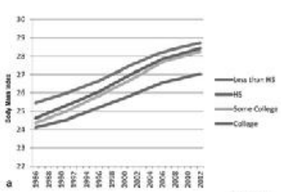
Welcome to Diabetes Mini-Series – Class 4

Beverly Dyck Thomassian, RN, MPH, BC-ADM, CDE
President, Diabetes Education Services

Diabetes Mini-Series:
Class 4

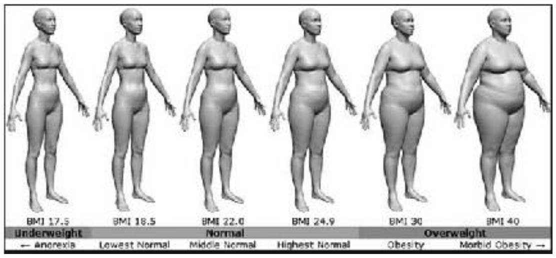
- New nutrition guidelines
- Keeping it real for our patients
- A quick and effective foot assessment

Obesity in America



- 68% overweight or obese
  - 34% BMI 30 +, 34% BMI 25-29
- 1/3 of all overwt people don't get diabetes
- We burn 100 cals less a day at work
- Overall, food costs ~ 10-15% of income
- Calorie Intake is on the rise

BMI – Visual Image



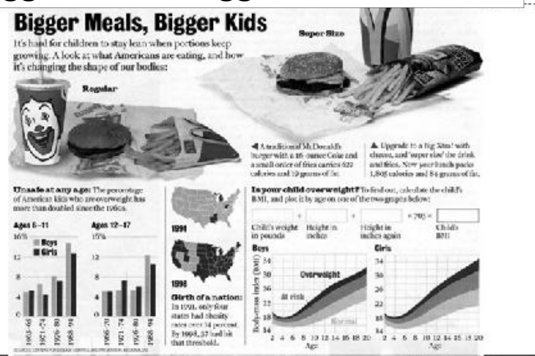
Average American Consumes 25 teaspoons of sugar a day (400 cals)

- Warning label on sodas proposed
- One soda has 12 teaspoons soda
- On avg, 1 person consumes 40 gallons of soda each year
- ADA guidelines "limit sodas and beverages with sugar, High Fructose Corn Syrup, (HFCS)

Thoughts on Diabetes, Weight, Social Change

- "The only way on a societal basis to reduce the prevalence of obesity is through community action" – Dr. Frieden, CDC
- Obesity (BMI 30+) prevalence 22% to 40%
- Poverty, Obesity, Diabetes inter-related

Bigger Meals, Bigger Kids



Weight and Gut Bacteria
New and Early Research

- Lower levels among obese and DM patients compared with healthy controls of:
  - *Firmicutes*: 4% lower in obese patients, 13% lower in DM
  - *Bifidobacteria*: 14% lower in obese patients, 28% lower DM
  - *Clostridium Leptum*: 14% lower in obese patients, 11% lower DM
- Based on prospective study involving:
  - 27 morbidly obese pts with mean BMI of 40
  - 26 pts with new type 2 – BMI 29
  - 28 healthy controls (mean BMI 23 kg/m2).

- "The human gut microbiome consists of some 100 trillion bacteria, or some 100 trillion friends you didn't know you had."
  - Yalcin Basaran, MD, presented at International Endocrine Meeting

Free Live Webinars and Live Seminars at DiabetesEd.net

- Free Webinars
  - Preparing to take CDE
  - New Frontiers
  - New Medications
  - BC-ADM

Medical Nutrition Therapy – ADA 2014 Updates

- No ideal percentage of calories from protein, carbohydrate and fat for people with diabetes.
- Macronutrient distribution should be based on an *individualized assessment* of eating patterns, preferences and metabolic goals.

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Medical Nutrition Therapy – ADA 2014

- Focus on the Individual
- Maintain pleasure of eating
- Provide positive messages about food
- Limit food choices only when backed by science
- Provide practical tools
- Refer to a RD and Diabetes Education – Lowers A1c by 1-2%

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Sodium, Fat and Fiber

- Sodium – Try and keep less than 2,300 mg a day
- Vitamin and mineral supplements not recommended -lack of evidence.
- Fat - same as recommended for general population
  - Less than 10% saturated fat,
  - Limit trans fats
  - Less than 300 mg cholesterol daily
  - Mediterranean Diet looks like good option
- Fiber 25 -38 gms a day

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Approach Depends on Patient

- New Type 2
  - Portion Control
  - Plate Method
  - Record Keeping
  - Education
- On Insulin?
  - Carb counting
  - Post prandial checks

Losing 2-8kg Early in diagnosis Type 2 Helpful

ADA 2014

- Weight Loss –
  - *The optimal macronutrient intake to lose weight not known*
  - *The literature does not support one particular nutrition therapy to reduce weight, but rather a spectrum of eating patterns that result in reduced energy intake*.

- To lose one pound – avoid 3,500 cals
  - Decrease intake 250-500 cals daily + exercise

Successful weight loss strategies include

- Weekly self-weighing
- Eat breakfast
- Reduce fast food intake.
- Decrease portion size
- Increase physical activity
- Use meal replacements
- Eat healthy foods

Diabetes Prevention Program
Focus on fat = wt loss success

To help you lose weight and improve your health, stay as close as possible to your fat and calorie goals.
Find your starting weight below. Your fat and calorie goals are in the same row. Circle your fat and calorie goals.

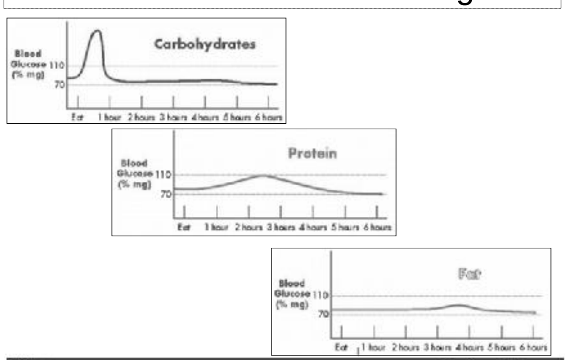
Weight (lb)	Fat Goal (grams)	Calorie Goal
120-174	33	1,200
175-219	42	1,500
220-249	50	1,800
>250	55	2,000

http://www.cdc.gov/diabetes/prevention/recognition/curriculum.htm

Public Health Issue?

- 66% of our people are obese/overweight
- Rates of gestational diabetes on rise
- 30% of kids are obese/overweight

How nutrients affect blood sugar



Teaching About Eating Healthy

Major food groups
"Handy Diet"
Plate Method
Exchange Lists
Food Diaries / Glucose Records
Carbohydrate Counting

Assess what is best for the situation.

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Move toward the Tomato

ADA recommendation
Eat Less Junk Food & Sugary Drinks –

- Less Processed Foods
- Less Sugary Beverages
  - increase visceral adiposity
  - With sugar or
  - High fructose corn syrup
- Soda Tax?
- Junk Food Tax?

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10 Superfoods

- Beans
- Dark Green Leafy Vegs
- Citrus Fruit
- Sweet Potatoes
- Berries
- Tomatoes
- Fish High in Omega-3 Fatty Acids
- Whole Grains
- Nuts
- Fat-Free Milk and Yogurt

USDA Food Pyramid www.myplate.gov

Balancing Calories

- Enjoy your food, but eat less.
- Avoid oversized portions.

Foods to Increase

- Make half your plate fruits and vegetables.
- Make at least half your grains whole grains.
- Switch to fat-free or low-fat (1%) milk.

Foods to Reduce

- Compare sodium in foods like soup, bread, and frozen meals — and choose the foods with lower numbers.
- Drink water instead of sugary drinks.

Another plate example

Mindful Eating

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Nutrition Facts
Serving Size 1/2 cup (114 g)
Servings Per Container 4

Amount Per Serving	
Calories 90 Calories from Fat 30	
	% Daily Value*
Total Fat 3g	5%
Saturated Fat 0g	0%
Cholesterol 0g	0%
Sodium 300mg	13%
Total Carbohydrate 13g	4%
Dietary Fiber 3g	12%
Sugars 3g	
Protein 3g	

1 tsp sugar ⟹ (Sugars)
=4 gms

Vitamin A 80% * **Vitamin C** 60%
Calcium 4% * **Iron** 4%

* 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	2000	2500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2400mg	2400mg
Total Carbohydrate		300g	375g
Fiber		25g	30g

Calories per gram: Fat 9 Carbohydrates 4 Protein 4

Fooducate App – gives grade and nutrition info.

Fooducate
eat a bit better™

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Carbs affect Post meal Blood Glucose

- Starch
- Fruit
- Milk
- Desserts

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Carbohydrate Needs for Most Adults

	Grams	Servings
Each Meal	45-60 gm	3 - 4
Snacks	15-30 gm	1- 2

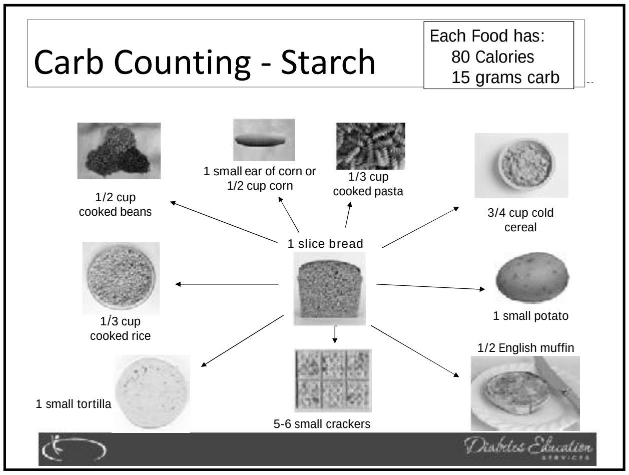
Carbs affect Post Meal Blood Glucose

Choose Healthy Carbs

- Carbs have fiber, vitamins, minerals and phytonutrients
- 25 gms of fiber a day
- Power Carbs include:
  - Beans
  - Veggies
  - Fruits
  - Whole grain foods

Handy Meal Plan

- Per Meal Serving
  - Each finger = 15 gms carb (can have 3-4 servings/meal)
  - Palm of hand = 3 oz's protein
  - Thumbnail = 1 tsp fat serving


Carb Counting - Starch
Each Food has:
80 Calories
15 grams carb
1/2 cup cooked beans
1 small ear of corn or 1/2 cup corn
1/3 cup cooked pasta
3/4 cup cold cereal
1 slice bread
1/3 cup cooked rice
1 small potato
1/2 English muffin
1 small tortilla
5-6 small crackers
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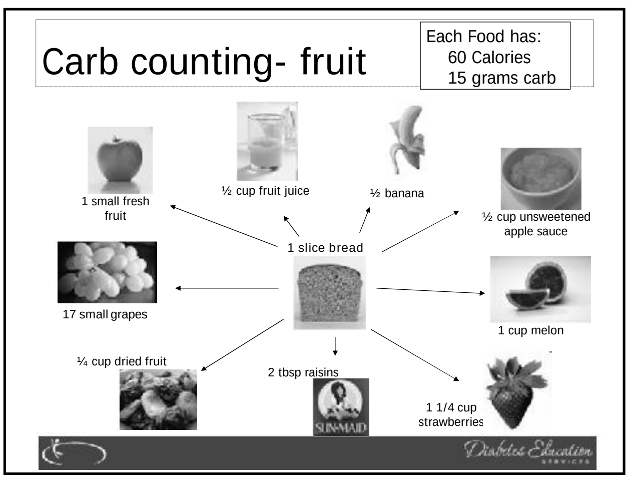
Carb counting- fruit
Each Food has:
60 Calories
15 grams carb
1 small fresh fruit
½ cup fruit juice
½ banana
½ cup unsweetened apple sauce
1 slice bread
17 small grapes
1 cup melon
¼ cup dried fruit
2 tbsp raisins
1 1/4 cup strawberries
SUN-MAID
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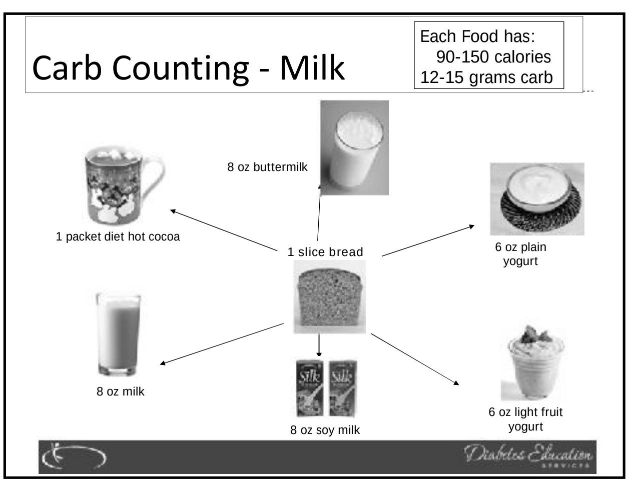
Carb Counting - Milk
Each Food has:
90-150 calories
12-15 grams carb
8 oz buttermilk
1 packet diet hot cocoa
1 slice bread
6 oz plain yogurt
8 oz milk
8 oz soy milk
6 oz light fruit yogurt
Silk
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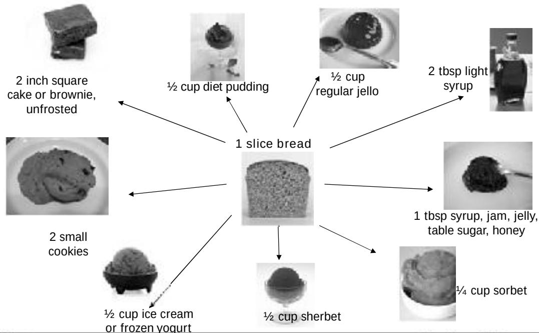
Carb Counting - Sweets

Each Food has:
Calories vary
15 grams carb



Go Lean with Protein

- Choose lean protein
  - Poultry, fish, egg, lean beef
  - Plant sources- beans, lentils, nuts
  - Low fat cheese- cottage cheese, mozzarella cheese
- Limit high fat protein
  - Bacon & sausage
  - High fat cuts of beef
  - Whole milk cheese
- Serving size
  - 1 oz = ¼ cup
  - 3 oz = deck of cards

Fats- Aim for heart health

- **Saturated fats (LIMIT)**
  - Solid
  - Animal
  - Tropical (palm, coconut)
  - Trans fats (deep fried)
- Monounsaturated
  - Olive & canola oils
  - Nuts
  - Avocado
- Polyunsaturated
  - veg oils: canola, corn, walnut, safflower, soybean

Serving sizes

- 1 tsp butter, margarine, oil, mayonnaise
- 1 Tbsp salad dressing, cream cheese, seeds
- 2 Tbsp avocado, cream, sour cream
- 1 slice bacon

Using Alcohol Safely

- Women- 1 or fewer alcoholic drinks a day
- Men 2 or fewer alcoholic drinks a day
  - 1 alcoholic drink equals
    - 12 oz beer, 5 oz glass of wine, or 1.5 oz distilled spirits (gin etc)
- If drink, limit amount and drink w/ food.
- Ask HCP if safe for you to drink. Tell them your usual quantity and frequency.
- Can cause hypo and worsen neuropathy

Ms. Gonzales' Daily Meal plan

Break	Lunch	Dinner	Night
5 corn tortillas, 1/2 c. beans, salsa, peppers, egg beaters	Sandwich, low fat potato chips, 1c. juice, 2-4 lowfat cookies	Lg bowl low salt soup, 1c. rice, BBQ meat, salad & cooked vegs 1 glass wine	1 bowl of cereal
Avg BG 120's	**Avg BG 200's**	**Avg BG 200's**	**Avg BG 180's**

Resources

- www.eatright.org American Dietetic Association website for nutrition information, resources, and access to Registered Dietitians
- www.diabetes.org American Diabetes Association website, advocates to prevent, cure and improve the lives of all people affected diabetes
- www.americanheart.org American Heart Association website; resources, recipes and tips; learn about efforts to reduce death caused by cardiovascular disease
- www.dce.org/publications/education-handouts/

Resources

- www.nhlbi.nih.gov contains information for professionals and the general public about heart and vascular diseases, lung diseases, blood diseases.
- www.niddk.nih.gov National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) information and resources clearinghouse.

Mr. Jones - What are Your Recommendations?

Patient Profile

64 yr old with type 2 for 11 yrs. Hx of CVD.

Labs:

- A1c 9.3%
- HDL 37 mg/dl
- LDL 114 mg/dl
- Triglyceride 260mg/dl
- Proteinuria - neg
- B/P 142/92

Self-Care Skills

- Walks dog around block 3 x's a week
- Bowls every Friday
- 3 beers daily
- Widowed, so usually eats out
- 15 lbs overweight
- *My foot hurts*

Vascular Risk Factors

- Modifiable
  - Blood Pressure
  - Lipids
  - Smoking
  - Obesity
  - Other factors – lack of exercise, Type A personality, dietary habits

Peripheral Vascular Disease – Venous Disease

- On exam
  - Skin brownish, reddish, mottled
  - Skin warm to touch, may be edematous
  - May have stasis ulcers on lower leg
  - Pulses difficult to locate due to edema
- Treatment
  - Support hose
  - Elevate feed
  - Avoid constriction
  - Shoes that can accommodate feet

Peripheral Arterial Disease (PAD)

- Affects 30% of people w/ dm over age 50
- Inadequate blood & oxygen to lower extremities
- Signifies ↑ risk of stroke, HTN, sudden death
  - Pain w/ walking, relieved by rest "intermittent claudication"
  - Pt c/o pain, cramping in calves, thighs, buttocks
- PAD + Neuropathy = increased amputation risk

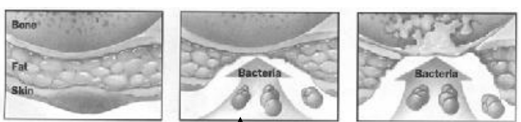
Peripheral Arterial Disease Intermittent Claudication

- Physical Exam – Skin
  - Pale or blue, purple
  - Dependent rubor, blanching when elevated
  - Cool to touch, loss of hair, nonhealing wounds, gangrenous
  - Diminished pulses
- Treatment = Protect feet
  - Avoid constriction, increase walking, stop smoking, medications and/or surgery

Healthy Foot

- Nerves
- Blood vessels
- Bones
- Joints

Foot Wounds



Blisters
Infection
Calluses

Ulcers

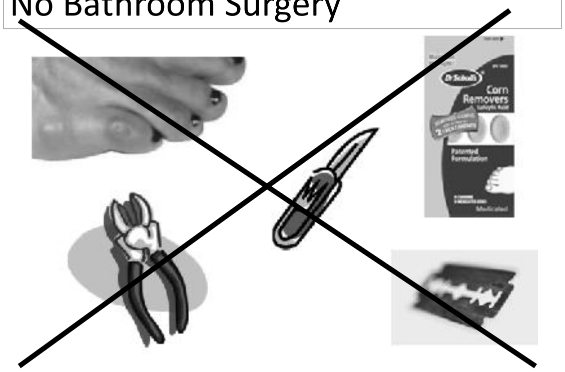
Bone

Diabetes and Amputations

- Diabetes = 8 fold risk of amputations
- Highest rate in those over 75
- 50% of amputations can be avoided through self-care skill education and early intervention
- Rate declined by 65% from 1996-2008
  - From 11.2 per 1000 to 3.9 per 1000

Stats from CDC 2012

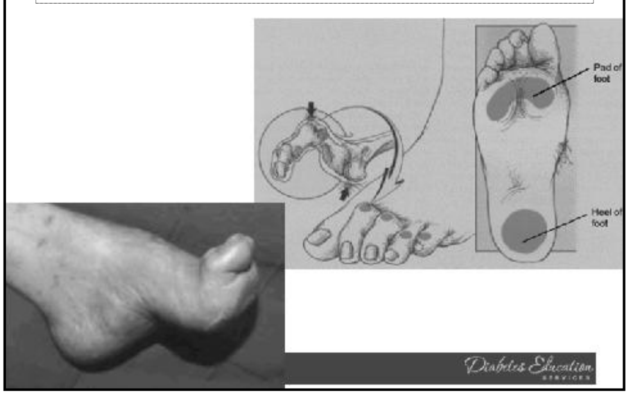
No Bathroom Surgery



Profile of a High Risk Foot ADA

- Previous amputation
- Previous foot ulcer history
- Peripheral neuropathy
- Foot deformity
- Peripheral vascular disease
- Vision impairment
- Diabetic neuropathy (esp if on dialysis)
- Poor glycemic control
- Cigarette smoking

Foot Deformities



You Can Make A Difference

- Assess
  - Nail condition, nail care, in between the toes
  - Who trims your nails
  - Have you ever cut your self?
  - Shoes – type and how often
  - Socks
  - Skin/skin care and vascular health
  - Ability to inspect
  - Loss of protective sensation

5.07 monofilament delivers 10gms linear pressure

10 Free Monofilaments
www.hrsa.gov/hansensdisease/leap/

Three Most Important Foot Care Tips

- Inspect and apply lotion to your feet every night before you go to bed.
- Do NOT go barefoot, even in your house. Always wear shoes!
- Every time you see your doctor, take off your shoes and show your feet. Report any foot problems right away!

Thank You

- Questions?
- Email bev@diabetesed.net
- Web www.diabetesed.net