The Skinny on Good vs. Bad Fats & Carbs

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Fats

The Good
- Unsaturated = LIQUID (oils), Plant Based Fats
- Monounsaturated
- Polyunsaturated, -3: linolenic acid (ALA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA)
- Anti-Inflammatory
- Heart Protective

Good FATS

UNSATURATED = Fish, Nuts, Oils……
PLANT PRODUCTS
Bad FATS

SATURATED = Fried, Red Meat, Cheese, Full-fat Dairy........
ANIMAL PRODUCTS

The Skinny on Fat

- High intakes of dietary fat are associated with obesity, heart disease and diabetes.
  - "Habitual dietary intake and insulin sensitivity in lean and obese adults." J Lovejoy and M DiGirolamo, AJCN Vol 55, 1174-1179

- Low-fat diets (<30%), have been linked to higher fasting glucose, fasting insulin and insulin resistance.
  - "Comparison of the effects on insulin resistance and glucose tolerance of 6-mo high-monounsaturated-fat, low-fat, and control diets." Anette Due, et al., AJCN, Vol. 87, No. 4, 855-862, April 2008
The Skinny on Fat

- Moderate fat diets with high intakes of monounsaturated and omega-3 fats have beneficial effects on cardiovascular risk factors and risk of diabetes.
- "Optimal Diets for Prevention of Coronary Heart Disease." Frank B. Hu, MD, PhD; Walter C. Willett, MD, DrPH; JAMA. 2002;288:2569-2578.

Diets of the Mediterranean

- Abundant plant foods (fruits, vegetables, breads, other forms of cereals, beans, nuts and seeds).
- Minimally processed, seasonally fresh and locally grown foods.
- Fresh fruit as the typical daily dessert, with sweets based on nuts, olive oil and concentrated sugars or honey consumed during feast days.
- Olive oil as the principal source of dietary lipids.
- Dairy products (mainly cheese and yoghurt) consumed in low to moderate amounts.
- Fewer than four eggs consumed per week.
- Red meat consumed in low frequency and amounts.
- Wine consumed in low to moderate amounts, generally with meals.

AHA Dietary Guidelines

- AHA Scientific Statement Circulation. 2006;114:82-96
- Diet and Lifestyle Recommendations:
The recommendations are to balance caloric intake and physical activity to achieve and maintain a healthy body weight; consume a diet rich in vegetables and fruits; choose whole-grain, high-fiber foods; consume fish, especially oily fish, at least twice a week; limit intake of saturated fat to <7% of energy, trans fat to <1% of energy, and cholesterol to <200 mg/day by choosing lean meats and vegetable alternatives, fat-free (skim) or low-fat (1% fat) dairy products and minimize intake of partially hydrogenated fats; minimize intake of beverages and foods with added sugars; choose and prepare foods with little or no salt; if you consume alcohol, do so in moderation; and when you eat food prepared outside of the home, follow these Diet and Lifestyle Recommendations.
Therapeutic Lifestyle Changes
(TLC Diet of the NCEP)

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Recommended Intake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturated fat</td>
<td>Less than 7% of total calories</td>
</tr>
<tr>
<td>Polyunsaturated fat</td>
<td>Up to 10% of total calories</td>
</tr>
<tr>
<td>Monounsaturated fat</td>
<td>Up to 20% of total calories</td>
</tr>
<tr>
<td>Total fat</td>
<td>25–35% of total calories</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>50–60% of total calories</td>
</tr>
<tr>
<td>Fiber</td>
<td>20–30 grams per day</td>
</tr>
<tr>
<td>Protein</td>
<td>Approximately 15% of total calories</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>Less than 200 mg/day</td>
</tr>
<tr>
<td>Total calories (energy)</td>
<td>Balance energy intake &amp; expenditure to maintain desirable body weight/prevent weight gain</td>
</tr>
</tbody>
</table>

Carbohydrates/Carbs

<table>
<thead>
<tr>
<th>The Good</th>
<th>The Bad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beans/Legumes</td>
<td>Sweets</td>
</tr>
<tr>
<td>Starchy Vegetables</td>
<td>Processed/Refined Carbs</td>
</tr>
<tr>
<td>Whole Grains (Brown Rice, Barley, Quinoa, Bulgur, Oats...)</td>
<td>Added Sugars (HFCS, Sugar, Honey, Agave, Brown Rice Syrup)</td>
</tr>
<tr>
<td>Fruit</td>
<td>Simple (Sugar) / Few Natural Nutrients</td>
</tr>
<tr>
<td>Low-fat Dairy</td>
<td>Fuel Weight Gain</td>
</tr>
<tr>
<td>Complex / Nutrient Dense</td>
<td></td>
</tr>
<tr>
<td>Fuel Activity</td>
<td></td>
</tr>
</tbody>
</table>

Good CARBS

FIBER = Whole Grains, Fruits, Vegetables, Beans....

PLANT PRODUCTS
The Skinny on Carbs

- High fiber diets have been shown to reduce risk of coronary heart disease and diabetes (cholesterol, inflammation, blood pressure, insulin resistance).

Labeling for Fiber & Heart Disease

- The FDA allows producers of foods containing 1.7g per serving of psyllium husk soluble fiber or 0.75g of oat or barley soluble fiber to claim that reduced risk of heart disease can result from their regular consumption.
- Labeling Statement: Soluble fiber from foods such as -------- as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease. A serving of ----- supplies --- grams of soluble fiber from --------.
- Example sources of soluble fiber include: oat bran, rolled oats, whole oat flour, whole grain barley and soluble fiber from psyllium husk (with purity of no less than 95%)

Good CARBS - Fiber

- The five most fiber-rich plant foods, (According to the Micronutrient Center of the Linus Pauling Institute) are:
  - Legumes (15–19 grams of fiber per cup), including several types of beans, lentils, and peas
  - Bran (17 grams per cup)
  - Prunes (12 grams per serving)
  - Asian Pear (10 grams each, 3.6% by weight)
  - Quinoa (9 grams per serving)
Bad CARBS

ADDED SUGAR/REFINED = Chips, Candy, Soda, Sugar Cereals, White Bread and Pasta

PROCESSED PRODUCTS

The Skinny on Carbs

- There is increasing evidence that carbohydrate quality (measured in terms of GI) may play a role in the development of diabetes and cardiovascular disease.

Glycemic Index (GI)

- GI = The glycemic index of a food is defined as the area under the 2 hr blood glucose response curve following the ingestion of a fixed portion of carbohydrate (usually 50 g).
  - Many limitations (cooking method, vinegar, protein, fat, fiber...)

- GL = The glycemic load is the product of the glycemic index and the grams of carbohydrate (GL=GI x Carb grams)
  - ≤ 10 LOW, 11-19 MEDIUM, ≥ 20 HIGH
  - For example, a 100g slice of watermelon with a GI of 72 (HIGH) and a carbohydrate content of 5g (5 x 0.72=3.6) so the GL is LOW.
Dietary Glycemic Load and Index and Risk of Coronary Heart Disease in a Large Italian Cohort. The EPICOR Study, Arch Intern Med. April 2010; 170 (7) 640-647

- Prospective investigation of the association of GI/GL with CHD
- 44,132 (13,637 men and 30,495 women) after exclusion for diabetes, CVD, incomplete questionnaires/missing data
- Subcohort underwent 24 hr dietary recall from which carbohydrates/GI/GL were analyzed
- Conclusion: High GL and total carbohydrate intake from high GI foods increase the overall risk of CHD in women BUT not in men.

The Skinny on Carbs

- An increased intake of added sugars (sugar sweetened beverages) may raise the risk of obesity, heart disease and diabetes.
  - "Sweetened beverage consumption and risk of coronary heart disease in women." Teresa T Fung et al. AJCN 89:1037-1042, 2009
  - "Sugar-Sweetened Beverages, Weight Gain, and Incidence of Type 2 Diabetes in Young and Middle-Aged Women." Matthias B. Schulze, DrPH; JoAnn E. Manson, MD, David S. Ludwig, MD, et al. JAMA. 2004;292:927-934.

Re-Think Your Drink

Café Vanilla Frappuccino® Blended Coffee

- Calories: 160
- Carbohydrates: 19g
- Sugar: 16g
- Fat: 6g
- Protein: 2.5g
Caloric Sweetener Consumption and Dyslipidemia Among US Adults.

JAMA, April 2010, Vol 303, No.15

- Cross-sectional study among 6,113 US adults from NHANES (National Health and Nutrition Examination Survey 1996-2006) to assess the association between consumption of added sugars and blood lipid levels
- 24 hr diet recall (subgroup with repeated 24 hr diet recall)
- Added sugars averaged 15.8% of total calorie consumption
- Conclusion: Higher intakes of added sugar resulted in a lowering of HDL-C, higher triglyceride levels and higher ratios of triglycerides to HDL-C.
- Conclusion: Among higher consumers (>10% added sugars), the odds ratio of low HDL-C levels were 50-300% greater compared with the reference group (<5% added sugars).

The Skinny on Carbs

- Additionally, consuming high amounts of fructose has been shown to increase risk of metabolic syndrome by increasing triglycerides, visceral adiposity, and decrease insulin sensitivity.

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The Skinny on Getting Skinny

- **Weight Loss = Calorie Restriction**
  - Cutting back on liquid calories may result in more weight loss than the same number of solid calories.
    - "Reduction in consumption of sugar-sweetened beverages is associated with weight loss: the PREMIER trial." Liwei Chen, et al., AJCN 89: 1299-1306, 2009
  - Changing the macronutrient composition of the diet may provide additional benefits
    - Decreasing carbohydrate and increasing unsaturated fats may improve insulin sensitivity, cardiovascular risk (blood pressure, blood lipid profile, inflammatory markers) often independent of weight loss.

Key Concepts

1. Fat is good in moderation - Aim for ~30% of total calories (up to ~40% if following the Mediterranean Diet).
2. Fat is good if it’s unsaturated; replace the bad saturated fats with omega-3’s and monounsaturated fats.
3. Carbohydrates are good in moderation – Aim for ~50% of total calories.
4. Good carbohydrates are those naturally nutrient dense and high in fiber (whole grains, beans, fruits and vegetables).
5. Limit the bad processed carbohydrates & added sugars.

Ideally, choices are not good vs. bad but better vs. worse. Teach your patients how to make better choices!

The Plate Method

[Image of a balanced plate with food groups and portion sizes.]
“Eat FOOD, not too much, mostly plants.”

Michael Pollan