



TRAINING PRINCIPLES



STUDENT INTRODUCTION

When developing and implementing a personal fitness plan, it is important to understand the training principles: overload, progression, and specificity. Understanding the training principles and how to apply those principles increases a person's ability to develop a fitness plan to meet personal goals toward improved health, performance and appearance. It also increases their ability to adjust those plans as necessary. A well thought out training program uses the FITT Principle to produce overload and includes progression and specificity.

The training principles are used to help individuals achieve exercise goals in many different careers. Since the beginning of athletic competition, the principles of training have been used to improve performance. Strength coaches use them to design workout programs for top athletes. Two-tenths of a second in the hundred meter dash or two inches in the high jump might be the difference between being a good college athlete and an Olympian. One Olympic athlete reported that he trained for eight years to take 1.5 seconds off his 200 meter time. That improvement in time was the difference between being a good high school sprinter and an Olympic champion with a world record. Personal trainers use the training principles to help movie stars lose weight or bulk up as they prepare for roles in upcoming movies. Firefighters and police officers use these principles to maintain their fitness in order to perform their jobs.

For positive changes to occur in health, performance and appearance, the body must adapt to an increased demand in one of three variables of the **FITT Principle**. These variables are **frequency** (sessions per week), **intensity** (training load expressed as resistance, speed or heart rate) and **time** (minutes or repetitions). Increasing the frequency, intensity or time (FITT Principle) of an activity beyond normal performance provides a reason for the body to adapt or change to meet the new demand and make positive changes in health, performance and appearance. Training the body beyond normal performance demonstrates the principle of **overload**.

For example, to improve cardiorespiratory endurance, a person who runs a ten-minute mile three times a week could create overload by changing the frequency of his/her workouts from three to four times per week, increasing the intensity by running at a faster pace than a ten-minute mile, or increasing the time by running at the same pace but for a longer distance. Each of these changes would create an overload by placing a demand on the body beyond normal performance.

With overload, the body adapts slowly and makes small changes towards improvement over time. Therefore, it is important to use the principle of progression correctly. It would be unreasonable to expect the person who ran a ten-minute mile three times a week, to increase all three FITT variables at once. Because the body requires periods of rest to rebuild muscle tissue, running eight-minute miles five days a week would be difficult. The drastic difference in overload could lead to exhaustion or injury, causing the body to break down rather than adapt, thus preventing progression. To achieve desired results, the principle of progression or gradual increasing



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frequency, intensity or time to create overload must be applied correctly, allowing the body to make subtle changes gradually over time.

Besides overload and progression, it is important to consider the principle of specificity when designing a fitness plan to improve health, performance and appearance. The principle of **specificity** states that training is specific to the muscles used and the component of fitness trained. Therefore, jogging every day would not be the best way to improve muscular strength. Likewise, performing squats and lunges with resistance would not be the most effective way to improve cardiorespiratory endurance. It is important that the type of training performed matches the desired results.

Studies have shown that to achieve the greatest improvements in cardiorespiratory endurance, a person's heart should beat at an intensity of 65% to 85% of its maximum heart rate or an intensity level (RPE) of 4. To achieve this intensity, a person should perform large muscle movements that create an increased demand for oxygen. Activities such as jogging, power walking, skating, bicycling and swimming use large muscle groups, produce a demand for oxygen and therefore raise the heart rate.

Performing the above activities for a minimum of 10 minutes at a time and for a total of 60 minutes a day with a frequency of at least five exercise sessions per week, would be the best way to improve cardiorespiratory endurance and represents the principle of specificity.

Continuing to use specificity with progression, to create additional overload, will provide the best results towards achieving exercise goals. The body will not improve unless it is stimulated to do so. Therefore, it is important to provide an additional overload for new improvements to occur. As the body slowly adapts to the increased demands of the workout, it is essential to remain patient and consistent to see changes in health, performance or appearance.

Using the training principles consistently in a fitness program will achieve the results desired in health, performance and appearance.



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Key vocabulary words that will be introduced during this unit are:

- **FITT Principle** – The variables of frequency, intensity, time and type
- **Frequency** – Number of exercise sessions per week
- **Intensity** – Training load expressed as weight, speed or heart rate
- **Overload** – An increase in one or more of the FITT variables to provide an additional workload
- **Progression** – Gradual increase in one or more of the FITT variables to create an overload
- **Specificity** – Exercise training is specific to the muscles used and the component of fitness trained
- **Time** – Minutes or repetitions
- **Type** – Activity performed

FITT PRINCIPLE				
Components of Fitness	Frequency (sessions/week)	Intensity (% of MHR)	Time (min)	Type (Activity)
Cardiorespiratory Endurance	5-7	65%-85%	60+	Various: Running Swimming, Biking