



CU SPORTS MEDICINE

Strength Training Tips

Which is better: free weights, exercise machines, stretch bands, or calisthenics?

Each type of strength training has both benefits and disadvantages, depending upon your fitness goals, experience and equipment availability.

- Free weights and calisthenics require balancing and stabilizing muscles that act together in real life situations to coordinate movement. This helps to increase the development of overall body strength.
- Exercise machines can provide a quick, safe workout for the beginner and are useful for muscle isolation.
- Stretch bands can be adapted easily to your muscle's need for increased resistance as you become stronger. (You increase the tension of the band by standing farther away from the anchor point.)

How often should I do my strength workout?

Most of us should strength train on alternate days to allow for sufficient recovery and rebuilding of muscle. You'll want to train between 2 to 4 days per week, depending upon your time constraints and goals. If your strength training session is "light", you'll be able to train more frequently. You can also alternate "heavy" and "light" loading sessions.

How many sets and repetitions should I do?

How many sets or repetitions you do will depend on your fitness goals.

- If you're seeking a general strengthening program, you'll want to select a weight that fatigues the muscle after 8 to 12 repetitions and 1 to 3 sets.
- If you're looking for muscle *endurance* (important for abdominals and back extensors) you'll want to increase the number of repetitions to 30, with a lighter resistance.
- For power and explosive strength, 4 to 6 repetitions are most effective.

To avoid overtraining, no more than 20 total weight-lifting sets should be performed in a workout.

How much weight or resistance should I use?

For the first couple weeks, a beginner should use a weight that feels somewhat challenging, but doesn't cause strain or exhaustion. This avoids injury and helps you concentrate on learning good technique before you increase demand on the muscle. Then you'll want to determine the maximal weight you can lift for 10 repetitions. You then will lift 50% of that weight during set 1, 75% during set 2, and 100% during set 3. You can also attempt to complete all three sets at the 100% level, or lift 100% during the first set, then 75%, then 50%. There are many ways to challenge the muscle. Find what works for you, but change your training routine periodically for optimal strength gains.



How long do I rest between each set and exercise?

If you're lifting 8 to 12 repetitions, you'll want to give yourself a 30 to 60 second rest period between sets. Highly trained athletes can often recover more quickly and need less recovery time. Heavy training with maximal loads may require between 3 to 5 minutes of rest between sets for recovery.

Do I really need to warm up before lifting weights?

Yes! Warm-up for weight lifting involves two components:

- 5 to 10 minute low level cardiovascular warm-up that increases muscle temperature and flexibility.
- a light warm-up set that allows you to practice good technique for each exercise and get your coordination in tune to avoid injury.

What are the most essential strength training exercises?

Functional exercises (movements that mimic everyday or sports movements) make the most sense for practical strength. For example, multiple-joint exercises that involve pushing, pulling, and squatting will provide crossover benefit for many activities and train your muscles the way they will be used. Make sure your program includes about 8 to 10 total exercises, involving muscles in the upper and lower extremities, and the trunk. You should seek to achieve balance. If you strengthen the muscles in your chest, don't neglect your upper back. Exercise your low back as well as your abdominals. Exercises for the same body part can be changed every 4 to 6 weeks to optimize strength gains and promote muscular balance.

The Top Ten

- Squats or Leg Press
- Calf Raises
- Chest Press or Incline Press
- Seated Row or Lat Pulldown
- Rotator Cuff (internal & external shoulder rotations)
- Abdominal Exercises (both upper & lower)
- Back Extensions (start w/ gentle floor exercises)
- Biceps Curls
- Triceps Pressdowns

Should I perform my strength exercises in a certain order?

A general rule-of-thumb is that multiple-joint, large muscle mass exercises should precede smaller muscle, isolation exercises. Other techniques include "super setting" which involves alternating opposing muscle groups with minimal rest between exercises. For example, switch back and forth between biceps curls and triceps presses. Athletes sometimes perform different exercises involving the same muscle back to back (compound setting). For example, standing barbell curls, and then alternating dumbbell curls. This can be very fatiguing and is not appropriate for the beginner. Power and speed movements (power cleans & snatches) should be performed before absolute strength exercises (bench presses & squats). Remember to breathe with exertion.

How do I know when it's time to increase my weight or resistance?

When you're able to do two or three successive workouts comfortably (at the high end of your repetition range) then it's time to increase your resistance. At a higher weight, you may have to reduce your repetitions and gradually build up again. If you reach a point where you feel comfortable with your level of strength, simply maintain your training regimen 2 days per week.

Should I do my strength training on a different day than my cardiovascular training?

Doing strength training and aerobic training on different days is ideal. But many of us have to fit our workouts into a limited time schedule. So there's nothing wrong with doing both on the same day. You can use your cardiovascular workout as a warm-up for strength training. Whichever type of training you do first will cause specific muscle fatigue that may reduce your performance in the second part of the workout. Do what's most important to you first.

What is "sports-specific" strength training?

During the off season it's important to maintain a base of general strength, flexibility, and endurance. But as the competitive season approaches, your conditioning should become specific in terms of the muscle groups, energy systems, and movement patterns that are unique to your sport. For example, the physical skills required for jumping, acceleration and quick changes of direction in basketball or soccer can best be improved by a strength workout that involves speed, power, coordination and balance. A sports-specific strength program often moves beyond the weight room and incorporates strength drills that involve resistance cords, weighted balls, and agility movements that help you develop explosive force. A sports-specific program also seeks to identify and correct areas of weakness, tightness, or imbalance related to common injuries in the sport (for instance, rotator cuff injuries in tennis or swimming). An athletic trainer, sports physical therapist, or coach can help you put this type of program together.