Motivating people to be physically active (Chapters 1 & 2)
Major premise

Effective Program + Motivation = Higher Adherence
Goals of each component

**Effective Program**
- Higher exercise self-efficacy
- Lower real & perceived barriers
- Specific intervention for targeted population

**Motivation**
- Strength one’s intention to exercise and be physically active

**Higher Adherence to Exercise**
Stage model approach provide a framework to:

- Examines people motives to change their physical activity habits
- The barriers to change.
- The benefits to change.
- The specific strategies and techniques for promoting change.
Many of the motivational techniques to promote physical activity came from motivational theories and behavior change. The stages of motivational readiness for change model is known as the Transtheoretical model. Transtheoretical model was developed from many psychological theories (such as social cognitive and self-determination theory).

The authors of the text calls the transtheoretical model, “the stages of motivational readiness for change model.”
Five constructs of the TTM include:

1. Stages of Change
2. Processes of Change in TTM
3. Decision Balance
4. Self-efficacy
5. Temptation
Stages of Change

- Movement through the stages is thought to be cyclical rather than linear

- There are 5 stages of changes
  - Inactive and not thinking about PA (Precontemplation)
  - Inactive and thinking about PA (Contemplation)
  - Doing some physical activity (Preparation)
  - Doing enough physical activity (Action)
  - Making physical activity a habit (Maintenance)
Questionnaire for Determining a Person’s Current Exercise Stage

“Regular exercise” is any planned physical activity (e.g., brisk walking, aerobics, jogging, bicycling, swimming, rowing, etc.) performed to increase physical fitness. Such activity should be performed three to five times per week for 20 to 60 minutes per session.

Do you exercise regularly according to that definition?

☐ 1. Yes, I have been exercising regularly for MORE than six months.

☐ 2. Yes, I have been exercising regularly for LESS than six months.

☐ 3. No, but I intend to start exercising regularly in the next 30 days.

☐ 4. No, but I intend to start exercising regularly in the next six months.

☐ 5. No, and I do NOT intend to start exercising regularly in the next six months.

RESULTS

If you checked the last box, you are in the precontemplation stage.
If you checked the fourth box, you are in the contemplation stage.
If you checked the third box, you are in the preparation stage.
If you checked the second box, you are in the action stage.
If you checked the first box, congratulations! You are in the maintenance stage.

Adapted from the Exercise: Stages of Change—Short Form.
Stages of Change Model

Behavior change involves moving through five stages:

- **Precontemplation**
  
  “I won’t/I can’t”

- **Contemplation**
  
  “I might”

- **Preparation**
  
  “I will”

- **Action**
  
  “I am”

- **Maintenance**
  
  “I have”
Individual does not intend to take action in the foreseeable future (i.e., next 6 mo.).

Precontemplation
“I won’t/I can’t”

Individual thinking about changing behavior within the next 6 mo. Open to new information.

Contemplation
“I might”

Individual intends to take action in the immediate future. Normally associated with a plan of action.

Preparation
“I will”

Individual has made specific overt change in life style within the past six mo. Requires the greatest commitment of time & energy.

Action
“I am”

Individual has maintained healthy life style change for over 6 mo. and is trying to prevent relapse.

Maintenance
“I have”
Processes of Behavior Change

- Processes are strategies and techniques that people use to modify their exercise and physical activity behavior.
  - Stages of changes addresses when people change
  - Processes describe how people change.

- Determining the specific processes are usually selected based on one the person’s stage.

- Processes of change are divided into two categories
  - Cognitive
  - Behavioral
Cognitive and Behavioral Processes

- **Cognitive (experiential) processes:**
  - Directed toward increasing people’s awareness of, and changing their thoughts and feelings about, themselves and their exercise behavior.

- **Behavioral processes:**
  - Directed toward changing aspects of the environment that can affect exercise participation.
# Definition and Examples of Cognitive Process

<table>
<thead>
<tr>
<th>Processes</th>
<th>Intervention Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscious raising</td>
<td>Read pamphlet, talk to health professional about the benefits of exercise.</td>
</tr>
<tr>
<td>Self-revaluation</td>
<td>Is being inactive really inline with one’s personal beliefs</td>
</tr>
<tr>
<td>Environmental reevaluation</td>
<td>Find out the cost of being inactive.</td>
</tr>
<tr>
<td>Increasing healthy opportunities</td>
<td>Seek out exercise groups and community PA resources</td>
</tr>
</tbody>
</table>
## Definitions and examples of behavioral processes

<table>
<thead>
<tr>
<th>Processes</th>
<th>Intervention examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substituting alternatives</td>
<td>For a walk after dinner rather than watching TV</td>
</tr>
<tr>
<td>Enlist the support of others</td>
<td>Buddy up with another person who exercises</td>
</tr>
<tr>
<td>Rewarding oneself</td>
<td>Establish goals and reward one for achieving them.</td>
</tr>
<tr>
<td>Committing yourself</td>
<td>Announcing one’s commitment to others.</td>
</tr>
<tr>
<td>Reminding yourself</td>
<td>Plan ahead due to busy workweek and set aside a time for exercise.</td>
</tr>
</tbody>
</table>
Stage-matched Interventions

- Programs based on the stages of motivational readiness for change model match interventions to the person's stage of change.

- E.g. if the client is at stage 1 or 2
  - Focus on increasing the awareness of the benefits or cognitive processes

- E.g. if the client is at stage 3, 4, or 5
  - Focus on goals and rewards or behavioral processes
Stage Matched Interventions

- Most interventions are designed for clients that do some form of physical activity or exercise Stage 3, 4, and 5.

- Marcus et al, (1992) studied workplace health promotion projects and classified
  - 23% at stage 1
  - 33% at stage 2
  - 10% at stage 3
  - 11% at stage 4
  - 22% at stage 5
Cross-Sectional Studies

Nigg & Courneya (1998) studied 819 high school students & their stage of change.

![Bar chart showing percentages of students in different stages of change: Precontemplation (2.1%), Contemplation (4.2%), Preparation (28.7%), Action (15.7%), Maintenance (49.3%).]
Table 1. Percentage Response of Transtheoretical Stages by Class Level

<table>
<thead>
<tr>
<th></th>
<th>Freshmen</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>2.0%</td>
<td>0.8%</td>
<td>1.7%</td>
<td>1.2%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Contemplation</td>
<td>6.8%</td>
<td>7.6%</td>
<td>7.0%</td>
<td>7.4%</td>
<td>7.4%</td>
</tr>
<tr>
<td>Preparation</td>
<td>39.6%</td>
<td>43.2%</td>
<td>33.3%</td>
<td>30.6%</td>
<td>36.3%</td>
</tr>
<tr>
<td>Maintenance</td>
<td>14.5%</td>
<td>16.1%</td>
<td>19.2%</td>
<td>12.8%</td>
<td>15.3%</td>
</tr>
<tr>
<td>Action</td>
<td>36.6%</td>
<td>32.2%</td>
<td>38.5%</td>
<td>47.2%</td>
<td>39.3%</td>
</tr>
</tbody>
</table>
Interventions that helps the client decide to exercise or being physical activity.

An individual will list more pros than cons of exercising.

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
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<tbody>
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<td></td>
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</tbody>
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Self-efficacy

- Increasing their self-confidence regarding their ability to become and stay physical active is helpful (Bandura, 1977)

- Increase in self-efficacy to overcome temptations:
  - An individual is confident that he or she can deal with high-risk situations that might tempt him or her to lapse into old sedentary ways.

- Overcoming the personal barriers is an important behavioral intervention which directly impact the client motivation to exercise and be physically active.
Table 2. Percentage Response to Exercise Barriers

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercising takes too much of my time.</td>
<td>3.8%</td>
<td>25.4%</td>
<td>52.6%</td>
<td>18.4%</td>
</tr>
<tr>
<td>Exercise tires me.</td>
<td>3.2%</td>
<td>35.1%</td>
<td>48.0%</td>
<td>13.4%</td>
</tr>
<tr>
<td>Places for me to exercise are too far away.</td>
<td>3.8%</td>
<td>15.0%</td>
<td>48.2%</td>
<td>32.8%</td>
</tr>
<tr>
<td>I am too embarrassed to exercise.</td>
<td>3.4%</td>
<td>13.4%</td>
<td>38.7%</td>
<td>44.2%</td>
</tr>
<tr>
<td>It cost too much money to exercise.</td>
<td>2.8%</td>
<td>11.0%</td>
<td>40.6%</td>
<td>45.4%</td>
</tr>
<tr>
<td>Exercise facilities do not have convenient schedules for me.</td>
<td>5.5%</td>
<td>17.6%</td>
<td>50.5%</td>
<td>26.2%</td>
</tr>
<tr>
<td>I am fatigued by exercise.</td>
<td>2.0%</td>
<td>26.6%</td>
<td>54.9%</td>
<td>16.3%</td>
</tr>
<tr>
<td>My spouse (or significant other) does not encourage exercising.</td>
<td>1.1%</td>
<td>6.6%</td>
<td>43.3%</td>
<td>48.8%</td>
</tr>
<tr>
<td>Exercise takes too much time from family/friend relationships.</td>
<td>0.7%</td>
<td>10.6%</td>
<td>60.0%</td>
<td>28.5%</td>
</tr>
<tr>
<td>I think people in exercise clothes look funny.</td>
<td>1.1%</td>
<td>5.8%</td>
<td>46.0%</td>
<td>46.9%</td>
</tr>
<tr>
<td>My family members do not encourage me to exercise.</td>
<td>1.5%</td>
<td>11.9%</td>
<td>43.3%</td>
<td>43.1%</td>
</tr>
<tr>
<td>Exercise takes too much time from family/friend responsibilities.</td>
<td>0.7%</td>
<td>11.2%</td>
<td>57.9%</td>
<td>30.0%</td>
</tr>
<tr>
<td>Exercise is hard work for me.</td>
<td>3.2%</td>
<td>30.9%</td>
<td>50.0%</td>
<td>15.7%</td>
</tr>
<tr>
<td>There are too few places for me to exercise.</td>
<td>4.3%</td>
<td>16.3%</td>
<td>52.6%</td>
<td>26.6%</td>
</tr>
</tbody>
</table>
Application of TT Model

1. Provides PFT with opportunity to match interventions to the different needs of individuals (matching hypothesis).

2. Provides PFT with opportunity to identify the at-risk population.

3. Can be used for recruitment and retention of individuals to adopt a healthy lifestyle
Marcus et al. (1998) used TTM to increase physical activity of 1,559 employees

- Employee where classified based on the TTM survey.
- Then randomly assigned to a stage-matched or standard self-help group

- After 3 months those in stage-matched group progressed or changed significantly more than the self hope group.

- Individuals in self-help group failed to progress to another stage or even showed regression to an earlier stage.
In summary

- The matching of interventions to the stage increases motivation and the following examples demonstrate the importance:
  - Increases the chances of attending the program,
  - Greater chance to meeting short and long term goals, and
  - Decrease the likelihood to relapse