Clients With Nutritional and Metabolic Concerns

Chapter 19
Overweight & Obesity

- What is it difference?
  - Pg. 485
- Energy Balance – What is it?
- Body Mass Index (BMI)
  - Pg. 484 & 485
  - Relative weight for height
  - Disease risk stratification
    - Type 2 diabetes
    - Hypertension
    - CAD
Overweight & Obesity

- Fat Distribution
  - Android Obesity “Apple Shape”
  - Gynoid Obesity “Pear Shape”
  - Measuring Abdominal Fat
  - Controlling Cardio Risk Factors

- Pay special attention to Table 19.2 pg. 487
  - Test Questions so “Flash Card It!”

- Benefits of Exercise in Weight Reduction
  - Pg. 488, Table 19.3
Lifestyle Change for Obesity

- Diet Modification & Low-Calorie Diet
  - Calorie Calculations pg. 127
  - Low-Calorie Diet (LCD)
    - No less than 1000 – 1200 kcal/day
  - Very Low-Calorie Diet (VLCD)
    - May be less than 800 kcal/day
- Scope of Practice p.490 (Eating Strategies pg 492)

- Reasonable Goals/Guides:
  - 10% body weight loss in 6 months
  - Calorie deficit of 500 – 1000 kcal per/day for 1 – 2 lbs per week
Physical Activity

- Recommended moderate levels of activity for 30 – 45 min. 3 - 5 d/wk
  - Pg. 493, Table 19.5
- Moderate activity uses about 150 kcal/day
- Look for ways to increase tasks of daily living
- ACSM Guideline for Weight Loss
  - Caloric Expenditure 1,000 – 2,000 kcal per week or 300 to 500 kcal per day
Lifestyle Change Support

- Identify obstacles, problem solve to overcome
- Self-Monitoring
- Rewards
- Goal Setting
- Stimulus Control
- Dietary Behavior Changes
Overweight & Obesity

- Exercise Concerns
  - Heat Regulation
  - Movement Restriction & Limited Mobility
  - Weight-Bearing Stress
  - Posture Problems & Low Back Pain
  - Balance Concerns
  - Hyperpnea & Dyspnea
# Overweight & Obesity

## Guidelines

<table>
<thead>
<tr>
<th>Mode</th>
<th>Intensity/Frequency/Duration</th>
<th>Guidelines</th>
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</table>
| **Aerobic Training** | 5 d/wk (or daily)  
Can begin w/ 2 sessions of 20-30 min  
Goal: 40-60 min/day  
40 or 50-70% VO2  
Can use intervals or rests | Low impact  
Take precautions for injury  
Emph. Duration  
Modify equipment if necessary |
| **Resistance Training** | 2-3 d/wk (non-consecutive days)  
1-3 sets, 10-15 reps  
Up to 8-10 exercises  
Gradual Load increase | Can be body weight  
Can pair w/ aerobics  
Modify equipment if necessary |
| **Flexibility Training** | Daily or at least 5 times/wk  
Hold static for 10-30 sec | -                                                          |
Eating Disorders

- **Disordered Eating**
  - Restriction of diet beyond dieting
  - May progress to an eating disorder

- **Anorexia Nervosa (Control)**
  - Restrictive Type
    - Severely restrict intake in type and/or amount
    - Most common
  - Binge Eating/Purging Type
  - Warning Signs pg. 504
Eating Disorders

- Bulimia Nervosa (Loss of Control)
  - Eat large amounts of food in short time
  - Purging behavior
    - Vomiting, laxatives, diuretics, enemas, excessive exercise
  - Warning Signs pg. 505

- Female Athlete Triad
  - Disordered Eating
    - Results in energy deficit
  - Amenorrhea
    - 3 consecutive menstrual cycles
    - Deficient in hormones for bone density accrualment
  - Osteoporosis
Eating Disorders

- **Body Dysmorphic Disorder (Mayo Clinic)**
  - Type of chronic mental illness in which you can't stop thinking about a flaw with your appearance. Flaw is either minor or imagined.
    - Appearance seems so shameful that you don't want to be seen by anyone.
    - Sometimes called "imagined ugliness."
  - Intensely obsess over your appearance and body image, often for many hours a day.
    - May seek out numerous cosmetic procedures to try to "fix" your perceived flaws, but never will be satisfied.
    - AKA dysmorphismophobia, the fear of having a deformity.
Eating Disorders

- Exercise/Program Design
  - Physical Exam/Physician’s Clearance
  - Don’t design w/ vigorous exercise
  - Engage in well-rounded aerobic, resistance, & flexibility program
  - Ensure adequate hydration
  - Encourage client have adequate dietary intake
  - Encourage client to consume 200-400 kcal of CHO during the first 30-90 minutes following exercise sessions
  - Check blood pressure & pulse
  - Don’t allow impact if client has stress fracture
  - Maintain regular communication w/ client’s medical team
  - Seek medical clearance with any of the following:
    - Light-headedness, irregular heartbeats, nausea, injuries, abnormal blood pressure levels or pulse
Eating Disorders

- Refusing to see a physician
  - Trainers may be one of the few people in touch with the client
  - Should not train without medical clearance
  - Do the possible benefits outweigh the possible disadvantages?
Hyperlipidemia

- **Therapeutic Lifestyle Change (TLC)**
  - Diet, Physical Activity, Weight Loss

- **TLC “Heart Healthy” Diet**
  - Limited intake of saturated fats and cholesterol
  - Adequate nutrients
  - High in fruits, vegetables, and whole grains

- **Physical Activity**
  - Reduces VLDL, raises HDL, and in some lowers LDL
  - Reduce factors for CHD
Hyperlipidemia

- TLC Weight Loss
  - Can bring greater decreases in LDL, increases in HDL, & reduce total cholesterol
- Resistance Training Guidelines in Ch. 15 may be followed (modify as needed)

| Exercise Guidelines for Clients with Hyperlipidemia |
|-----------------------------------------|-------------------------------------------------|--------------------------------------------------------|
| **Mode**                               | **Intensity/Frequency/Duration**                 | **Guidelines/Concerns**                                 |
| **Aerobic Conditioning**                | -3-7 day/wk (preferably at least 5)             | - Obesity may limit exercise type                       |
|                                         | - Can begin w/ 2 sessions of 20-30 min each     | - Initially emphasize increasing duration to optimize caloric expenditure |
|                                         | - Eventual goal: 40-60 min/day                  |                                                        |
|                                         | - 40-70% functional capacity                    |                                                        |
|                                         | - Monitor intensity via RPE (11-16 on the 6-20 scale) |                                                        |
Metabolic Syndrome

- Persons that have a cluster of major cardiac risk factors and abdominal obesity (pg. 511)
  - Increased blood pressure
  - High blood sugar level
  - Excess body fat around the waist or abnormal cholesterol levels
- Poor glucose regulation due to insulin resistance proposes as underlying cause
- Typically have the android “apple” body shape
- Face higher risk of developing diabetes and CVD and other diseases
Diabetes Mellitus

What is it?
- Excessively high or uncontrolled blood glucose levels
- Leading cause of blindness, renal failure, and lower extremity amputations

Types of Diabetes
- Type 1 (10%)
  - Formerly known as “Insulin Dependent” because usually leads to insulin dependency via injection or pump for survival
  - Most develop disease by age 25
  - Can lead to Diabetic ketoacidosis
- Type 2 (90%)
  - Formerly known as “Non-insulin Dependent” (insulin resistant)
  - Highly associated w/ family history, older age, obesity and lack of exercise
  - Usually requires modified diet, weight control, regular exercise, and oral hypoglycemic agents
- Gestational
  - When glucose levels rise and diabetic symptoms appear during pregnancy in non-diabetics
  - Caused by insulin resistance and symptoms usually disappear after delivery
Diabetes Mellitus

- **Working with Clients**
  - Exercise is essential
    - Increases insulin sensitivity & glucose utilization
  - Cautions
    - Need Medical Evaluation/Physician’s Clearance
    - Watch for hypoglycemia (glucose level ≤ 65mg/dl)
    - Peripheral neuropathy (low impact & proper shoes)
    - Contraindications to exercise pg. 513
  - Signs & Symptoms of Hypoglycemia (p. 514)
  - Responding to Client w/ Hypoglycemia (p. 514)
### Exercise Guidelines for Clients With Diabetes

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<tbody>
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<td><strong>Aerobic Conditioning</strong></td>
<td>- 4-6 days/wk (or daily)</td>
<td>- Snack may be needed before exercise</td>
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<tr>
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<td>- Eventual goal: 20-60 min/day</td>
<td>- Monitor blood glucose before and after exercise</td>
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<td>- 40-70% VO2 Max</td>
<td>- Include 5-10 min warm-up and cool down</td>
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<td>- Monitor via RPE</td>
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<tr>
<td><strong>Resistance Conditioning</strong></td>
<td>- 2-3 nonconsecutive day/wk</td>
<td>- Can begin w/ body weight and progress to free weight resistance</td>
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<td>- 1-3 sets, 10-15 reps/set</td>
<td>- Clients w/ well controlled diabetes can progress to strength training</td>
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<td>- Up to 8-10 exercises</td>
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<tr>
<td><strong>Flexibility Conditioning</strong></td>
<td>- Min of 2-3 sessions/wk</td>
<td>None</td>
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<td>- Hold static for 10-30 sec</td>
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