Welcome back! Group Quiz Bowl #1 fun!

Don't be bashful! Speak up & participate!

BL 199 Discussion 2

I. Announcements Project Safe Ride! Q from last time? Paper topics due prior to discussion next Monday. Send to Pat @ lombardi@uoregon.edu

II. Paper & Presentation Guidelines Q?

III. Informal Group Work to Discuss Potential Topics

IV. Quiz Bowl on Chapter 1 Group competition p 23+

V. Changing Behaviors in Memory of Jean! pp 18-20

VI. Group Activity Tables inside front cover DRI, RDA, AI, UL? Trends? For which nutrients are ♀ requirements >♂? Why?

VII. Dietary Recommended Intakes What? How established? RDA, AI, UL, EAR → RDA, AMDR, HEI pp 32-7 vs. DV? p 50

VIII. Group Vending Machine Exploration!

IX. Dietary Guidelines for Americans ChooseMyPlate pp 37-9, evolution, diet planning, discretionary cal? pp 37-49

X. Think Fitness p 42 + ACSM/CDC, USDA/HHS guidelines
Paper Guidelines

1. **Any topic** on any controversy related to nutrition, If controversy from text, *ch* 10-15, rather than *ch* 1-9

2. **6 pages**, double-sided, double-spaced, ≥ 10 point, simple font (e.g., Arial, Cambri, Times, Universal)

3. **Include Headers** *Introduction*, topic *Headers*, *Directions for Future Research*, *Summary & Conclusions*, *References*

4. **1 page of references** (so total = 7 pages), 8 point OK ≥ 10 references of which < 5 web-based (.edu,.org,.gov)

5. **Top resources** Science Library + (see S&W pp 19-20 & 26)
   - [http://www.adajournal.org](http://www.adajournal.org), [http://www.ajcn.org](http://www.ajcn.org)
   - [http://www.heart.org](http://www.heart.org) (click on Getting Healthy)

6. **Due dates** e-mail to **lombardia@uoregon.edu** Oct 12 (topic), Oct 26 (outline), Nov 16 (draft). **Dec 4 (final paper)** put in Pat's box < 5 pm in Main Biology Office, 77 Klamath.
Seek Accurate & Reliable Peer-Reviewed Resources!
Outstanding Peer-Reviewed Lay Resources
Presentation Guidelines

1. **Same topic** as controversy covered in paper.
2. **8-10 min**, +4-5 min added for questions, answers & discussion.
3. **Any medium** .ppt, overheads, large-font thematic poster, skit, home-made video,...
   *NB*: Must notify Pat of equipment needs by 12 n Friday prior to presentation.
4. **Concise summary** of your findings, e.g., 5-6 .ppt slides, 5-6 key points, ID controversy, limited background, **colorful** with few words, summary & conclusions/take-home message.
Group Work to Discuss Potential Topics
1. **Energy-yielding nutrients** include all of the below except:
   a. vitamins  b. carbohydrates  c. fat  d. protein

2. **Organic nutrients** include all of the following except:
   a. minerals  b. fat  c. carbohydrates  d. protein

3. A **nutritious diet** provides no constituent in excess. This principle of diet planning is called:
   a. adequacy  b. balance  c. moderation  d. variety

4. A **peach pie slice** supplies **357 calories** with **48 IU of vit A**; one **large peach** has **42 calories** with **53 IU of vit A**. This is an example of:
   a. calorie control  
   b. nutrient density  
   c. variety  
   d. essential nutrients
Quiz Bowl on Chapter 1: Group Competition

5. Which is a processed food?
   a. carrots       b. bread          c. nuts            d. watermelon

6. Studies of populations in which observation is accompanied by experimental manipulation are ___ studies
   a. case   b. intervention   c. laboratory   d. epidemiological

7. Both heart disease and cancer are due to genetic causes and diet cannot influence whether they occur. T or F

8. People most often choose foods for the nutrients they provide. T or F

9. Both carbohydrates and protein have 4 calories/gram. T or F

10. One large, hard-boiled egg contains \(~0.5 \text{~g~carbohydrate} \~5 \text{~g~of~fat}, \& \~6 \text{~g~of~protein}\). Approximately how many calories would you ingest, if you eat the entire egg? How did you arrive at your answer?
Behavior Change Requires Awareness!
GUESS WHAT, CHARLIE BROWN—
I'VE BEEN PICKED TO BE THE
POSTER CHILD FOR AIR QUALITY
IN KNOXVILLE, TENNESSEE.

OR... THAT'S GREAT, PIGPEN...

WITH APOLOGIES TO PEANUTS...
Stages of Behavior Change

1. **Precontemplation** – Not considering change

2. **Contemplation** – Admit change may be needed

3. **Preparation** – Prepare to change, initial steps

4. **Action** – Committing time & energy

5. **Maintenance** – Integrating into daily life!

6. **Adoption** – New routine, former is gone!

Dedicated to JVL!
Group Activity: DRI, EER, RDA, AI, UL
Tables inside front cover

1. Any trends or general observations?

2. For which nutrients are requirements for females > for males? Ideas why?
Dietary Reference Intakes (DRI)

Set of standards established by research & used as goals in the US & Canada for energy (EER), carbohydrates & fiber, fats, proteins, water, vitamins & minerals (RDA/AI)
Vitamins and Minerals

Number of people

Daily requirement for nutrient X (units/day)

EAR\(^a\)  Recommended intake (RDA)

\(^a\)Estimated Average Requirement
## US Dietary Recommended Intakes (DRI) Committee Acceptable Macronutrient Distribution Ranges (AMDR)

<table>
<thead>
<tr>
<th>Energy Nutrient</th>
<th>% Total Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbohydrate</td>
<td>45-65%</td>
</tr>
<tr>
<td>Fat</td>
<td>20-35%</td>
</tr>
<tr>
<td>Protein</td>
<td>10-35%</td>
</tr>
</tbody>
</table>
Emphasize ABCs + Variety & Moderation!
How Does the Typical U.S. Diet Stack Up?

The bars below reflect the average diet of people in the United States, from toddlers to the elderly. The top part of the figure indicates serious shortages of nutrient-dense foods and nutrients; the bottom part indicates an overabundance of foods and nutrients that should be limited for health’s sake.

**Need more:**
- Whole grains: 15%
- Vegetables: 59%
- Fruits: 42%
- Milk/milk products: 52%
- Seafood: 44%
- Oils: 61%
- Fiber: 40%
- Potassium: 56%
- Vitamin D: 28%
- Calcium: 75%

**Goal**

**Need less:**
- Solid fats/added sugars*: 280%
- Refined grains: 200%
- Sodium: 149%
- Saturated fat: 110%

*Measured in calories.


What the heck is a DV or Daily Value?
Information relative to 2000 kcal diet

S&W 2011 p 50
Approved health claims stated in terms of the total diet

The name and address of the manufacturer, packer, or distributor

The common or usual product name

Approved nutrient claims if the product meets specified criteria

The net contents in weight, measure, or count

Approved health claims stated in terms of the total diet
4 oz $\rightarrow$ 3 oz

Deck of Cards

or

1 c

raw $\rightarrow$ cooked

1/3 c

1 oz

1.5 oz
Group Exploration: Vending Machine Nutrition? Nutrient Density?
2. Focus on fruits. Whole fruit preferable to juice, but any fruit counts! Fill ½ your plate with fruits & vegetables!

3. Make at least ½ of your grains whole grains!

4. Go lean with protein. Keep protein to < ¼ plate! Nuts, beans, peas, seeds, poultry, lean meat, seafood,…

5. Get your calcium-rich foods. Buy skim or 1% milk. Go easy on cheese!

1. Vary your veggies. Fill ½ your plate with fruits & vegetables!

ChooseMyPlate.gov
Make $\geq \frac{1}{2}$ of your grain selections whole grains!

**Key:**
- ● Foods generally high in nutrient density (choose most often)
- ▲ Foods lower in nutrient density (limit selections)

**Make at least half of the grain selections whole grains.**

These foods contribute folate, niacin, riboflavin, thiamin, iron, magnesium, selenium, and fiber.

- **1 oz grains is equivalent to:**
  - 1 slice bread
  - $\frac{1}{2}$ c cooked rice, pasta, or cereal
  - 1 oz dry pasta or rice
  - 1 c ready-to-eat cereal
  - 3 c popped popcorn

- ● Whole grains (amaranth, barley, brown rice, buckwheat, bulgur, millet, oats, quinoa, rye, wheat) and whole-grain, low-fat breads, cereals, crackers, and pastas; popcorn.

- ● Enriched bagels, breads, cereals, pastas (couscous, macaroni, spaghetti), pretzels, rice, rolls, tortillas.

- ▲ Biscuits, cakes, cookies, cornbread, crackers, croissants, doughnuts, french toast, fried rice, granola, muffins, pancakes, pastries, pies, presweetened cereals, taco shells, waffles.
Choose a variety of vegetables each day!

Key:
- Foods generally high in nutrient density (choose most often)
- Foods lower in nutrient density (limit selections)

VEGETABLES

Choose a variety of vegetables each day, and choose from all five subgroups several times a week.

These foods contribute folate, vitamin A, vitamin C, vitamin K, vitamin E, magnesium, potassium, and fiber.

1 c vegetables is equivalent to 1 c cut-up raw or cooked vegetables; 1 c cooked legumes; 1 c vegetable juice; 2 c raw, leafy greens.

Vegetable subgroups

1. Dark green vegetables: Broccoli and leafy greens such as arugula, beet greens, bok choy, collard greens, kale, mustard greens, romaine lettuce, spinach, and turnip greens.
2. Orange and deep yellow vegetables: Carrots, carrot juice, pumpkin, sweet potatoes, and winter squash (acorn, butternut).
3. Legumes: Black beans, black-eyed peas, garbanzo beans (chickpeas), kidney beans, lentils, navy beans, pinto beans, soybeans and soy products such as tofu, and split peas.
4. Starchy vegetables: Cassava, corn, green peas, hominy, lima beans, and potatoes.
5. Other vegetables: Artichokes, asparagus, bamboo shoots, bean sprouts, beets, brussels sprouts, cabbages, cactus, cauliflower, celery, cucumbers, eggplant, green beans, iceberg lettuce, mushrooms, okra, onions, peppers, seaweed, snow peas, tomatoes, vegetable juices, zucchini.

▲ Baked beans, candied sweet potatoes, coleslaw, french fries, potato salad, refried beans, scalloped potatoes, tempura vegetables.
Choose a variety of fruits & ≤ ½ as juice!

Key:
- Foods generally high in nutrient density (choose most often)
- Foods lower in nutrient density (limit selections)

FRUITS

Consume a variety of fruits and no more than one-half of the recommended intake as fruit juice.

These foods contribute folate, vitamin A, vitamin C, potassium, and fiber.

1 c fruit is equivalent to 1 c fresh, frozen, or canned fruit; ½ c dried fruit; 1 c fruit juice.

- Apples, apricots, avocados, bananas, blueberries, cantaloupe, cherries, grapefruit, grapes, guava, kiwi, mango, nectarines, oranges, papaya, peaches, pears, pineapples, plums, raspberries, strawberries, tangerines, watermelon; dried fruit (dates, figs, raisins); unsweetened juices.

- Canned or frozen fruit in syrup; juices, punches, and fruit drinks with added sugars; fried plantains.
Make fat-free or low-fat dairy choices!  

Make fat-free or low-fat choices. Choose lactose-free products or other calcium-rich foods if you don’t consume milk.

These foods contribute protein, riboflavin, vitamin B₁₂, calcium, magnesium, potassium, and, when fortified, vitamin A and vitamin D.

1 c milk is equivalent to 1 c fat-free milk or yogurt; 1½ oz fat-free natural cheese; 2 oz fat-free processed cheese.

- Fat-free milk and fat-free milk products such as buttermilk, cheeses, cottage cheese, yogurt; fat-free fortified soy milk.

⚠️ 1% low-fat milk, 2% reduced-fat milk, and whole milk; low-fat, reduced-fat, and whole-milk products such as cheeses, cottage cheese, and yogurt; milk products with added sugars such as chocolate milk, custard, ice cream, ice milk, milk shakes, pudding, sherbet; fortified soy milk.
If you eat meat, make lean or low-fat meat choices!

Make lean or low-fat choices. Prepare them with little, or no, added fat.

Meat, poultry, fish, and eggs contribute protein, niacin, thiamin, vitamin B₆, vitamin B₁₂, iron, magnesium, potassium, and zinc; legumes and nuts are notable for their protein, folate, thiamin, vitamin E, iron, magnesium, potassium, zinc, and fiber.

1 oz meat is equivalent to 1 oz cooked lean meat, poultry, or fish; 1 egg; ¼ c cooked legumes or tofu; 1 tbs peanut butter; ½ oz nuts or seeds.

- Poultry (no skin), fish, shellfish, legumes, eggs, lean meat (fat-trimmed beef, game, ham, lamb, pork); low-fat tofu, tempeh, peanut butter, nuts (almonds, filberts, peanuts, pistachios, walnuts) or seeds (flaxseeds, pumpkin seeds, sunflower seeds).

- Bacon; baked beans; fried meat, fish, poultry, eggs, or tofu; refried beans; ground beef; hot dogs; luncheon meats; marbled steaks; poultry with skin; sausages; spare ribs.
Select recommended oils & limit amounts!

Select the recommended amounts of oils from among these sources.

These foods contribute vitamin E and essential fatty acids (see Chapter 5), along with abundant calories.

- Liquid vegetable oils such as canola, corn, flaxseed, nut, olive, peanut, safflower, sesame, soybean, and sunflower oils; mayonnaise, oil-based salad dressing, soft trans-free margarine.

- Unsaturated oils that occur naturally in foods such as avocados, fatty fish, nuts, olives, seeds (flaxseeds, sesame seeds), and shellfish.
Limit solid fats & added sugars!

Limit intakes of food and beverages with solid fats and added sugars.

Solid fats deliver saturated fat and trans fat, and intake should be kept low. Solid fats and added sugars contribute abundant calories but few nutrients, and intakes should not exceed the discretionary calorie allowance—calories to meet energy needs after all nutrient needs have been met with nutrient-dense foods. Alcohol also contributes abundant calories but few nutrients, and its calories are counted among discretionary calories. See Table 2-2 on page 44 for some discretionary calorie allowances.

▲ Solid fats that occur in foods naturally such as milk fat and meat fat (see ▲ in previous lists).

▲ Solid fats that are often added to foods such as butter, cream cheese, hard margarine, lard, sour cream, and shortening.

▲ Added sugars such as brown sugar, candy, honey, jelly, molasses, soft drinks, sugar, and syrup.

▲ Alcoholic beverages include beer, wine, and liquor.
Figure 2-6
How Solid Fats and Added Sugars Add Calories to Nutrient-Dense Foods

- Regular ground beef patty (75% lean) cooked, 3 oz: 184 calories in nutrient-dense form, 52 additional calories, total 236 calories.
- Breaded fried chicken strips, 3 oz: 138 calories in nutrient-dense form, 108 additional calories, total 246 calories.
- Frosted corn flakes cereal, 1 c: 90 calories in nutrient-dense form, 57 additional calories, total 147 calories.
- Curly French fried potatoes, 1 c: 117 calories in nutrient-dense form, 141 additional calories, total 258 calories.
- Sweetened applesauce, 1 c: 105 calories in nutrient-dense form, 68 additional calories, total 173 calories.
- Whole milk, 1 c: 83 calories in nutrient-dense form, 66 additional calories, total 149 calories.

Figure 2–7
Discretionary Calorie Concept

The discretionary calorie allowance sets the upper limit for calories from added sugars and solid fats in USDA Food Patterns.
History of Establishing Guidelines for Americans
US Modifications to 1992 Food Pyramid 2005

Fats, oils, and sweets
Use sparingly

"good" fats!
saturated & trans fats!

Milk, yogurt, and cheese group
2–3 servings

3 or more!

Vegetable group
3–5 servings

5 or more!

Meat, poultry, fish, dry beans, eggs, and nuts group
2–3 servings

eg, fish, nuts
4 or more!

Fruit group
2–4 servings

Bread, rice, pasta group
6–11 servings

1/2 whole grain

Regular Physical Activity: Exercise! Exercise!!
1. ↑emphasis on ↓kcal + ↑exercise. 🌻
2. 9-A-Day! 4 fruit + 5 vegetable servings.
3. ≥ 3 of 6 whole grains → ½ whole grains!
4. 3 servings of dairy, eg 3 c fat-free milk.
5. ↓saturated + trans fats + ↑unsaturated/ “good” fats, eg Ω-3 fish, walnuts.
6. Drink in moderation if at all.
7. Practice food safety.
MyPlate.gov

Based on 2010 Dietary Guidelines Released June 2, 2011
American Heart Association (AHA) & National Heart, Lung & Blood Institute

http://www.my.americanheart.org

http://www.nih/nhlbi.gov

Department of Health and Human Services · National Institutes of Health

National Heart Lung and Blood Institute

People Science Health
We all have multimillion-dollar bodies!!

Can you believe that’s Nicole?

Hollywood glamour queen Nicole Kidman likes to swim to keep that multimillion-dollar body in shape. But the down-to-earth superstar doesn’t need a fancy spa — she does her laps at the local YMCA! Nice goggles, Nic!
Continuous exercise

> 50% muscle mass

> Conversational pace

20-60 min/session

3-5 days/wk

Do moderately intense aerobic exercise
30 min/d, 5 d/wk

OR

Do vigorously intense aerobic exercise
20 min/d, 3 d/wk

AND

Do 8-10 strength-training exercises
8-12 repetitions/each exercise, 2 d/wk
How much strength?
- 2-3 days/week
- 8-10 exercises for major muscle groups
- >1 set/exercise
- 8-12 (most) or 10-15 (frail/> 50-60 yr) repetitions/set
Federal exercise guidelines include strength training for all

Adults: Moderate to Vigorous Exercise
> 30 min, 5 d/wk

Children: Moderate to Vigorous Exercise
> 60 min, 5 d/wk