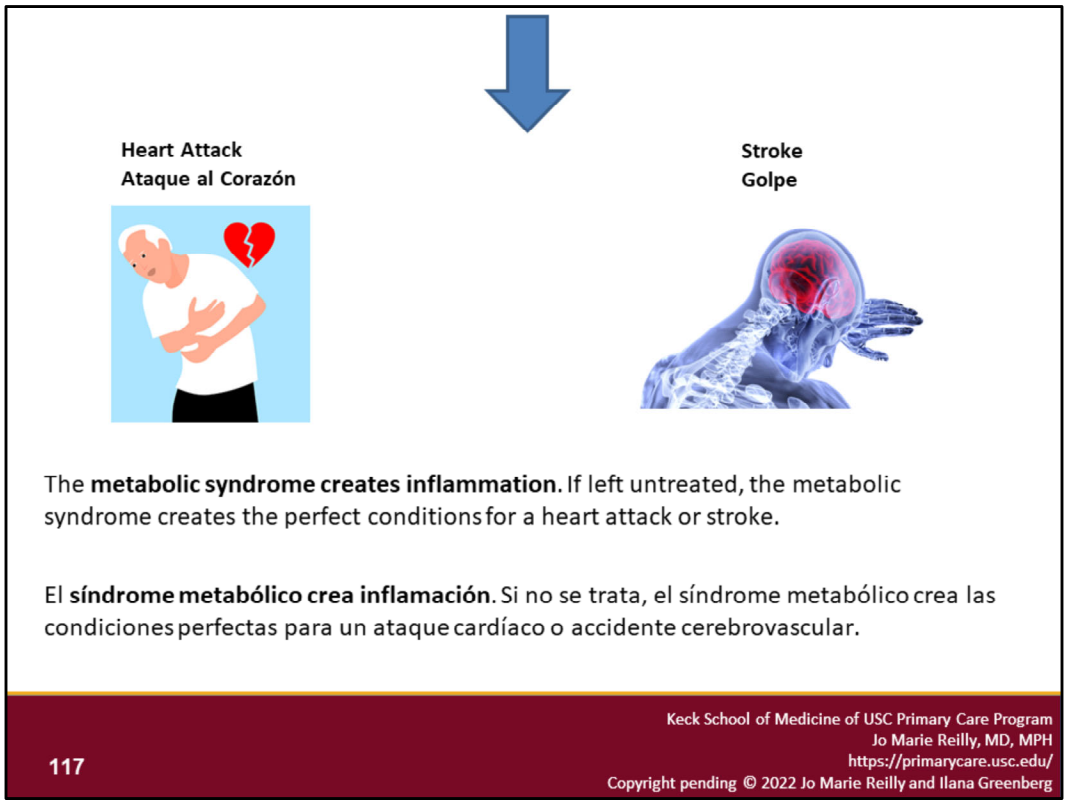
Credit: Learning About Diabetes, Inc. 2014
This is a health condition which includes : a large waist/overweight, high blood pressure, high fats in the body (high triglycerides) and diabetes/prediabetes



These are multiple health conditions associated with metabolic syndrome that can have serious health affects.



The metabolic syndrome creates inflammation and the perfect conditions for a heart attack or stroke.

How to Treat Chronic Illness
Cómo Tratar las Enfermedades Crónicas

- Low salt diet
- Eat more veggies
- Avoid high fat foods
- Avoid alcohol and tobacco
- Exercise daily
- Lose weight

- Dieta baja en sodio
- Consumir mas verduras
- Evitar comidas altas en grasa
- Evitar beber alcohol y tabaco
- Hacer ejercicio
- Perder peso

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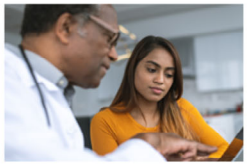
How can you live healthier with chronic illnesses?
What healthier choices can you make?

Questions/Preguntas

1. What are three ways you can prevent chronic illness?
2. What are some symptoms of fatty liver disease?
3. What diseases can metabolic syndrome lead to?



1. ¿Cuáles son las tres formas en que puede prevenir enfermedades crónicas?
2. ¿Cuáles son algunos de los síntomas de la enfermedad del hígado graso?
3. ¿A qué enfermedades puede conducir el síndrome metabólico?

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Vitamin Supplements / Vitaminas Supplementarias



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Dietary Vitamins
Vitaminas de fuentes de alimento

- In general, it is much better to get vitamins and minerals from food sources
- Your body absorbs vitamins in food better than in pills
- Other nutrients/fiber in food

- Generalmente, es mucho mejor obtener sus vitaminas y minerales en su comida
- Su cuerpo puede absorber vitaminas más de su comida que en la forma de pastillas.
- Hay fibra en la comida y no en las pastillas

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How do vitamins work in your body and what sources do they come from?

Vitamin Supplements
Suplementos Vitaminicos

There are some exceptions when supplements are ***preferred***:

- Vit D (few food sources)
- Calcium for pregnant/breastfeeding and post menopausal women
- Iron for patients with iron deficiency anemia
- Vitamin B12 for vegans/vegetarians (mostly found in animal products)
- Folate during pregnancy
- People who are not eating/able to eat a healthy diet

What are the vitamins which need supplements because the diet alone isn't enough.

Vitamin Supplements
Suplementos Vitaminicos

En algunos casos, sería ***preferido*** tomar suplementos:

- Vitamina D (pocas fuentes alimentarias)
- Calcio durante el embarazo/lactancia materna and y para mujeres postmenopáusicas
- Hierro para pacientes con anemia por deficiencia de hierro
- Vitamina B12 para los veganos/vegetarianos (se encuentra en productos de animales)
- Ácido fólico durante el embarazo
- Personas que no comen o no pueden comer una dieta saludable

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What are the vitamins which need supplements because the diet alone isn't enough.

Water-Soluble Vitamins
Vitaminas solubles en agua

Water-Soluble Vitamins

- Dissolve in water and readily absorbed into tissues, but not stored in body
- Need to be replenished regularly in diet
- Vitamins B and C

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What are water soluble vitamins? Why are they important

Water-Soluble Vitamins
Vitaminas solubles en agua

Vitaminas solubles en agua

- Algunas vitaminas en su cuerpo no pueden aumentar a un nivel tóxico porque son solubles en agua.
- Eso significa que sus riñones pueden quitarlas como las vitaminas B y C

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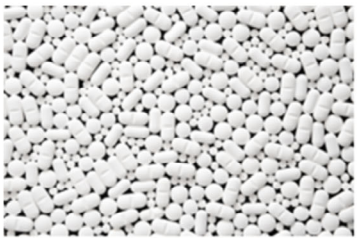
What are water soluble vitamins? Why are they important

Fat-Soluble Vitamins
Vitaminas solubles en grasa

Fat-Soluble Vitamins

- Stored in liver and fat tissues and absorbed by fat globules that absorbed into small intestines and into the bloodstream
- Can accumulate to toxic levels
- These fat soluble vitamins are vitamins: ADEK



What are fat soluble vitamins and why are they important?
We can get too much of them which can cause toxic body problems.

Fat-Soluble Vitamins
Vitaminas solubles en grasa

Vitaminas solubles en grasa

- Otras vitaminas se guardan en nuestra grasa corporal. Si tomas demasiado, la cantidad en su cuerpo se puede aumentar a un nivel tóxico
- Las vitaminas solubles en grasa son: ADEK

What are fat soluble vitamins and why are they important?
We can get too much of them which can cause toxic body problems

Calcium
Calcio

- **Dosages:**
  - Adults, pregnancy, breastfeeding: 1000 mg/day
  - Women over 50= 1200 mg/day
- Important for bones and teeth, blood vessels, muscle function, and may reduce blood pressure.
- **Food sources:** Milk/calcium/cheese/tofu, dark green vegetables, lentils, red and pinto beans, almonds

What are the important sources of calcium and what conditions and times in our life cycle is calcium most important?
Post menopausal women need extra calcium and vitamin d in their diets to help keep their bones strong.

Calcium
Calcio

- **Dosis:**
  - Adultos, mujeres durante el embarazo/lactancia materna: 1000mg/dia
  - Mujeres mayor de 50=1200 mg/día
- Importante para la salud de tus huesos/dientes, arteries, músculos, puede reducir su presión arterial
- **Fuentes alimentarias:** Leche, queso, tofu, almendras, vegetales verdes como espinaca, la col

What are the important sources of calcium and what conditions and times in our life cycle is calcium most important?
Post menopausal women need extra calcium and vitamin d in their diets to help keep their bones strong.

Vitamin D
Vitamina D

- **Dosages:**
  - Adults, pregnancy, breastfeeding: 600 IU
  - Adults over 70: 800 IU
- May impact memory, bone development , teeth development, some data to show it helps prevent certain cancers
- **Food sources:** vitamin D fortified milk, orange juice and cereals, sunlight, fish, eggs.

What are important sources of vitamin D and how does it impact our health? Vitamin D levels can be determined by a blood test.

Vitamin D
Vitamina D

- **Dosis:**
  - Adultos, mujeres durante el embarazo/lactancia materna: 600 IU
  - Adultos mayores de 70=800 IU
- Importante para la memoria, el desarrollo de huesos/dientes, puede prevenir algunos tipos de cáncer
- **Fuentes alimentarias:** leche fortificada con vitamina D, jugo de naranja, cereales, la luz del sol, pescado, huevos

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What are important sources of vitamin D and how does it impact our health? Vitamin D levels can be determined by a blood test.

Iron
Hierro

- **Doses:**
  - Men : 8 mcg/day
  - Women: 18 mcg/day
  - Pregnancy: 27 mcg/day
  - Breastfeeding: 9 mcg/day
- Blood cells need iron to carry oxygen. Insufficient iron can result in low energy and fatigue. Important in body's defense against infections and helps it with the neurological system of the body.
- **Food sources:** Meat, fish, pork, eggs (yolk), shrimp, tuna, lentils, dark green vegetables, kidney beans, dried fruits, tofu, fortified cereals

What is the role of iron in our diet?
There are meat based sources of iron and vegetable sources of iron
The meat sources are a little easier to absorb from our bodies but the plant/grain based sources are also good sources.

Women who are menstruating need to make sure they have adequate iron stores.

Iron
Hierro

- **Dosis:**
  - hombres: 8 mcg/dia
  - mujeres: 18 mcg/dia
  - durante el embarazo: 27 mcg/dia
  - durante la lactancia materna: 9mcg/day
- Es necesario para transportar el oxígeno en su cuerpo. Sin el hierro se puede sentir muy cansada/sin energía. También es importante para prevenir las infecciones y mantener el sistema neurológico
- **Fuentes alimentaria:** carne/lácteos como pescado, carne de res, cerdo, huevos, atun, vegetales/frijoles como lentejas, espinaca, frutos secos, tofu, cereales fortificados

What is the role of iron in our diet?
There are meat based sources of iron and vegetable sources of iron
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Women who are menstruating need to make sure they have adequate iron stores.

Vitamin B12
Vitamina B12

- **Vitamin B12 dose:**
  - adults: 2.4 mcg/day
  - pregnancy: 2.6 mcg/day
  - breastfeeding 2.8 mcg/day
- Necessary for Red Blood Cell formation and protecting and maintaining nerve cells
- **Food sources:** Beef, milk, cheese, eggs, chicken, turkey, fortified cereals, clams, crab, salmon

Vitamin B12 is necessary for blood and nerve cells in our body.
Certain medical conditions and medications can lower the level.
Those taking the diabetes medication metformin should have their vitamin B 12 level checked periodically as the medication can lower the B12 level.

Vitamin B12
Vitamina B12

- **Vitamina B12 dosis:**
  - adultos: 2,4mcg/dia
  - durante el embarazo: 2,6mcg/dia
  - durante la lactancia materna: 2,8 mcg/dia
- Se usa para prevenir la anemia porque fortalece los glóbulos rojos de la sangre. También es necesario para mantener el sistema nervioso.
- **Fuentes alimentarias:** carne de res, leche, huevos, pollo, pavo, cereales fortificados, almejas, cangrejo, salmon

Vitamin B12 is necessary for blood and nerve cells in our body.
Certain medical conditions and medications can lower the level.
Those taking the diabetes medication metformin should have their vitamin B 12 level checked periodically as the medication can lower the B12 level.

Folate
Folato

- **Folate dose:** 400 mcg/day for women of childbearing age
- Important in the development if the nervous system of newly growing babies; Very important in pregnant women.
- Helps in making of red blood cells in body.
- **Food sources:** beans, lentils, asparagus, spinach, peas, chicken, peanuts

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Folate is another vitamin that is especially important for women of child bearing age as it presents birth defects .
All women considering becoming pregnant should be taking adequate folate.
Folate is in the foods we eat but it is available over the counter as a supplement and in prenatal vitamins.

Folate
Folato

- **Folate dosis:** 400 mcg/día para mujeres en edad fértil
- Muy importante para el desarrollo del sistema nervioso de los bebés. Por eso es importante para las mujeres embarazadas.
- Importante para el desarrollo de los glóbulos rojos de la sangre.
- **Fuentes alimentarias:** frijoles, lentejas, asparagus, arvejas, espinaca, pollo, mani

Folate is another vitamin that is especially important for women of child bearing age as it presents birth defects .
All women considering becoming pregnant should be taking adequate folate.
Folate is in the foods we eat but it is available over the counter as a supplement and in prenatal vitamins.

Questions/Preguntas

1. Who must take Folate supplements and why?
2. Give an example of a situation where supplements are preferred over dietary intake
3. What are good dietary sources of iron?

1. ¿Quien debe tomar suplementos de ácido fólico/folato y porque?
2. Dé un ejemplo de una situación en la que sería preferido tomar un suplemento vitamínico en lugar de consumir la vitamina en su comida.
3. ¿Cuales son buenas fuentes alimentarias del hierro?

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Let’s review the material we have learned in this lecture.

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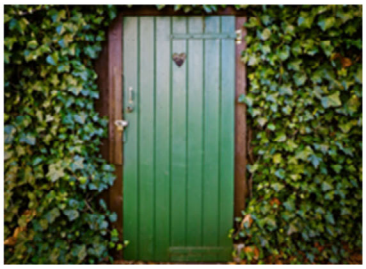

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