



WORKOUT VARIABLES

Growth Stimulating Variables

- Intensity
- Velocity
- Volume (repetitions, sets)
- Rest
- Plane of Motion
- ROM
- Exercise Selection
- Exercise Order
- Frequency
- Balance and Coordination

All of these variables should be mixed up about once a month for strength training to keep the body challenged and prevent overtraining or boredom.

Adaptation to Specific Variables

Adaptation	# of exs's	Sets	Reps	Load % of 1 rep max	Rest	Tempo	X/wk (total)
Max Strength	3-6	4-6	1-5	85-100%	3-5 min	3-1-1	3-5
Strength	3-4	3-4	6-8	75-85%	45 sec- 5 min	3-1-1	3-5
Hypertrophy	3-6	3	9-12	70-85%	45-90 sec	4-2-2	3-5
Endurance	2-4	1-3	12-25	50-80%	1-3 min	3-2-1	3-4
Stabilization	3-5	1-3	12-25	40-70%	0-1.5 min	Slow	3-5

* Number of times per wk varies depending on how many muscles are strengthened each workout.

Stretching Guidelines

Static	Dynamic
<ul style="list-style-type: none"> • Hold each stretch for at least 20 seconds. • Do not use before a strength workout or sport. • This is the easiest type of stretching to learn and results in the least amount of injuries. • Always make sure you are warm before stretching. • Without relaxed breathing the body's reflex system will not accept the new length of the muscle and your efforts will be wasted. • Static stretches are ideal for improving posture and aches and pains. • One example of a static stretch is laying on your back and pulling one leg up into the air and holding it for 20-30 seconds (hamstring stretch). 	<ul style="list-style-type: none"> • Each stretch is held for only 6-8 seconds while other muscles coordinate to hold the body in various positions, i.e. yoga-type poses. • Dynamic stretching is ideal for warm-up or as its own workout because it challenges the body to maintain good alignment while utilizing important stabilizing muscles. • Always make sure you are warm before stretching. • Dynamic stretching is more advanced than static stretching and is associated with more injuries. • This type of stretching is essential for anyone who wishes to be able to play sports or have functional flexibility.

Plane of Motion

There are three different planes of motion; all three are utilized in functional movements. If one plane is underdeveloped, that direction of movement will most likely lead to wear and tear or injury. A comprehensive exercise program needs to include and systematically progress each plane of motion.

The three planes of motion:

1. **Sagittal** – forward/backward
2. **Frontal** – side to side
3. **Transverse** – rotation

Healthy Fitness Routine

Guidelines

- Always warm-up at least 5-10 minutes prior to weightlifting or stretching in order to increase the body's temperature and coordinate the neuromuscular system. Proper warm-ups include; jumping rope, dribbling a basketball, jogging, cardio, performing easy exercises in all three planes of motion which prepare the body for the upcoming workout, etc.).
- Stretching should be done 1) before a workout (if something feels extremely tight) by using short, dynamic movement stretches instead of 20-30 second holds (holding a stretch for 20-30 seconds is great for a cool down but tends to weaken that muscle for the following hour or so), 2) as its own workout, i.e. yoga, or 3) after a workout by using long, static holds, i.e. 20-30 seconds in one position.
- Always do abs/low back and rotator cuff exercises at the end of a workout, otherwise they will fatigue in the middle of the workout and lose their ability to stabilize the body during the main exercises.
- If you feel too tired to workout, then you probably are. Focus on stretching and recovery that day.
- Get plenty of water and rest before, during, and after a workout. The workout is only 1/3 of physical fitness; the body also needs rest and proper nutrition.
- For strengthening, components "a-e" can be done 1-2x wk while "f" can be done 3-4x wk (see below).
- Strengthening can be done by using numerous techniques. Basic weight training and circuit training are described here because they are the easiest and most beneficial for the average person.
- For general results, alternate between circuits and basic weight training every 1-4 weeks.
- The following exercise components are the basics for a healthy fitness routine.

Exercise Components

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| 1. Cardio/Sports (3-6x wk) | 4. Strengthening (2-5x wk total) |
| 2. Stretching (5-7x wk) | a) chest (push) c) arms (curl/extend) e) legs |
| 3. Balance/Coordination (2-3x wk) | b) back (pull) d) shoulders (raise) f) abs/low back |

Sample Workout Schedule

	M	T	W	TH	F	SA	SU
A	1-3,4(a,b,f)	1 & 2	3, 4(e,f)	1 & 2	1-3,4(c,d,f)	2 & rest	1-3
B	Circuit	1-3	1 & Circuit* * optional	1-3	Circuit	rest	1-2

Training Techniques for Strengthening

Basic Weight Training (A)	Circuit Training (B)
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Goal = Strength or Toning

- 45 sec-3 min rest (↑ intensity = ↑ rest)
- 2-3 different exercises per muscle group
- 3-4 sets of each exercise
- 6-12 sets total for each muscle group
- 6-15 reps, except abs/low back, which can often be done to failure.

Goal = Endurance and Toning

- 2-4 circuits each workout
 - 2-4 different exercise per circuit
 - 5-10 sec rest between exercises
 - 2-3 min rest between circuits
 - 12-20 reps each exercise
 - Utilize entire body within each circuit
- OR**
- Focus on one or two parts each circuit and rotate body parts each circuit.