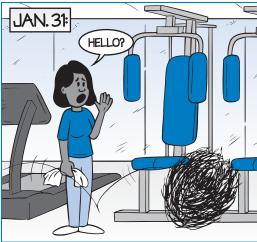


Building Motivation: How Ready Are You?

Sara S. Johnson and Brian Cook





Promoting the adoption and maintenance of regular exercise is undoubtedly a significant behavior change challenge. A mere 30% of adults are exercising in accordance with the current American College of Sports Medicine guidelines (2), and nearly 40% engage in no leisure-time physical activity (6). The question is: What can motivate people to exercise?

The answer depends in part on where they start: Often, what motivates people to begin thinking about starting to exercise is different than what motivates them to actually begin, which in turn differs from what motivates them to continue once they are exercising regularly. For those reasons, ACSM (2) reports that effective exercise interventions are often individually tailored on constructs from a health behavior change theory and incorporate behavioral strategies such as goal setting, social support, and relapse prevention.

EVIDENCE: THE TRANSTHEORETICAL MODEL OF BEHAVIOR CHANGE (TTM)

The Transtheoretical Model of Behavior Change (TTM), also known as the Stages of Change model, is one of the most commonly employed health behavior change theories within exercise interventions (20,23). Reviews of interventions matched to individuals' readiness to change (13,22) have demonstrated that tailoring messages is an extremely effective way to change behavior. Furthermore, multiple studies (5,9,12,14-19,32) revealed that tailored, TTM-based exercise interventions, including those delivered by health coaches (27), increase the adoption and maintenance of regular exercise. The success of these interventions underscore an important lesson for fitness professionals: It is crucial to assess each client's readiness to engage in regular exercise and tailor your interventions to his or her stage of change. Recognizing the unique needs of individuals in early stages and reconceptualizing progress as movement to the next stage can significantly increase the impact of your work with a client. Given the utility of the TTM for assisting clients in adopting and maintaining regular exercise, this chapter will provide an overview of the TTM and illustrate its practical application to assisting individuals in adopting and maintaining regular exercise.

The Five TTM Stages

The TTM conceptualizes change as a process that unfolds over time in a series of five stages of readiness to change (see Figure 4.1).

PRECONTEMPLATION

Precontemplation is the stage of change in which individuals are not intending to exercise regularly in the foreseeable future (typically defined as the next 6 months). Individuals in this stage are often unaware or under-aware of the benefits of adopting exercise and overestimating the costs of changing. They are often characterized by one or more of the three Ds: defensiveness, denial, or demoralization. Often they are described by the health professionals with whom they interact as nonadherent, unmotivated, or difficult. It is important, however, not to confuse lack of readiness to adopt exercise with lack of desire to exercise: Individuals

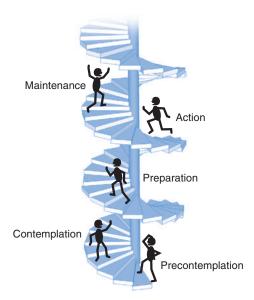


FIGURE 4.1. Stages of change.

in Precontemplation may want to begin exercising regularly or wish they would, but are not ready to do so because of perceived barriers, have low self-efficacy (i.e., confidence—or the belief that they can engage in regular exercise), or lack of information on how to get started.

CONTEMPLATION

Individuals in Contemplation are intending to exercise regularly within the next 6 months. They are more aware of the numerous benefits of exercise, but are also acutely aware of the cons, or drawbacks. As a result, they may be ambivalent about exercise. At times, the ambivalence is so profound that individuals get "stuck" in Contemplation, which is referred to as "chronic Contemplation." These individuals often lack the confidence and commitment they need to adopt regular exercise.

PREPARATION

Individuals in *Preparation* are ready to exercise regularly in the next 30 days and have often taken some steps closer to their goal, such as exercising on some days or exercising less than 30 minutes per day. They are creating a plan for how to move forward and are the perfect candidates for traditional messaging and programs that encourage people to take action to exercise regularly (e.g., Just Do It!). They are also more committed and confident about their ability to exercise regularly.

ACTION

Individuals in Action have adopted regular exercise within the past six months and are actively using behavioral strategies to create a new habit. They are likely to experience a setback when they experience a challenge (e.g., bad weather, injuries, schedule conflicts) unless they have planned ahead.

MAINTENANCE

Individuals in Maintenance have been exercising regularly for quite some time (typically defined as more than six months) and are significantly more confident about their ability to maintain the behavior change. Recent research indicates that low confidence or self-efficacy is the single best predictor of discontinuing exercise while in the Maintenance stage (11).

Moving Individuals Forward in the Stages of Change

As will be illustrated in the following text, an individual's stage of change has important implications for selecting intervention strategies and messaging. Equally important, though, are the implications the stage paradigm has for reconceptualizing what "success" means in working with clients to help them adopt or maintain exercise. A reasonable goal for each client is to help them move forward one stage of change, as forward stage movement is an important predictor of later success. In fact, assisting individuals in moving forward at least one stage of change (e.g., from Precontemplation to Contemplation) can as much as double the probability that they will take effective action in the following 6 months. Helping them move two stages can triple their chances of taking action (29). How can you help clients achieve that goal? By encouraging them to use behavior change strategies matched to their stage of change.

Those strategies are derived from other behavior change constructs included in the TTM, such as decisional balance, self-efficacy, and the 10 processes of change.

PROS (BENEFITS) AND CONS (DRAWBACKS)

Decisional balance represents an individual's relative weighting of the pros (i.e., benefits) and cons (i.e., hassles, barriers, or drawbacks) of changing (31). An extensive review of the pros and cons for 48 health behaviors (10) revealed a consistent pattern of the pros and cons across the stages for 48 health behaviors. The cons are higher than the pros in the Precontemplation stage, while the pros outweigh the cons in the Action stage. The relationship between the pros and cons across the stages has important implications for intervention strategies. The key takeaway messages for fitness professionals and other health care providers are that:

- 1. Raising the pros is twice as important as reducing the cons.
- 2. It is crucial to raise the pros for individuals in the early stages.
- 3. Contemplation is the time to begin addressing the barriers.

SELF-EFFICACY

Self-efficacy is defined as an individual's belief about his or her ability to do or achieve a specific behavior (3). Within TTM-based exercise interventions, it is operationalized as confidence to make and sustain changes. Confidence is low in the Precontemplation stage and increases across the stages (8). Given the importance of self-efficacy, it needs to be raised early by assisting individuals in setting and achieving small goals that will build their confidence for taking on increasingly difficult challenges. If, for example, someone is not exercising at all but is intending to do so in the next 6 months, it would be helpful to have them set a reasonable and achievable goal to begin exercising slowly (e.g., 10 minutes, three times a week) and increase the frequency and intensity once that goal has been mastered.

THE PROCESSES OF CHANGE

The processes of change (25;26) (see Table 4.1) represent both the covert and overt behavior change strategies that individuals use to progress through the stages of change (26). Research demonstrates that experiential (i.e., cognitive, affective, and evaluative) processes of change are typically emphasized by individuals in the earlier stages, whereas individuals in later stages rely more on the behavioral processes (i.e., social support, commitments, and behavior management techniques) (28). Additional research demonstrates that process use differs significantly across the stages of change for exercise (4,18,21,30,33). Each process can be activated by various techniques. Consciousness raising, for example, can be accomplished by reading articles or listening to news stories about the importance of exercise, talking with a health care provider or trainer about what modes of exercise best suit a person given their health history and physical limitations (if any), asking friends what types of exercises they enjoy, checking out the website of a local gym or fitness facility to see what types of

TABLE 4.1 Processes of Change						
Processes of Change	Description	Strategy Examples				
Experiential Processes						
Consciousness Raising (Become Informed)	Learning new facts, ideas, and tips that support exercise	Read books, magazines, or visit Web sites that focus on exercise and health.				
Dramatic Relief (Pay Attention to Feelings)	Experiencing negative emotions (fear, anxiety) that go along with the health consequences of not exercising or the positive emotions (e.g., inspiration) that go along with regular exercise	Think about somebody close to you that has had severe health problems that may have been prevented by regularly exercising. Does their inactivity and subsequent health problem upset you?				
Environmental Reevaluation (Notice your Effect on Others)	Realizing the negative impact not exercising has on others and our society—and the positive impact that exercising could have	Consider the example your inactivity sets for your children, family, friends, and coworkers.				
Self-Reevaluation (Create a New Self-Image)	Realizing that regular exercise is an important part of one's identity	Ask yourself, "How do I think and feel about myself as someone who is not exercising regularly? How might I feel differently if I was exercising regularly?"				
Social Liberation (Notice Social Trends)	Realizing that social norms are changing to support exercise	Name some social changes that support exercise (e.g., walking paths).				
Behavioral Processes						
Self-Liberation (Make a Commitment)	Believing in one's ability to exercise regularly and making a commitment to change based on that belief	Set a date to start exercising regularly and tell your friends, family, and coworkers your plan.				
Helping Relationships (Get Support)	Seeking and using social support to start and/or continue exercising	Join an adult sports league or ask a friend to walk around the neighborhood with you every evening after dinner.				
Counterconditioning (Use Substitutes)	Substituting healthy alternative behaviors and thoughts for unhealthy ones	Ride your bike to work instead of driving your car.				
Reinforcement Management (Use Rewards)	Increasing the intrinsic and extrinsic rewards for exercise and decreasing the rewards for being sedentary	Buy a new set of workout clothes after you have met an exercise goal.				
Stimulus Control (Manage your Environment)	Removing reminders or cues to be sedentary and using cues to exercise	Leave your running shoes and clothes in a bag by the door to remind you to run during your lunch break.				

programs they offer, or keeping a diary (paper or a mobile app) of how much physical activity a person is getting during the week. The first column of Table 4.1 includes both the official and (parenthetically) a more informal name of each process of change. Figure 4.2 illustrates the stages in which various processes of change are most relevant.



FIGURE 4.2. Processes by stage of change.

Step-by-Step

The basic assumption of traditional action-oriented interventions is that everyone is ready to change. The stage paradigm, however, operates under a fundamentally different assumption—that the majority of individuals are not ready to change. This difference in perspective allows exercise professionals to assist clients in employing the most effective strategies at the right time to help them get ready to initiate and maintain an exercise routine. Thus, encouraging the use of specific processes at the appropriate time facilitates forward stage movement.

- 1. Step 1. Assess Readiness to Change: Matching the intervention program or message to the needs of your client increases the likelihood that she or he will successfully adopt and maintain regular exercise. To begin, you will first need to assess how ready each client is to exercise to guidelines (i.e., in accordance with the ACSM guidelines for 30 minutes per day on 5 or more days per week of moderate exercise, or 20 minutes on 3 or more days per week of vigorous exercise, or some combination (2). It is crucial to know how ready he or she is to meet the public health recommendation, which is the ultimate goal. If a client has physical limitations that prevent him or her from achieving that level of exercise, you can assess readiness to engage in whatever level of physical activity is safe for them based on their health care provider's recommendations. You can separately assess readiness to engage in resistance exercises for each major muscle group and neuromotor exercise 2 to 3 days per week or flexibility exercises on at least 2 to 3 days per week (1).
- 2. Step 2. Target Interventions to Individual's Readiness to Change: Once you have assessed each individual's readiness to exercise regularly, you can employ the suggestions on the following pages to assist them in moving to the next stage. If, for example, your client is in the Contemplation stage, you can employ the intervention strategies described in the Contemplation section. We've also provided sample activities you can use with clients in each stage (25). These activities are handouts for the client, so they are written as if the client is reading them. For more guidance about how to apply the TTM successfully, you can participate in an e-learning module developed by Pro-Change Behavior Systems on using the TTM for coaching (details at www.prochange.com/e-learning) or refer to Mastering Change, A Coach's Guide to Using the Transtheoretical Model with Clients (24).

PRECONTEMPLATION

The goal in Precontemplation is to encourage clients to view success as progress to Contemplation. They are not ready to take action, so encouraging them to do so is likely to lead to dropout or demoralization. Providing information is a great way to initiate the behavior change process. Keep in mind that although they are not ready to begin exercising regularly, they may be willing to set a small goal (e.g., adding a few minutes of exercise to their day once a week). If they aren't ready to set that goal, see if you can arrive at one that feels reasonable to them.

For a sample Precontemplation activity, see From the Practical Toolbox 4.1.

Precontemplation: Key Intervention Strategies

Increase the Pros

- Encourage clients to list their own "pros" of exercise—How will they benefit from exercising regularly? What's in it for them?
- · Reinforce what they came up with and point out additional benefits, including some that are specific to them.
- · Provide a list of over 75 benefits.
- Encourage clients to create a Top Ten List of the most personally relevant benefits.

Raise Consciousness—Help Clients Become Informed

- · Increase their awareness of consequences of sedentary behavior (e.g., ask their health care provider about how being sedentary is affecting their health).
- · Make observations (e.g., "You're saying that you have less energy since you stopped exercising. . . ").
- Encourage the client to be more open to information from media, health care providers, friends, etc. (e.g., ask them to notice headlines related to exercise).

Social Liberation-Notice Social Trends

- · Encourage the client to name some social changes that support exercise; provide examples to add to what they mention.
- · Ask them to notice other social trends that are making it easier to exercise, including:
 - Walking paths
 - Free or low-cost exercise programs and fitness classes offered through towns or worksite wellness programs
 - Fund-raising groups (e.g., The Leukemia Society's Team-In-Training) designed to train clients for exercise while raising money for a great cause
 - Increasing opportunities to work out at home (e.g., fitness DVDs from Netflix, video games like Dance, Dance Revolution, Wii Sports, and Wii Fit)
 - Mobile wireless technology is making it easier to work out and track physical activity by downloading fitness programs and trackers to cell phones or MP3 players (e.g., work out apps such as Nike + or mapmyrun.com).

Environmental Reevaluation—Notice Your Effect on Others

- Encourage the client to consider the effect of not exercising on others, including children, spouse, friends, and family.
- Ask if the client is setting the example he or she wants to set for those people.
- Ask whether someone else will have to deal with the potential consequences of their sedentary behavior (e.g., chronic diseases, physical limitations, early death).



SAMPLE ACTIVITY FOR PRECONTEMPLATORS: RAISE THE PROS

People in Precontemplation usually don't focus enough on all of the good reasons to exercise regularly. The more good reasons, or "Pros" you have, the easier it will be to take the next step when you are ready.

The following are 75 benefits of exercising regularly.

Which benefits are most important to you? Be sure to check them off as you go.
Exercise will improve your health in many ways: You will manage your weight better. You will lower your risk of an early death. You will improve your quality of life. You may lose weight, particularly if you also reduce calories. You will improve heart, lung, and muscle fitness.
You can reduce your risk of many illnesses: Coronary heart disease Diabetes High blood pressure Osteoporosis (brittle bones) Stroke Depression Dementia Diverticulitis Gallstones Colon cancer Breast cancer Endometrial cancer Hip fracture
It's good for your overall well-being: □ Exercise increases your energy. □ Regular exercise helps you cope with stress. □ Exercising regularly relaxes you. □ Regular exercise improves your sleep. □ Regular exercise controls your appetite. □ Exercising regularly makes you stronger. □ Exercise improves your mood. □ Exercise increases your endurance. □ Exercise can reduce pain. □ Exercise can reduce body fat.
It's good for your heart: ☐ Helps raise levels of "good" cholesterol (HDL) ☐ Decreases levels of "bad" cholesterol (LDL) ☐ Increases your chance of surviving a second heart attack ☐ Decreases risk of clogged blood vessels ☐ Lowers your resting heart rate

From the Practical Toolbox 4.1 continued



Decreases irregular heart rhythms Improves circulation	
t improves your self-image: Increases confidence Improves self-esteem Helps you look better Improves your posture Helps you be more productive Increases your joy in life Increases your sense of well-being Improves your self-worth	
t improves your overall health: Helps your immune system work better Helps your body use insulin Increases your metabolism Helps muscles burn more energy all day Strengthens joints Makes your bones stronger Lowers the risk of erectile dysfunction Improves bowel regularity Strengthens muscles	
You'll notice changes in your everyday life: 2 You'll feel less nervous or anxious. 2 You'll have increased stamina. 2 You'll be more alert and focused. 2 You'll improve your memory. 2 You'll be more flexible. 3 You'll become better coordinated. 4 You'll help relieve the pain of tension headaches. 5 You'll reduce your risk of falling. 6 You'll reduce and prevent low back pain. 6 You'll have less muscle tension. 7 You'll better tolerate heat and cold. 8 You'll have increased sex drive and improved sexual performance. 9 You'll have fewer illnesses and absences from work. 9 You can challenge yourself in new and different ways. 9 You'll be able to better manage your anger. 9 You'll find that exercise takes your mind off other things for a while. 9 You will function better. 9 You clothes may fit better.	
Others will benefit, too! 2 Your loved ones would worry less about your health.	

☐ You will set an example about making healthy choices.

☐ You would be a healthy role model for your own children, family, and friends.

CONTEMPLATION

The goal in Contemplation is to encourage clients to view success as progress to Preparation. They are getting ready to take action, so encouraging them to rush to adopt regular exercise before they are ready is likely to be ineffective. The real risk for a Contemplator is that they will get stuck in "chronic" Contemplation because they are ambivalent. They see the value of adopting regular exercise, but are still acutely aware of the barriers or drawbacks. To help them keep moving forward, encourage them to take small steps. Being successful with those small steps will build their confidence and help them see the benefits of exercise more clearly.

For a sample Contemplation activity, see From the Practical Toolbox 4.2.

Contemplation: Key Intervention Strategies

Make the Pros Outweigh the Cons

- Ask client to name his or her most significant con(s).
- · Acknowledge changing does have costs, but avoid debate about whether change is "worth it."
- Ask clients to shrink cons by:
 - Comparing them to their growing list of pros.
 - Asking how important cons are relative to pros.
 - Challenging themselves to overcome the cons.

Consciousness Raising—Become Informed

- · Encourage clients to keep an exercise log or wear a pedometer so they can see how much, if any, exercise they are getting and when.
- Encourage clients to ask questions and search for more information (e.g., explore alternatives for exercise venues that are well matched to preferences and schedules, talk to friends about how they fit exercise into their schedule).
- · Ask clients what headlines or news stories they have seen recently about exercise (e.g., a story on National Public Radio about exercise increasing memory capacity among older adults, etc.) and challenge them to look for more.

Self-Reevaluation—Create a New Self Image

- · Encourage the client to ask him or herself about self-image: "How do I think and feel about myself as someone who is not exercising regularly?"
- Challenge the client to describe the kind of person he or she wants to be.
- Ask the clients to describe how their self-image might improve if they were exercising regularly.
- Provide a checklist of adjectives for the client to endorse (e.g., energetic, sluggish, fit, out of shape, etc.).

Dramatic Relief—Pay Attention to Feelings

- · Ask the client to share an inspirational story about someone they knew who improved their health and well-being by starting to exercise regularly (a friend, family member, celebrity, etc.).
- If she or he cannot think of an example, share one from your experience—convey the impact of beginning to exercise on someone who had been in the stage where this client is now.
- · Ask the client to describe how she or he would feel if they were diagnosed with a chronic disease like diabetes or heart disease due in part to an unhealthy lifestyle-would they regret not exercising? Would she or he be worried about premature death? How can taking small steps toward regular exercise help him or her deal with those feelings?



SAMPLE CONTEMPLATION ACTIVITY: OVERCOME THE ROADBLOCKS

There is a good chance you are wondering whether regular exercise is worth the effort. It can be challenging to change old habits, especially at first. We have three strategies to help reduce the drawbacks or roadblocks you might be facing. Jot down your three biggest roadblocks in the table below. Which of the following strategies will you use to overcome each barrier?

- 1. Create a list of the benefits, or pros, of exercising regularly. (The Sample Activity for Precontemplators: Raise the Pros, found in From the Practical Toolbox 4.1, can be used here, as well, if you have not already done so.) As you add to your list, the drawbacks, or cons, may seem less important.
- 2. Consider the cons as the hassles they are, compared to the serious consequences of not exercising regularly. For example:
 - How does the cost of an exercise class or a new pair of sneakers compare to the risk of diabetes or heart disease?
 - How does finding the time to exercise compare to the time you

- could be adding to your life by doing it?
- How does the temporary discomfort of starting to exercise compare to the chance you will have less strength and endurance over time if you don't exercise?
- 3. Counter the cons, or drawbacks, with practical alternatives or challenges. For example:
 - If I lack a 30-minute block of time to exercise, I can do three, 10-minute blocks during the day.
 - I can watch a favorite show while I am on a treadmill to make the time pass more quickly.
 - If I am embarrassed to exercise in front of others. I can exercise at home, go to a class for beginners, or hit the gym when it is not crowded. I will feel less self-conscious.
 - If I cannot afford a gym membership, I can walk outside for free, sign up for a low-cost class at my community center, or ask if the gym offers a sliding scale membership fee.

List Your Three Biggest Roadblocks Here:	List Three Practical Alternatives Here:

- Encourage Small Steps (to Build Self-Efficacy)
 - Provide clients with options for a small step they can take toward their goal (e.g., a 10-minute walk each day, going to one exercise class each week, taking the stairs instead of the elevator, making an appointment with their health care provider to get clearance to begin exercising).
 - Ask clients to choose among the small steps suggested or provide their own examples. Check in with them again to see how they did.

PREPARATION

The goal in Preparation is to encourage clients to be successful when they adopt regular exercise. Help them set a date, make a concrete plan, and build a support team. Encourage them to anticipate potentially difficult situations (e.g., travel, upcoming busy times at work, bad weather) and make contingency plans so they do not get off track. Having a plan will build clients' confidence that they can achieve their goals. Your encouragement and support will also be crucial. For a sample Preparation activity, see From the Practical Toolbox 4.3.

Preparation: Key Intervention Strategies

Self-Liberation—Make a Commitment

- Encourage client to make a strong commitment to start exercising regularly by:
 - Setting a specific start date, rather than waiting for a magic moment
 - Sharing commitment with others (tell others, post on Facebook or other social networking sites, etc.)
 - · Creating a specific "Action Plan" and gathering any information they need
 - Writing down their commitment, start date, and action plan

Helping Relationships—Get Support

- · Ask clients to identify others who can support their change efforts
 - · A friend trying to make similar change
 - Loved ones, family, friends, neighbors, coworkers
 - Facebook friends
 - You or other staff at their gym, provider's office, etc.
 - Encourage clients to be as specific as possible about the type and amount of support and encouragement they need.
- Assist client by:
 - Role-playing requests for support
 - · Identifying additional sources of support
 - Tapering support if it appears he or she is becoming dependent on you (e.g., by meeting less often).

Self-Reevaluation—Keep Creating a New Self-Image

- Encourage clients to think about how they will think and feel about themselves after they have started making changes.
- Utilize visualization exercises (*i.e.*, client imagining themselves in 3 to 6 months or a year)
 - How they think about themselves
 - · How their image of themselves has shifted
 - How their health has changed
 - How their outlook has changed
- Here are some additional guidelines for visualization (6):
 - Find a quiet place free of distractions. Relax and take deep breaths.
 - Visualize color—first as large blue circles. See them shrink to small dots and then disappear. Blue is a relaxing color.
 - Fill the scene with exercise images. Be as specific and detailed as possible.
 - Progressively add specific details including the client seeing themselves in great detail.
 - Have the client imagine themselves in the exercise setting. Imagine in detail how
 regular exercise will change their self-image. Have the client imagine the tasks
 and motor skills in vivid detail.
 - End by guiding them to breathing deeply, slowly opening their eyes, and adjusting to the real external environment.



SAMPLE PREPARATION ACTIVITY: MAKE A COMMITMENT

Before beginning any exercise program, it is important to check with your doctor to make sure he or she does not have any concerns or recommendations for you.

Once you have gotten the green light, it is full steam ahead.

1. Set a Goal

Choose the specific goal you will work on by checking one of the following boxes.

- □ 150 minutes of moderate exercise (at least 30 minutes on at least 5 days per week)
- □ 75 minutes of vigorous exercise (at least 20 minutes a day on 3 or more days)
- ☐ A combination of moderate and vigorous activity that adds up to those targets (assuming 1 minute of vigorous exercise = 2 minutes of moderate)
- □ 8 to 12 repetitions of resistance exercises that include all major muscle groups, 2 to 3 days per week
- ☐ Exercises to improve balance, coordination, and agility, 2 to 3 days per week
- ☐ Flexibility exercises (60 seconds per exercise) for each major muscle-tendon group, at least 2 days per week

2. Find an Exercise

Making exercise a habit is a lot easier if you find something that matches your exercise goals, and that you really enjoy doing.

The most popular form of exercising in America is walking. However, you may prefer using a stationary bike, swimming, doing Zumba, taking a fitness class, doing yoga, playing basketball, or lifting weights.

The key is to think about what you want to gain from exercise, and then find the right type of exercise for you.

The exercise I choose is:___

3. Set Your Start Date

When will you start to exercise regularly? Studies have shown that it helps to:

- Pick a date in the next month.
- Choose a day that you have some control over.
- Select a day that will not be too stressful.
- Mark your date where you will be reminded (in your planner or phone, etc.).

I will start exercising regularly on:

4. Tell Others about Your Commitment

Public commitments are stronger than private ones. Every time you tell someone about your promise to start exercising regularly, you make your commitment stronger.

Start to strengthen your determination to exercise by:

- · Deciding who you will tell about your commitment, and
- Telling them about your plans. Who will you tell about your plan? I will tell:

How will	you	tell	people	? C	Consi	der	these
ideas:	·						

- Update your Facebook or Twitter status to: "I am starting an exercise program!"
- · Say to your friends, family, and coworkers: "I wanted to let a few people know that I'm planning to start exercising regularly. Telling people will help me stick with it. I plan to start on . Look for me at the gym/pool/on the road/walking path!"

continued

	-	_
-		

From the Practical Toolbox 4.3 continued

stating: "I an • Put a note of starts		n exercise pla Exercise plan	n!" Rui out and	vnload a smartphone app: nkeeper will not only tr for you, but will upload results to Facebook or	ack your work- l your workouts Twitter.
5. Make an A You will be m	Action Plan nore successful if y	you plan your	r strategy in a	are going to be exercising dvance. Be as specific as For example, have a bac	possible, keeping
My Action F	Plan				
Start Date:					
Days of the v	week I will exerci	se:			
My Exercise	Plan				
	Time of Day	Activity	Location	Duration/Distance	Backup Plan
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					
before, etc.)				classes, pack exercise clo	othes the night
What else do	o I need to get	started?			

Counterconditioning—Use Substitutes

- Encourage clients to substitute healthy thoughts for unhealthy ones that might hold them back. You can share these examples:
 - If you are feeling tired, tell yourself how much energy you will have after you
 - "On stressful days, think of exercise as a time away from the day's worries."
 - "When you think you're too busy, remind yourself that exercise is an important part of being healthy."

ACTION

The goal in Action is to help the client continue exercising regularly. Encourage them to plan ahead to prevent slips: Remind them that failing to plan is planning to fail. Having a specific plan to deal with any potentially difficult situation (e.g., holidays, stressful times at work, gym closures) will keep their confidence high, which is crucial in Action. At the same time, reassure them if they have a slip that they need not get discouraged. It is common to slip. Educate them that the most important thing is to evaluate what went wrong, create a plan for dealing with the situation in the future, and get back on track as quickly as possible. For a sample Action activity, see From the Practical Toolbox 4.4.

Action: Key Intervention Strategies

Counter Conditioning—Use Substitutes

- · Assist clients in replacing negative behaviors with positive behaviors (e.g., "Instead of waiting until the end of the day to exercise (when I might not get to it), I will exercise in the morning").
- Teach clients to challenge negative thoughts by substituting positive alternatives (e.g., "Instead of thinking of exercise as a chore, I will think of it as a gift I give to myself").
- Problem-solve with clients to identify behavioral alternatives that will work for

Stimulus Control—Take Control of Your Environment

- · Help the client identify and avoid people, places, and things that increase the likelihood of being sedentary (i.e., sitting down to watch "just one" show at night, busy days, friends who do not exercise, travel) and plans to work around those.
- · Encourage clients to use reminders to exercise, like notes, scheduling exercise in their calendar, or signing up for a class so they have a specific time to exercise.
- · Assist clients in identifying ways to restructure their environment to make it easier to exercise regularly (e.g., exercise at lunch time with coworkers, leave their gym bag and sneakers in the car so they do not have to go home after work first, etc.).

Helping Relationships—Get Support

- · Encourage clients to seek support from others, especially those who are regular exercisers.
- · Encourage clients to be as specific as possible about the type and amount of support and encouragement they need.
- · Point out that support can come from professionals as well as personal sources (e.g., trainers, health care professionals, etc.).
- Remind clients that they may need to adjust their support team over time.



SAMPLE ACTIVITY FOR ACTION: USE SUBSTITUTES

Replacing old habits and ways of thinking with new ones is one of the secrets to continuing to exercise regularly. The following examples will show you how others have made healthy substitutes.

Name	Old Way of Thinking	Healthy Substitute
Paul	"I used to get frustrated when I got to the gym and the machines were taken. So I'd just turn around and leave— without exercising."	"Now, I go to the gym early in the morning when it's not so busy. When I can't do that, I go for a jog outside or do squats, sit-ups, push-ups, lunges, and use free weights at home. That way, I'm certain to get a daily workout."
Jake	"I always found it difficult to set aside time for exercise because I let all my other priorities come first."	"I had to schedule a time to exercise to be sure I did it. It has worked really well—so now, I treat that time like an appointment. On the rare times when I don't feel like going, I tell myself that I can go for a few minutes and stop if I want. I've never stopped—once I get moving, I'm fine."
Danielle	"I used to skip exercising when I felt stressed."	"Now I remind myself that exercising is one of the best ways to manage my stress. I always feel better after I work out. Plus, it makes me more productive."
Lila	"I used to watch a lot of TV in the evenings.	"Now I tell myself that I can trade one of my half-hour shows for a brisk walk. I read last year that watching too much TV can actually make you gain weight. Watching TV for a half hour burns 36 calories—brisk walking burns about 148."
Terry	"I get bored easily."	"To keep myself interested in exercise, I add variety to my exercise program. Two days a week I walk, 2 days I swim, and 2 days I use the stair climber or elliptical machine at the gym. Crosstraining has also given me the confidence to try new things. I feel stronger overall."

Now give some thought to the old thoughts and behaviors you might need to replace with healthier substitutes. Come up with at least one alternative for each.

Instead of	I will

Reinforcement Management—Use Rewards

- · Encourage the client to notice the intrinsic rewards of exercising regularly (more energy, lower blood pressure, more self-confidence, higher self-esteem, higher productivity, etc.).
- Encourage clients to reinforce themselves with positive self-statements.
- · Ask the client if they want to use tangible rewards for meeting various shortand long-term goals or milestones (e.g., new sneakers or workout clothes after 3 months of regular exercise).

Self-Liberation—Make a Commitment

· Encourage the client to reaffirm their commitment to exercising regularly and to believe in his or her ability to do so.

MAINTENANCE

The goal in Maintenance is to help the client make regular exercise a life-long habit. Assist your clients in planning ahead to prevent slips in times of unusual distress (major stressors). Encourage them to get back on track quickly if they happen to have a slip to prevent that slip from turning into a major backslide.

For a sample Maintenance activity, see From the Practical Toolbox 4.5.

Maintenance: Key Intervention Strategies

Stimulus Control—Continue to Control

- · Help client identify any people, places, or situations that they need to avoid to stay on track.
- Encourage clients to continue to use reminders to exercise.
- · Ask clients if they have restructured their environments enough to ensure that they will keep exercising.

Counterconditioning—Continue to Substitute

- Encourage the client to keep his or her thinking positive (rule of thumb—three positive thoughts for each negative thought).
- Help clients to plan ahead to deal with difficult situations so confidence is high.
- · Remind clients that a majority of relapses occur at times of distress and that although distress cannot be prevented, relapse can be.
- · Remind clients that one of the best stress relievers and mood elevators is exercise. Other alternatives for dealing with distress include seeking support and using relaxation.

Reinforcement Management—Use Rewards

 Encourage clients to reward themselves for reaching various goals and overcoming any slips they might have.

Get Support

- Encourage the client to seek support as needed.
- Remind them they can now offer support to others to consolidate their own gains.

Recycling

- Many clients relapse before reaching permanent Maintenance.
- Encourage clients to view setbacks/lapses as an opportunity to learn and move ahead better prepared.
 - Encourage the view of a setback as temporary.
 - · Help clients analyze slips and problem-solve about what can be done differently the next time.



SAMPLE MAINTENANCE ACTIVITY: PLAN AHEAD TO KEEP CONFIDENCE HIGH

Having been a regular exerciser for so long, you're probably pretty confident in your ability to keep exercising.

During the coming years, though, you might face new situations that could challenge your confidence. Read the following stories to learn how others have dealt with difficult situations and answer the questions that follow each one.

Difficult Situation: Stacey

Stacey had been walking as a way to stay healthy and maintain her weight for just over a year. During winter, though, she slipped on the ice, fell, and sprained her ankle.

By the time her injury had healed, it was spring. Though there was no ice on the ground, she still didn't want to head outside for a walk. She knew she needed to exercise—especially after she tried on her spring clothes and discovered that they were tight.

It took a while, but one day she just put on her sneakers and went for a walk. "I can't believe how good it felt! I don't know why I waited so long. My body needs this!"

Since then, she's back to walking regularly, and is feeling better than ever. She's even been saving up to buy a treadmill when winter hits. This winter there will be no ice to slip her up!

Imagine that you couldn't perform your regular exercise. What would you do instead?

Difficult Situation: Brian

Brian has been working toward a promotion at work. He is very good at his job, and has been putting in extra hours to stay in the race for the position.

He was stressed, feeling like he needed to be there all the time to show his commitment. This meant he stopped running. . .for the first time in years. Not running affected Brian pretty quickly. By the second week, he was less focused, could not sleep well, his stress was building, and he was grouchy all the time. On the tenth day of his "all work, no play" routine he took a run during lunch. "When I got back from that run, I had so much more energy and was so focused that I had a really productive afternoon and evening. It's easy to take exercise for granted once you're used to doing it regularly. But after stopping for a couple of weeks, I realized that getting out for a run helped me clear my head and stay balanced. I had to keep it up to be able to focus on my work."

After that, Brian made sure to get a run in every day during lunch, rain, or shine. He had learned a lesson about moderation—all work and no play is often less productive. And because he showed his boss he was able to dedicate himself to work in a healthy way, he got the promotion!

Brian discovered that he could not function well without exercising regularly. How would you function without your regular exercise?

How does exercise help you achieve your goals?

From the Practical Toolbox 4.5 continued



What other unexpected situations could derail you (e.g., extended travel, change in daily routine like a new longer commute, or change in family demands, such as a sick parent)?

How will you handle those unexpected situations?

- Encourage clients to maintain an image of who they are working to be and an image of themselves as someone who is succeeding in the process.
- Ask clients to reassess their current stage if they slip out of exercising regularly.

Avoiding Boredom

Maintaining an exercise routine is a daunting task that involves continuously motivating choice in performing a behavior. Thus, it is not surprising that many individuals often focus on performing one, or only a few, different types of physical activities when beginning or maintaining an exercise routine. For this and any number of other potential reasons, people may become bored with their routine. To avoid boredom, you could encourage your clients to:

- Incorporate a variety of physical activity into their exercise routines
- Keep their usual routine interesting by varying their route
- Change the music they listen to
- Inviting different friends to join them.

The following strategies will also help your client to avoid boredom and relapsing to sedentary behavior. It will be most helpful to engage in nondirective problem solving with your client to generate solutions for avoiding boredom using the suggestions that follow. In other words, engage them in an active discussion in which you are facilitating their creation of a plan to incorporate variety into their routine.

For a sample form for monitoring workouts to avoid boredom, see From the Practical Toolbox 4.6.

Strategies to Avoid Boredom

- · Have your client reconceptualize boredom with their current routine as an opportunity rather than a hindrance. This is a good time to finally attempt a sport, activity class, or new exercise routine that they have wanted to try.
- · Challenge your client to identify what they hope to get out of exercise and to identify what types of activities could provide that feeling or outcome. If, for example, they want to build strength, they can lift weights, try white water rafting, or take Zumba. If they want creativity, they can try skateboarding, snowboarding, freestyle dance, mountain biking, urban hip hop, or inline skating. If they want to build stamina, they can try hiking, distance running, or swimming, or to boost a mind-body connection they could try yoga, Tai Chi, Pilates, or martial arts.
- Encourage them to look for helpful information while exploring other types of exercise.
- · Help them to internalize their motivation to exercise by focusing on how good it feels to try other forms of physical activity and experience the sensations of participating in a new physical activity.



SAMPLE MONITORING FORM

Date:	e: Location of workout:			
Type of Activities	Intensity/Effort Expended	Duration of Workout		
*	n track for my short-term goals n track for my medium-range ş			
	n track for my long-term goals?	-		
How did I feel <u>before</u> today's we How did I feel <u>during</u> today's w				
How did I feel <u>after</u> today's world	kout?			
Which (if any) parts of my work on track to accomplish all of my	cout could I change to help me so goals?	tay motivated, enthusiastic, and		
Any additional notes or commen	nts:			

- Encourage your client to get help from others. Good examples include joining a new gym, activity group, recreational sports team, or community recreation league. Encourage them to ask different friends, family members, and/or coworkers to join them to exercise.
 - Recognize that many clients are looking to exercise professionals for this type of helping relationship. Encourage them to become their own coach by determining what exactly they are bored with in their routine (e.g., lack of enjoyment; lack of satisfaction with performance/results) and problem-solving about other ways to achieve the desired outcome.
- · Help them to realistically evaluate their goals and expectations. Give them information about which other activities may help accelerate progress toward appropriate short-, medium-, and long-term goals.
- · Have your client track their progress daily. Carefully monitoring all aspects of their workouts allows you (and them) to see exactly which aspect(s) are contributing to boredom. Be sure to monitor:
 - What types of exercise are being performed, and their level of interest while performing it
 - Feelings of perceived exertion
 - Satisfaction with each workout
 - If short-, moderate-, and long-term goals are being met. Are these goals realistic to begin with? Can they be adjusted?

Relapse Prevention

Understanding that slips and setbacks will happen is the first step in not letting those slips derail all of the hard work an individual has done to become physically active. In terms of exercise, this means avoiding relapse to sedentary behaviors. Thus, strategies for preventing relapse must focus on addressing the temptations to be sedentary.

Strategies to Help Avoid Relapse

- · Encourage your client to recognize the times when they are tempted to skip a workout. Come up with a strategy to avoid succumbing to this temptation. For example:
 - Get a gym membership or treadmill for the home if they enjoy running, but do not like running outside in bad weather.
 - Call a friend when they are not in the mood to exercise and need a little extra social support to stay on track.
 - Focus on the mood improvements that result from exercising to avoid skipping a workout when they feel down.
- Assist your client to recognize all of their previous accomplishments, successes, and new knowledge they have about exercise and health. Help them realize the barriers they have overcome to get where they are now, and remember the experiences that they had while becoming a regular exerciser.
- · Encourage your client to reward themselves for all of their accomplishments. It may seem obvious to reward behavioral milestones such as working out 4 days in one week, or reaching a new performance goal, but remind them to reward other accomplishments, even if the reward is a positive self-statement (Good job! I knew I could do it!). For example, reward small steps such as joining a gym, subscribing to a fitness magazine, or scheduling appointments with a trainer or a group exercise class.

- Help your client identify other people and/or groups that they may turn to for help and support. Provide them with a list of websites that post exercise classes, recreational sports leagues, local road races, and physical activity meet-up groups.
- Identify the cues in your client's life that are triggering sedentary behaviors. Can they, for example, leave some workout equipment (e.g., light weights/ dumbbells, DVDs, or therabands) in places where they would normally be sedentary (i.e., living room, bedroom, home office, etc.)?
- Encourage your client to substitute negatives with positives. For example, help them:
 - Have walking meetings at work.
 - Ride a stationary bike while watching TV instead of sitting on the couch.
 - · Ask a friend to catch up and talk while walking around the neighborhood instead of talking over coffee.
- · Help your client stay up to date on exercise strategies, opportunities, and benefits by encouraging them to subscribe to fitness-oriented magazines, bookmark their favorite physical activity-oriented Web sites, and talk to people about specific issues and/or questions about staying on track.
- · Encourage your client to monitor their exercise routines, progress, goals, and setbacks. Daily monitoring is key in identifying where and when setbacks are likely to occur.

The Action section earlier in this chapter provides additional tips on avoiding relapse.

RESOURCES FOR CLIENTS

To provide clients with additional assistance navigating the behavior change process, you can refer them to a variety of free resources with behavior change tips.

Behavior Change Resources for Clients

Web Sites

Centers for Disease Control: http://www.cdc.gov/physicalactivity/index.html National Institutes of Health: http://health.nih.gov/topic/ExercisePhysicalFitness; older adults can also find guidance at http://health.nih.gov/topic/ ExerciseforSeniors.

Computer-Tailored Intervention

You can also refer them to an evidence-based computer-tailored intervention for exercise within the LifeStyle Management Suite of programs available at www. prochange.com/myhealth. Participants can interact with the fully tailored intervention, which gives individualized feedback on the behavior change processes they are using and suggestions about what they need to use more or less to move forward. A demo of the program is available at www.prochange.com/exercisedemo. The suite also contains a Personal Activity Center that includes interactive activities designed to activate the most appropriate strategies for change. A nominal fee grants access for 1 year. Participants can print and share their computertailored intervention report with you or other health professionals.



Case Scenario 4.1

Marianne is a 56-year-old woman with hypertension, high cholesterol, and a body mass index of 27. She was referred through a worksite wellness program to a session with a health coach, who can see from her Health Risk Assessment that she is not currently exercising.

During their first call, Marianne reports that she has no intention to begin exercising regularly in the next 6 months. She explains that she has no time for exercise given her busy work schedule. She also reports that she does not need to exercise because she is "pretty healthy." She attributes her weight gain in the past 5 years to menopause.

What stage of change is Marianne likely in, and what interventions do you suggest?

Intervention Suggestions:

- Raise the Pros
- · Decrease defenses—Marianne is blaming her weight gain on menopause, rather than recognizing the role a sedentary lifestyle could be playing. She is potentially denying the role her sedentary lifestyle and overweight status is playing in her chronic illnesses, both of which increase her risk of cardiovascular disease. It will be helpful to point out that we often use defenses, and to assist Marianne in recognizing hers, so she can use
- Ask Marianne if she has spoken with her health care provider about the role exercise could play in managing her hypertension and high cholesterol. If she has not, ask her if she will. Would it be possible to get off the medication she is now taking if she exercised more? Would exercise also lower her risk of other conditions, such as diabetes?
- Does she pay attention to news stories and headlines about exercise? Could she find one between now and your next call?
- Does Marianne have children or other young family members (e.g., nieces or nephews)? Is she concerned about living as long as she can for them or seeing important milestones in their lives (e.g., weddings, first babies)? Could exercising help her be there for those special people? Ask her if she has thought about what type of example she would be setting for them if she were to start exercising someday.

What else might be an effective intervention for Marianne?

Marianne is in the Precontemplation stage because she is not intending to exercise regularly in the next 6 months. Another effective intervention strategy for those in Precontemplation is to encourage them to look for inspiration from others who have adopted regular exercise. Ask if she knows anyone who has improved his or her health and well-being by beginning to exercise regularly. How did that person do it? Does that person's success inspire her to want to exercise?



Case Scenario 4.2

Bill is a 33-year-old with no notable medical history and a body mass index of 22. He played basketball in high school and college, but has little time now that he has a new demanding position as a supervisor at work and a new baby at home. He reports that he is "thinking about" beginning to exercise again sometime in the next 6 months or so, but has no specific

plans. He also reports that he "feels guilty" spending time exercising after work since his wife seems more overwhelmed when he comes home later.

What stage of change is Bill likely in, and what interventions do you suggest?

Intervention Suggestions:

- Stress, a demanding schedule, and feeling guilty over taking time away from his new family are big cons for Bill. Assist him in overcoming those cons by coming up with practical ways around them (e.g., Can he exercise on his lunch hour at the company's fitness facility? Can he ride his bike to and from work so his transportation is his exercise and he will not be hassled with traffic? Can he find some way to give his wife a break and exercise by taking the baby for a walk or jog in the stroller?) and/or comparing them to the advantages he is familiar with (e.g., he will feel less stressed if he exercises, he is likely to be more productive, and he will live longer for his new baby).
- · Can Bill talk to coworkers and friends to figure out how they are fitting exercise into their schedules? Are there any alternatives that might fit into his schedule (e.g., a gym that opens up early enough for him to go on his way to work so he can still be home in the evening)?
- Ask Bill to list his values and what is important to him. Is his sedentary lifestyle consistent with those values? Is that the image he wants his new son to have of him?
- Has he been inspired by anyone who manages to fit exercise in and has benefited as a result? Has he heard any stories of colleagues who had health problems because they did not take care of themselves by exercising and eating well?
- Are there any small steps he can take to start to reincorporate exercise into his life? What else might be an effective intervention for Bill?

Bill is in the Contemplation stage. Another effective intervention strategy for individuals in Contemplation is to ask him to consider the effect of his inactivity on the important people in his life. Could he be a better role model to his child, and other people in his life, if he were exercising regularly?



Case Scenario 4.3

Michelle is a 25-year-old recent college graduate with a body mass index of 25. She is in good health overall, but would like to drop a few pounds. Her typical workout routine has included 30 minutes a day on the elliptical machine at the gym in her apartment complex or walking around the neighborhood. Recently her motivation and adherence to this routine has waned

Case Scenario 4.3 continued

because she is frustrated with her slowing weight loss. She now reports that she has a hard time consistently exercising because of work and social obligations. She also seems to be overestimating how many calories are burned during exercise and the intensity level of her workouts. She reports that she is going to get back on track in the next week or so, but wants some tips.

What stage of change is Michelle likely in, and what interventions do you suggest?

Intervention Suggestions:

- Encourage Michelle to renew her commitment to exercising regularly and encourage her to focus on all of the benefits, rather than just on the potential to lose weight. Ask her if exercise will make her feel more energetic, confident, and healthy.
- Encourage Michelle to share her commitment to get started again with her friends, family, and coworkers.
- Assist Michelle with making detailed plans for how and when she will exercise, anticipating potential challenges. What will she do when she has to work late or when the weather is bad?
- Help Michelle find accurate information about the intensity of her exercise and educate her about the duration and intensity needed to burn calories. Does she need to increase the intensity of her exercise to see the results she wants?
- Encourage Michelle to employ substitutes for negative thoughts that could be getting in her way (e.g., If she is busy with work, can she walk or bike there to add more activity to her day or get off public transportation a few stops earlier? If she feels like she is missing out on social obligations when she is exercising, can she involve friends in her activity—going for hikes or bike rides? If she is bored with the elliptical and not getting the results she wants, can she add more variety to her routine?)

What else might be an effective intervention for Michelle?

Michelle is in the Preparation Stage. She had been in Action and is planning to get back on track. To help Michelle reach her goal, you could suggest that she turn her social network into a support network. Suggest that she ask for the encouragement of important people in her life and talk with her about how specifically she can do that. Does she want to challenge her friends informally or formally in apps like Nike+? If you sense reluctance, ask if a closed social network like LoseIt! might work for her.

TAKE-HOME MESSAGES

Other behavior theories and models are described in Chapter 1. This chapter further details the TTM as a useful intervention framework for assisting clients in adopting and maintaining regular exercise. It is crucial to assess each client's readiness to engage in regular exercise and tailor your interventions to his or her stage of change. Recognizing the unique needs of individuals in early stages and reconceptualizing progress as movement to the next stage can significantly increase the impact of exercise interventions. Adequate preparation prior to taking action has the potential to decrease relapse rates and assist individuals in recycling more quickly if they do relapse to an earlier stage. The suggestions and sample activities provided here will assist you in using stage-appropriate strategies for the entire population of clients with whom you come into contact, rather than the minority who are prepared to take action.

REFERENCES

- 1. American College of Sports Medicine. ACSM's Guidelines for Exercise Testing and Prescription. 9th ed. Baltimore (MD): Lippincott Williams and Wilkins; 2014.
- 2. American College of Sports Medicine. Quantity and quality of exercise for developing and maintaining cardiorespiratory, musculoskeletal, and neuromotor fitness in apparently healthy adults: Guidance for prescribing exercise. Med Sci Sports Exerc. 2011;1334-59.
- 3. Bandura A. Self-efficacy. In: Ramachaudran VS, editor. Encyclopedia of Human Behavior. New York: Academic Press; 1994. p. 71–81.
- 4. Blaney C, Robbins M, Paiva A, et al. Validation of the TTM processes of change measure for exercise in an adult African American sample. In: Proceedings of the 31st Annual Conference of the Society of Behavioral Medicine, 2010, Seattle WA.
- 5. Butterworth SW. Influencing patient adherence to treatment guidelines. J Manage Care Pharm. 2008;14(6 suppl b):21.
- 6. Centers for Disease Control and Prevention. Health Behaviors of Adults: United States 2005-2007. Vital Health Stat Series 10, Number 24, 2010.
- 7. Cox RH. Sports Psychology. 7th ed. New York: McGraw-Hill; 2012.
- 8. DiClemente CC, Prochaska JO, Fairhurst SK, Velicer WF, Velasquez MM, Rossi JS. The process of smoking cessation: an analysis of precontemplation, contemplation, and preparation stages of change. J Consult Clin Psychol. 1991 Apr;59(2):295-304.
- 9. Dunn AL, Marcus BH, Kampert JB, Garcia ME, Kohl III HW, Blair SN. Comparison of lifestyle and structured interventions to increase physical activity and cardiorespiratory fitness. JAMA. 1999;281(4):327-34.
- 10. Hall KL, Rossi JS. Meta-analytic examination of the strong and weak principles across 48 health behaviors. Prev Med. 2008;46(3):266-74.
- 11. Johnson S, Paiva A, Castle PH. Cluster analysis within the Maintenance stage: Profiles predicting relapse from regular exercise. In: Proceedings of the 31st Annual Conference of the Society of Behavioral Medicine, 2010, Seattle WA.
- 12. Johnson SS, Paiva AL, Cummins CO, et al. Transtheoretical Model-based multiple behavior intervention for weight management: Effectiveness on a population basis. *Prev Med*. 2008 Mar;46(3):238–46.
- 13. Krebs P, Prochaska JO, Rossi JS. A meta-analysis of computer-tailored interventions for health behavior change. Prev Med. 2010 Sep;51(3-4):214-21.
- 14. Marcus BH, Emmons KM, Simkin-Silverman LR, et al. Evaluation of motivationally tailored vs. standard self-help physical activity interventions at the workplace. Am J Health Promot. 1998;12(4):246-53.
- 15. Marcus BH, Lewis BA, Williams DM, et al. A comparison of Internet and print-based physical activity interventions. Arch Intern Med. 2007;167(9):944.
- 16. Marcus BH, Lewis BA, Williams DM, et al. Step into motion: A randomized trial examining the relative efficacy of Internet vs. print-based physical activity interventions. Contem Clin Trials. 2007;28(6): 737-47.
- 17. Marcus BH, Napolitano MA, King AC, et al. Telephone versus print delivery of an individualized

- motivationally tailored physical activity intervention: Project STRIDE. Health Psych. 2007;26(4):401.
- 18. Marcus BH, Rossi JS, Selby VC, Niaura RS, Abrams DB. The stages and processes of exercise adoption and maintenance in a worksite sample. Health Psych. 1992;11(6):386.
- 19. Mauriello LM, Ciavatta MMH, Paiva AL, et al. Results of a multi-media multiple behavior obesity prevention program for adolescents. Prev Med. 2010;51(6):451–6.
- Neville LM, O'Hara B, Milat A. Computer-tailored physical activity behavior change interventions targeting adults: A systematic review. Int J Behav Nutr and Phys Act. 2009;6(1):30.
- 21. Nigg CR, Courneya KS. Transtheoretical Model: Examining adolescent exercise behavior. J Adolesc Health. 1998;22(3):214-24.
- 22. Noar SM, Benac CN, Harris MS. Does tailoring matter? Meta-analytic review of tailored print health behavior change interventions. Psychol Bull. 2007 Jul;133(4):673-93.
- 23. Norman GJ, Zabinski MF, Adams MA, Rosenberg DE, Yaroch AL, Atienza AA. A review of eHealth interventions for physical activity and dietary behavior change. Am J Prev Med. 2007;33(4):336-45.
- 24. Pro-Change Behavior Systems, Inc. Mastering Change: A Coach's Guide to Using the Transtheoretical Model with Clients. Kingston (RI): Pro-Change Behavior Systems, Inc.; 2004.
- 25. Pro-Change Behavior Systems, Inc. Roadways to Healthy Living: A Guide for Exercising Regularly. Kingston (RI): Pro-Change Behavior Systems, Inc.; 2009.
- 26. Prochaska JO, DiClemente CC, Norcross JC. In search of how people change: Applications to addictive behaviors. Am Psychol. 1992 Sep;47(9):1102-14.
- 27. Prochaska JO, Evers KE, Castle PH, et al. Enhancing multiple domains of well-being by decreasing multiple health risk behaviors: A randomized clinical trial. Popul Health Manag. 2012 Oct;15(5):276-86.
- Prochaska JO, Velicer WF, DiClemente CC, Fava J. Measuring processes of change: Applications to the cessation of smoking. J Consult Clin Psychol. 1988 Aug;56(4):520-8.
- Prochaska JO, Velicer WF, Fava JL, Rossi JS, Tsoh JY. Evaluating a population-based recruitment approach and a stage-based expert system intervention for smoking cessation. Addict Behav. 2001 Jul; 26(4):583-602.
- 30. Tseng YH, Jaw SP, Lin TL, Ho CC. Exercise motivation and processes of change in communitydwelling older persons. J Nurs Res. 2003;11(4):269.
- 31. Velicer WF, DiClemente CC, Prochaska JO, Brandenburg N. Decisional balance measure for assessing and predicting smoking status. J Pers Soc Psychol. 1985 May;48(5):1279-89.
- 32. Williams DM, Papandonatos GD, Jennings EG, et al. Does tailoring on additional theoretical constructs enhance the efficacy of a print-based physical activity promotion intervention? Health Psych. 2011;30(4):432.
- 33. Woods C, Mutrie N, Scott M. Physical activity intervention: A Transtheoretical Model-based intervention designed to help sedentary young adults become active. Health Ed Res. 2002;17(4):451-60.