



Lab A4-I Advanced Weight Training Systems

The basic weight training program described in your text is designed to develop a moderate level of muscular strength and endurance for general fitness. Depending on your goals and preferences, you may choose to adopt a more serious program that will result in greater gains in strength. This lab describes some techniques that are used by athletes and experienced weight trainers.

Regulating Loads, Sets, and Repetitions

Many systems or techniques have been developed for regulating the amount of weight (load) and number of sets and repetitions used for each exercise. Some of the more commonly used systems are described below.

- **Circuit training.** Uses 6 to 20 exercise stations set up in a circuit (i.e., in series). The person progresses from one station to the next, either performing a given number of repetitions or doing as many repetitions as possible during a given time period (for example, 20 seconds) at each station.
- **Constant set method.** The same weight and number of sets and repetitions are used for each exercise. Example: Bench press 5 sets of 5 repetitions at 80 lb.
- **Pyramid method.** Uses multiple progressive sets, either ascending or ascending–descending, for each exercise. Variations: increasing weight while decreasing repetitions, or decreasing weight while increasing repetitions.

Ascending pyramid

Set 1	5 repetitions	75 lb
Set 2	5 repetitions	100 lb
Set 3	5 repetitions	120 lb

Ascending-descending pyramid

Set 1	5 repetitions	75 lb
Set 2	5 repetitions	100 lb
Set 3	5 repetitions	120 lb
Set 4	5 repetitions	100 lb
Set 5	5 repetitions	75 lb

- **DeLorme method.** 3 sets of 10 repetitions at 50, 75, and 100% of maximum. Example for a person who can do 10 repetitions at 100 lb:

Set 1	10 repetitions	50 lb (50%)
Set 2	10 repetitions	75 lb (75%)
Set 3	10 repetitions	100 lb (100%)
- **Super sets.** Usually uses two exercises, typically with opposing muscle groups, in rapid succession.

Set 1	10 repetitions	30 lb	knee extensions
Set 1	10 repetitions	15 lb	knee flexion
Rest			
Set 2	10 repetitions	30 lb	knee extensions
Set 2	10 repetitions	15 lb	knee flexion
Rest			
Repeat			

(over)

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- **Giant sets.** Uses multiple exercises in succession for the same muscle group.

Set 1	10 repetitions	75 lb	bench press
Set 1	10 repetitions	5 lb	dumbbell fly
Rest			
Set 1	10 repetitions	75 lb	bench press
Set 1	10 repetitions	5 lb	dumbbell fly
Rest			
Repeat			

Basic Cycle Training Techniques

Cycle training involves varying the volume and intensity of your workouts. It allows the body to recover more fully and to train hard when intense training is called for. The principle is simple: You do a particular exercise more intensely in one workout than in another rather than training at maximum intensity for every exercise during every weight training session.

Many elite athletes use cycle training based around their competitive schedule. In athletics, the year is divided into off-season, preseason, early season, and peak season. The weight training program will be different during each part of the year:

- During the off-season, athletes do general conditioning exercises. The program maintains fitness and provides mental and physical rest from the rigors of training.
- During the preseason and early season (sometimes called the load phase), if the goal is to develop maximum power for a strength-speed sport, the program develops a base level of fitness that serves as a foundation for maximum lifts later in the season. The weight training program typically involves high volume (5 sets of 5–8 repetitions for the major exercises, with moderately heavy loads). This phase is typically very exhausting.
- The peak phase (competitive phase) helps you achieve peak performance. The weight training program involves high-intensity workouts (heavy loads) with much less volume (fewer sets) than in the pre- and early-season phases. The athlete gets plenty of rest between intense workouts.

Each major cycle contains microcycles in which the volume, intensity, and rest vary from workout to workout or from week to week. The purpose of microcycles is to allow muscle systems adequate recovery time. According to several studies, intensity is the chief factor in building strength. In traditional training programs, athletes train hard every session, a system that may lead to overtraining. Microcycles prepare people for intense training by giving them time to recover.

Although sophisticated workout cycles are most suitable to athletes, anyone can benefit from them because they help increase strength more rapidly. Cycle training can make working out with weights more interesting and helps you to progress faster. It isn't necessary to do the same exercises every session using the same weights. Vary your program. Do some exercises intensely during one workout and other exercises intensely during the next. A basic three-days-per-week conditioning program using the cycle-training technique is shown on the facing page.

LAB A4-I (continued)

An Example of Cycle Training for General Conditioning

MONDAY			
<i>Exercise</i>	<i>Sets</i>	<i>Repetitions</i>	<i>Weight (lb)</i>
Bench press	4	10	60
Lat pulls	3	10	30
Squats	4	10	80
Abdominal curls	3	20	—
Back extensions	3	15	—
Arm curls	3	10	25
Triceps extensions	3	10	15

WEDNESDAY			
<i>Exercise</i>	<i>Sets</i>	<i>Repetitions</i>	<i>Weight (lb)</i>
Incline press	3	10	40
Modified pull-ups	5	5	—
Pull-overs	3	10	20
Leg presses	3	10	150 (machine)
Calf raises	4	20	150 (machine)
Abdominal curls	3	40	—
Good mornings	3	10	15

FRIDAY			
<i>Exercise</i>	<i>Sets</i>	<i>Repetitions</i>	<i>Weight (lb)</i>
Bench press	3	10	50
Lat pulls	3	10	40
Squats	3	10	70
Abdominal curls	3	20	—
Back extension	3	15	—
Arm curls	4	10	30
Triceps extensions	4	10	20

Develop Your Own Program

Use the examples of cycle training given in this lab to put together a personalized training program. Specify the amount of weight and number of sets and repetitions for each exercise. In the “Comments” column, describe any special techniques or systems you will use—for example, an ascending pyramid system for a 3-set program.

Exercise	Weight (lb)	Repetitions	Sets	Comments

Source: Fahey, T. 2004. *Basic Weight Training for Men and Women*, 5th ed. New York: McGraw-Hill. Used with permission from The McGraw-Hill Companies, Inc.