

...intelligence and skill can only function at the peak of their capacity when the body is healthy and strong...hardy spirits and tough minds usually inhabit sound bodies.

-John F. Kennedy

Physical

How many sets and reps should I do?

Training goal	Goal repetitions	Sets*
Strength	≤6	2-6
Power:		
Single-effort event	1-2	3-5
Multiple-effort event	3-5	3-5
Hypertrophy	6-12	3-6
Muscular endurance	≥12	2-3

Ranges for optimal results from "Essentials of Strength Training" by National Strength and Conditioning Association - 2008.

TABLE 15.9
Load and Repetition Assignments Based on the Training Goal

Training goal	Load (%1RM)	Goal repetitions
*Strength	≥85	≤6
†Power:		
Single-effort event	80-90	1-2
Multiple-effort event	75-85	3-5
Hypertrophy	67-85	6-12
Muscular endurance	≤67	≥12

*These RM loading assignments for muscular strength training apply only to core exercises; assistance exercises should be limited to loads not heavier than an 8RM (6).

†The load and repetition assignments shown for power in this table are not consistent with the %1RM–repetition relationship. On average, loads equaling about 80% of the 1RM apply to the two- to five-repetition range. Refer to the discussion of assigning percentages of the 1RM for power training on page 400 for further explanation.

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How much weight should I lift?

TABLE 15.12
Rest Period Length Assignments Based on the Training Goal

Training goal*	Rest period length
Strength	2-5 minutes
Power:	
Single-effort event	2-5 minutes
Multiple-effort event	
Hypertrophy	30 seconds-1.5 minutes
Muscular endurance	≤30 seconds

*Because there are occasions when the prescribed percentage of the 1RM for assistance exercises falls outside the range associated with the training goal (e.g., ≥8RM loads are recommended for assistance exercises as part of a muscular strength training program [6]), the strength and conditioning professional should examine the loads used for each exercise when assigning rest periods rather than generally applying the guidelines for a training goal.

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How long should I rest between sets?

Physical

Training Principles

Each training program should consider the following six training principles.

1. **Specificity**-goals are specific to the type of training that is performed.
2. **Overload**-muscles need to be overloaded to respond to the exercise stimuli to get stronger, however use caution to not overreach.
3. **Progression**-the body adapts and becomes more efficient with training, therefore progression must be considered. This could be by volume, intensity, or time.
4. **Recovery**-training is best when a healthy balance of physical exertion is complimented with appropriate recovery strategies.
5. **Variation**-a variety of exercise should be included to ensure balance throughout the program utilizing all planes of movement.
6. **Regularity and Reversability**-consistency in programming is vital to ensure optimal performance. It takes 8 weeks to capture true strength gains.

Injury
Prevention
Strategies



Pain
Management
Strategies



Physical

The FITT Principle is utilized to plan efficient training sessions that meet the desired training objectives. Below is a chart from the American College of Sports Medicine on Frequency, Intensity, Time, and Type.

	FREQUENCY	INTENSITY	TIME (incl rest)	TYPE
Cardiovascular ACSM guidelines 2012	5 days per week	Moderate: 12-13 RPE	≥ 150 mins (accumulated) per week	Rhythmic activity using large muscle groups, e.g. cycling, running, aerobics
	3 days per week	Vigorous: 14-17 REP	>20 min per day 3 days per week	
Strength ACSM guidelines 2009 Novice	3-4 days per week	60-70% 1RepMax (RM) 8-12 Reps 1-3 Sets	2-3 mins	Free weights, Resistance machines, dyna-bands
Strength ACSM guidelines 2009 Intermediate	4-6 days per week	60-70% 1RepMax (RM) 8-12 Reps 1-3 Sets	2-3 mins	Free weights, Resistance machines, dyna-bands
Strength ACSM guidelines 2009 Experienced	2-3 days per week	≥ 80% 1RepMax (RM) 1-12 Reps 3+ Sets	2-3 mins	Free weights, Resistance machines, dyna-bands
Local Muscular Endurance ACSM guidelines 2009 (ALL LEVELS)	2-3 days per week	40-60% 1RepMax (RM) 15-25 Reps 1-2 Sets	<90 secs	Free weights, Resistance machines, dyna-bands
Flexibility ACSM guidelines 2009 (ALL LEVELS)	2-3 days per week Preferably daily	2-4 reps per muscle group Hold to mild discomfort	Hold for 10-30 secs (static)	Static, active, PNF, dynamic etc.