

Program Design: Beginning Weight Training

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THE FOLLOWING WEIGHT training program, although very basic in design, includes the elements needed to develop an individualized program for the beginner. The information in this article is appropriate for the new strength and conditioning professional who is working with those who have little or no weight training experience. Beginners may include adolescent athletes, adults, or even the elderly.

Before starting an exercise program, assess the needs and goals of the individual. This will dictate the design of the program and the exercises to be performed. After 6 weeks, review the individual's progress and make the necessary adjustments to ensure that the program will help achieve his or her goals.

Regardless of age or goals, a properly designed weight training program can lead to a stronger, healthier, more productive lifestyle. A young athlete, for example, may start weight training to increase overall strength and improve performance. An adult's goal, however, may be improved stamina and/or body composition by increasing muscle mass and decreasing body fat. This is accomplished through weight train-

ing, proper nutrition, and/or aerobic exercise. In both cases the secret to success is program design, goal-setting, discipline, and commitment to performing the workouts.

Depending on the design of the program, the short- and long-term benefits of participating in a weight training program may include (a) decreased body fat, resting blood pressure, and resting heart rate; (b) improved cholesterol ratio of HDL and LDL, improved self-concept and well-being; and (c) increased bone density, functional power, local muscular endurance, local muscular strength, muscle mass, and neuromuscular control.

Before starting the program, be sure the individual is free of any inherent health risks and has consulted a physician who is familiar with exercise. Select a properly equipped location for the workouts such as a high school gym, a health club, or a recreation center.

It is very important that exercisers *not hold their breath* while exercising. They should exhale during the lifting phase and inhale during the lowering phase of an exercise.

Weight training terms:

- **Repetition:** Performing one exercise movement from start to finish, one time.
- **Set:** Performing a specific number of repetitions without resting (e.g., 10 reps).
- **Load:** Amount of weight lifted (e.g., 100 lbs).
- **Intensity:** Stress level of an exercise, normally expressed as a percent of a repetition maximum (RM), normally from 1 to 10. A 10-RM is the heaviest weight that can be lifted during a 10-repetition set. A 5-RM will usually be more intense than a 10-RM because a greater load is used. Because this is a beginning program, intensity will be based on a 10-RM. How to estimate a 10-RM? (a) For the first workout, select a very light weight (weaker individuals may need to start with one plate on a weight machine, an empty bar, or a 3- to 5-lb dumbbell); (b) if less than 8 reps were performed, decrease the weight for the next workout; (c) if more than

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10 reps were performed, increase the weight for the next workout; and (d) when the lifter reaches a weight that can only be lifted 10 times, this is his or her 10-RM.

- Recovery: Amount of rest between sets (e.g., 1:30).
- Exercise selection: Selection of exercises for specific areas of the body and muscle groups.
- Training days per week: Number of training days a week.

■ 3-Day/Week Beginning Program

Start with a 3-day program. After 6 weeks you may either continue with the 3-day program (see Table 2 for new sets, reps, and percents) or switch to the 4-day program. Neither program is right or wrong. The choice should be based on individual time restrictions and personal goals. The 3-day-a-week program is a total body workout that exercises all the major muscles in one workout.

Table 1 provides basic information on progression, number of sets, number of repetitions, and recovery between sets for that program. The number of exercises should be 8 to 10. Start with 8 exercises and add another one every 2 weeks until a predetermined goal for number of exercises is reached. Select one exercise from each muscle group listed in Table 3 (chest, shoulders, etc.).

■ 4-Day/Week Beginning Program

After 7 weeks (6 weeks of the beginning program plus 1 week of low intensity training) you may advance to the 4-day-a-week program. The 4-day program is also called a "split routine," and work-

Table 1
Progression of a 3-Day/Week Beginning Program

Week	Sets	Reps	Intensity*	Recovery
1	1	10-12	@ 50%	1:30-2:00
2	2	10-12	Set 1-50 Set 2-65	1:30-2:00
3	3	10-12	Set 1-50 Set 2-65 Set 3-75	1:30
4	3	10-12	Set 1-50 Set 2-75 Set 3-85	1:30
5	3	10-12	Set 1-60 Set 2-80 Set 3-90	1:30
6	3	10-12	Set 1-60 Set 2-85 Set 3-100	1:30
7	3	10-12	Set 1-40 Set 2-50 Set 3-60	1:30
Light workout				

*For Monday high intensity workouts and for an estimated 10-RM

Table 2
Sample 3-Day Workout
After 6 Weeks on the Beginning Program

Day	Intensity	Example sets & reps
Monday	High	10 × 75%* 10 × 90% 10 × 105%
Wednesday	Low	10 × 50% 10 × 70%
Friday	Medium	10 × 65% 10 × 70% 10 × 85%

*Percent of a 10-RM

outs are based on exercising specific body parts (see Table 4). Two workouts incorporate a specific

group of exercises (e.g., upper body) and two workouts incorporate another group of exercises

(e.g., lower body). The number of exercises for each workout may range from 6 to 8, which will result in a greater volume of work as long as the number of sets and repetitions remains the same.

If you want to keep the same volume of work as the 3-day program, then use four to five exercises. Following are examples of 4-day-a-week programs:

Push/Pull Workout

- Upper body push: chest, shoulders, triceps, upper abdominals.
- Lower body and upper body pull: legs, upper back, biceps, low back, lower abdominals.

Upper/Lower Body Workout

- Upper body: chest, shoulders, biceps, triceps, upper back, upper abdominals.
- Lower body: legs, lower back, lower abdominals.

Refer to Table 3 for exercise selection, and to Table 4 for sets, reps, and percentages. For Monday and Thursday workouts, select one exercise from each of the following muscle groups:

Push/Pull Workout

- Chest
- Shoulders
- Triceps
- Upper abdominals

Upper/Lower Body Workout

- Chest
- Shoulders
- Triceps
- Biceps
- Upper back
- Upper abdominals

Select an additional exercise from each of the following muscle groups:

Push/Pull Workout

- Chest
- Shoulders

Muscle Group	Exercise	Equipment
Chest	Bench press	Barbell or machine
	Incline press	Barbell
	Dumbbell bench	Dumbbell
	Dumbbell incline	Dumbbell
Shoulders	Military press	Barbell or machine
	Dumbbell shoulder press	Dumbbell
	Lateral or forward shoulder raises	Dumbbell
Upper back	Lat pulldown	High cable pulley
	Seated row	Low cable pulley
	Chin-up or pull-up	Chin-up bar
Triceps	Triceps press-down	High cable pulley
	French press	Barbell or dumbbell
	Dips	Dip station
Biceps	Arm curl	Barbell
	Arm curl	Dumbbell
	Arm curl	Low cable pulley
Quadriceps	Leg press	Machine
	Squat	Barbell
	Leg extension	Machine
Hamstring	Leg curl	Machine
Calves	Calf raise/leg press	Machine
	Standing heel raise	Machine or barbell
	Seated heel raise	Machine
Lower abdominals	Vertical leg raise	Vertical leg raise
	Supine leg raise	Lying on the floor
Upper abdominals	Crunch	
Low back	Set-up	Place calves on bench
	Back extension	Apparatus

For the Tuesday and Friday workouts, select one exercise from each of the following muscle groups:

Push/Pull Workout

- Quadriceps
- Hamstrings
- Calves
- Upper back
- Biceps
- Low back

Upper/Lower Body Workout

- Quadriceps
- Hamstrings
- Calves
- Lower back
- Lower abdominals

Select an additional exercise from each of the following muscle groups:

Push/Pull Workout

- Quadriceps
- Lower abdominals

Table 4
Sample 4-Day, Split-Routine Workout
After 6 Weeks on the Beginning Program

Day	Body part	Intensity	4-set example	3-set example
Monday	Upper body push	High	10 x 60%* 10 x 75 10 x 90 10 x 105	10 x 70%* 10 x 85 10 x 105
Tuesday	Lower body & upper body pull	Low-med	10 x 55 10 x 65 10 x 75 10 x 80	10 x 50 10 x 65 10 x 80
Wednesday	No training			
Thursday	Upper body push	Low-med	As w/Tues	As w/Tues
Friday	Lower body & upper body pull	High	As w/Mon	As w/Mon

*Percent of 10-RM

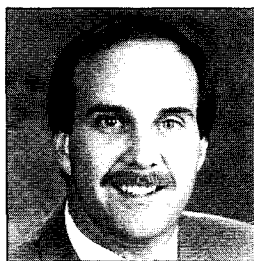
Advantages and Disadvantages

There are advantages and disadvantages to each program. Advantages of the 3-day program are (a) less time commitment each week, and (b) each workout is a total body workout.

Disadvantages are that (a) because 8 to 10 exercises will be performed in each workout, this is more demanding than a workout in the 4-day program; and (b) the 3-day program does not concentrate on specific areas of the body as does the 4-day program.

Advantages of the 4-day program are that (a) each workout takes slightly less time than in a 3-day program because it involves only 6 to 8 exercises; and (b) more emphasis is placed on specific areas of the body because there are more exercises for each muscle group or more sets for each exercise.

The main disadvantage of the 4-day program is that, compared to the 3-day program, it requires an extra day of commitment each week.



Bill Allerheiligen received a master's in physical education from the University of Wyoming and is currently the NSCA's Director of Education. As a strength coach he has held positions at the University of Nebraska, Kansas State University, Notre Dame, and the University of Wyoming, as well as the NFL's Houston Oilers. Bill was named National Strength Coach of the Year in 1988 by the NSCA.

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