Making An Exercise Plan

The purpose of an Exercise Rx (prescription) is to provide a guide for your workouts that

1. is specifically designed to help you meet your fitness goals,
2. is controlled by how your body is responding, and
3. will help prevent over or under-exercising

Your Exercise Rx will change over time as your body changes in response to physical activity and as you modify your goals. As the person in charge of your health and fitness, you will want to review your exercise program often and make the appropriate adjustments.

Your exercise program can best be described by the four letters F I T T. These four letters represent the variables inherent in any exercise program. The meaning of these letters is as follows:

F **Frequency** is how often you exercise.
Measured in days per week.

I **Intensity** is how hard you exercise.
Measured in heart rate (preferred) or perceived exertion (scale of 1 - 10).

T **Time** measures how long you spend working out.

T **Type** of exercise: aerobic, strength, or flexibility.

Each of these four variables in your Exercise Rx controls different aspects of the exercise program. By making adjustments to these four exercise elements you can fine tune your exercise program to maximize the benefits that are important to you. Two important factors will guide you as you make adjustments to your Exercise Rx: 1) your fitness goals; and 2) how your body is responding to your current exercise program.

Frequency

Frequency is how often you exercise and is important because it plays a major role in determining whether the benefits of regular exercise *accumulate* or not. If you don't exercise often enough the good things that happen as a result of your workout disappear before you can build on them. Conversely, if you exercise a particular muscle group too frequently, you overwork those muscles before they've have a chance to be repaired. Neither of these situations is good, so let's look at both in more detail.

The benefits of a particular exercise or exercise intensity are known as the exercise's "Training Effect" (the effect the exercise or training has). These training effects occur because your body adapts structurally and functionally to the physical demands you place on it. However, these training effects don't last indefinitely. Eventually, without more exercise to trigger your body into another cycle of adaptation, the training effects begin to dissipate.

When your goal is to *increase* fitness benefits, you should choose a frequency that causes your body to add a new training effect before the training effect from the previous workout starts to diminish.

Building Fitness Frequency Minimum
4 days per week with no more than one day between workouts.

If your goal is to *maintain* the fitness benefits you've already gained, then you can choose a lower frequency, one that doesn't let you lose previously gained benefits but isn't concerned with accumulating

more training effect. Loss of training effect starts to happen when there are more than two days between aerobic workouts. This leads us to an important breakpoint:

Maintenance Mode Frequency Minimum
3 days per week with no more than two days between workouts.

Recovery Time

Recovery time is needed by your muscles to rebuild after you exercise. Under certain conditions, it's possible to exercise too frequently, especially if you workout strenuously or you are unaccustomed to physical exercise. Sometimes, less is more, and overdoing it can cause real problems.

When you exercise a group of muscles, they go through many changes and it takes time for these muscles to recover. To be successful, you must build recovery time into your Exercise Rx. This recovery time is as important to your program as are the workout times because it's during this time that muscle is built. Without this recovery time, performance usually suffers and there is an increased risk of injury. When you're just starting out, recovery means that you don't exercise the same muscle groups without some healing time between workouts, but as you become more fit, you may find that you can alternate "hard" workouts with "easier" workouts and your muscles will recover on the easy days.

The amount of time it takes your muscles to recover from a workout is influenced by how hard the workout was, your physical condition, heredity, and age. Obviously, the harder the workout, the longer it will take to recover from it. Unfortunately, as we age, our recovery times increase. But the good news is that *as you become more fit you will be able to recover more quickly.* So if you're worried about the effects of aging, remember that being fit can help offset the influence aging has on recovery time.

If you are just starting out with an exercise program, start slowly; use the minimum frequency with the goal of progressing to higher frequencies. As you increase your frequency watch for signs of over-exercise, such as

- Increase in resting heart rate - 5 to 10 bpm above normal.
  (Resting heart rate is measured in the morning before getting out of bed.)
- Increased resting blood pressure.
- Abrupt reduction in blood pressure when standing after sitting or lying down.
- Decrease in performance.
- Slow recovery after exercise.
- Fatigue
- Decreased desire to exercise.
- Increased number of injuries.
- Pain in joints.
- Loss of maximal strength.
- Poor sleep.
- Chronic colds or infections.
- Loss of appetite.
- Rapid weight loss.
- Irritability and/or depression.
- Pale or pasty skin color.
- Dark, concentrated, or cloudy urine.
- Loss of menstruation.

Most of these symptoms can also be caused by illness or other health problems. If you experience any of these, ask yourself if over-exercise is the likely cause. If so, adjust your Exercise Rx by reducing the Frequency or Time elements. You should avoid large increases in your Exercise Rx. Follow the 10% rule: from week-to-week, never increase your Exercise Rx's total time by more than 10%.

You should review your Exercise Rx every 4 to 6 weeks and watch for these signs that adjustments are needed:

Frequency Too Low	Workout performance stays the same Lack of progress in meeting your goals
Frequency Too High	Workout performance decreases Quick decrease in Lean Body Mass Signs of over-exercise (see above)

Tracking your workout performance is very important. Document your workouts with information about the amount of time you spent, your heart rate, and the distance you covered. An increase in performance would mean that you were able to cover a greater distance in the same amount of time at the same heart rate. A decrease in performance is indicated by being unable to cover the same distance in the amount of time at the same heart rate that you usually do. (This assumes similar environmental conditions - heat and humidity do effect performance.) Of course, you will have some workouts that are better than others so look for trends. If you're not in maintenance mode, but you can't seem to improve performance, look at your frequency. If your frequency is low, try increasing it and see what happens. Conversely, if your frequency is high but you are seeing a decline in your performance, you may want to lower your frequency, at least for a while.

Intensity

Intensity describes how "hard" the workout is. When used for aerobic exercise, intensity is important because it determines the type of benefits you'll receive from the workout. Aerobic intensity is measured using your heart rate, which is how many times your heart beats per minute.
In order to use your heart rate to predict the fitness benefits you'll receive from your workout, you must first know your maximum heart rate. The only 100% accurate way to do this is with a "maximal" stress test conducted by your doctor. However, most people can get a pretty accurate prediction of their true maximum heart rate with the Maximum Heart Rate Field Test. If you're just getting started and you're not up for that yet, you can use the common "220 minus your age" formula. It won't be as accurate as the field test, but it will give you a good estimate to get started with.

Your Maximum Heart Rate (MHR) is used to calculate Heart Rate Training Zones. The calculation is based on a percentage range of your MHR. For example, to calculate Zone 1 (50% to 60% of MHR), you multiply your MHR by .5 for the 50% number and .6 for the 60% number. Each zone has its own set of benefits and training in a particular zone will produce the benefits associated it. The following table lists the zones and the benefits associated with each one:

Zone	%MHR	Benefits
1	50% - 60%	Decreases Body Fat Lowers Blood Pressure Improves Cholesterol Levels Enhances Function of Immune System Good for Starting an Exercise Program Warm-Up / Warm-Down Zone for Established Rx

2	60% - 70%	Burns More Calories than Zone 1 Decreases Body Fat More than Zone 1 Increases Lean Body Mass Elevates Metabolic Rate (Even at Rest) Improves Blood Pressure More than Zone 1 Improves Cholesterol More than Zone 1 Enhances Function of Immune System Increases Number of Fat Burning Sites in Muscles Increases Size of Fat Burning Sites in Muscles Teaches Metabolism to Prefer Fat Over Sugar
3	70% - 80%	Improves Cardiovascular Efficiency Improves Cardiopulmonary Capabilities Improves VO2max Increases Strength and Size of the Heart Lowers Resting Heart Rate Builds Endurance Releases Endorphins Reduces Anxiety, Tension & Stress Increases Pain Tolerance Improves Appetite Control
4	80% - 90%	Primary High Performance Improvement Zone Increases Anaerobic Threshold Heart Rate Improves Maximum Sustainable Heart Rate Same Workout Intensity Becomes Easier
5	90% - 100%	**Danger** - *For Well Conditioned Athletes Only* Conditions Body to Withstand High Acidosis Levels Increases Tolerance to Intense Fatigue Decreases Sensitivity to Burning Muscle Pain Improves Ability to Resynthesize Lactic Acid

As you are developing or adjusting your Exercise Rx, choose the benefits of the zone that most closely match your fitness goals and use those zones as the aerobic exercise intensity part of your prescription. If you have been inactive for 10 weeks or more, start out with a frequency of 3 days per week with an intensity of Zone 1 for at least 2 - 4 weeks. Once your body has become accustomed to exercise you may want to adjust your Exercise Rx by first spending some time in Zone 2. For example, you could decide that you will spend 75% of your workout time in Zone 1, 25% in Zone 2 - all in the same workout. Or you can dedicate one out of every four workouts to Zone 2. On your next Exercise Rx review, you may decide to work primarily in Zone 2 (say 60% - 80%) and balancing out the rest with a little Zone 3 - using Zone 1 only for warming up and warming down. The point is that you can mix and match the zones to fit your fitness goals. Look at which benefits are most important to you and spend more time in those zones while spending less time in the zones that are less important to you. Some zones, for example Zones 4 and 5 (used primarily to improve competitive athletic performance), may not be important to you at all and you may never use those zones. It's all up to you and what you want to accomplish. You are the one who decides what is important; we'll give you the tools to get there.

One of the best investments you can make for your fitness program is the purchase of a quality heart rate monitor that will track how much time you spend in each of the Heart Rate Training Zones. For a

breakdown of these zones for your maximum heart rate visit the Heart Rate Zones Calculator. This will give you the actual heart rates, in beats per minute, for each zone based on your maximum heart rate.

Time

Time is the amount of time (usually in minutes) you spend in your aerobic workout and is important because it represents the quantity of exercise in your workout. This may seem obvious at first, but a lot of people track the amount of aerobic exercise they get with distance. Both time and distance are important; but it's best to use distance to track performance, and time to track your quantity of exercise. Of course, some exercises, such as Step Aerobics, don't involve distance at all. For these exercises, performance can be tracked using other variables, such as pace (steps/minute) and step height.

When you exercise in the low intensity zones, especially Zone 1, the benefits can be accumulated in bits and pieces. This means that you can split your low intensity workout time across more than one workout session. For example, if you've decided that you are going to exercise for 60 minutes a day / 4 days per week in Zone 1, you could split that 60 minute workout into a 30 minute morning workout and another 30 minute workout after work. Or, you could split it into three 20 minute workouts, four 15 minute workouts, or even six 10 minute workouts. The reason this works is because your body has two different responses to exercise: "Training Effects," which are structural and functional changes, and "Last Bout Effects," which are immediate responses your body has to exercise (such as a post-exercise drop in blood pressure). The good news is that with repeated regular bouts of exercise, these Last Bout Effects accumulate and actually become permanent structural/functional Training Effects.

The Time element and the Frequency element of your Exercise Rx are closely linked. When reviewing the Time portion of your Exercise Rx, ask yourself if you are meeting your realistic short-term goals. If you find that you are not making progress and your Frequency is within reason (4 to 6 days per week) then start looking at the Time element of your Exercise Rx. Look for signs that you are over-exercising and if you're not, try increasing the time element and watch your performance numbers closely. If they increase then you made the correct adjustment, but if they decrease you'll need to adjust either your Frequency or Time element, whichever seems the most likely candidate. For example, if you've been exercising for just three months and your Exercise Rx is Frequency = 4 days/week, Intensity = Zone 3 & 4, and Time = 90 min/workout and your performance is dropping, decreasing Time would be the first adjustment to try because Frequency is obviously not too high. But if your Frequency was 7 and your Time was 45 min/workout, then decreasing Frequency to 5 would be appropriate because Time doesn't seem too high but Frequency is max’d out. If neither stand out as being possibly too low nor too high, adjust Time first and then Frequency if needed. The reason is that it's usually easier to add or subtract time to an already scheduled workout then to change the whole workout schedule.

Type

Type represents the type of exercise you are doing during your workout. There are three broad categories into which exercise can be designated: 1) aerobic; 2) strength; and 3) flexibility. The most successful fitness programs incorporate all three types of exercise. So far, we've been focusing on aerobic exercise; many people consider it the foundation of their fitness program. However, adding strength-type exercise to your routine can provide added benefits, such as increased muscle mass, increased metabolism, and decreased body fat.

One strategy for adding strength-type exercise to your routine is to add strength workouts on your aerobic recovery days. Because strength workouts exercise a different type of muscle, the muscles you used in your aerobic workout will still have the recovery time needed. As an example of this type of schedule, if your aerobic frequency is 4 days per week with a recovery day between each day, you would do aerobic workouts on Sunday, Tuesday, Thursday, and Saturday with strength workouts on Monday, Wednesday, and Friday. This means working out seven days a week, so you may want to modify your Exercise Rx to

incorporate a full day of recovery with no exercise at all, resulting in 3 days per week aerobic exercise and 3 days per week strength exercise.

Of course, you can incorporate strength exercise in the same workout as your aerobic workout, or you could split the two workouts - one in the morning and one in the evening of the same day. There are a lot of ways to plan your fitness routine to fit your schedule. Experiment to find what works best for you.

Flexibility is the third type of exercise and should be incorporated in every workout - aerobic and strength. By stretching you decrease your risk of injury. Also, many people find that the flexibility exercises give them an overall feeling of well-being. With the positive feelings a flexibility workout produces, it's not surprising that Yoga and Pilates are so popular.

Make sure your muscles are warm before stretching. To avoid injury, muscles and ligaments need to have lubricants and blood saturating them. By warming up prior to stretching, you make sure these are present. One of the best ways to end a workout is by warming down and then stretching.

Your First Exercise Rx

Your first Exercise Rx, if you have not been exercising recently, should be very gentle. It is recommended that you start out with

Frequency: 3 Days per Week

Intensity: Zone 1

Time: 20 Minutes

There's nothing wrong with changing up the Frequency and Time components in this Exercise Rx because it's a low-intensity workout. The goal is to get one hour of aerobic exercise per week. That can consist of three 20-minute workouts or six 10-minute workouts or some other combination that totals 60 minutes.

Stick with this workout for at least 2 - 4 weeks. The goal here is to prepare your body for exercising. A lot of changes occur with this workout: blood vessels increase in size and number, the heart becomes stronger, new capillaries develop around the muscles, and the lungs become more efficient, just to name a few. It's not uncommon for people who are unaccustomed to exercise to reach their anaerobic threshold (the point where there is shortness of breath) at about 60% of their Maximum Heart Rate. As your level of fitness increases, your anaerobic threshold will also go up. In someone who is accustomed to exercise, the anaerobic threshold is usually between 80% and 90% of their Maximum Heart Rate. If this Exercise Rx becomes just plain too easy, first increase the Time element, and then if needed increase Frequency - but always in Zone 1.

The next step is to review this basic Exercise Rx and make adjustments to it that reflect your goals and how your body is responding to your workout program. As you progress, remember to document your workouts, track your progress with the fitness tests, and adjust your Exercise Rx often. This will help you gain the greatest and most optimal benefits from your workouts.