DYNAMIC HEALTH AND FITNESS, L.L.C.

FORMS & VARIABLES OF STRENGTH TRAINING

Specific Forms of Strength Training

Limit Strength: The maximum force a muscle can produce in a single contraction. The movement is an involuntary action used only during life threatening situations, drugs (PCP), hypnosis. After the movement their muscle will tear because the body cannot tolerate 100% activation of motor units.

Maximum Strength: Is characterized by the maximal force a muscle can generate without a time limit at a specified movement.

Relative Strength: The maximal amount of force an athlete can generate per unit of bodyweight. (wrestling, boxing, powerlifting)

Optimal Strength: The maximal amount of strength an athlete needs for a given sport or goal. Any further strength added will not enhance performance.

Explosive Strength: An athlete's ability to produce maximal strength in minimum time. Maximum force divided by time taken = Explosive Strength

Starting Strength: The ability of the muscles to develop force at the beginning of a movement. Resistance is light medicine balls are excellent tools to enhance starting strength.

Strength Endurance: The athlete's ability to prolong fatigue during strength endurance events. (swimming, cycling, running)

Reactive Strength: The ability to move from eccentric to concentric movement as quickly as possible. (plyometrics)

Variables of Strength Training

Sets: Groups of repetitions during a specific movement.

Load: The amount of resistance utilized.

Volume: The total amount of load lifted in a workout.

Repetitions: The single performance of a movement.

RM Scale:

<6 RM:	Increased relative strength (muscular power)
6-8RM:	Increased maximal strength and muscle hypertrophy
9-12 RM:	Increased muscle hypertrophy and maximal strength
13-20 RM:	Increased strength endurance and low hypertrophy
>20 RM:	Increased muscular endurance

Lifting Speed: Lifting speed is described as tempo of movement through full muscle contraction. (eccentric – isometric – concentric) An example of a 3-2-1 for a bicep curl is 3 seconds lowering, 2 second pause, 1 second curling weight up.

Rest Intervals: Defined as the amount of time taken between sets.

90% or more workload:	3-5 minutes rest
75-90% of workload:	2-3 minutes rest
60-75% of workload:	1-3 minutes rest
< 60% of workload:	45sec. – 2 minutes rest

Intensity: Defined as the amount of weight used per repetition. The amount of effort exerted with each repetition depends on the goal and what energy system is being utilized.

Duration	Intensity	Energy System
0-6s.	Very Intense	Phosphogen
6-30s.	Intense	Phos. / Anaerobic Glycolysis
30s. – 2m.	Heavy	Anaerobic Glycolysis
2-3m.	Moderate	Anaerobic / Aerobic Glycolysis
>3m.	Light	Aerobic Glycolysis

RM	**% Max**
1	100
2	94.3
3	90.6
4	88.1
5	85.6
6	83.1
7	80.7
8	78.6
9	76.5
10	74.4
11	72.3
12	70.3

Duration: The duration of workout relates to the individuals ability to maximize their anabolic hormones (GH & testosterone) and minimize their catabolic hormones (glucagons & cortisol). Research indicates that at approximately 45 minutes to 60 minutes the anabolic hormones decline rapidly and catabolic hormones rise rapidly.

Frequency: The frequency between workouts depends on the individual's level of fitness, the goal, the intensity of workouts, and most importantly their lifestyle. A general rule of thumb the more intense workouts that completely fatigue the muscle, rest should be between four to seven days to fully recover. For beginners and less intense or less focused on isolated muscles the body needs at least 24-48 hours recovery.