Lifestyle Management of Type II Diabetes

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Reimagining Nutrition Education
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Video demo of nutrition curriculum of the future!

https://youtu.be/dYVNFl-GmLw?list=PLBoAYRZmsMalYiSed-tF6oiw-LXr5wrJQ
Topics

- Brief Type II Diabetes Case/Screening/Diagnosis
- Review Insulin Resistance & Dyslipidemia
- Glycemic Index & Glycemic Load
- Whole vs. Highly-processed Foods
- Healthy Diet Principles
- Added Sugars / Hidden Sugars
- Reading Nutrition Labels
- Exercise Recommendations
- Culture & Counseling on Lifestyle Change
- Mobile Tools to Help with Diet & Weight Loss
- Food Insecurity Guide for Assistance in SCC
Healthy Lifestyle & Disease Prevention

- Having 5 healthy behaviors can prevent >80% chronic diseases (like diabetes and CVD).
  - Eat a Healthy Diet
  - Maintain a Healthy Weight
  - Don’t smoke
  - Moderate Alcohol Intake
  - Engage in Regular Physical Activity

- Unfortunately, only 1-10% of people have all 5 behaviors.
  - This is where YOU come in!

Sources: INTERHEART Study & Nurses Health Study II
Type II Diabetes Mellitus Case

**HPI**: 50-year-old female with class I obesity presents to your clinic for follow-up after a hemoglobin A1c checked at yearly preventive visit was 6.5%. She feels fine and has no symptoms.

**PMH**: none

**PSH**: none

**ALL**: none

**Meds**: multivitamin

**FH**: adopted/unknown

**SH**: First-generation immigrant from Michoacán, Mexico who has lived in this area with her husband for 25 years. She works locally as a middle school teacher. Catholic. Never smoker. Drinks 1 beer most nights.

**ROS**: negative other than as noted above.
Type II Diabetes Mellitus Case

- How do you counsel this patient on lifestyle changes?
- Do you want to know anything else about this patient before you counsel them?
- **TAKE 3-5 MIN TO DISCUSS AT YOUR TABLES**
Type II Diabetes Mellitus Case

- **How do you counsel this patient?**
- **Do you want to know anything else about this patient before you counsel them?**

- **What about habits & common comorbidities?**
  - **History**
    - Dietary, exercise, smoking, alcohol habits
  - **Physical exam**
    - Blood pressure
    - BMI / Waist circumference
  - **Labs/Studies:** *(most will be discussed in your small groups)*
    - Lipid panel (Total cholesterol, LDL, HDL, Triglycerides)
Who to screen for DMII / Risk Factors

- Age ≥ 45 yrs.
- Overweight or Obese (BMI ≥ 25, BMI ≥ 30)
- DMII in a 1st degree relative
- Sedentary
- h/o gestational diabetes or delivering baby > 9 lbs.
- HTN (BP ≥ 140/90)
- Dyslipidemia
- PCOS
- h/o vascular disease
- h/o A1c ≥ 5.7, impaired glucose tolerance, IFG
Diagnosing Type II Diabetes

- **Hemoglobin A1c x 2 (or with FPG)**
  - <5.7 = normal
  - 5.7-6.4 = pre-diabetes
  - ≥6.5 = diabetes

- **Fasting Plasma Glucose x 2 (or with A1c)**
  - <100 = normal
  - 100-125 = pre-diabetes (aka. Impaired fasting glucose, IFG)
  - >125 = diabetes

- **2-hr Oral Glucose Tolerance Test (OGTT)**
  - <140 = normal
  - 140-199 = IFG/pre-diabetes
  - ≥200 mg/dL = diabetes

- **Classic symptoms of hyperglycemia + Random plasma glucose ≥200**
Review: Insulin Resistance

- **DEFINITION:** blood glucose response to insulin is less than it should be for a given level of insulin.

- **Clinical Markers**
  - Pre-diabetes levels of labs we just discussed
  - Triglyceride/HDL >3.5
  - Metabolic syndrome

- Weight loss may be greater on low-carb diet for those with insulin resistance, and on a low-fat diet for insulin sensitive patients
<table>
<thead>
<tr>
<th>Ethnic group</th>
<th>Waist circumference (as measure of central obesity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europids*</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>≥94 cm</td>
</tr>
<tr>
<td>Women</td>
<td>≥80 cm</td>
</tr>
<tr>
<td>South Asians</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>≥90 cm</td>
</tr>
<tr>
<td>Women</td>
<td>≥80 cm</td>
</tr>
<tr>
<td>Chinese</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>≥90 cm</td>
</tr>
<tr>
<td>Women</td>
<td>≥80 cm</td>
</tr>
<tr>
<td>Japanese</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>≥90 cm</td>
</tr>
<tr>
<td>Women</td>
<td>≥80 cm</td>
</tr>
<tr>
<td>Ethnic South and Central Americans</td>
<td>Use South Asian recommendations until more specific data are available</td>
</tr>
<tr>
<td>Sub-Saharan Africans</td>
<td>Use European data until more specific data are available</td>
</tr>
<tr>
<td>Eastern Mediterranean and middle east (Arab) populations</td>
<td>Use European data until more specific data are available</td>
</tr>
</tbody>
</table>
Review: Dyslipidemia

• Definition: *any combination of high LDL and TG or low HDL*

• Optimal lipid levels for someone with DMII
  - Low LDL-Cholesterol (Debate: ACC/AHA 2013** vs. other)
  - Low Triglycerides (<150)
  - High HDL-Cholesterol (>50 for women, >40 for men)

• Dyslipidemia often travels with DMII

Downloadable calculator: http://my.americanheart.org/professional/StatementsGuidelines/PreventionGuidelines/Prevention-Guidelines_UCM_457698_SubHomePage.jsp**
Review: Dyslipidemia

- Quick Dietary Guide for Dyslipidemia treatment:
  - Avoid
    - Refined/Heavily-processed carbohydrates
    - Trans-fats
    - Saturated fat* (replace with mono- & polyunsaturated fats)
  - Increase intake of:
    - Fiber
    - Vegetables & Fruits
    - Fish, Walnuts, Flax &/or other sources of Omega-3’s
    - Plant sterols
  - Lose weight
2013 AHA/ACC/TOS Guideline for Management of Overweight and Obesity in Adults*

- **Key Features:**
  - Behavior Modification
  - Physical Activity
  - Gives descriptions of many diet options acceptable for weight loss

- This is a BIG departure from previous guidelines which just said that people should eat a low-fat diet.

Insulin resistance: High triglycerides

 Normally, insulin tells fat cells to keep fat stored.

- This happens because insulin is released in response to a meal—if you just ate, why would you need to use stored energy?

Metabolic response to **insulin resistance** is to release stored triglycerides from fat cells.

- Fat cells get the wrong message.

Since you don’t need these triglycerides for energy, the liver removes them from the blood and repackages them (in VLDL), and sends them back to fat for storage.

Result=Hypertriglyceridemia
Dyslipidemia → Diabetes

Quick Dietary Guide for Dyslipidemia Treatment:

Avoid

- Refined/Heavily-processed carbohydrates
- Trans-fats
- Saturated fat* (replace with mono- & polyunsaturated fats)

Increase intake of:

- Fiber
- Vegetables & Fruits
- Fish, Walnuts, Flax &/or other sources of Omega-3’s
- Plant sterols

Lose weight
Which food groups have carbs?
Which food groups have carbs?

ALL OF THEM!

- Fruit Sugars
- Mainly starchy veggies like sweet potatoes & other potatoes
- All grains, but especially highly-processed grains
- Lactose
- Beans/Legumes & Peas
HEALTHY EATING PLATE

Use healthy oils (like olive and canola oil) for cooking, on salad, and at the table. Limit butter. Avoid trans fat.

The more veggies – and the greater the variety – the better. Potatoes and French fries don’t count.

Eat plenty of fruits of all colors.

Drink water, tea, or coffee (with little or no sugar). Limit milk/dairy (1-2 servings/day) and juice (1 small glass/day). Avoid sugary drinks.

Eat a variety of whole grains (like whole-wheat bread, whole-grain pasta, and brown rice). Limit refined grains (like white rice and white bread).

Choose fish, poultry, beans, and nuts; limit red meat and cheese; avoid bacon, cold cuts, and other processed meats.

STAY ACTIVE!

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Harvard School of Public Health  
The Nutrition Source  
www.hsph.harvard.edu/nutritionsource

Harvard Medical School  
Harvard Health Publications  
www.health.harvard.edu

http://www.hsph.harvard.edu/nutritionsource/healthy-eating-plate/translations/
Glycemic Index, Glycemic Load & Blood Glucose

- GI = (AUC test food/AUC glucose) x 100
  - Ranked 1-100
    - Low GI < 55
    - Med GI 56-69
    - High GI ≥ 70

- GL = (grams carbs x GI)/100
  - Low GL ≤ 10
  - Med GL 11-19
  - High GL ≥ 20

The amount of carbohydrate in the reference and test food must be the same.
Glycemic Index & Glycemic Load Example

- Glycemic index of watermelon = 72 (high GI)

- Glycemic load of 100g serving of watermelon = 
  \[\frac{5 \times 72}{100} = 3.6\] (low GL)

This is more useful because this is how people actually eat!
The Whole Grain Kernel

ENDOSPERM
(source of complex carbohydrates, B-complex vitamins and proteins)

BRAN
(fiber, B-complex vitamins, trace minerals and phytonutrients)

GERM
(essential fatty acids, vitamin E, B-complex vitamins and trace minerals)
Glycemic Index & Load for Bread

Sprouted Grain Bread
GI=55 (med)
GL=5 (low)

Whole Wheat Bread
GI=71 (high)
GL=10 (low-med)

White Bread
GI=71 (high)
GL=10 (low-med)
<table>
<thead>
<tr>
<th>Food (1 serving)</th>
<th>Glycemic Index</th>
<th>Glycemic Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pear</td>
<td>33</td>
<td>4</td>
</tr>
<tr>
<td>Hummus</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Boiled Potato</td>
<td>89</td>
<td>19</td>
</tr>
<tr>
<td>Spaghetti</td>
<td>42</td>
<td>20</td>
</tr>
<tr>
<td>Coca Cola</td>
<td>63</td>
<td>16</td>
</tr>
<tr>
<td>Gatorade</td>
<td>78</td>
<td>12</td>
</tr>
<tr>
<td>Oatmeal, old-fashioned</td>
<td>55</td>
<td>13</td>
</tr>
<tr>
<td>Instant Oatmeal, sweetened</td>
<td>83</td>
<td>30</td>
</tr>
<tr>
<td>Corn Flakes</td>
<td>93</td>
<td>23</td>
</tr>
<tr>
<td>Brown Rice</td>
<td>50</td>
<td>16</td>
</tr>
<tr>
<td>White Rice</td>
<td>89</td>
<td>43</td>
</tr>
<tr>
<td>Ice cream, premium</td>
<td>38</td>
<td>3</td>
</tr>
<tr>
<td>Reduced-fat Fruit Yogurt</td>
<td>33</td>
<td>11</td>
</tr>
<tr>
<td>Peanuts</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Peanut M&amp;M’s</td>
<td>33</td>
<td>6</td>
</tr>
<tr>
<td>Fruit Roll-Ups</td>
<td>99</td>
<td>24</td>
</tr>
<tr>
<td>Soy Beans/Edamame</td>
<td>15</td>
<td>1</td>
</tr>
</tbody>
</table>
Low-fat craze becomes widespread
Low-fat diet = High carbohydrate diet

**Dietary carbohydrate priorities**
1. Immediate needs
2. Glycogen repletion
3. Convert remainder to fat (i.e. triglycerides) for storage

**High dietary carbohydrate (glucose)**
Requires insulin response
- May lead to insulin resistance when consumed in excess

**High dietary carbohydrate (fructose)**
Metabolized differently in liver and brain
- May contribute to non-alcoholic fatty liver disease
- May promote hunger and/or inhibit satiety
Whole Foods
Highly-processed Foods
“Healthy Halo” Highly-processed Foods
Carbohydrate Pyramid

- **Legumes** - Beans, Lentils, Peas
- **Vegetables** – Greens (salad, cooking), Crucifers (broccoli, cabbage), tomatoes, carrots, bell peppers, asparagus, etc.
- **Whole grains** - Wheat berries, Oats (steel cut)
- **Pasta, brown rice**
- **Whole grain flour products**
- **Soda, added sugars, candy, White flour breads, bagels, etc**
- **Fruit juice**

Avoid or Limit:
- Pasta, brown rice

Enjoy!
Healthy Diet Principles

- **Focus on diet QUALITY**
  - Whole foods / High fiber
  - Copious vegetables & fruits
  - Majority of fat from mono- and polyunsaturated sources (oils liquid at room temp, nuts, seeds, avocados) / Avoid *trans*-fats
  - Avoid refined carbs and added sugars
  - Get protein from plant sources, fish, and grass-fed meats
  - Eat foods of all colors of the rainbow
  - Limit sodium: <2,400mg/day (healthy), <1,500 (HTN, CVD, DMII, CKD)

- **Rough macronutrient breakdown:**
  - 10-15% calories from PROTEIN
  - 30-40% calories from (healthy) FAT
  - 45-60% calories from minimally-refined CARBOHYDRATES
Sugar
Eating “Healthy” = Hidden Sugars

Check out *That Sugar Film*--https://www.youtube.com/watch?v=6uaWekLrlrY
### Nutrition Facts Panel

<table>
<thead>
<tr>
<th>Serving Size</th>
<th>Amount Per Serving</th>
<th>% Daily Value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Bar (37g)</td>
<td>Calorie 140</td>
<td>Calories from Fat 25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total Fat 2.5g 4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Saturated Fat 0g 0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trans Fat 0g 0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cholesterol 0mg 0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sodium 90mg 4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Potassium 30mg 1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total Carbohydrate 28g 9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dietary Fiber 1g 4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sugars 16g</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Protein 2g</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vitamin A 0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vitamin C 15%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calcium 2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Iron 2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thiamin B1 10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Riboflavin B2 10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Niacin B3 10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vitamin B6 10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Folic Acid 10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vitamin B12 10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Selenium 50%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Daily Values</th>
<th>Calories:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2,000</td>
</tr>
<tr>
<td></td>
<td>2,500</td>
</tr>
<tr>
<td>Total Fat</td>
<td>Less than 65g 65g</td>
</tr>
<tr>
<td>Sat Fat</td>
<td>Less than 2g 25g</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>Less than 300mg 300mg</td>
</tr>
<tr>
<td>Sodium</td>
<td>Less than 2,400mg 2,400mg</td>
</tr>
<tr>
<td>Potassium</td>
<td>Less than 3,500mg 3,500mg</td>
</tr>
<tr>
<td>Total Carbohydrate</td>
<td>300g 375g</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td></td>
</tr>
<tr>
<td></td>
<td>25g 30g</td>
</tr>
</tbody>
</table>

### Ingredient List

**INGREDIENTS:** STRAWBERRY FILLING (ORGANIC EVAPORATED CANE SUGAR, STRAWBERRIES, APPLE POWDER, FRUIT JUICE CONCENTRATE [PEAR, PINEAPPLE, APPLE, PEACH], TAPIOCA STARCH, VEGETABLE GLYCERIN, NATURAL FLAVOR, CITRIC ACID, PECTIN, LOCUST BEAN GUM, RED CABBAGE AND ANNAATTO EXTRACTS [FOR COLOR]), ORGANIC WHEAT FLOUR, ORGANIC INVERT CANE SUGAR, ORGANIC EVAPORATED CANE SUGAR, ORGANIC EXPELLER PRESSED CANOLA OIL, ORGANIC OAT FLOUR, CONTAINS LESS THAN 2% OF: ORGANIC WHOLE GRAIN ROLLED OATS, ORGANIC WHEAT BRAN, NATURAL FLAVORS (ORGANIC EXPELLER PRESSED SOYBEAN OIL, MILK), ORGANIC WHEAT GLUTEN, ORGANIC HONEY, ORGANIC NONFAT DRY MILK, CREAM OF TARTAR, SODIUM BICARBONATE, SOY LECITHIN (EMULSIFIER), CARRAGEENAN, SEA SALT, SODIUM Selenite, THIAMINE HYDROCHLORIDE (VITAMIN B1), RIBOFLAVIN (VITAMIN B2), PYRIDOXINE HYDROCHLORIDE (VITAMIN B6), CYANOCOBALAMIN (VITAMIN B12), FOLIC ACID (VITAMIN B9), NIACINAMIDE (VITAMIN B3).

CONTAINS WHEAT, SOY AND MILK INGREDIENTS. PRODUCED IN A FACILITY THAT PROCESSES PEANUTS, TREE NUTS AND EGGS.
How to read Nutrition Facts Panels

① Check Serving Size
   No Rules-can be deceptive!

② Check Calories

③ Limit sodium, Avoid Trans fat

④ Increase fiber

⑤ Avoid added sugars*

*To determine if sugars are added, you must look at the ingredient list!

These are good:
⑥ 5% or less is LOW
20% or more is HIGH

http://www.fda.gov/Food/IngredientsPackagingLabeling/LabelingNutrition/ucm274593.htm#overview
On the Nutrition Facts panel, the term “sugar” means naturally-occurring (e.g. lactose in milk) **AND** added sugars, such as those listed below:

<table>
<thead>
<tr>
<th>Natural Sugars</th>
<th>Added Sugars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown sugar</td>
<td>Invert sugar</td>
</tr>
<tr>
<td>Concentrated fruit juice</td>
<td>Lactose</td>
</tr>
<tr>
<td>Fruit puree concentrates</td>
<td>Maltose</td>
</tr>
<tr>
<td>Confectioner’s sugar</td>
<td>Sucrose</td>
</tr>
<tr>
<td>Corn sweeteners</td>
<td>Levulose</td>
</tr>
<tr>
<td>Corn syrup</td>
<td>Maple sugar</td>
</tr>
<tr>
<td>Dextrose</td>
<td>Molasses</td>
</tr>
<tr>
<td>Fructose</td>
<td>Raw sugar</td>
</tr>
<tr>
<td>Galactose</td>
<td>Turbinado</td>
</tr>
<tr>
<td>Glucose</td>
<td>White sugar</td>
</tr>
<tr>
<td>Granulated sugar</td>
<td>Cane juice</td>
</tr>
<tr>
<td>Honey</td>
<td>Barley malt</td>
</tr>
<tr>
<td>Brown rice syrup</td>
<td>Dates/Date sugar</td>
</tr>
</tbody>
</table>
Label Reading Activity

- As a table, spend 5 minutes reading the 2 labels and answer these questions about them:

Questions:
1. Which of the 2 items will affect blood sugar more?
2. How many times does some type of sugar appear on the label?
3. Is either one a healthy choice? If not, can you recommend a healthier alternative?
Mixed Berry Nutri Grain Breakfast Bar

Ingredients:
CRUST: whole grain oats, enriched flour (wheat flour, niacin, reduced iron, thiamin mononitrate, riboflavin, folic acid, whole wheat flour, soybean and/or canola oil, corn fiber, sugar, dextrose, fructose, calcium carbonate, whey, wheat bran, salt, cellulose, potassium bicarbonate, natural and artificial flavor, mono- and diglycerides, soy lecithin, wheat gluten, niacinamide, vitamin A palmitate, carrageenan, zinc oxide, reduced iron, guar, gum, pyridoxine hydrochloride, thiamin hydrochloride, riboflavin.
FILLING: Invert sugar, corn syrup, glycerin, apple puree concentrate, sugar, strawberry puree concentrate, blueberry puree concentrate, modified corn starch, raspberry puree concentrate, sodium alginate, natural and artificial flavors, citric acid, malic acid, methylcellulose, dicalcium phosphate, red 40, blue 1.

Health claims:
• Made with whole grains
• Real fruit
Mixed Berry Nutri Grain Breakfast Bar

Ingredients:
CRUST: whole grain oats, enriched flour (wheat flour, niacin, reduced iron, thiamin mononitrate, riboflavin, folic acid, whole wheat flour, soybean and/or canola oil, corn fiber, sugar, dextrose, fructose, calcium carbonate, whey, wheat bran, salt, cellulose, potassium bicarbonate, natural and artificial flavor, mono- and diglycerides, soy lecithin, wheat gluten, niacinamide, vitamin A palmitate, carrageenan, zinc oxide, reduced iron, guar, gum, pyridoxine hydrochloride, thiamin hydrochloride, riboflavin.
FILLING: Invert sugar, corn syrup, glycerin, apple puree concentrate, sugar, strawberry puree concentrate, blueberry puree concentrate, modified corn starch, raspberry puree concentrate, sodium alginate, natural and artificial flavors, citric acid, malic acid, methylcellulose, dicalcium phosphate, red 40, blue 1.

Health claims:
• Made with whole grains
• Real fruit
Diet & Exercise Tips

- **Tip for losing weight + avoiding hunger:**
  - Make sure all meals and snacks contain some: Fiber + Protein + Fat

- **More Healthy Diet Tips:**
  - Look for low sugar, high **FIBER** foods (slows carb/insulin response)
  - Healthy **FATS** are good for CVD, slow digestion of carbs/insulin response, improved lipids if refined carbs are replaced with healthy fats and less refined carbs
  - **PROTEIN** also slows digestion of carbohydrate/insulin response

- **Exercise & weight loss:**
  - Exercise is good for maintaining weight & improving metabolic profile, but cutting calories is generally required to lose weight
Exercise Recommendations - CDC

- **Minimum**
  - 150 min. moderate-intensity aerobic PA (e.g. brisk walking)/week
    
    +
    
    - Strength training of all major muscle groups 2+ days/wk
  
  **OR**
  
  - 75 min. vigorous-intensity aerobic PA/wk (e.g. running)
    
    +
    
    - Strength training of all major muscle groups 2+ days/wk
  
  - 10 min increments or more at a time

Source: http://www.cdc.gov/physicalactivity/basics/adults/
Exercise Recommendations - CDC

• For even more benefit
  ○ 300 min. moderate-intensity aerobic PA (e.g. brisk walking)/week
    +
  ○ Strength training of all major muscle groups 2+ days/wk
  OR
  ○ 150 min. vigorous-intensity aerobic PA/wk (e.g. running)
    +
  ○ Strength training of all major muscle groups 2+ days/wk

• PA for those with Disabilities: National Center on Health, Physical Activity, and Disability (NCHPAD) www.nchpad.org

Source: http://www.cdc.gov/physicalactivity/basics/adults/
### Absolute & Relative Contraindications to Exercise

#### Absolute
- Acute myocardial infarction (within two days)
- Unstable angina
- Uncontrolled cardiac arrhythmias causing symptoms or hemodynamic compromise
- Symptomatic severe aortic stenosis
- Uncontrolled symptomatic heart failure
- Acute pulmonary embolus or pulmonary infarction
- Acute myocarditis or pericarditis
- Active endocarditis
- Acute aortic dissection
- Acute noncardiac disorder that may affect exercise performance or be aggravated by exercise (eg, infection, renal failure, thyrotoxicosis)
- Inability to obtain consent

#### Relative*
- Left main coronary stenosis or its equivalent
- Moderate stenotic valvular heart disease
- Electrolyte abnormalities
- Severe hypertension (systolic $\geq 200$ mmHg and/or diastolic $\geq 110$ mmHg)
- Tachyarrhythmias or bradyarrhythmias, including atrial fibrillation with uncontrolled ventricular rate
- Hypertrophic cardiomyopathy and other forms of outflow tract obstruction
- Mental or physical impairment leading to inability to cooperate
- High-degree atroventricular block

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*Relative contraindications can be superseded if benefits outweigh risks of exercise.*

Medicare and Medicaid pay for the following if a patient has a BMI $\geq 30$:

- One face-to-face visit every week for the first month;
- One face-to-face visit every other week for months 2-6;
- One face-to-face visit every month for months 7-12, if the beneficiary meets the 3kg (6.6 lbs) weight loss requirement.

Qualified providers:

- Internal Medicine
- Family Practice
- Obstetrics/Gynecology
- Pediatric Medicine
- Geriatric Medicine
- Nurse Practitioner
- Certified Clinical Nurse Specialist
- Physician Assistant
Culture & Counseling on Diabetes & Lifestyle Change

- Unless you are fluent in a language including medical terms and regionally-specific phrases/mores, ALWAYS USE AN INTERPRETER (phone or in-person).
- Patients have varying levels of acculturation—ask questions about things you are unsure about.
- Spend time investigating cultural foods and feelings about exercise and health practices for major cultural groups in your practice.
- Ask questions about what a “typical day” is like for patients, and what their likes and dislikes are—then be creative to make your lifestyle change recommendations utilize this info.
Wrap Up: Patient Counseling

Now, think about how you would use what you learned today to counsel the patient.

- Ask which language she prefers and get an interpreter if needed.
- Counsel briefly on healthy diet, exercise, and weight loss.
- Confirm DMII diagnosis (repeat A1c or FPG)
- Refer to a nutritionist
- If she’s interested, schedule a follow-up for Intensive Behavioral Therapy for Obesity.
- If the patient’s HgA1c becomes increasingly elevated or she needs to begin using insulin in the future, refer her to a diabetes nurse educator.
500 MILLION TO USE A HEALTH APP THIS YEAR

Source: http://mobihealthnews.com/30199/half-of-mobile-health-app-users-are-using-fitness-apps/
Resources for Nutrition & Weight Loss

Online—For physicians + patients w/ higher education

- **NutritionData**  [http://nutritiondata.self.com](http://nutritiondata.self.com)
- **USDA Database**  [http://ndb.nal.usda.gov/ndb/search/list](http://ndb.nal.usda.gov/ndb/search/list)

Apps for anyone

- **MyFitnessPal**  * (Online, App Store, Google Play)
  - Food and activity tracking, FREE
- **Noom Coach**  * (App Store, Google Play)
  - Free food and activity tracking, but must pay for personalized plan, coach, access to weight loss community.
- **Rise**  (App Store, Google Play)
  - In-app purchases for health coaches, nutritionists, and more.

*Available in multiple languages*
Resources for Nutrition & Weight Loss

Apps for anyone (continued)

- **HealthyOut** (App Store, Google Play)
  - Find healthy and specialty diet food when eating out, FREE

- **ShopWell** (App Store, Google Play)
  - Scan food in grocery store for nutrition info and suggestions for healthier choices, can shop by specialty diet, FREE

- **Lose It!** (App Store, Google Play)
  - Set food/activity goals, tracking, connects to mobile and health devices (HR monitors, Blood pressure monitor, Apple Watch, etc. Free with in-app purchases.

- **CalorieKing** (Online, App Store, Google Play)
  - Compare nutrition info on 70,000 foods from 260 fast food chains, FREE

- **WeightWatchers*** (Online, App Store, Google Play)
  - Food, activity, weight tracker, shows location of WW meetings, nutrition info for restaurants, barcode scanner, In-app purchases, $50-300

- **>200 nutrition, food, & health app reviews @**
  - http://www.foodandnutrition.org/Nutrition-Apps/

*Available in multiple languages*
Exercise Apps

Apps for anyone (continued)

- **Runtastic*** (Online, App Store, Google Play)
  - Most popular workout app, run/walk/distance workout tracker, training features, FREE with premium paid features.

- **FitStar** (App Store, Google Play, AppleTV)
  - Personal trainer+HD video of exercises/yoga, MANY features 7.99/mo, 39.99/yr.

- **Running for Weight Loss*** (App Store, Google Play)
  - Running app with weight loss support, training plans, music timed to workout, FREE or paid premium.

- **MapMyRun*** (Online, App Store, Google Play)
  - Run/walk tracker with online community. FREE with paid premium features.

- **Strava*** (Online, App Store, Google Play)
  - Cycling, Run/Walk tracker with online community w/ competition, most popular with trail runners and cyclists who bike hill b/c tracks elevation change, FREE w/ paid premium features.

- **Nike+*** (Online, App Store, Google Play)
  - Run/Walk tracker with competition feature, FREE

*Available in multiple languages*
Commitment Device(s)

PACT

Earn cash for living healthy, paid by members who don’t

The Goal: Eat more fruits and veggies

What counts: A photo of at least one serving of fruit or veggies approved by the Pact community.

Make a pact to exercise more or eat healthier
## How to Get Food Help in Santa Clara County

<table>
<thead>
<tr>
<th>Program</th>
<th>Who?</th>
<th>What do I get?</th>
<th>Contact Info</th>
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</thead>
</table>
| CalFresh (formerly known as Food Stamps)     | All ages; Individuals and families with low incomes; Must be a US Citizen or Legal Resident | Electronic Benefits Transfer (EBT) card that can be used like an ATM card to purchase eligible food items at stores certified as CalFresh retailers | Santa Clara County  
24-Hr Automated InfoLine: (877) 962-3633  
Second Harvest Food Bank  
Food Connection Hotline: (800) 984-3663 |
| Food Assistance Hotline                     | All ages                                                             | A hotline that connects people in need with food programs in their neighborhood. | Food Connection Hotline: (800) 984-3663 |
| Head Start                                  | Age: At least 3 years old and must not turn 5 years old by December 2 AND meet either the income or categorical eligibility requirements | Early childhood development and health services    | Santa Clara County Office of Education – Student’s Services: (800) 820-8182 |
| Meals on Wheels                             | SNP: Frail and homebound seniors 60 years of age or over  
The Health Trust: Santa Clara County residents, and must demonstrate need for home-delivered meals due to medical condition or isolation | Nutritious meals delivered to your home weekly     | Senior Nutrition Program: (408) 975-4860  
Sourcewise: 408-350-3246  
The Health Trust: (408) 961-9870 or (800) 505-3367 (toll free) |
| School Nutrition Program                    | Elementary, Middle, and High School Students                        | Students are provided with breakfast and lunch at school. The amount paid depends on the family's income. | Contact your local school or school district office for an application form |
| Second Harvest Food Bank                    | Low income individuals in Santa Clara and San Mateo Counties         | Healthy food and support services from various programs such as Family Harvest, Food Pantries, Produce Mobile, and Brown Bag | Food Connection Hotline: (800) 984-3663  
Email: foodconnection@shfb.org  
Text GetFood to 97779 in Santa Clara and San Mateo Counties |
| Senior Nutrition Program (SNP)              | Seniors 60 years of age or over                                     | Hot lunches from Congregate Meals Sites or food delivered to home through the Meals on Wheels Program | Senior Nutrition Program: (408) 975-4860 |
| Women, Infants, and Children (WIC)          | Income eligible pregnant, breastfeeding, and postpartum women, infants, and children up to age 5 including those cared for by a single father, grandparent, foster parent, step-parent or guardian | Nutrition and health education, food checks to buy healthy foods, education and support for breastfeeding, and help in finding healthcare and other community services. | Santa Clara County WIC Program:  
(408) 792-5101  
Indian Health Center WIC Program:  
(408) 445-3400 x210  
Gardner WIC Program:  
(408) 254-5197 |