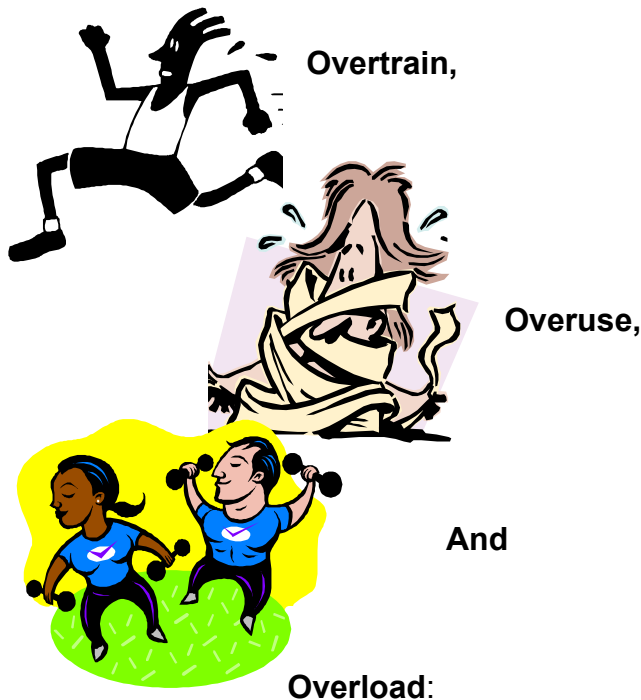


## Client Handout



failure of a joint or muscle's protective mechanisms and may result in a chronic injury. Chronic injury is characterized by a gradual onset with no history of a specific incident. Symptoms of an overuse injury can include: loss of strength, reduced range of motion, swelling, stiffness and pain. If left untreated, a chronic injury may cause permanent damage.

Overtraining and overuse are **not** the desirable results of fitness training. Both can usually be attributed to setting unrealistic goals or lack of information regarding and effective training principles. Specific training principles such as progression and overload must be adhered to in order to safely and effectively achieve cardiorespiratory and muscular fitness.

**Overload**, one of the most important training principles, is defined as subjecting a physiological system (i.e. cardiovascular, respiratory or muscular) to a greater-than-normal load or stress in order to achieve measurable improvement in functional capacity.

To avoid overuse and overtraining, and reap the benefits of overload, follow the American College of Sports Medicine (ACSM) training guidelines for improving cardiorespiratory and muscle fitness.

### What's the Difference?

**Overtraining** is a process, which occurs when the volume of training (intensity, duration, frequency) over a period of days or weeks is excessive enough to cause chronic fatigue and a decrease in physical performance. Overtraining affects the whole body and can occur when there is insufficient recovery time between workout sessions, when workouts are too intense and/or when workouts last too long. Although fatigue is a natural component of training, we need to be able to identify and differentiate momentary fatigue from symptoms of overtraining. Symptoms of overtraining include:

- ↳ A sudden decline in performance that is not remedied by a few days of rest and proper nutrition.
- ↳ Restlessness
- ↳ Decreased body weight
- ↳ Decrease in appetite
- ↳ Sleep disturbances
- ↳ An elevated resting heart rate
- ↳ Persistent muscle tenderness
- ↳ Chronic nausea

Overtraining can also cause psychological changes such decreased motivation, confidence and concentration. Increased stress levels, depression, anger, anxiety, mood swings and irritability are also common symptoms of overtraining.

**Overuse** usually results in musculoskeletal injury and is caused by an accumulation of highly repetitive movement or force. Repetitive physical stress or impact can cause

Cardiorespiratory Fitness		ACSM Guidelines
F	Frequency (How often to exercise)	3 - 5 days per week
I	Intensity (How hard to exercise)	60 - 90% of max heart rate 50-85% of VO2 Max
T	Time (How long to exercise)	20 - 60 minutes of continuous activity
T	Type (What activity to engage in)	Aerobic activities such as: run, walk, bike, swim, dance

Muscular Fitness		ACSM Guidelines
F	Frequency (How often to exercise)	Twice a week on nonconsecutive days
I	Intensity (How hard to exercise or how much resistance)	40 - 60% of a 1 repetition maximum load
R	Repetitions (How many times per exercise)	Minimum 8 - 12 (enough to elicit voluntary muscle fatigue)
S	Sets (how many groupings of repetitions per exercise)	Minimum of 1 set of 8 - 10 exercises for all the major muscle groups
T	Type (What activity to engage in)	Resistance exercises, performed slowly, through a joints full range of motion