




Dietary Fats

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Objectives

- Explain the role of dietary fat for optimum health
- Learn the different types of fat in our food supply – specifically which ones are detrimental and which are protective for our well being
- Gain a better understanding of saturated fats and its role in heart disease and discuss what food substance is considered a major risk factor for heart disease
- Identify which oils are best used for cooking based on their specific smoke point
- Explain which healthy fats can replace unhealthy fats in your daily diet

Surah Al- Baqarah

- “Eat of the good things which we have provided for you (2:173) Eat of what is lawful and wholesome on the earth (2:168)

Why do we need fat?

- Fats provide energy – each gram of fat provides 9 calories per energy for the body - double the amount for carbs and protein
- Cell structure
- Fat needed for vitamin absorption (A,D,E and K)

Why we need fat cont'd

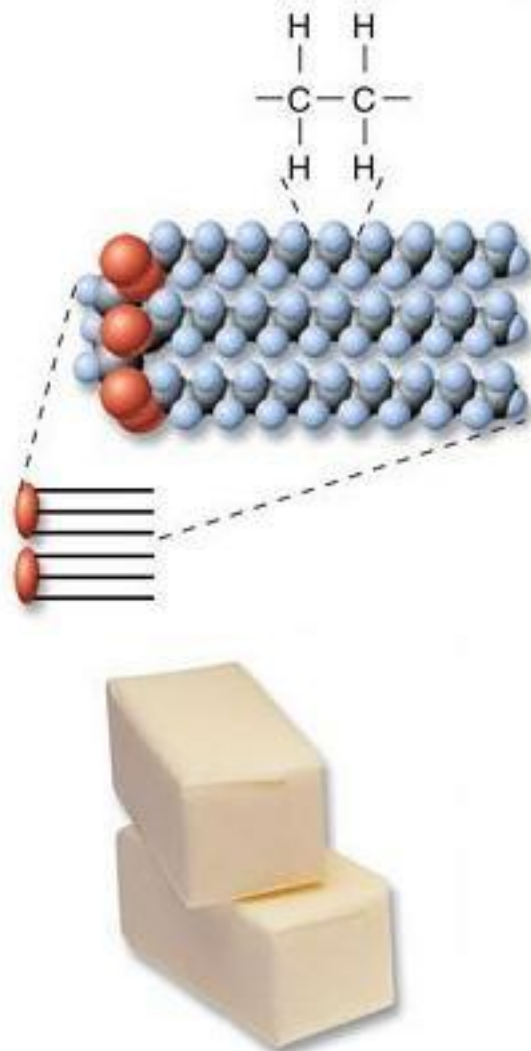
- ◉ Regulate hormones
- ◉ Healthy skin and body temperature regulation
- ◉ Helps to protect our vital organs
- ◉ Taste good!

How our body uses fat

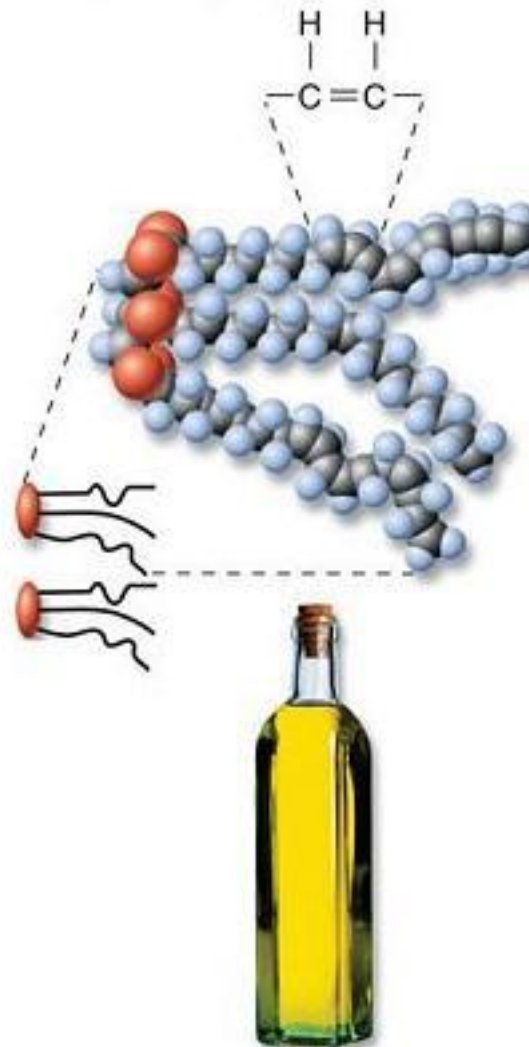
- Most fat stored in the human body is subcutaneous (meaning under the skin)
- Body stores fat for energy
- When muscles need more power it sends enzymes to a fat cell to break it down which releases glycerol and fatty acids in the blood. With fatty acids circulating in the body the muscle use them for extra energy

Types of Dietary Fat

- Research on the possible harms and benefits of dietary is always evolving
- “Bad” fats saturated and trans fat
- “Good” fats monounsaturated (MUFA) and polyunsaturated fat (PUFA)



(b) Hard fat (saturated): Fatty acids with single bonds between all carbon pairs



(c) Oil (unsaturated): Fatty acids that contain double bonds between one or more pairs of carbon atoms

Trans Fat

- ◉ Most trans fat is man made by adding hydrogen to vegetable oils causes oil to become solid in room temperature
- ◉ Raises your LDL (bad) and lowers your HDL (good) cholesterol
- ◉ Food companies love it – because its cheap, less likely to spoil and foods have longer shelf life
- ◉ Baked goods (cakes, cookies, pie crust, crackers, ready made frosting)
- ◉ Snacks: potato, corn and tortilla chips and microwaved popcorn
- ◉ Fried food: French fries, fried chicken,
- ◉ Refrigerated dough – frozen pizza dough
- ◉ Creamer and margarine



Trans Fat and Nutrition Label

- If a food has 0.5 grams of trans fat in a serving the food label can say 0 grams – dangerous if you eat multiple servings
- Ingredient list : partially hydrogenated vegetable oil

Nutrition Facts

Serving Size: 5 Croutons (7g)
Servings Per Container: About 20

Amount Per Serving

Calories 30 **Calories from Fat** 15

% Daily Value*

Total Fat 1.5g **2%**

Saturated Fat 0g **0%**

Trans Fat 0g **0%**

Cholesterol 0mg **0%**

Sodium 115mg **4%**

Total Carbohydrate 4g **1%**

Dietary Fiber less than 1g **2%**

Sugars 1g

Protein 1g

Vitamin A 0% • Vitamin C 0%

Calcium 2% • Iron 2%

*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	2400mg	2400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram

Fat 9 • Carbohydrate 4 • Protein 4

INGREDIENTS: WHOLE WHEAT FLOUR, WATER, PARTIALLY HYDROGENATED SOYBEAN OIL, HIGH FRUCTOSE CORN SYRUP, WHEAT GLUTEN, YEAST. CONTAINS 2% OR LESS: SALT, MALTED BARLEY, CORN GRITS, WHEY, ROMANO AND PARMESAN CHEESE (PASTEURIZED MILK, PART SKIM MILK, CHEESE CULTURES, SALT, ENZYMES), BUTTER, MILK, SOYBEAN OIL, DISODIUM PHOSPHATE, CITRIC ACID, SOY FLOUR, NATURAL FLAVORS, MALTODEXTRIN, GARLIC, PARSLEY, SPICES, PAPRIKA, DISODIUM INOSINATE AND GUANYLATE, CALCIUM SULFATE, ENZYMES, CALCIUM DIOXIDE, SOYLECITHIN. CONTAINS: WHEAT, MILK AND SOYBEANS.

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NO PRESERVATIVES
NO CHOLESTEROL
0g TRANS FAT

Enjoy Our Other

Marie Callender's

Delectable Gourmet Crout

- Whole Grain Caesar
- Cheese & Garlic
- Garlic & Butter
- Ranch
- Fat Free Caesar
- Fat Free Herb Seasoned
- Multi-Grain Organic Seasoned
- Classic Seasoned

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Jif Creamy
Peanut Butter:

Roasted Peanuts and **Sugar**, Contains 2% or less of: Molasses, **Fully Hydrogenated Vegetable Oils (Rapeseed and Soybean)**, **Mono and Diglycerides**, Salt.

VS



Smucker's Natural
Creamy Peanut
Butter:

Peanuts, Salt

Nutrition Facts

Serving Size 1 tbsp (15 mL)

Amount Per Serving

Calories 15 Calories From Fat 10

% Daily Value*

Total Fat 1 g **2%**

Saturated Fat 0 g **0%**

Trans Fat 0 g

Polyunsaturated Fat 0 g

Monounsaturated Fat 0 g

Cholesterol 0 mg **0%**

Sodium 0 mg **0%**

Total Carbohydrate 2 g **1%**

Sugars 0 g

Protein 0 g

Not a significant source of dietary fiber, vitamin A, vitamin C, calcium, and iron.

*Percent Daily Values are based on a 2,000 calorie diet.



INGREDIENTS: WATER, CORN SYRUP SOLIDS, PARTIALLY HYDROGENATED SOYBEAN AND/OR COTTONSEED OIL, AND LESS THAN 2% OF NATURAL & ARTIFICIAL FLAVORS, SODIUM CASEINATE (A MILK DERIVATIVE)**, MALTODEXTRIN, MONO- AND DIGLYCERIDES, DIPOTASSIUM PHOSPHATE, COLOR ADDED, CARRAGEENAN, DEXTROSE, SUCRALOSE, ACESULFAME POTASSIUM (NON-NUTRITIVE SWEETENER).

** Not a source of lactose.

Current as of June, 2010. Please see shelf packaging for any changes.

Polyunsaturated Fats

- Liquid at room temperature
- Polyunsaturated fats (PUFAs) Found in Soybean, corn, sunflower as well as in fish
- Vital for blood clotting, muscle contraction and relaxation and inflammation
- Reduce LDL and Triglycerides (TG)

2 Types of Polyunsaturated Fats

- Omega 3
- Omega 6
- Both are essential fats, the body needs but can't produce on its own and you need to obtain from food

Omega-3s

- Fatty fish (salmon, mackerel, herring and trout)
- 2x a week
- Omega-3 fats have been shown to decrease TG levels, slow growth rate of plaque and potentially lower blood pressure
- Omega-3s contain EPA and DHA (fish) and ALA mostly found in plant sources (walnuts, flaxseed, canola oil)

Omega-3

- Omega 3



- Supplement – 500 mg - 1gram



Omega 6

- Most omega 6 comes in forms of vegetable oil
- Overload in western diet found in snack foods
- Reduce consumption of processed oil and opt for omega-3 oils

Monounsaturated fats

- These fats should be used as much as possible
- Great food sources include: olive oil, peanut oil, canola oil, avocado and most nuts
- Eating foods that are high in monounsaturated fats (MUFAs) improves blood cholesterol which can reduce your risk of heart disease
- MUFAs may benefit insulin levels and blood sugar control

Saturated Fat and Heart Disease

- Found in meats, dairy, and some plant products (coconut)
- Since the 1950s we have been told that saturated fat increases our total cholesterol and heart disease and stroke
- To reduce cholesterol it is best to avoid food that has saturated fat (full fat dairy, coconut, meat, etc)

New Thoughts on Heart Disease

- In 2010 In the Journal of Clinical Nutrition a study was done that showed that there is no proof that linked saturated fat to heart disease or stroke
- Study involved 21 studies and about 350,000 people
- Key element discovered was that cutting out saturated fat and what as added as a replacement was very important (refined carbs, vs. healthy oils)

New thoughts on Heart Disease

- Swapping saturated fats for healthy oils showed lower LDL cholesterol but when sat fat was swapped for refined carbs showed otherwise – higher triglycerides and lower HDL
- High Triglycerides and low HDL are risk factors for cardiovascular disease and a criteria of metabolic syndrome which is linked to DM2 and heart disease

New Thoughts on Heart Disease

- Eating less saturated fat is not equal to weight loss either
- Low carb vs. low fat dieters showed that low carb dieters had more saturated fat but better cholesterol levels.
- INSULIN = Refined carbohydrates
- Fewer carbs, means less insulin produced, reduce fat storage, control hunger, and influences metabolism that helps cholesterol stay in check

Insulin and weight loss

- Insulin is a hormone produced in the pancreas
- Main job is to signal the liver, muscle and fat tissues to take up glucose from the blood and store it as glycogen
- Fat cells respond to insulin by taking fat and turning them to fatty acids and uses it for storage – so large amount of insulin promotes the storage of fat in our fat cells so when trying to loose weight your fat reserves will not be used when insulin is around

Insulin and weight loss continued

- Main dietary player in insulin regulation are carbs since they contain glucose and immediately affect blood glucose
- When too much insulin is present it triggers storage of fat - **so high levels of insulin promote weight gain**
- For effective weight loss need to gain better control over insulin

New Thoughts on Heart Disease Conclusion

- More research needs to be done to confirm findings from study
- Heart and Stroke guidelines have not changed: reduce fat intake to 20-35% of your daily calories, choose healthy fats such as polyunsaturated and monounsaturated fats found mainly in vegetable oils, nuts and fish, limit saturated fat intake to less than 7% of daily calories

Heart Health and Fat Intake

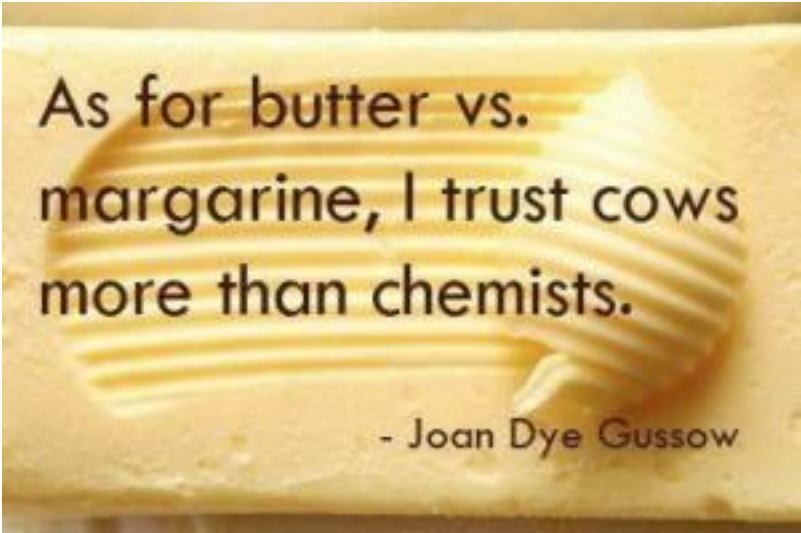
- Need to look at single nutrients but also whole food groups
- Regular exercise
- Maintain healthy body weight
- Go for yearly physicals and know your blood pressure and cholesterol levels!!

Smart Fat Swaps

- Add slices of avocado to sandwiches to replace cheese and mayo
- Instead of creamy dressings choose oil based dressing
- Instead of mayo swap in mustard
- Snack on popcorn instead of chips
- Add pumpkin seeds to salads instead of croutons

Butter or Margarine?

- Butter!
- Natural ingredients
- 1 pat is 36 calories and 4 grams of fat

A close-up photograph of a single pat of butter. The butter is a pale yellow color and has a distinct, wavy, ribbed texture. Embossed on the surface of the butter is a quote in a dark, sans-serif font. The quote reads: "As for butter vs. margarine, I trust cows more than chemists." Below the quote, in a smaller font, is the attribution "- Joan Dye Gussow". The background is a solid, light green color.

As for butter vs.
margarine, I trust cows
more than chemists.

- Joan Dye Gussow

What about Ghee?

- Ghee is pure butterfat, moisture is removed as well as all milk solids
- Butter has butterfat, milk solids and water
- Ghee has a very high smoke point
- Has short and medium chain fatty acids, the way its broken down is favorable and has shown to reduce inflammation and improve digestion
- Ghee has natural contents of conjugated linoleic acid (CLA) if prepared from grass fed cows. CLA linked to animal studies to improving insulin resistance and as cancer prevention

How to make Ghee

- Use grass fed butter (Organic Meadow) – grass fed dairy is higher in vitamin K2 and Omega-3 – heart healthy. In countries where cows are mostly grass-fed, dairy fat is associated with lower risk of heart disease.
- High smoke point
- <http://www.everydaymaven.com/2013/how-to-make-ghee/>



What about Coconut Oil?

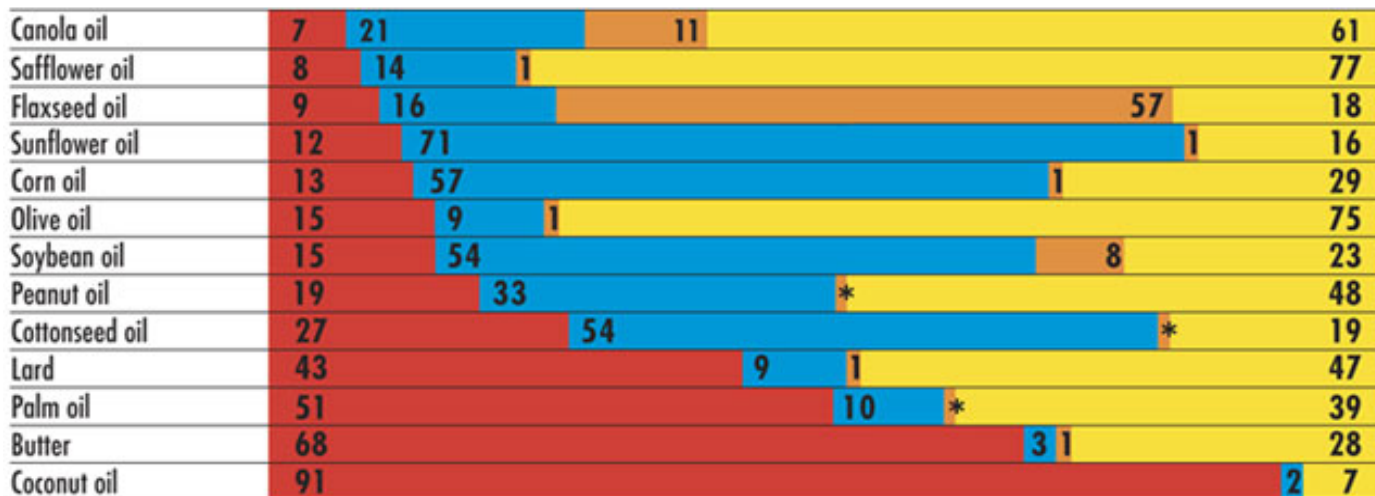
- Richest source of saturated fat almost 90%
- Mostly consist of medium chain fatty acid, metabolized differently and can lead to more energy expenditure
- Studies show that coconut oil can improve cholesterol profile
- Choose the unrefined coconut oil



What is the Best Oil for Cooking?

Comparison of Dietary Fats

DIETARY FAT



SATURATED FAT



POLYUNSATURATED FAT



linoleic acid
(an omega-6 fatty acid)



alpha-linolenic acid
(an omega-3 fatty acid)

MONOUNSATURATED FAT



oleic acid
(an omega-9 fatty acid)

*Trace

Fatty acid content normalized to 100%

SOURCE: FOS PILLOT PLANT CORPORATION

Questions?

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