Individual Interventions
Individual Interventions

• In designing individual interventions it should include:
  1. Individual characteristics or individual profile
  2. Physical activity setting (environment), and
  3. Personal and environmental barriers

Individual Interventions should be based on the models and theories of physical involvement
Individual Interventions

Client Profiling → Physical Activity Setting → Models → Intervention strategies → PA Level

Personal & Environmental Barriers → Models
Client Profiling

• Characteristics of the client
  – Demographic
  – Psychologically
  – Health & Physical status (healthy or unhealthy; not at risk or risk)
Demographic Profile

Married, single or divorced
Married or single with small children
Occupation
Income
Age
Gender
Disabilities
Injury
Psychological Profile

Psychological and physical profiling the Client
- Level of Depression
- Level of life stress
- Level of sense of self
- Perceived and actual barriers to exercise
- Attitude toward exercise
- Stage of exercise
- Level of exercise self-efficacy
- Social physique anxiety level
- Motivation to exercise
- Preferred exercise mode & personality
- Preferred exercise leader
Health or Physical Profile

• History of Exercise
• History of Injury
  – Type
  – Physical disabilities status
• Risk Factors Screening
• Fitness testing (depending upon what stage of exercise)
Physical Activity Setting

Accessibility & Density of PA Resources
Home based equipment
Media based intervention
Traditional delivered interventions
Work site PA facility
Community access to PA facility
Access to hospital or private PA centers
Neighborhood access to parks, walking, running, or biking trials
Personal & Environmental Barriers

Environmental barriers
- Cost of PA facility
- Transportation
- Safety
- Characteristics of exercise program
- Level of social support
- Climate

Perceived barriers
- Attitude toward PA
- Exercise self-efficacy
- Schedule
- Time
- Intention of exercise
Commonly Used Models & Interventions

- Self-efficacy
- Theory of Reasoned Action
- Theory of Planned Behavior
- Health Benefits Model
- Self-determination Theory
- Personal Investment Theory
Self-Efficacy

• Belief and expectations about how capable one is to perform PA or exercise to achieve an outcome (e.g. low weight, fitness).
• *Major determinate* of adherence in all the models
Self-Efficacy Interventions

• Gradual progression in exercise programming ensures mastery experiences (prime source of self-efficacy).
  – When an exerciser begins with a starter program and progresses not only do they change physically but they also change in their beliefs, attitudes, and cognition about PA.
• Seeing others, watching one demonstrate, and viewing self-tapes enhance (Vicarious learning) one level of self-efficacy.
Self-Efficacy Interventions

- Provide the client with information of why, what, and where of physical activity (verbal persuasion).
- Increase the client’s awareness of physiological states associated with physical activity (physiological states).
- Provide the client choice (perceived and actual controllability), and
- Workout should be enjoyable (emotional state).
Theory of Reasoned Action

Interventions

• The key elements of initiating and maintaining physical activity are:
  – High willingness or intention to exercise
  – High perceived benefits in exercising
  – High positive evaluation of exercise
  – Exercise programs should be positive experiences
    • Easy, enjoyable; gradual in intensity, duration, and frequency
  – High perceived social and personal pressure to exercise
  – High perceived power to overcome barriers to exercise
  – Interventions that promote a sense of personal control over one’s exercise behavior:
    – Accessible resources available to be physically active
Theory of Planned Behavior
Interventions

• Interventions that promote a sense of personal control over one’s exercise behavior:
  – Allow exercisers some input when designing their physical activity program
  – Educate them about exercise principles, routines, and components of fitness
  – Accessible resources available to be physically active
Health Benefit Interventions

• The main function of perceived severity of physical inactivity is to motivate people to consider physical activity.
  – Provide client knowledge about their existing condition and the serious risk consequences from being inactive.
  – Provide examples of people of their same age, gender, and condition who had wished they would had been active.

• Once people are engaging in physical activity
  – Motivation strategies are necessary.
  – Need to be assessed regularly changes from exercising.
  – Benefits of exercise demonstrated must occur immediately.
  – Clients should start believing that being sedentary lifestyle is a severe threat.
Self-determination & Personal Investment Interventions

Exercise programs should learn or gain the knowledge about how to exercise.
The exercise program set for the client should be at a level where they can successful complete the exercises or workout (demonstrate competency).
Have the client demonstrate what they can do!
The client should be satisfied with the exercise program:
  a) achieve their fitness goals
  b) exercise workout is enjoyable but a challenge
Use meaningful, extrinsic rewards in a beginning exercise program.
Personal Investment Interventions

Activities that are highly meaningful; people will invest effort and energy toward.

- Meaning is associated to choice and,
- to an activity (actual or perceived control) that enhances the client’s sense of self.
Intervention Strategies

- Behavioral & Experiential Intervention Strategies (interventions based on the models of PA involvement)
  - Reinforcement
  - Goal setting
  - Contracts
  - Client profiling (e.g. barriers to exercise)***
  - Self-monitoring (e.g. logs)

- Exercise prescription
  - Duration, intensity, frequency
  - Progression

- Matching one Stage to a intervention (TTM Model)
Exercise Prescription

Intervention

• Interventions that targeted a more active leisure time lifestyle was greater then specific strength and/or aerobic exercise programming.

• Most clients prefer and adhere to PA when it is of low-intensity then high intensity PA.

• Shorter exercise bouts were greater than longer.

  – “It would seem that people are more likely to be physically activity if the behavior (exercise) is not perceived to be overly stressful and integrated into their lifestyle”
Exercise Prescription

Based on ACSM Guidelines that manipulating the four components of exercise:

Duration
Intensity
Frequency
Mode

\[ \text{Progression} = \text{ACSM Goal} \]
Steps of Exercise Prescription

1. Medical Screening
2. Physical Fitness, Nutritional, & Psychological Assessment
3. Goal Setting & Stage Matching Strategies
4. Development of Exercise Program
5. Exercise & Nutritional Adherence
6. Re-assessment of Physical Fitness & Nutritional Aspects
Stage 1: Medical Screening

- Personal & Family History
- ACSM Guidelines based on Age
- Physiological Measures
  - Blood pressure
  - Blood chemistry
  - Resting Heart Rate
- Drug History
- Health Risk Profile
Step 1: Medical Screening

• Apparently healthy individuals:
  – Under the age of 45 and apparently healthy with no risk factors can proceed to physical fitness testing
  – If over 45 and apparently healthy with no risk factors a stress test should be taken before exercise
Step 2: Medical Screening

• Individuals at high risk
  – At least one risk factor or has symptoms, stress test is recommended for those under the age of 35.
  – Over the age of 35 with one or more risk factors, stress test should be required.

• Individuals with known disease needs always to be tested.

• If in doubt always refer them to a M.D. for a review.
Risk Factors

- Hypertension (140/90)
- Hyperlipidemia
  - Total CHL at or greater than 250
  - Triglycerides at or greater than 150
  - HDL ration at or greater than 5
- Smoking
- Electrocardiographic abnormalities
- Family history of CV diseas before 60
- Sedentary lifestyle
- Type A coronary prone behavior with stressful occupation
- Diabetes mellitus or glucose at or greater than 100
- Hypoeruricemia
- Obesity (22%; 19%)
Step 2: Assessment

• Physical Fitness Assessment*
  – * ESAT 3420 Exercise Testing & Prescription Course

• Nutritional Assessment*
  – *ESAT 3410 Performance nutrition & weight management

• Psychological Assessment
  – ESAT 3210 Exercise Adherence
Psychological Assessment

• Identify compliers and non compliers based on determinates and correlates

• Key psychological correlates:
  – Self-efficacy
  – Depression
  – Stress
  – Barriers

• Attitude toward Exercise

• Stages of changes for exercise
Step 3: Goals Setting

Key motivational intervention

Considered to be a cornerstone of success of one’s fitness program

Formal and continuous goals setting throughout one’s fitness program increases adherence to exercise
Step 3: Goals Setting

- Goals need to be realistic, attainable, flexible, meaningful, and challenging.
- Stair step approach to fitness
- Major pitfall in setting goals is to set them early and never assess them until the very end.
- Systematic Goal Setting System
Step 4: Development of A Program

- Based on psychological and physiological assessments
- ACSM guidelines apply to clients that have been exercising for less than 6 months, that is clients in the action stage.
- But in many cases ACSM guidelines for a beginning exercisers is too intense, so a starter program is recommended.
Pre-starter Program

• Activity is closely associated with their daily activity, such as walking.
• Need to be convenient, that is, it can be done around home or work.
• No dress out is necessary.
• Should not be concerned with meeting ACSM training goal.
• The goal is just movement.
Starter Program

• 3-5 METS (low in intensity)
• Establish a exercise habit
• 3 days a week!
• Just do it! 6-8 weeks!
• Short in duration  
  – Aerobic 10 -15 minutes  
  – Weight 7-10 stations; 8-15 reps.
• Gradually work on duration not intensity.
• Client choice
• Keep a log
• Before and after (Show benefit in weight, inches, etc.)
Key Psychological Factors During Pre- and Starter Programs

- Elimination of barriers to exercise
- Emphasize the benefits to exercise
- Social support to exercise
- Motivation techniques (e.g., contracts)
- Plan for slippage
- Extrinsic rewards
- Establish a schedule (time to exercise)
- Goal setting
Exercise Program

• Progression (keeping logs)
• Use periodization training methods
• Physiological goal is to meet the ACSM training effects.
• Psychological goal is for PA and exercise to become a habit
• Variety within the program become important
• Slippage control
• Goal setting
Step 5: Adherence

- Contracts
- Rewards
- Contingency plan for slippage
- Social support
- Time of exercise
- Variety in PA program
- Intensity of exercise
- Duration of exercise
- Setting daily and weekly goals
Step 6: Re assessment

• Re-assess the physiological components
  – Aerobic ability every 16 weeks.
  – Strength every 8 weeks
  – Flexibility every 8 weeks
  – Body composition every 16 weeks.

• Re-assess life stress
Commonly Used Behavioral & Experiential Intervention Techniques

• Establishing an exercise contract
• Goal-setting
• Self-monitoring
• Preventing relapse
Effectiveness of and Drawbacks to Behavioral & Experiential Interventions

• Effectiveness
  – The most effective way to increase physical activity
  – Effective among both men and women, in a variety of settings

• Drawbacks
  – Well-trained counselors are needed
  – Limited number of activity counselors compared to numbers of inactive people
Sample Exercise Contract

EXERCISE CONTRACT

Contract start date: 1/3/06  
Award date: 6/1/06

In order to obtain my goal of improving my cardiovascular endurance (increase \( \dot{V}O_2 \text{max} \) by 10%) and lose weight (10 pounds), I will

(a) walk one mile through my neighborhood daily after dinner and 
(b) ride the stationary bike three times per week (30 mins, 70% heart rate).

As a reward for accomplishing this goal by the award date shown above, I will be entitled to a shopping spree to purchase all-new exercise attire and equipment (e.g., winter outdoor exercise wear, electronic pedometer, stationary bicycle for home).

Signed Devin Kelly  
Date 1/2/06
Elements of Effective Goal-Setting

- Goals need to be challenging but realistic
- Goals should be very specific
- Interventions should involve establishing plans of action that will facilitate goal achievement
  - Goal-setting worksheet
  - Daily progress notes
Sample Goal-Setting Worksheet

GOAL-SETTING SHEET

Contract set date: 1/2/06  Target date: 6/1/06

Goal defined: To improve my cardiovascular endurance (VO2 max) by 10% and lose weight (10 pounds)

Strategies to achieve goals:
(a) walk neighborhood daily after dinner (1 mi)
(b) ride stationary bike three times per week (30 mins, 70% max heart rate)

Daily progress notes:
1/4/06 - walked after dinner, no bike today, weighed myself at 7:00 am. - no change from 2 days ago
1/6/06 - walked after dinner yesterday and today, biked during lunch hour but only made it 20 mins, heart rate around 80% max, lost a pound
Goal-Setting Process

1. **Set/update goal**
2. **Develop strategies (plan of action) for achieving goals**
3. **Accumulate data related to goal from daily progress notes and testing**
4. **Use data to evaluate progress toward goal and to update goal as needed**
Self-Monitoring

• Paying attention to one’s own thoughts, feelings, and behaviors
  – Monitor level of exercise intensity (i.e., heart and respiration rates) to prevent overexertion and injury
  – Monitor daily physical activity behavior with an activity log
# Sample Seven-Day Activity Log

<table>
<thead>
<tr>
<th>DATE</th>
<th>MODE</th>
<th>DISTANCE</th>
<th>TIME</th>
<th>MY HEART RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/19</td>
<td>Jog</td>
<td>20 mi.</td>
<td>16:20</td>
<td>156</td>
</tr>
<tr>
<td>7/20</td>
<td>Jog</td>
<td>20 mi.</td>
<td>15:47</td>
<td>154</td>
</tr>
<tr>
<td></td>
<td>Swim</td>
<td>15 lengths</td>
<td>7:19</td>
<td>161</td>
</tr>
<tr>
<td>7/21</td>
<td>Rest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/22</td>
<td>Jog</td>
<td>25 mi.</td>
<td>21:08</td>
<td>165</td>
</tr>
<tr>
<td>7/23</td>
<td>Jog</td>
<td>20 mi.</td>
<td>16:53</td>
<td>159</td>
</tr>
<tr>
<td></td>
<td>Swim</td>
<td>20 lengths</td>
<td>10:22</td>
<td>164</td>
</tr>
<tr>
<td>7/24</td>
<td>Rest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/25</td>
<td>Jog</td>
<td>30 mi.</td>
<td>26:59</td>
<td>164</td>
</tr>
</tbody>
</table>
Your Viewpoint

• How do you motivate yourself to exercise?
• How would you motivate others to exercise?
• Have you ever used an exercise contract, goal-setting worksheet, or activity log?
Transtheoretical Model & Interventions

- Stage model reflects behavior change in exercise adherence
- Assumes individuals in same stage are similar with respect to characteristics, such as level of PA.
- Therefore, there are specific behavior modification interventions that are appropriate at each stage.
Stage Model

1. Pre-contemplation
2. Contemplation
3. Preparation
4. Action
5. Maintenance
Precontemplation Stage

• Individual are inactive and have no intention to start exercising. They are not seriously thinking about changing their level of PA within the next six months.
Behavior Interventions at Precontemplation Stage

• Goal: To begin thinking about changing

• Strategies:
  – Provide them health information of benefits
  – Reduce the actual and perceived costs & barriers
    • Intention to exercise is low
    • Willingness is low
    • Self-efficacy is low
    • Perceived & actual access to facilities
  – Strengthen actual and perceived benefits of PA
Pre-contemplation Stage

- Health pamphlets
- Media advertising
- Awareness of risks
- Benefits of exercising
- Health clinics & workshops
- Wellness seminars (topics such as weight loss and physical activity)
Contemplation Stage

• Individuals are also inactive, but they intend to start regular exercise within the next six months.
Behavior Intervention at Contemplation State

• Goal: To adopt regular exercise

• Strategies
  – Marketing and media campaigns with accurate information
  – Activities to increase self-efficacy
    • Modeling, demonstrating, verbal persuasion
  – Evaluate pros and cons of exercise
Decision Balance Sheet

- Positive
- Negative
Preparation Stage

• Individuals are active below the criterion level (CDC or ASCM) but intend to become more active in near future (1 month)

• Starters or irregular exercisers
Intervention for Preparation Stage

• Goals: To adopt regular exercise at criterion levels

• Strategies
  – Assessment of physical and psychosocial traits
  – Goal Setting
  – Evaluate one’s environment and social support
  – Evaluate one’s barriers to modifying behavior
Preparation Strategies

• Self-Monitoring activities
  – Weekly workout progress log
  – Computer programs that record your workouts
    • Self-monitoring exerciser checklist of type, mode, intensity of exercise, time, distance, heart rate, number of steps, kcal, etc.
  – Cue controls

• Starter Program
Cue Controls

• Have a set time for PA
• Separate PA from other activities
• PA is pleasant surroundings
• Seek to spend time with friends
• Exercise posters
• Modeling effect from spouse
Action Stage

• Individual engaged in regular exercise at the criterion level for less than six months.
• This is the least stable stage and are at great risk of relapse.
Interventions at Action Stage

• Goal: To establish exercise as a habit

• Strategies:
  – Rewards and punishment
    • Contingency contracts
  – Slippage control
    • Boredom, lack of time, laziness, vacations, and illness
  – Proper exercise prescription
Contingency Contracts

• I will:_______
• I will enlist the help of:_____ 
• My responsibilities are:_______
• My helper’s responsibilities are:_____ 
• My reward:_____ 
• My punishment:_____
Effective Rewards

- What kinds of things do you like to have?
- What are your major interests? Hobbies?
- Who do you like to be with?
- What do you do for fun?
- What do you do to relax?
- What makes you feel good?
- What would you hate to lose?
Relapse Prevention

• Seek to prevent the *abstinence violation effect*—when an initial lapse causes the exerciser to abandon entire exercise regimen
• Identify high-risk thoughts, feelings, and situations that might prompt a relapse
• Plan for a relapse before it occurs
• Change one’s thinking about relapses
  – Realize they are inevitable and normal
  – Be more flexible about exercise goals
Slippage Control

• Time management training
• Stress management training
• Barriers to exercise
  – Tape the TV show
• Backup Plan (type & place)
  – Swimming pool not open I will walk on treadmill
  – Snowing can’t walk, put on a aerobic tape
Maintenance Stage

• Individuals who have been exercising regularly for more than six months.
• Risk of relapse is low.
Intervention at Maintenance Stage

- Re-evaluate goals at regular intervals every 8-16 weeks.
- ACSM Exercise prescription Guidelines
- Variety of exercise routines
The End