Everything from here – is for FINAL EXAM!!!

- Chapter 16-30, materials from week 3-5 and please see your study guide for the FINAL exam – will be available during week 4.
Chapter 16

• Public Health Threat Number two and growing: Poor Diet and Physical Inactivity
Body-Mass Index

• Height (meters) divided by weight (kilograms) squared

• Healthy BMI is below 25

• BMI between 25 and 29.9 is overweight

• BMI of 30 and above is obese

• Pear shape vs. apple shape: waist to hip ratio
Epidemiology of Obesity

- Prevalence of overweight and obesity have been increasing since 1960s in males and females of all ages
- Among men, 71% are overweight and 33% are obese
- Among women, 61% are overweight and 35% are obese
- Black women are more likely than white women to be overweight or obese
- Black men and white men have the same prevalence of overweight and obesity
- Higher SES is associated with lower rates of overweight and obesity, especially among women
Figure 5.36  The percentiles for the ratio of abdominal circumference to gluteal circumference (or waist to hips) are shown for men (top figure) and women (bottom figure). These are preliminary norms. Source: Bray GA, Gray DS. Obesity: Part 1—Pathogenesis. West J Med 149:429–441, 1988. Reprinted by permission of the Western Journal of Medicine.
<table>
<thead>
<tr>
<th>Age (yr)</th>
<th>18–25</th>
<th>26–35</th>
<th>36–45</th>
<th>46–55</th>
<th>56–65</th>
<th>&gt;65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
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<td></td>
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<tr>
<td>Below average</td>
<td>70–72</td>
<td>72–76</td>
<td>69–71</td>
<td>72–74</td>
<td>70–72</td>
<td>72–75</td>
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</tbody>
</table>

Health Risks of Obesity

- Cardiovascular disease
- Diabetes
- Some cancer
- Arthritis
Overweight among Children

• Prevalence of overweight among 6 to 19 year olds increased from 5% to 15% between 1960s and 2000.
• High prevalence among Mexican American boys and African American girls
• Type 2 diabetes is being diagnosed in children
Diet and Nutrition

- Federal recommendations – Dietary Guidelines for Americans
- More fruits and vegetables
- Legumes
- Whole grains
- Low-fat milk and milk products
- Less refined grains
- Less total fats, especially cholesterol and saturated and trans fats
- Less added sugar and calories
- New Food Guide Pyramid
Diet and Nutrition

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- Legumes
- Whole grains
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- Less refined grains
- Less total fats, especially cholesterol and saturated and trans fats
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- New Food Guide Pyramid
What is a Serving Size?

**Dairy**—1 C milk or yogurt, 1⁄2 C cottage cheese, 1 oz. low fat cheese

**Plant oils**—1 tsp vegetable oil or trans fat free margarine

**Vegetables**—1 C salad, 1 C fresh veggies or 1⁄2 C cooked, 6 oz. juice

**Legumes**—1⁄3 C cooked beans, peas, lentils, or garbanzos

**Grains**—1 slice bread, 2⁄3 C dry cereal, 1⁄2 C cooked cereal, rice, or pasta

**Protein foods**—1 egg, 1⁄4 block tofu, 1 soy or Garden-burger®, 2 oz. fish or meat

**Fruit**—1 medium fresh fruit or 1⁄2 C canned, 1 C berries or melon, 6 oz. pure fruit juice

**Nuts**—1 oz. nuts or seeds, 2 T nut butter
MyPyramid

Source: USDA
"What d'ya mean!? I got the four basic food groups here ... ice cream, chips, chocolate and soda."
Dietary Surveys by USDA

- Only 1% to 3% of Americans eat recommended number of servings from all food groups
- Main vegetables are iceberg lettuce, potatoes including chips and fries, and canned tomatoes
- Increased intake of sweetened beverages, less milk
Promoting Healthy Eating

• Social environment promotes overeating
• Advertising by food industry, including ads aimed at children
• Very difficult to change eating patterns
• “5-a Day” campaign to increase consumption of fruits and vegetables
• Food labeling
• Best hope is to focus on children, starting with breast-feeding
## Nutrition Facts

<table>
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<tr>
<th>Amount/serving</th>
<th>% DV*</th>
<th>Amount/serving</th>
<th>% DV*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fat</td>
<td>2.5g</td>
<td>4%</td>
<td>Total Carb.</td>
</tr>
<tr>
<td>Sat. Fat</td>
<td>1.5g</td>
<td>8%</td>
<td>Fiber</td>
</tr>
<tr>
<td>Trans Fat</td>
<td>0g</td>
<td></td>
<td>Sugars</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>15mg</td>
<td>4%</td>
<td>Protein</td>
</tr>
<tr>
<td>Sodium</td>
<td>160mg</td>
<td>7%</td>
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</tr>
</tbody>
</table>

*Percent Daily Values (%DV) are based on a 2,000 calorie diet.

**INGREDIENTS:** LOW FAT MILK, CONDENSED SKIM MILK, VITAMIN A PALMITATE, VITAMIN D3.

*FEDERAL TEST HAVE PROVEN THAT NO SIGNIFICANT DIFFERENCE HAS BEEN SHOWN BETWEEN MILK DERIVED FROM rBST TREATED AND NON rBST TREATED COWS.

**KEEP REFRIGERATED**

ALTA DENA CERTIFIED DAIRY, INC.
CITY OF INDUSTRY, CA 91744
What Can Be Learned from Tobacco Control Programs?

- Lawsuits? Deceptive advertising
- Need more food labeling; advertising should include information on calories, fat, and sugar content
- Taxes on soft drinks and other junk food?
- Less availability of soft drinks and fast foods in schools
Physical Activity and Health

• Weight control works best when healthy eating is combined with physical activity
• Exercise promotes health independent of weight control
• Exercise helps to prevent heart disease, high blood pressure, improves cholesterol, diabetes, some forms of cancer
How Much Exercise?

- Minimum of 150 kilocalories per day, e.g., walking briskly for about 30 minutes
- More is better
- One out of 4 Americans get no exercise
- Lower SES is associated with more inactivity
- Children get less exercise as they get older
- Obesity in children is correlated with the amount of time spent watching television
Promoting Physical Activity

• Remove environmental barriers and provide places to exercise
• Suburban lifestyle – must drive everywhere
  – Build sidewalks, walking trails, bike paths
  – Mall walking in shopping malls
• Police surveillance and neighborhood watches in high-crime neighborhoods
• Develop habits of exercise in children
  – Physical education classes should focus on activities that can be practiced throughout one’s lifetime
Discussion Question 1

• What are some of the environmental factors that discourage Americans from eating a healthy diet?
Discussion Question 2

• Can you think of two or three changes in your daily schedule that would increase your physical activity level?
Discussion Question 3

• Referring to Table 16-2, estimate how many calories of energy you expend each day. Do you achieve the minimum recommended by the CDC and the ACSM? Can you think of two or three changes in your daily schedule that would increase your physical activity level?
Discussion Question 4

• Visit www.MyPyramid.gov and determine the dietary guidelines and exercise recommendations individualized for you.

• Use the ecological model (see Chapter 14) to design a community program to help people follow the recommendations of the Food Guide Pyramid.
Discussion Question 5

- Visit the Web site of the CDC’s Physical Activity for Everyone Program (www.cdc.gov/nccdphp/dnpa/physical/index.htm)

- In what ways is the CDC trying to promote more physical activity for Americans?

- Under “other resources,” the site links to recommendations specific to different groups of the population. Find one that is relevant to you. Can you find any ideas that you might want to try?
• Please see mandatory links and video clips under ROAD MAP for week 3.
Chapter 17

• Injuries are not accidents
• Traditionally, injuries have been though of as “accidents”, unavoidable random occurrences

• ONLY RECENTLY: Injuries can and should be treated as a public health problem

• Individual behavior, physical and social environment
Epidemiology of Injuries

- Injuries are the fifth leading cause of death in the U.S.
- Injuries are the leading cause of death among people ages one to 44
- Higher injury rates in groups with lower SES
- Males have higher injury rates than females
- Blacks have higher injury rates than whites
Leading Causes of Injuries

- Motor vehicle injuries
- Firearms injuries
- Poisoning
- Falls
- Suffocation
- Drowning
- Fires/burns
- Cut/pierce
Categories of Injury Death

- Unintentional
- Intentional
  - Homicide
  - Suicide
Injury Pyramid

• Deaths
• Hospitalizations – include long-term disability
• Emergency department visits
• Episodes of injuries reported
Analyzing Injuries

• Host – agent – environment

• Primary prevention – conditions prevailing before the event (alcohol, anger, defective brakes, dark, rain…)

• Secondary prevention – conditions prevailing during the event (airbag, seat belt, divided highway)

• Tertiary prevention – availability and quality of emergency care
The “Three E’s” of Injury Prevention

• Education (alcohol consumption, manage anger…)
• Enforcement (state and federal regulations on flammability of fabrics)
• Engineering (child proof caps, smoke detectors)
Motor Vehicle Injuries

- Leading cause of injury death – over 40,000 deaths per year
- Ralph Nader – *Unsafe at Any Speed, the Designed-In Dangers of the American Automobile*, published 1966
- Engineering changes to make cars safer
- Engineering changes to make highways safer
- NHTSA empowered to set standards for auto safety
- Crash testing
Motor Vehicle Injuries, ctd.

- Education and enforcement
  - Speed limits
  - Seat belts
- Alcohol plays a major role in fatal crashes
- Second leading factor – youth and inexperience
  - Graduated driver’s licenses
  - Zero tolerance for blood alcohol
- Motor vehicle fatalities decreased by more than 20% since 1968 (federal traffic safety legislation) despite many more cars on the road and many more miles driven
Pedestrians, Motorcyclists, and Bicyclists

- **Pedestrians** – about 5,000 deaths per year
  - 16 percent are over 70 (increase time - walk signs)
- **Motorcyclists** - more than 3,000 deaths
  - 19 states and DC require helmets
  - 28 states require helmets for younger riders
- **Bicyclists** – about 600 deaths per year
  - 21 percent are 14 and under
  - 19 states and DC require helmets for children
Firearms Injuries

- Peaked in 2001 at almost 40,000 deaths
- Declined to less than 30,000 deaths in 2001
- More than half suicides, about 40% homicides, others unintentional
- Gun control legislation is strongly opposed by National Rifle Association, which has clout in Congress
Occupational Injuries

- Occupational Safety and Health Administration (OSHA) – regulatory agency
- National Institute of Occupational Safety and Health (NIOSH) – research agency
- Over 5,500 deaths per year
- Motor vehicle injuries are the leading cause of death
  - Highway crashes, rollovers of agricultural and constructional vehicles
- Second: falling objects, caught in running machinery
- Violence is third
- Falls, electrocutions, poisoning
- Repetitive motion injuries – keyboards,....
Discussion Question 1

- Conduct a survey in your class. How many of your classmates (1) use seatbelts, (2) wear bicycle or motorcycle helmets, (3) adhere to speed limits, (4) have a smoke detector in the home, and (5) have a firearm in the home?
Discussion Question 2

• Visit the CDC’s Injury Maps Web site (http://wisqars.cdc.gov:8080/cdcMapFramework/)
• Using national maps, determine which states have the highest homicide rates. Which have the highest suicide rates?
• Create a state map for your state. Are mortality rates for specific kinds of injury especially high in any parts of the state?
Discussion Question 3

• Visit the Web site of the National Highway Traffic Safety Administration (www.nhtsa.dot.gov)

• Review the news items and determine what safety issues the agency is focusing on
Discussion Question 4

• Visit the Occupational Safety and Health Administration Web site (www.osha.gov). Review the news releases for the past month.

• What types of fatal accidents occurred during this period, and what hazards were investigated?
Discussion Question 5

• Visit the Web site of the National Safety Council (www.nsc.org)

• What recommendations does this organization make for making driving safer, especially for young people? Do you agree with the recommendations?
• Please use the earlier questions – to study and to learn more about public health.
Chapter 18

Maternal and Child Health as a Social Problem
Importance of Infant and Child Health

- Foundation of health throughout life
- Children are most vulnerable group in society
- Infant mortality rate (IMR) is an indicator of health status of population
- U.S. ranks 30th internationally
- IMR higher for blacks than whites – indicator of health disparity
History of Child Health Programs

- New York City milk stations (safe milk) starting in 1893
- U.S. Children’s Bureau beginning in 1912 (children – a national resource and that their health – important for the progress of the society)
- Child labor regulated by U.S. beginning in 1930s
- Ongoing conflicts over the role of government in protecting children (example: recent news on a cancer therapy)
- Infant mortality rate has fallen over 20th century
Causes of Infant Mortality in U.S.

- Birth defects – leading cause overall
- Prematurity and low birth weight
  - Was leading cause overall until recently
  - Still leading cause among blacks
- Sudden infant death syndrome (SIDS)

- please click on or copy the link into your browser and read the information.
  - http://www.nichd.nih.gov/health/topics/Sudden_Infant_Death_Syndrome.cfm
SIDS

- “Back to Sleep” - baby position- campaign
- SIDS rate has fallen by over 50%
Social Factors in Infant Mortality

• Number one risk factor is poverty
• Reasons why low SES increases risk
  – Environmental hazards
  – Poor nutrition
  – Maternal risk behaviors – smoking, alcohol, illegal drugs
  – Social factors – young maternal age, violence, stress, lack of social support
  – Lack of prenatal care
Prenatal Care

• Provides women with information
• Diagnose problems early
• Can often link poor women with social services
• Most states try to remove financial barriers
• States and federal government collect data on prenatal care
• Please click on or copy the link and read the information

http://www.mypyramid.gov/mypyramidmoms/
Preventing Birth Defects

• Genetic and newborn screening
• FDA regulation of teratogenic drugs
• Warnings against alcohol for pregnant women
• Immunization of all children against rubella protects infants
• Dietary supplementation with folic acid
Preventing Low Birth Weight

• Prenatal care
• Reducing adolescent pregnancy
• Causes of low birth weight are not well understood
• Recent increases in low birth weight due to multiple births because of reproductive technology
Family Planning and Adolescent Pregnancy

- Adolescent pregnancy has physical and social risks for mother and child
- Planned pregnancy leads to healthier outcomes
- Controversy about government provision of family planning services
- Sex education in schools is controversial
  - Federal requirement for abstinence only programs
  - Abstinence only education is less effective
Kinds of Contraception

- Sterilization – most common method, but permanent
- Oral contraceptives and other hormones
- IUS
- Barrier methods – condom, diaphragm, cervical cap
  - Prevents sexually transmitted disease
  - Used inconsistently and unreliably
- Controversy over “morning after pill”
Government Nutrition Programs

• WIC – provides vouchers for nutritious foods for pregnancy women, lactating mothers, children up to 5 – very effective
• Please click on or copy the link and read the information
• School Meals Program
• Food Stamp Program
• Food insecurity is still common in the U.S.
Nutritional network for healthy Californians

- [http://www.dhs.ca.gov/cdic/cpns/network/default.htm](http://www.dhs.ca.gov/cdic/cpns/network/default.htm)

- Please click on above link or copy the link into your browser and read the information
Children’s Health and Safety

- Immunizations required before entering school
- Public health efforts to vaccinate younger children
- CDC tracks immunization rates
- Well baby care and screenings in school
- Childhood asthma is growing (environment)
Children’s Health and Safety, ctd.

- Fluoridation of water to prevent tooth decay
- Regulation of day care centers
- U.S. Consumer Products Safety Commission regulates toys and children’s furniture
- Public health campaigns for child safety seats, bicycle helmets
- Governments also provide diagnostic, treatment, and rehabilitative services for children with special needs
Discussion Question 1

• Why is the health of infants and children of special concern for public health?
Discussion Question 2

• What are five or more reasons why, on average, black children have poorer health than white children?
Discussion Question 3

• Why should public health advocates try to ensure that every pregnancy is an intended pregnancy?
Discussion Question 4

• What are the three leading causes of infant mortality? For each cause, suggest two or more public health measures aimed at reducing the risk.
Discussion Question 5

• Visit the CDC’s Web site for maternal and child health (www.cdc.gov/reproductivehealth/)
• What programs does the CDC have to promote maternal and infant health?
Discussion Question 6

• Visit the Web site of the National Institute of Child Health and Human Development (www.nichd.nih.gov)

• What programs does NICHD have to promote healthy child development?