

Muscular Strength and Endurance

I. Muscle Physiology

- Muscles consist of many _____ connected in bundles.
- Muscle _____ are made up of _____.
- Strength training _____ the number of _____ and the size of muscle _____ = _____.
- Inactivity _____ the process = _____.

II. Physiological Effects of Strength Training

- Increased _____
- Increased _____
- Increased _____
- Increased _____
- Improvements _____

III. Benefits of Muscular Strength and Endurance

- _____
- _____
- _____
- _____
- _____
- _____

IV. Assessing Muscular Strength and Endurance

- Muscular strength assessed by determining _____ (1 MR), the _____
- Muscular endurance assessed by counting the _____

V. Types of Strength Training Exercises

- Static (isometric) exercise - _____
- Dynamic (isotonic) exercise - _____
 - Concentric Contraction - _____
 - Eccentric Contraction - _____

VI. Types of Dynamic Exercise

- _____
- _____
- _____
- _____

VII. Creating a Successful Weight Training Program

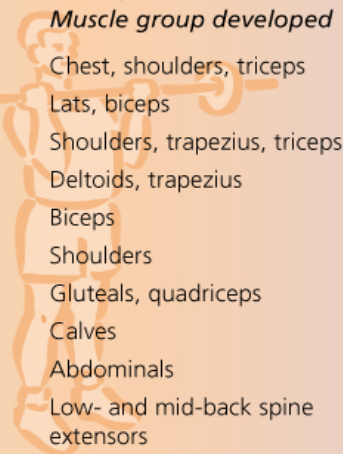
- Choosing equipment: Weight Machines vesus Free Weight
- Resistance is provided by both types of training
 - Exercise Machines- _____
 - Free Weights - _____

VIII. Applying the FITT principle

- F = _____
- I = _____
- T = _____
- T = _____

Frequency of Exercise	Intensity of Exercise: Amount of Resistance
Time of Exercise	Type of Exercise

FITT Example:

Warm-up 5–10 minutes	Strength training exercises for major muscle groups (8–10 exercises)	Cool-down 5–10 minutes																								
	Sample program  <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><i>Exercise</i></th> <th style="text-align: left;"><i>Muscle group developed</i></th> </tr> </thead> <tbody> <tr><td>Bench press</td><td>Chest, shoulders, triceps</td></tr> <tr><td>Pull-ups</td><td>Lats, biceps</td></tr> <tr><td>Shoulder press</td><td>Shoulders, trapezius, triceps</td></tr> <tr><td>Upright rowing</td><td>Deltoids, trapezius</td></tr> <tr><td>Biceps curls</td><td>Biceps</td></tr> <tr><td>Lateral raises</td><td>Shoulders</td></tr> <tr><td>Squats</td><td>Gluteals, quadriceps</td></tr> <tr><td>Heel raises</td><td>Calves</td></tr> <tr><td>Abdominal curls</td><td>Abdominals</td></tr> <tr><td>Spine extensions</td><td>Low- and mid-back spine extensors</td></tr> <tr><td>Side bridges</td><td>Obliques, quadratus lumborum</td></tr> </tbody> </table>	<i>Exercise</i>	<i>Muscle group developed</i>	Bench press	Chest, shoulders, triceps	Pull-ups	Lats, biceps	Shoulder press	Shoulders, trapezius, triceps	Upright rowing	Deltoids, trapezius	Biceps curls	Biceps	Lateral raises	Shoulders	Squats	Gluteals, quadriceps	Heel raises	Calves	Abdominal curls	Abdominals	Spine extensions	Low- and mid-back spine extensors	Side bridges	Obliques, quadratus lumborum	
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<i>Start</i>	<i>Stop</i>																									
<p>Frequency: 2–3 days per week</p> <p>Intensity/Resistance: Weights heavy enough to cause muscle fatigue when exercises are performed with good form for the selected number of repetitions</p> <p>Time: Repetitions: 8–12 of each exercise (10–15 with a lower weight for people over age 50–60); Sets: 1 (doing more than 1 set per exercise may result in faster and greater strength gains)</p> <p>Type of activity: 8–10 strength training exercises that focus on major muscle groups</p>																										

IX. Making Progress

- _____
- _____
- _____
- _____

X. More Advanced Strength Training Programs

- _____
- _____
- _____