NUTRITION & DISEASE
Dr. Jerome L. Hojnacki

WHAT THE COURSE IS ABOUT
September 2011
Chronic diseases/disorders related to:

1. Nutrition
2. Physical Activity

Nutrition Affects All Generations
Women’s Health Initiative

- Large study funded by federal government - started 1991
- Look at major causes disease & death in women
- 161,000 volunteers (ages: 50-79)
- Emphasize: biological differences: women vs. men
Nutrition & Disease Overview

**Nutrition:**
- Taking in food
- **Assimilation** “You are what you eat”
- Growth
- **Repair** - wear/tear/injury
- All body activities
- Nutrients - **stored** - future use
Nutrients: Chemical Substances → Food

Energy
Structure
Regulate Body Processes
Macronutrients
• Water
• Carbohydrates
• Fats
• Proteins

Micronutrients
• Vitamins
• Minerals
Disease: Illness, Pathology

Acute: Rapid, Severe Symptoms, Short Course
Infectious: Smallpox, Malaria, Measles

Chronic: Long, Drawn Out
Insidious: Lacking Early Symptoms-Going On In You Now, Unaware
Diseases- Chronic

- Heart Disease
- Cancer
- Stroke
- High Blood Pressure
- Type 2 Diabetes
- Bone Thinning
- Obesity

- Heart disease*: 25.9%
- Cancer*: 23.8%
- Stroke*: 23.1%
- Chronic lower respiratory infections†
- Accidents†
- Alzheimer’s disease*
- Diabetes*
- Influenza and pneumonia
- Kidney disease*: 5.7%
- Blood-borne infections
- All other causes

* Causes of death in which diet plays a part
† Causes of death in which excessive alcohol consumption plays a part
‡ Causes of death in which tobacco plays a part
Some diseases run in families

Genetic Risk

Modify your *lifestyle*: prevention

Develop a “**Family Health History**”

Starting place: family gatherings
Many Chronic Diseases

Start Early - Children

Problems Later in Life
**US Congress** Interested. Why?

Before **1965** Government Smaller $ Medical Bills

**1965:** Medicare & Medicaid

↑ Cost US Government
Economic Implications:

- 2007 Health care = $2.4 Trillion
- $7,900/person
- >16% GDP
Soaring Costs

Medicare and Medicaid are taking up ever-larger portions of federal spending, just as businesses are trying to pare their health and pension costs.

Spending as percentage of G.D.P.

Source: Congressional Budget Office

The New York Times
Companies & Medical Care Costs of Employees
• Concern: **sedentary** workers
• Carlson Companies- Minneapolis: **1 diabetic** employee: **$13,000/year** medical/time off costs
• **Report cards**- monitor: cholesterol, blood pressure, blood sugar
• **Incentives:** cash/merchandise/reduced insurance cost/personal nurse
• **Workout Rooms:** Raytheon
NY Times 3/26/10

50-70% of nation’s health care costs: preventable

Health Incentive Program

Developed by Virginia Group

- Companies monitor workers: on-line tracking- pedometers, accelerometers, heart-rate monitoring

- $100/month insurance premiums
“Wal-Mart aims to promote health and environment” NY Times 6/22/06

1. 1.3 million US employees- largest workforce
2. Higher rates- heart disease & diabetes than general public
3. Teach employees- take better care of themselves
4. **Nutrition** information
5. Help **reduce** health care spending
LIFESTYLE $\frac{1}{2}$ deaths each year in US

American Cancer Society: 2007

1 in 3 cancer deaths related to:

OBESITY, PHYSICAL INACTIVITY, AND NUTRITION
Public Schools

- **2004** Boston schools **banned** soda, sports drinks, fruit drinks
- **Educate** students: amount sugar in drinks, emphasize H20
- **2008** Harvard Study: ↓ sugary drinks—both inside & **outside** of school
- No change sugary drinks US students
- Conclusion: policy change
- Behavioral change
How to Control Costs:
Buzz Words

• Health promotion
• Disease prevention
• HMO
• Behavioral/lifestyle modifications
• Stress management
• Early detection
• Screening
• Education (Nutrition)
President Obama and Health Promotion
First Lady Michelle Obama

Let’s Move campaign against childhood obesity: partners - government, science, medicine, business, educators, sports
To fight childhood obesity: agreement—large food companies will remove 1.5 trillion calories from food by 2015.
Major League Baseball joins Let’s Move
30 TV/radio ads aimed at families, women, daytime TV audience (young children)
Goal: “Kids born today reach adulthood at healthy weight”

Curtis Granderson
Yankees

Jeff Francoeur
Mets
Michele Obama and US Department of Agriculture (June 2011): simple way to eat healthy: all food groups, portions of each
Michele Obama

“Partnership for healthier America”

Pledge: Wal-Mart, Walgreens, SuperValu: expand/open

1500 stores in “Food Deserts”

Wal-Mart 5 year plan:

- ↓ Salt, fats, sugars in packaged foods
- ↓ Price: fruits and veggies
Food Deserts: low income areas—Rural or City

- Far from affordable food
- Limited access: fresh produce, nutritious food
- Inner cities: fast food, convenience stores
- Bronx: capital of obesity—Food Insecurity (not enough $ for food)

- Joel Berg—NY Coalition Against Hunger

“When you’re just trying to get your calorie intake, you’re going to get what fills your belly”
1977 “Dietary Goals for US”

George McGovern & Senate Committee on Nutrition

“An epidemic of killer diseases - stroke, obesity, heart disease, diabetes, cancer linked to eating habits of Americans.”

Committee recommendations: return to more “natural” diet (less processed foods)
1980 US Department of Health and Human Services
“Dietary Guidelines for Americans” first published

By law- updated every 5 years
1985

DIETARY GUIDELINES FOR AMERICANS

- Eat a variety of foods
- Maintain desirable weight
- Avoid too much fat, saturated fat, and cholesterol
- Eat foods with adequate starch and fiber
- Avoid too much sugar
- Avoid too much sodium
- If you drink alcoholic beverages, do so in moderation
2005 Dietary Guidelines for Americans

Quantitative

↑ Fiber  ↑ Vegetables & Fruits  ↑ Exercise

↑ Whole Grains, Nuts, Beans

Low Fat Dairy, Fish, Lean Meats

↓ Saturated Fat & Trans Fat  ↑ Poly + Monounsaturated Fat
Dietary Guidelines for Americans 2005

- Goals: Reduce risk of chronic diseases, lead longer, healthier lives
- Developed by Expert Scientists
- Preponderance - scientific evidence
- Primary source nutrition information: all health care professionals
- For Americans > age 2
Two examples of eating patterns-
range of calories:

USDA Food Guide
www.mypyramid.gov

Dietary Approaches to Stop Hypertension (DASH)
www.nutrition.gov
Early Humans → Dietary Deficiencies
beriberi, scurvy, rickets, protein calorie malnutrition - **UNDERNUTRITION**

Today in US - **OVERNUTRITION** - affluence
Over consumption: saturated fat, cholesterol, sugar, salt, alcohol, **calories**

Some Americans: excessive calories but malnourished (not enough essential nutrients)
Some obese American children: **1000 calories/day** in sweetened drinks
Equal to: 59 sugars, 3 bottles soft drinks
<table>
<thead>
<tr>
<th>Past - 1910</th>
<th>Present</th>
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<tbody>
<tr>
<td>Milk</td>
<td>Meat, fish, Poultry, Alcohol</td>
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<tr>
<td>Grains (wheat, rice, Corn)</td>
<td>Sugar Soft Drinks</td>
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<tr>
<td>Fresh fruit/vegetables</td>
<td>Animal protein (saturated fat &amp; cholesterol) Processed foods: (canned, frozen) High Salt “Junk Foods”- High calorie low nutrients</td>
</tr>
<tr>
<td>Plant protein (low fat, no cholesterol)</td>
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<tr>
<td>More fiber: Fruits, vegetables, whole grains</td>
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AMERICANS EAT TOO MUCH:

1) Calories
2) Solid Fat
3) Added Sugars
4) Refined Sugars
5) Sodium
AMERICANS DON’T GET ENOUGH:

1) Potassium
2) Fiber
3) Calcium
4) Vitamin D
5) Unsaturated Fat: Oils, Nuts, Seafood
6) Other Nutrients in: Veggies, Fruits, Whole Grains, Low Fat Milk, Yogurt, Cheese
Some people in world don’t eat like Americans

(But they are starting to!)
People – other countries:

- Starches \uparrow
- Sugar \downarrow
- Vegetables \uparrow
- Meat, Fat \downarrow
- Chronic Diseases \downarrow
Mediterranean Diet

- Vegetables, fruits, legumes (beans & peas) (fiber)
- Fish, cereals
- Unsaturated fat (olive oil)
- Saturated fat
- Dairy products, meat, poultry
- Mild-moderate alcohol
- Heart disease
- Alzheimer’s disease
**Mediterranean Food Pyramid**

- **Monthly**: Meat
- **Weekly**: Sweets, Eggs, Poultry, Fish
- **Daily**: Cheese and yogurt, Olive oil, Fruits, Beans, legumes, and nuts, Vegetables, Bread, pasta, rice, couscous, polenta, other whole grains and potatoes
- **Daily physical activity**

**The Traditional Healthy Mediterranean Diet Pyramid**
A plant-based diet with minimal amounts of high saturated fat, high-sugar foods, coupled with daily physical activity, reflects the healthy habits of the Mediterranean lifestyle.
Mediterranean Diet

- Cholesterol levels
- Heart Disease
- Cancers
  - Mouth
  - Esophagus
  - Stomach
  - Lung
  - Intestine

- Longer Life

Breast Cancer
Mediterranean vs. U.S. Women
How Mediterranean Diet May Work

You are what you eat
OXIDATION

• Oxidation: removing electrons from molecules
• Happens normally during metabolism
• Also- exposure air pollution, cigarette smoke
OXIDATION

• Oxidation: produces “highly reactive” molecules: free radicals
• Damage: DNA, proteins, & fats in cell membranes and blood
• Oxidative stress: free radicals accumulate in body
• May cause cell death, cancer, aging, damage to arteries
OXIDATION

• Your body: built in protection-enzyme systems: **anti-oxidation**-protect against damage due to oxidation

• Diet: Vitamin C, E , beta carotene (carrots), selenium (mineral): **antioxidants**: destroy reactive molecules
How Mediterranean Diet May Work

- **Cancer**: fruits & veggies:
  - **antioxidants**: protect DNA & cell membranes

- **Heart Disease**: monounsaturated fat:
  - ↓ blood cholesterol, blood fats resist oxidation

- **Aging & Alzheimer’s Disease**: monounsaturated fat → brain nerve cell membranes → fluidity
In general:

↑ Affluence  ↑ Meat

↑ Heart Disease & Cancer
McDonald’s in Moscow: January 1990

Major change: Communism & foreign investment-

30,000 people served-

opening day
Today: Dramatic increase American fast food in Russia: 279 McDonald’s

Wendy’s 2011
NY Times June 20, 2006 “McDonald’s operating profit in France last year was second only to that of McDonald’s in the United States.”

A McDonald’s Ally in Paris
How a Frenchman Turned the Tables on Anti-Americana
NY Times 9/13/06 “The number of new diabetics now totals around 35 million” ..... “in a country better known for famine.”
Before WW II

- Plant foods
  - 25-33% lower fat than Americans

↓ Heart Disease

After WW II:

- Industrialization

↑ Meat  ↑ Fat  ↑ Heart Disease

Example: Japan
“Dramatic rise in overweight and obesity in China.”

- 2002 Nutrition & Health Survey: China had 184 million overweight, 31 million obese

- % diet from animal sources increased 8 → 25% during 20 year period

- Linked to rise in overweight/obesity
People other countries

↓

U.S.

Adopt our diet

Develop our chronic diseases
2004 US Census Bureau statistics: Americans: “Fattest inhabitants of the planet”
Rest of course

- Eating out - fast food/restaurants
- How to read food labels
- “What I ate” : Before and After-Diet analysis
- Your body chemistry
- How you digest food
Dietary Guidelines for Americans 2005/2010 - Specific Recommendations - importance of each
• Nutrition relationship to:
  1) Heart Disease
  2) Diabetes
  3) Obesity
  4) Cancer
  5) Alcoholism
  6) Eating Disorders
“Americans now eat more than one third of their meals outside the home.”

Conclusion: Restaurant food can have a significant influence on your diet
Marketing Food
“Life Tastes Better with KFC”
“Eat Like a Man” Taco Bell
“Come Hungry, Leave Happy” IHOP
“Better-For You Choices” DDSmart
Marketing Food to Children

Hey, Kids! Want a Toy with That Dog and Fries?

Obesity levels have tripled among children in the past three decades. Now the TV ads, internet games, and prizes that appeal to young customers are coming.

How do you McNugget?

Duel 'Em
Stab 'em with a straw!
Slosh 'em in some sauce!

Swamp 'Em
Mix up different sauces!
Splash 'em in your mix!

mcdonalds.com/shrek

Shrek figures were available for a limited time, while supplies last. Prices and participation may vary.

© 2004 DreamWorks Animation LLC. DreamWorks, Shrek and all related titles, characters and elements are trademarks and/or copyrights of DreamWorks LLC. All rights reserved.
USDA- Restaurant Food

1) Serving size ↑ over the years
2) Restaurant food: more fat, saturated fat, cholesterol, and sodium than food cooked at home

3) More food - more calories
4) Restaurant food: less calcium, fiber, and iron
Portion Distortion

30 years ago

Percent increase in portion size

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<thead>
<tr>
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<th>30 years ago</th>
<th>Today</th>
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<tr>
<td>Soft drinks</td>
<td>62%</td>
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<tr>
<td>French fries</td>
<td>57%</td>
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<tr>
<td>Cheeseburgers</td>
<td>24%</td>
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McDonald’s Trims Its Happy Meal
Sept 2011: It’s a start
Response to: consumer pressure, lawsuits

<table>
<thead>
<tr>
<th>OLD MEAL</th>
<th>NEW MEAL</th>
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<tr>
<td>CALORIES</td>
<td>520</td>
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<td>520</td>
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<tr>
<td>TOTAL FAT</td>
<td>26g</td>
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<td>19g</td>
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<tr>
<td>SATURATED FAT</td>
<td>5g</td>
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<tr>
<td>4.5g</td>
<td></td>
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<tr>
<td>SUGARS</td>
<td>12g</td>
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<tr>
<td>15g</td>
<td></td>
</tr>
<tr>
<td>SODIUM</td>
<td>690 mg</td>
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<tr>
<td>550 mg</td>
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SERVINGS OF FRIES will be less than half the size of those in the current Happy Meal.

1% MILK is shown in this example, but if Coca-Cola were substituted, the total amount of sugars would more than double. A fat-free chocolate milk option will also be offered.

McNUGGETS will stay the same as in previous Happy Meals.

APPLE SLICES will be added to all Happy Meals, instead of being an optional replacement for fries.
“New” Happy Meal

- Calories 520 → 410
- Total Fat 26g → 19g
- Sat’d Fat 5g → 4.5g
- Sugars 12g → 15g
- Sodium 690 mg → 560 mg
- 1% Milk available, options: Coke or fat-free chocolate milk
- **No change McNuggets**
- Reduce fries 50%, add apple slices
- **Toy Included**- marketing to children
KFC: “Who’s the fattiest of them all?”
4/26/10 NY Times

Double Down sandwich: 2 fried chicken breasts, bacon, cheese, special sauce
540 calories
Calories Count

• NY City requires: “calorie counts”- near price: some restaurants

• Required postings all big restaurants- new federal Health Care Legislation

• Why is this important?
• Chili’s:
  1) Chicken Caesar Salad: 1,010 calories (76 grams fat)
  2) Classic sirloin steak: 540 calories (42 grams fat)

• Subway:
  1) Tuna sandwich: 530 calories
  2) Roast beef sandwich: 290 calories
What you can do: practical tips

Common Sense

- Ask for “Nutrition Information” sheet
- Look at the food on your plate
- If too much- cut in half → share with friend
- bring home- refrigerate (leftovers taste great)
• Pick broiled, roasted, grilled, boiled, or steamed foods
• Avoid fried foods
• Ask server: “What kind of fat/oil was used to cook food?”
• Good: liquid, vegetable oils (canola, olive oil, corn oil)
• Bad: butter, lard
• Ask server to hold **MSG**
• Look for “weight watchers”, “lighter fare”, “heart healthy”, “low fat”, “Best Bites” on menu
• Drink water with lemon instead of soft drinks
• Limit **alcohol**- calories without nutrients
• Use **skim or low fat milk** instead of **cream** in coffee
• Use mustard or ketchup instead of mayo on sandwiches

• Consider egg substitutes or whites instead of whole eggs

• Ask for salad dressing (non- or low-fat) on the side
• Order baked potato or whole-grain (brown) rice instead of fries

• Consider fresh fruit or low fat yogurt for dessert

• Ask questions- You are paying for the food you eat- you have a right to know
Dietary Guidelines for Americans 2005

Just the Facts

Recommendations
EXERCISE

How Much Every Day?

Recommendations:

30 Minutes per Day - moderate
to help prevent heart disease

60 Minutes per Day - moderate to vigorous
to keep healthy weight and prevent heart disease

60 to 90 Minutes per Day - moderate
to help lose weight and prevent heart disease
FOOD GROUPS

Combos are good: mix-and-match foods from all groups everyday

1. Grains 6 ounce equivalents /day [3 whole grains]
2. Vegetables 2 1/2 cups /day [dark green/orange]
3. Fruits 2 cups /day
4. Milk 3 cups /day [yogurt, cheese]
5. Meat & Beans 5 1/2 ounce equivalents /day [meat, chicken, turkey, fish, beans, peas, eggs, seeds and nuts]
Recommendation:

6 ounce equivalents per day
At least 3 ounce equivalents of whole-grain foods

1 ounce equivalent is:
- 1 slice of bread,
- or 1 cup of dry cereal,
- or 1/2 cup of cooked rice, cereal, or pasta

Food label Key Words:
“100% whole grain” or “whole grain”

Consider These:
- whole wheat
- whole-grain corn
- whole-grain barley
- wild rice
- buckwheat
- millet
- quinoa
- whole oats/oatmeal
- popcorn
- whole rye
- brown rice
- triticale
- bulgur
- sorghum
Recommendation:

Eat 2 1/2 cups every day - fresh, frozen, canned, cooked, or raw

Consider These:
Broccoli, spinach, carrots, sweet potatoes, squash, pumpkin, dry beans, green beans, chickpeas, tofu, corn, potatoes, peas, tomatoes, cabbage, celery, cucumber, lettuce, onions, peppers, cauliflower, mushrooms
FRUITS

Recommendation:

Eat 2 cups everyday - variety is good

Consider These:

- apricots
- dates
- grapefruit juice
- mangoes
- orange juice
- pineapples
- strawberries
- apples
- grapes
- guava
- melons
- papaya
- prunes
- bananas
- grapefruit
- kiwi fruit
- oranges
- peaches
- raisins
- tangerines
Recommendation:

3 cups per day

1 cup equivalent is:
1 cup of milk
or
1 cup of yogurt
or
1 1/2 ounces of cheese

Food label Key Words: “fat-free” or “low-fat”

Consider These:
Fat-free or low-fat milk, yogurt, cheeses (low-sodium), soy, rice, oat, or almond milk, lactose-free milk
LEAN MEAT, CHICKEN, FISH, BEANS, PEAS, NUTS

Meats, Poultry, Fish
Dry Beans - Peas - Eggs - Nuts

Recommendation:
51/2 ounce equivalents/day

1 ounce equivalent is:
1 ounce of meat, poultry, or fish
or 1/4 cup cooked dry beans
or 1 egg
or 1 tablespoon peanut butter
or 1/2 ounce of nuts or seeds

Food Label Key words:
Low-fat, lean, extra-lean, trimmed meats,
skinless poultry
Consider These:
Fish, beans, peas, nuts and seeds
FATS & OILS

TOTAL FAT

Recommendation:

Total Fat: less than 65 grams per day

Food label Key Words: “lean”, “low-fat”, “fat-free”

Total fat in your diet =

- Saturated................(bad)
- Trans....................(bad)
- Cholesterol...............(bad)
- Polyunsaturated...........(good)
- Omega 3.................(good)
- Monounsaturated........(good)
SATURATED FAT

FATS & OILS
SATURATED FAT - BAD FAT

Recommendation:

Less than 20 grams per day

Limit: (examples - contain 6 or more grams per serving)

beef (chuck), bologna, burritos, cheeses (cheddar, cream) enchiladas, frozen dinners (some), gravies (some), hamburger, ham loaf, hot dog (beef), ice cream, lamb chops, meat loaf, cheese omelet, pastas with cheese, parmigiana (chicken, veal, eggplant), pies (some), pizza, sauces (some) sausage, spareribs, steaks, tacos
TRANS FAT

BAD FATS

Recommendation:

Eat as little as possible.

Food Label Key Words: “hydrogenated”, “partially hydrogenated”, “trans fat”

Limit These: cakes, cookies, crackers, pies, bread, some margarines, French fries, potato chips, corn chips, buttered popcorn, shortenings.
Recommendation:

less than 300 milligrams per day

Limit:
[examples - contain 100 or more milligrams per serving]

beef (chuck), cheese souffle, chicken leg with skin, desserts (eclair, mousse, some pies), eggs, frozen dinners (some), ham loaf, kidney, lamb (leg), liver, lobster newburg, meatloaf, parmigiana (chicken, veal), pastas with cheese (some), quiche, shrimp creole, spareribs, steak (chicken fried, salisbury), sub sandwich (salami & cheese)
FATS & OILS

GOOD FATS

Recommendation:

Polyunsaturated +
Monounsaturated less than 45 grams per day

Food label Key Words:
polyunsaturated, monounsaturated

Consider These:
flaxseed, nuts (unsalted),
seeds (sesame, sunflower)
liquid vegetable oils: canola, corn, olive,
safflower, soybean, margarine (tub)
**SODIUM**

Limit: 2300 milligrams per day

**Food Label Key Words:**
- low sodium, low salt, no-salt added,
- reduced sodium/salt, sodium-free, unsalted

**Limit salt:**
- At the table, when eating out,
- “ready-to-eat” foods

**Consider:**
- salt substitutes, spices/herbs,
- fresh foods
POTASSIUM

Recommendation:

4,700 milligrams per day

Consider these:

Tomato paste/puree/sauce, sweet potato, beet greens, baked potato, beans (white, soy, lima, kidney), cooked dry beans, yogurt, clams, prune juice, carrot juice, blackstrap molasses, halibut, tuna, winter squash, rockfish, cod, bananas, spinach, tomato juice, peaches, prunes, non-fat/low-fat milk, apricot, rainbow trout, cantaloupe, honeydew melon, lentils, plantains, oranges, orange juice, split peas.
Limit “added” sugars: calories without nutrients

Food Label Key Words:
other names for “added” sugar -
brown sugar, corn sweetener, corn syrup, dextrose, fructose, fruit juice concentrates, glucose, high-fructose corn syrup, honey, invert sugar, lactose, maltose, malt-syrup, molasses, raw sugar, sucrose, syrup
FIBER
THE GOOD CARB

Recommendation:

25-28 grams every day

Consider these:
Beans (all types), bran cereal, split peas, lentils, artichoke, chick peas, cowpeas, soybeans, rye wafers, sweet-potato, pears, green peas, whole-wheat English muffin, bulgur, mixed vegetables, raspberries, black berries, baked potato with skin, prunes, figs, dates, oat bran, pumpkin, spinach, shredded wheat, almonds, apple with skin, brussels sprouts, whole-wheat spaghetti, banana, orange, oat bran muffin, guava, cooked barley, sauerkraut, tomato paste, winter squash, broccoli, parsnips, turnip greens, collards, okra.
ALCOHOL

In Moderation - Set Limits

1. Drink per day - Women
2. Drinks per day - Men

Calories...but few nutrients

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<th>Average Serving</th>
<th>Calories</th>
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<tr>
<td>Beer (light)</td>
<td>108</td>
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<tr>
<td>White Wine</td>
<td>100</td>
</tr>
<tr>
<td>Red wine</td>
<td>105</td>
</tr>
<tr>
<td>Sweet Dessert Wine</td>
<td>141</td>
</tr>
<tr>
<td>Liquor</td>
<td>96</td>
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</table>
EATING SAFELY

FOOD SAFETY

- Wash hands - soap and water
- Wash food counter surfaces
- Wash fruits and vegetables
- Keep separate - raw, cooked, ready-to-eat foods
- Cook foods at temperatures that kill bacteria
- Refrigerate foods right after use
- Avoid raw, partially cooked, under cooked, unpasteurized foods
HOW TO READ FOOD LABELS

• Assignment: Bring in food labels for every class
• Bring in Fast Food Nutrition Information sheets
• Print out nutrition information-restaurant WEB sites (Unos.com)
Nutrition Facts (Food Labels)

• Best way to know about what you are eating and drinking

• All food labels uniform: same information, same order
Two Groups of Nutrients

- Limit Some
- Increase others
Carbohydrate (sugars and starches)
4 kcal per gram

Protein
4 kcal per gram

Energy sources for the body

Fat
9 kcal per gram

Alcohol
7 kcal per gram
Reading Food Labels: a Simple Method

Based on 2000 calorie “reference” diet

Two categories of nutrients:
1) Limit per day
2) Goals per day
Ingredients: Listed from highest to lowest in amount

- **Good words**: 100% whole-grain, whole wheat, fiber, vitamin A, vitamin C, vitamin E, calcium, iron

- **Not so good words**: hydrogenated, partially hydrogenated, sodium, salt, sugar, sucrose, glucose, high fructose corn syrup, corn syrup, maple syrup, fructose
## Nutrition Facts

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<th>Servings Per Container</th>
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<table>
<thead>
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<table>
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<th>Calories</th>
<th>% Daily Value*</th>
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Look Here First
Read and know what you are eating.

Good: whole, whole grain

Not Good: salt, sodium, sugar, hydrogenated, partially hydrogenated
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Look Here
Next
This is
1 serving
## Nutrition Facts

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**Servings Per Container**

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<tbody>
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**Ingredients:**

Your daily calorie limit is based on your activity level and if you want to lose weight, gain weight, or stay the same.
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#### Amount Per Serving

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#### Ingredients:

*Your FAT limit per day.*

**65 grams**

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*Find THIS Number*  
...and Compare it with THIS Number*
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Find THIS Number

...and Compare it with THIS Number

Your SATURATED FAT limit per day.
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</table>

| Vitamin A | Vitamin C | Calcium | Iron |

**Ingredients:**

- 45 grams

Your POLY + MONO UNSATURATED FAT limit per day.

Find THESE 2 Numbers, add them together...and Compare it with THIS Number.
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Ingredients:

- Your CHOLESTEROL limit per day.
### Nutrition Facts

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**Ingredients:**

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*Your SODIUM (salt) limit per day.*

2300 MILLIGRAMS

*Find THIS Number... and Compare it with THIS Number*
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**Servings Per Container**  

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4700 MILLIGRAMS  

Your POTASSIUM GOAL per day.

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Fruits, Vegetables, Whole Grains, & Low/Non-Fat Milk Products

Most Important

This amount will vary in your diet

...get most of your carbs from these
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**Total Fat**

- Saturated Fat
- Trans Fat
- Polyunsaturated
- Monounsaturated

**Cholesterol**

**Sodium**

**Potassium**

**Total Carbohydrate**

- Dietary Fiber
- Sugars

**Protein**

- Vitamin A
- Vitamin C
- Calcium
- Iron

**Ingredients:**

- 25-28 GRAMS

Your FIBER GOAL per day.

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*Find THIS Number...
...and Compare it with THIS Number*
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**Ingredients:**

LIMIT THESE:
(all are “added” sugars)
Brown sugar, corn sweetener, corn/malt syrup, dextrose, fructose, fruit juice concentrate, glucose, honey, lactose, maltose, molasses, sucrose, sugar

Does not separate sugars into “added” vs. “natural”

Look HERE to find the “added” sugar
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**Ingredients:**

- Lean meat, skinless poultry, fish, dry beans, peas, eggs, nuts, and seeds
- THIS Amount Will Vary in Your Diet
- Get Your Protein from These
<table>
<thead>
<tr>
<th>Amount Per Serving</th>
<th>Calories</th>
<th>% Daily Value*</th>
</tr>
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<tbody>
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</table>

**Total Fat**
- Saturated Fat
- Trans Fat
- Polyunsaturated
- Monounsaturated

**Cholesterol**

**Sodium**

**Potassium**

**Total Carbohydrate**
- Dietary Fiber
- Sugars

**Protein**

**Vitamin A**

**Vitamin C**

**Calcium**

**Iron**

**Ingredients:**

**Find THESE Percentages**

**Compare with Your Goals for the Day**

100%
Dietary Guidelines for Americans 2010

“A call to action” DGA Advisory Committee

• “America experiencing public health crisis involving overweight and obesity

• American children: 1 in 3 overweight or obese

• ↑ Risk- heart disease and diabetes

• Cost: treating obesity related diseases: $150 billion/year

• Best strategy: primary prevention starting in pregnancy and childhood

• High risk: native Americans, Blacks, Hispanics, low income groups
Obesity in children—may start in womb

- Women gain excessive weight during pregnancy
- Have bigger babies
- ↑ Risk of overweight children
- ↑ Risk diabetes, heart disease, cancer later in life
2010: the average child eats:

365 calories/day in **added sugars**
433 calories/day in **solid fats**
798 calories/day (1/3 of total calorie intake)
Dietary Guidelines for Americans 2010

Recommendations- based on 4 integrated findings

#1 Reduce overweight and obese Americans by decreasing overall calories and increasing physical activity
Dietary Guidelines for Americans 2010

How to do it:

- Know your calorie need: age, sex, activity
- Calories from added sugars, solid fats, refined grains
- Variety veggies, fruits, fiber-rich whole grains
- Sugar-sweetened drinks
- Eat smaller portions - high calorie foods
- Dining out: eat low calorie foods
- Physical activity
#2 Meet nutrient needs and maintain energy (calorie) balance

- Increase **shortfall** nutrients: potassium, fiber, vitamin D, calcium
How to do it:
• Shift eating to more **plants foods**
• Veggies
• Cooked dry beans and peas
• Fruits
• Whole grains
• Nuts and seeds
• Seafood
• Fat-free, low fat milk and milk products
• Eat moderate amounts: lean meats, poultry, eggs
#3 Decrease significantly: foods that are **high** in calories and **low** in nutrients
How to do it:

- Added sugars
- Solid fats
- Sodium
- Refined Grains

Why? Foods linked: to weight gain, high blood pressure, heart disease, diabetes
#4 Meet 2008 Physical Activity Guidelines for Americans

- Decrease Sedentary Behavior
- Increase Physical Activity
DIETARY GUIDELINES FOR AMERICANS 2010
KEY RECOMMENDATIONS
SIMPLE VERSION
DIETARY GUIDELINES 2010

• Limit calories to maintain healthy weight
• Eat foods from all food groups
• Eat nutrient dense foods
• Reduce solid fats (saturated & trans fats)
• Eat instead mono- and polyunsaturated fats
• Reduce added sugars
• Reduce refined grains
DIETARY GUIDELINES 2010

• Increase whole grains
• Reduce sodium
• Limit alcohol: moderate amounts
• Eat more fruits and veggies
• Increase fat-free or low fat milk, yogurt, cheese
• Replace some meat and poultry with seafood
Dietary Guidelines for Americans 2010: Detail

Balancing Calories

- Control calories $\rightarrow$ Control weight
- Overweight/obese: $\downarrow$ calories in food and drink
- Physical activity
- Sitting around
Foods to Decrease
Eat less:

• Salt  < 2300 mg/day
• Better yet  <1500 mg/day
• Salt: African Americans, people ≥ 51, people with hypertension, diabetes, kidney disease
• Eat  < 10% daily calories- saturated fat
Eat Less:

- Replace saturated fat with mono- and polyunsaturated fat
- Eat < 300 mg cholesterol/day
- Keep Trans Fats (partially hydrogenated) as low as possible
- Solid Fats (saturated, trans fats)
- Added (vs. natural) sugar
- Refined grains
- Limit alcohol: 1 drink/day women
  2 drinks/day men
Foods and Nutrients to Increase

- Fruits
- Veggies (dark green, red, orange)
- Beans and Peas (legumes)
- Whole grains (50% of total grains)
- Fat or low fat milk, yogurt, cheese, or soy drinks
Eat a variety of protein foods

- Seafood
- Lean meat (lower in solid fats)
- Poultry
- Eggs
- Beans
- Peas
- Soy products

↑ Seafood in place of meat/poultry
Foods and Nutrients to Increase

- Oils instead of solid fats
- Foods rich in potassium, fiber, calcium, vitamin D (nutrients of concern)

1) Veggies
2) Fruits
3) Whole grains
4) Milk, yogurt, cheese
Develop a healthy eating pattern

• Good balance nutrients vs. calories
• You can stick with over time
• Review all of your food and drinks
• Be aware of food safety (storing, handling, preparing, cooking)
Women who might become pregnant

• Pick foods rich in heme iron (lean meat, poultry, seafood) (better absorption) and vitamin C (helps iron absorption)

• Take in 400 micrograms/day of folic acid (fortified foods and/or supplements) (protection- neural tube disorders)
Women: pregnant or breast feeding

- Eat 8-12 ounces/week of variety of seafood
- Limit white (albacore) tuna (high in mercury) to 6 ounces/week
- Don’t eat: tilefish, shark, swordfish, king mackerel (high mercury)
- Take an iron supplement
People ≥ 50

- Eat foods with fortified vitamin B12 (DNA synthesis, myelin sheath nerve cells) (cereals)
- Take a vitamin B12 supplement
Dietary Guidelines

Meet 2008 Physical Activity Guidelines for Americans

• Decrease Sedentary Behavior
• Increase Physical Activity