

Strength Training for the Runner




FURMAN INSTITUTE OF RUNNING & SCIENTIFIC TRAINING

FIRST

Strength Training for the Runner

What?

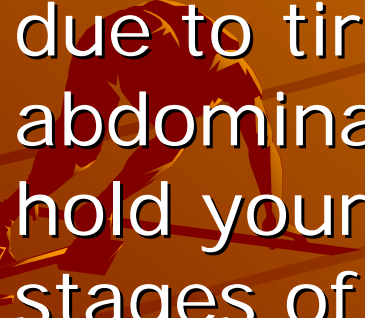
The goal of resistance training for runners is not necessarily adding muscle mass but...

1. improving muscular strength,
 2. improving local muscular endurance,
 3. maintaining current muscle mass,
 4. "pre-hab" for injury prevention, and
 5. Post-injury rehabilitation.
- 
- A silhouette of a runner in a starting crouch on a track, positioned on the left side of the slide. The runner is in a low, forward-leaning position with hands on the ground, ready to start a race. The background is a warm orange gradient with curved lines.

Strength Training for the Runner

Why?

When you become fatigued, your form deteriorates (poor running economy). It is not just because of tired legs, but it is also due to tired arms and a tired back and abdominals. Having a strong torso helps hold your form together in the latter stages of a workout or a race.

A silhouette of a runner in a starting crouch on a track, positioned on the left side of the slide. The runner is in a low, forward-leaning position, ready to start a race. The background is a warm orange gradient with faint, curved lines suggesting a track or a stylized background.

Strength Training for the Runner

Why?

- ✦ Resistance training prevents the gradual loss of strength and bone mineral content that occurs naturally with aging.
- ✦ Eccentric muscle contractions reduce the risk of injury.
- ✦ Resistance training eliminates muscle imbalances between opposing muscles.



Strength Training for the Runner

Why?

- ✦ Resistance training improves running economy (one of the key determinants of running performance).
- ✦ By improving running economy, a runner should be able to run faster over the same distance due to a decrease in oxygen consumption.
- ✦ Improved running economy would also increase a runner's time to exhaustion.

Strength Training for the Runner

Why?

- ◆ Improves running performance as a result of neuromuscular adaptations that ensures that muscle activation remains high during the duration of a workout or race. In one study, after ten weeks of resistance training, 10K times decreased by an average of a little over one minute.
- ◆ As a result of strength training, rapid force production when the foot is on the ground reduces ground contact time thereby ensuring a higher running speed.



Introducing strength training to a running training plan

Sample week



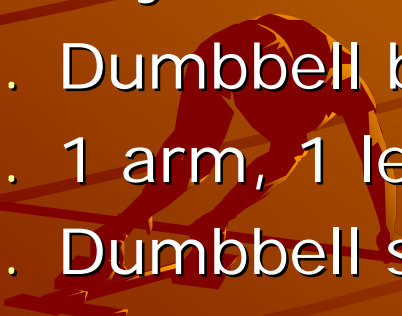
Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Sun.
Cross train or easy run	Key Run #1 Strength train Workout #1	Cross train or easy run	Key Run #2 Strength train Workout #2	Off or swim	Key Run #3	Off or swim Strength train Workout #3 (optional)

Typical Resistance Training Program for a Runner

What Exercises?

Exercise

Muscle Group

- 
1. Split squat / lunges for quads & hips
 2. Physioball Leg Curl for glutes/hamstrings/lower back
 3. Dumbbell bench press for pectoralis & triceps
 4. 1 arm, 1 leg dumbbell row for latissimus dorsi/trapezius
 5. Dumbbell squat to press for total body
 6. Split dumbbell curl-press for biceps & shoulders
 7. Dumbbell pullover ext. for triceps
 8. Core exercises for abdominals and core

Strength Training for Runners

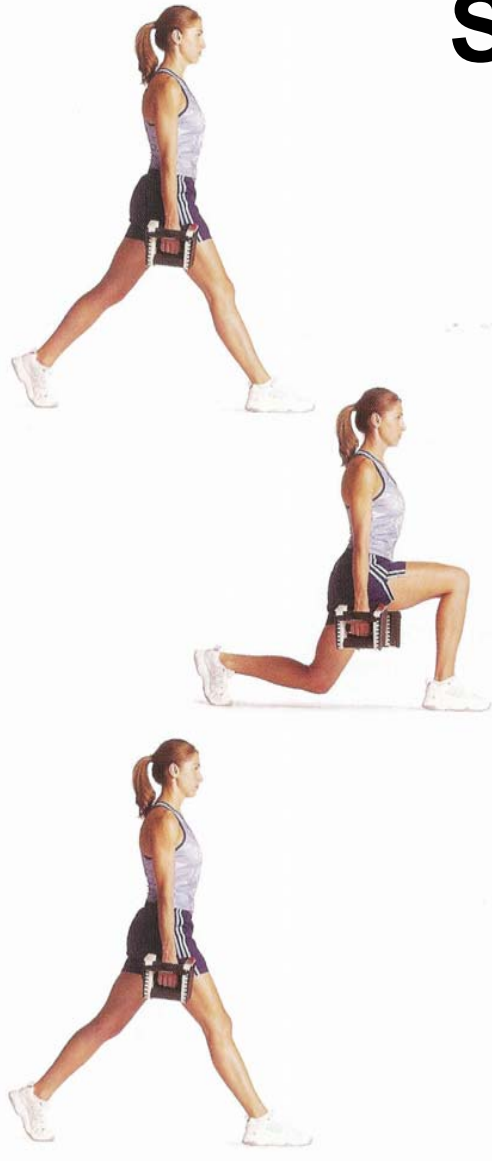
Exercise: Split Squat / Lunge

Goal: Improve strength and balance in your hip and leg muscles.

Muscle Groups: Quadriceps and hip flexors.

Doing It: Step out into a lunge. Lower your hips toward the floor by squatting down and back. Do not let your back knee touch the ground. Return to the starting position by driving your weight back up with your front leg. Do one leg then switch legs and repeat.

Reminders: Do not let your front knee extend beyond the point of your front toes.



Illustrations and exercise descriptions from Verstegen, M., (2004). Core Performance. Rodale Press.

Strength Training for Runners

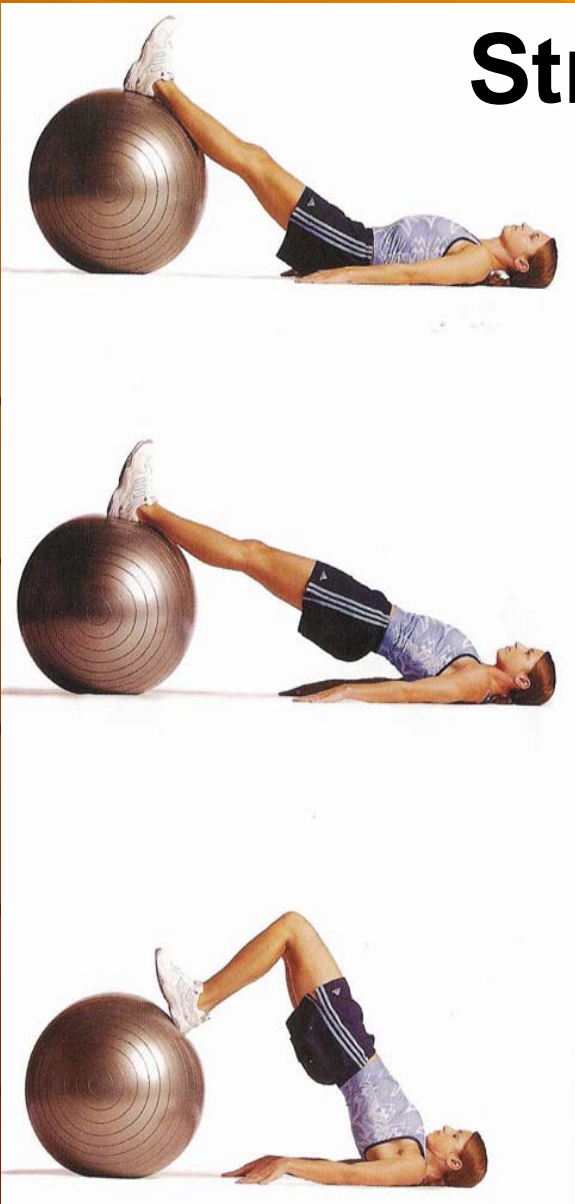
Exercise: Physioball Leg Curl

Goal: Improve strength and stability in glutes, hamstrings, and lower back.

Muscle Groups: Lower back, glutes, hamstrings, and gastrocnemius.

Doing It: Lie face up on the floor with heels on a physioball. Tighten your glutes until your body is in a straight line from ankle to shoulders. Keep your hips high and pull your heel toward your glutes. Let the ball roll back slowly as you straighten your legs.

Reminders: Keep your glutes activated and do not let hips drop as you pull heels in.



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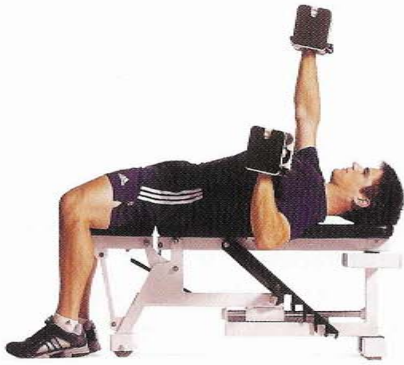
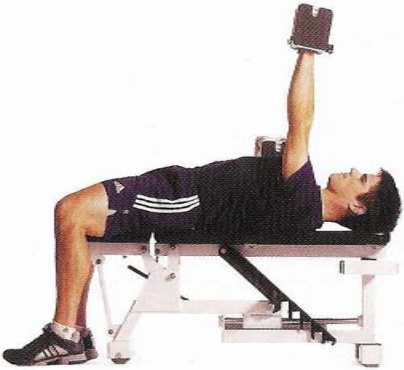
Exercise: Dumbbell Bench Press

Goal: Improve strength and stability in chest, shoulders and triceps.

Muscle Groups: Pectoralis major, deltoids, and triceps.

Doing It: Lie on a bench with dumbbells held at shoulder width and palms facing your legs. Lift both dumbbells straight up then lower one dumbbell to the outside of your shoulder, then push it back up. Repeat with other arm.

Reminders: At top of arm extension, keep arm stabilized and extend both dumbbells up for a "plus" (full range of motion).



Strength Training for Runners

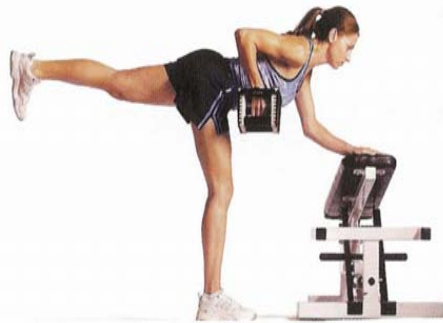
Exercise: 1-Arm, 1-Leg Dumbbell Row

Goal: Develop upper-back strength along with hip stability.

Muscle Groups: Latissimus dorsi, trapezius, deltoids

Doing It: Stand on one leg and stabilize upper-body with opposite side hand. Bend over and lift opposite leg to create a "T" with your body. Pull dumbbell with free hand up to the side of your waist then lower it. Do one arm then switch sides and repeat.

Reminders: Initiate row with shoulder, not arm. Keep shoulders and back parallel to floor.



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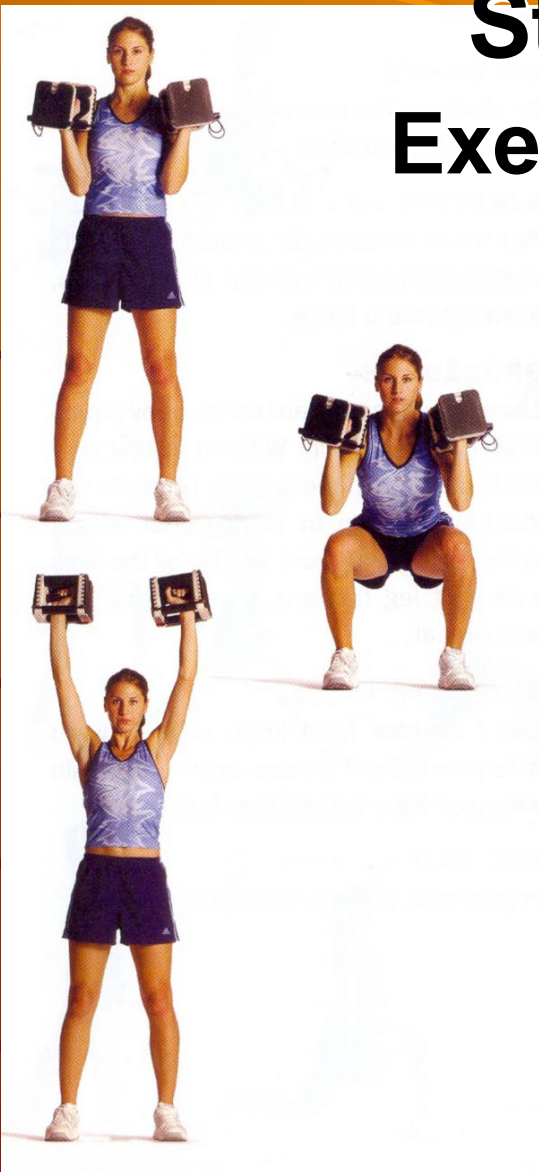
Strength Training for Runners

Exercise: Dumbbell Squat to Press

Goal: Develop and improve total-body strength and power.

Muscle Groups: This is a total body exercise.

Doing It: Initiate movement from your hips and squat down until thighs are parallel to floor. Explode up using hips and quads and use momentum to drive weights overhead. Finish with straight legs and arms. Lower weights back to shoulders, then drop back down into a full squat.



Illustrations and exercise descriptions from Verstegen, M., (2004). Core Performance. Rodale Press.

Reminders: Keep your weight on your heels when you squat; do not

Strength Training for Runners

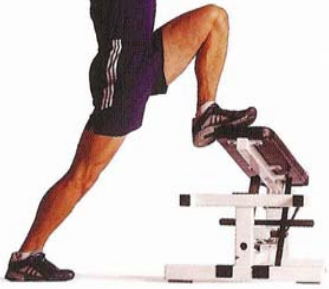
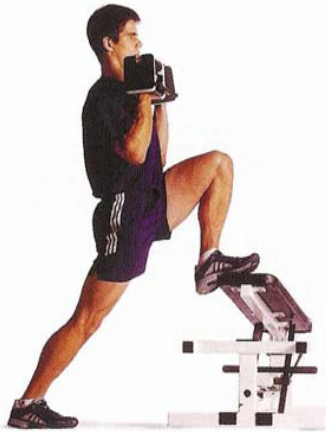
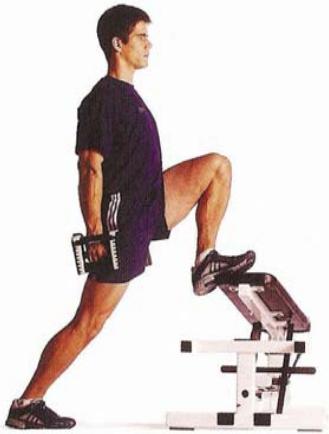
Exercise: Dumbbell Curl to Press

Goal: Strengthen arms and shoulders while stabilizing hips and core.

Muscle Groups: Biceps, deltoids, core

Doing It: Stand holding dumbbells at your side. Rest a foot on a bench about mid-thigh height. Perform a biceps curl rotating palms so they face up. Then press weight over-head rotating dumbbells to finish facing forward. Return to starting position. Do one set with one leg forward then repeat with other leg forward.

Reminders: Keep up-right posture by contracting abdominals and keeping shoulder blades pulled back.



Illustrations and exercise descriptions from Verstegen, M., (2004). Core Performance. Rodale Press.

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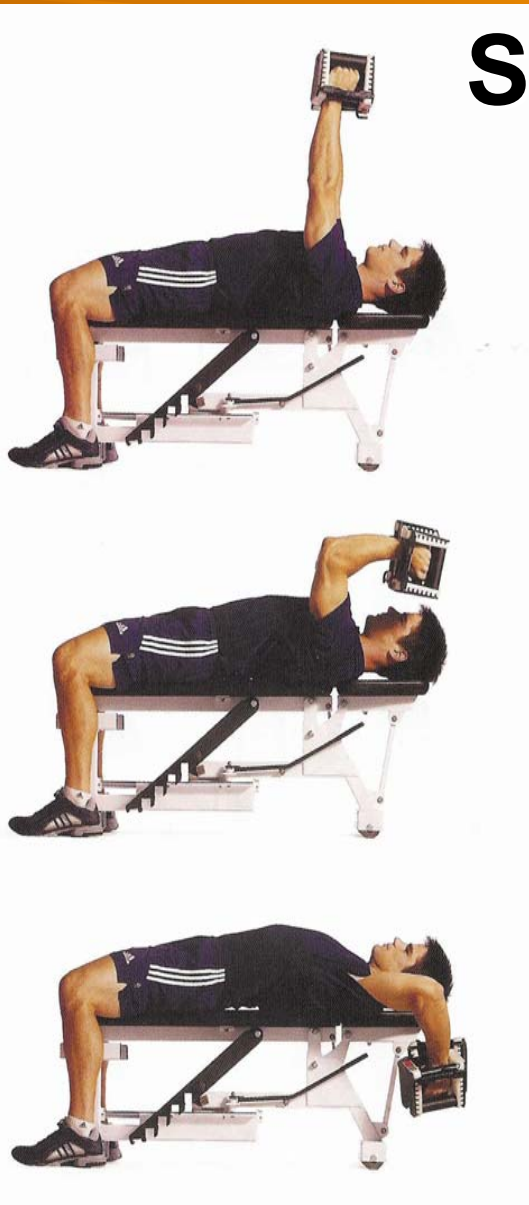
Exercise: Pullover Extension

Goal: Improve strength and coordination between the muscles of the upper back and the triceps.

Muscle Groups: Latissimus dorsi and triceps

Doing It: Lie on a bench with dumbbells held straight up over your chest. Lower dumbbells until elbows are at 90 degrees. Lower upper arms until parallel to the floor. Pull arms back to the starting position straightening elbows on the way up.

Reminders: Drop hands first, then drop elbows.



Illustrations and exercise descriptions from Verstegen, M., (2004). Core Performance. Rodale Press.

Core Strength Training

The intent of core training is to strengthen the muscle groups that stabilize your skeletal structure.

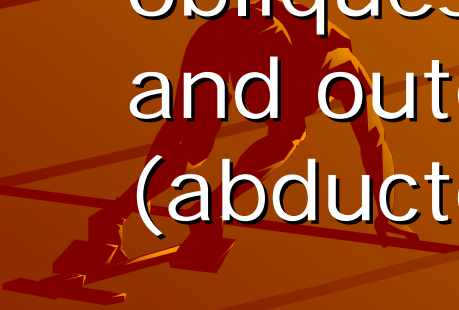


The muscle groups that you strengthen with core training generally don't drive you forward, but they are the "platform" from which your arms and legs work.

Resistance Training

Core Strength Training

Core training focuses on muscular areas of the abdominals including obliques, upper and lower back, hips, and outer and inner thighs (abductors and adductors).



Core Training for the Runner

Exercise: Plank or Core Torture



Support your body on the floor or a ball with your forearms. Keep your body in a straight line and pulling your belly button towards your spine. Maintain this position up to one minute and repeat 3 to 5 times. As you get stronger, alternate raising one of your legs a few inches off the ground.

Core Training for the Runner

Exercise: Side Plank with Knee Pull

Palm of hand and head aligned above wrist. Body aligned in a straight line when sighting down the body with abdominals contracted.

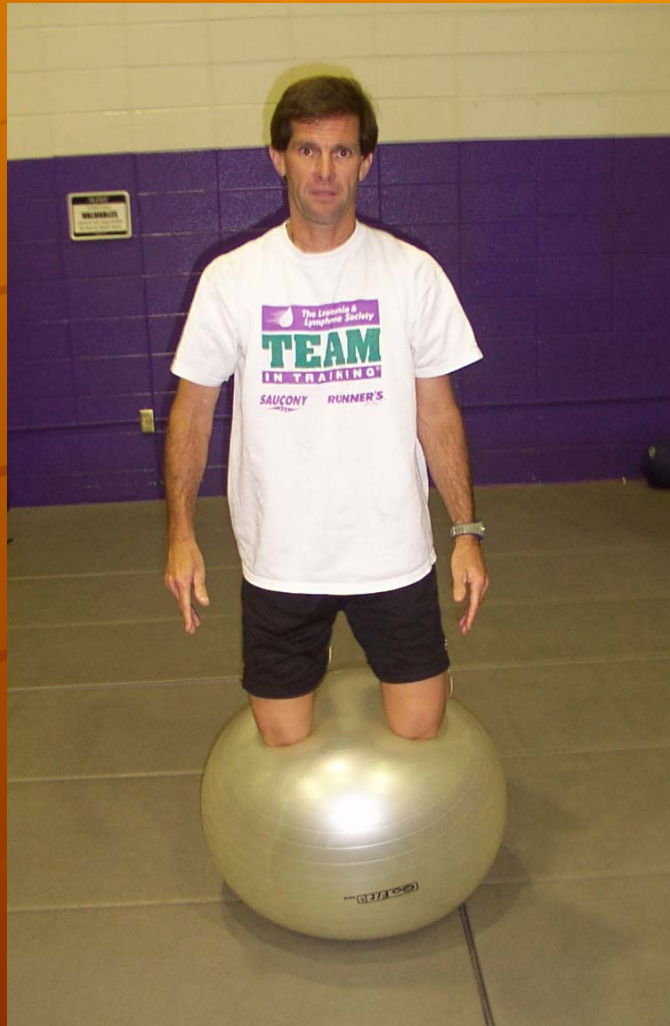


Palm of hand and head aligned above wrist. Body aligned in a straight line when sighting down the body with abdominals contracted.



Core Training for the Runner

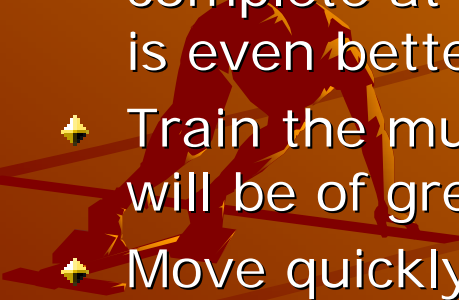
Exercise: Physioball Stabilization



Resistance Training

Tips for Setting Up Your Resistance Training Program

- ◆ There is no single method that can be shown to be unequivocally superior to another.
- ◆ Train regularly, failure to do so has limited benefit. Try to complete at a minimum two strength sessions per week (3 is even better).
- ◆ Train the muscle groups most in need of conditioning that will be of greatest benefit to running.
- ◆ Move quickly from one exercise to the next in order to keep your heart rate elevated. This will also minimize your time spent doing resistance training.



Resistance Training

Tips for Setting Up Your Resistance Training Program

- ◆ Ensure muscle balance by training antagonists as well as agonist muscle groups. Agonist muscles are defined as the muscle or muscles most directly involved with bringing about a movement (also known as prime movers). Antagonist muscles are the muscle or muscles that can slow down or stop a movement. Antagonist muscles assist in joint stabilization.
- ◆ Change the exercises you are using each month to keep mentally stimulated and to ensure that strength gains continue (runners can quickly plateau if they do the same exercises month after month).

Resistance Training

Tips for Setting Up Your Resistance Training Program

- ◆ Provide a progressive overload stimulus.
- ◆ Work the muscles throughout their full range of movement so that strength gains occur in the full range of motion.
- ◆ Allow adequate time between training sessions for recovery and physiological adaptation to occur.
- ◆ It is important that exercises be performed properly with attention to posture, breathing, and adequate time given to each repetition.
- ◆ Perform 1 set of 10-15 repetitions for each exercise.

FIRST

Discussion ?
Comments ?
Q & A



Thank You