Safety Considerations

The majority of exercise injuries can be prevented by following proper exercise prescription and wearing appropriate clothing and shoes. Heat regulation, hydration, and proper technique are some of the other factors that can substantially reduce the risk of injury.

Proper Clothing:

Wear loose-fitting, breathable clothing. Exercising in the heat is a major concern, so attention has to be paid to actual temperature changes. When exercising on your own outdoors, pay special attention to proper clothing. In extreme heat and humidity, expose as much skin as possible while avoiding too much sun exposure, and ensure adequate hydration. In colder temperatures, wear layered clothing and minimize the amount of skin exposed to prevent frostbite.

Proper Shoes:

Wear walking, jogging, or running shoes with good sole support and padding on the ball of the foot.

Proper Hydration:

Of concern during exercise is the body's ability to get rid of the excessive heat that is produced during exercise. If fluid intake is inadequate, the sweating ability of your body may be impaired. This is dangerous and may result in "overheating," heat exhaustion, or heat stroke. Thirst is a sign of dehydration. Drink 1-2 cups of fluid 30 minutes before exercise, ½ -1 cup of fluid every 15 minutes of exercise, and replenish all lost fluids after exercise by drinking at least 2 cups of fluid.

Warm-up

Warm-up is the initial part of any exercise session and involves low intensity and low impact activities that should incorporate major muscle groups. The purpose of a warm-up is to prepare your body for the increased demand put on it during exercise.

Light Stretching

Light stretching of major muscle groups is performed after warm-up when the muscle groups have been properly warmed-up. Stretches of major muscle groups – performed for 10-15 seconds each – improve exercise performance by allowing for full range of motion. Stiff muscles may result in a serious injury.

Cool-down and Static Stretching

Cool-down immediately following exercise sessions. It is crucial to slowly and gradually decrease exercise intensity. Abrupt stopping or abrupt initiating of high-intensity exercise may

result in injury. Allow for adequate recovery and engage in low-intensity activities for 5-10 minutes until your heart rate has returned nearly to its normal, resting rate.

Stretch as the final part of the exercise session to help to maintain and restore flexibility. The same stretches used in the warm-up should be performed for 20-30 seconds each in the cool-down.

Monitoring Exercise Intensity

Knowing how to monitor one's exercise intensity is an important**.** Exercising at an intensity lower than recommended may mean that desired physical improvements are not taking place, while exercising at intensity levels higher than recommended may lead to unnecessary stress to your body and may lead to injuries.

Three methods commonly used for monitoring exercise intensity include:

1. Monitoring Heart Rate
2. Ratings of Perceived Exertion
3. Talk Test

Heart Rate

Your heart rate is a good indicator of your physical condition, as your resting heart rate will decrease with improvements in your fitness. Your heart rate is also directly related to exercise intensity.

When and how to take your resting heart rate?

Take your heart rate in the morning, before you get out of bed. You can take your pulse either at your wrist (radial artery) or at your neck (carotid artery):

> To take your pulse at the wrist, slowly slide two fingertips of your right hand along the edge of your left thumb toward your wrist until they rest on your arm. Feel for the pulse and count the number of beats for 15 seconds. Then multiply this number by 4 and you will get your resting heart rate in beats per minute. (Example: 18 x 4 = 72 bpm).

Similarly, you can monitor your heart rate during exercise. For this purpose, however, take your pulse only at your wrist. (Taking your pulse at your neck while exercising could be dangerous as you could hamper blood flow into your brain). You may find it difficult to take your pulse for 15 seconds while moving. If so, you can take pulse for 10 seconds only and then multiply by 6.

Rating of Perceived Exertion Scale (RPE)

The Rating of Perceived Exertion Scale provides us with information about *subjectively perceived* exertion – that is, how hard you feel you are working. Therefore, it is an extremely useful tool that can prevent potential injuries resulting from inadequate exercise intensity.

The RPE Scale provides information about how hard one feels he/she is working. Rate yourself during exercise according to the scale ranging from 6 ("very, very light") to 20 ("very, very hard"). The feeling of exertion should reflect your total amount of exertion and fatigue, combining all sensations and feelings of physical stress, effort, and fatigue. Don't concern yourself with any one factor such as leg pain, shortness of breath, or exercise intensity, but instead think about your overall feeling of exertion, and try to be as accurate as you can!

Rating of Perceived Exertion (RPE) "How hard do you feel you are working?"	
6	
7	Very, very light
8	
9	Very light
10	
11	Fairly light
12	
13	Somewhat hard
14	
15	Hard
16	
17	Very hard
18	
19	Very, very hard
20	

For a safe progression, we recommend that you exercise at a RPE of 10-12 in the initial stages of your new exercise program and gradually progress to 13-15 in the advanced stages.

Talk Test

The 'Talk Test' is very easy to use. The idea behind this method is that while you are exercising, you should be able to hold a conversation. If you are breathless, gasping for air, or can utter out only one or two words, you are probably exercising too hard. This means that you need to decrease your intensity until you are able to talk in phrases or short sentences again.

Aim to exercise at an intensity that allows you to converse in short sentences.

As you may guess, this method is not very accurate and can change from one individual to another. Nonetheless, it is a useful method if nothing else is available. For better accuracy, to use the 'Talk Test' along with ratings of your perceived exertion using the RPE scale.

Exercise Adherence: The challenge of sticking with the program

A sedentary lifestyle is defined as having less than 20 minutes per session and/or less than 2 times per week of leisure time physical activity during the past month. Living a sedentary lifestyle is also a major risk factor for many chronic conditions including cardiovascular disease and obesity.

Although the majority of individuals are aware of the health benefits associated with exercise, the majority of the US population remains low active or completely sedentary. Lack of physical activity leads to poor fitness and increases risk of death and a number of chronic diseases, including cancer, cardiovascular disease, arthritis, osteoporosis, and diabetes. High levels of physical activity appear to be associated with increased lifespan.

The American Heart Association's (AHA) provides the following tips for increasing daily physical activity levels:

- Work in the garden or mow the grass. Using a riding mower doesn't count! Rake leaves, prune, dig and pick up trash.
- Walk or ride a bicycle to the corner store instead of driving
- Go out for a short walk before breakfast, after dinner or both! Start with 5-10 minutes and work up to 30 minutes.
- When walking, pick up the pace from leisurely to brisk. Choose a hilly route. When watching TV, sit up instead of lying on the sofa. Or stretch.
- Park farther away at the shopping mall and walk the extra distance. Wear your walking shoes and sneak in an extra lap or two around the mall.
- Stand while talking on the telephone
- Plan family outings and vacations that include physical activity (hiking, backpacking, swimming, etc.)
- See the sights in new cities by walking, jogging or bicycling.

Setting task-oriented goals that focus on comparison with your own past performance rather than with the performances of others will also help you stay motivated. Effective goal-setting should also be realistic and specific. Use the **SMAART formula** to help you set your goals! This states that effective goals are **S**pecific, **M**easurable, are Adjustable, involve concrete **A**ction, are **R**ealistic, and **T**ime-related.

How to set SMAART Goals:

Set Specific Goals. Research shows that specific goals are the most motivating. A specific goal is to walk at a moderate intensity 3 times per week for one hour for the next 4 weeks. Simply saying that you want to start exercising is far too general to really motivate you to do so.

Set Measurable Goals. Simply saying that you want to walk, for example, will not be enough. You should know how often, how long, and how intensely you plan to walk. Measuring your progress is the best way to evaluate whether you are accomplishing your goals. You can use a journal to keep track of your exercises and to see whether or not you have met your goals.

Set Adjustable Goals. This means your goals are flexible enough to accommodate unexpected challenges without becoming obsolete. An injury or having company at the house may force you to adjust your goals down temporarily but it doesn't mean you need to abandon them. At the same time, you may find you are progressing quickly and need to set a more challenging goal.

Set Action-Oriented Goals. Another important aspect of goal-setting is to keep them focused on personal action. Luckily, exercise-related goals are naturally action-oriented!

Set Realistic Goals. It is important to recognize your current level of activity, and then to set your goals accordingly. To avoid injury and disappointment, it is best to progress gradually.

Set Time-based Goals. Look again at our first example: walking at a moderate intensity 3 times per week for one hour for the next 4 weeks. This is specific and time-based. Without a timeline it is easy to procrastinate or get bored. You may also need to set specific short term goals ("I want to walk for 20 minutes per day, 4 days per week for the next month") that can build toward long term goals ("I want to be able to walk four miles without stopping") to keep you on track. You should distinguish among your long-term goals, short-term goals, and immediate goals. Although long-term goals may help guide your actions, in general, goals that stretch out beyond 6 months are too long to keep you interested and motivated. Try to re-evaluate your goals on a regular basis (at least once per month).