Smarter Cardio

6 keys to efficent running

By: **Matt Fitzgerald**, Illustrations by: **Headcase Design**

Run tall. Gravity and weak core muscles cause many runners to "fold" in the middle when their feet land. This sitting-down movement wastes energy. Imagine that wires are attached to your shoulders, pulling you up slightly. Thrust your hips forward a bit and think "stability" when your foot hits. It's easier to run tall if you've worked your core properly; find core exercises below.

Relax. Tension in your arms, shoulders, neck, and face reduces efficiency. Arms and fingers should be loose. Unclench your hands and let your jaw jiggle.

Breathe right. Your breathing should be rhythmic and deep, and you should feel your diaphragm, not your chest, doing the work. Exhale with controlled force. When you pick up the pace, don't let your breathing get shallow.

Land on the midfoot. A heel-first landing is a brake. It means you're extending your leg out too far in front of your center of gravity, so it takes more energy to move forward. And it's shaky, so your muscles are working on stabilization instead of forward motion. Shorten your stride. It'll feel odd at first, like shuffling, but once you get used to it, focus on thrusting backward with force.

Run softly. The louder your footfalls, the less efficiently you're running. Try running more quietly; you'll be unconsciously switching to a midfoot strike and a shorter, quicker stride.

Swing symmetrically. Check your form on a treadmill in front of a mirror. If one arm is bent more than the other or swings more, you have a musculoskeletal imbalance that can slow you down. Target the weaker side with strength and flexibility exercises

Build a Rock-Solid Core

Innovative muscle builders and a world-class plan that will give you the results you want

Workout by: **Myatt Murphy**

THE PAYOFF

ADVANTAGES OF BEING A MIDDLE MAN

Don't confuse an ab routine with a core workout. A true core program develops dozens of muscles attached to the hips, pelvis, lower back, and abdominals. We'll focus on four muscle groups: the erector spinae, along the spinal column; the rectus abdominis, from the middle of your rib cage to your pubic bone; the obliques, alongside your waist; and the transverse abdominis, under your obliques.

Goal 1

ULTIMATE AGILITY!

Developed core muscles help you react faster and stronger, and let your body distribute stress evenly and absorb shock effectively. Athletes who give these muscles proper attention will reap enhanced balance, body awareness, coordination, and flexibility.

Goal 2

DOMINANT POWER!

The most effective exercises for developing power, such as deadlifts and squats, require a strong core to stabilize and protect the lower back. Conditioning the deep core muscles gives you the foundation needed to lift more weight with less risk of injury.

Goal 3

PERFECT POSTURE!

The more centered your spine is in relation to the rest of your body, the more erect you'll sit and stand. Strong lower-back and abdominal muscles help you run with proper technique, sustain a long commute, even sit at a desk all day. Clothes fit better, and you appear taller, slimmer, and more confident.

Goal 4

LONG-TERM WEIGHT LOSS!

Developing your core helps you perform daily tasks with less effort and fatigue. This means you'll have more energy to burn in the gym or on the field, and less time on the sidelines from early exhaustion or injury.

YOUR SIX-PACK, AND MUCH MORE

Most men never bother to develop core strength. "Men tend to focus more on the muscles they can see, so they work on their six-packs, but the obliques, lower back, and hips are all part of the core," says Mike Huff, C.S.C.S., coordinator of sports performance at the Michael W. Krzyzewski Human Performance Lab at Duke medical center. Focus on core muscles first, to gain the strength and stability to help you perform the real muscle-building moves. Proper training enables all the core muscles to work in sync, says Huff. "The only way to achieve that kind of synergy is through functional exercises that require those muscles to work together."

THE WORKOUT

This program strengthens major and minor muscles at the same time. Many of the exercises involve rotation of the spine, which engages more of the erector spinae and the internal and external obliques. Your core muscles work all day long, so they're resistant to fatigue. That means you won't need many rest days on this program.

The plan can be a separate workout three or four times a week. But if you weight-train regularly, put it at the end of your routine twice a week--preferably on the day you perform squats or deadlifts. This will make it easier to exhaust your core muscles. Don't worry about the number of reps--concentrate on form and on going slowly.

WEEK 1

Create your routine by . . . Picking 1 move from section A, 1 from B, and 2 from C
Sets of each exercise: 2
Repetitions per set: As many as you can do with perfect form

Your total workout should be . . . 8 sets
Speed of each repetition: At least 2 seconds up and 2 seconds down
Rest between sets: 30 seconds
Do this workout . . . Once or twice a week

WEEK 2
Create your routine by . . . Combining the 4 moves you didn't use during week 1
Sets of each exercise: 2
Repetitions per set: As many as you can do with perfect form
Your total workout should be . . . 8 sets
Speed of each repetition: At least 2 seconds up and 2 seconds down
Rest between sets: 30 seconds
Do this workout . . . 2 or 3 times a week

WEEK 3
Create your routine by . . . Doing all 8 moves in the order shown
Sets of each exercise: 1–2
Repetitions per set: As many as you can do with perfect form
Your total workout should be . . . 8–16 sets
Speed of each repetition: At least 3 seconds up and 3 seconds down
Rest between sets: 15-30 seconds
Do this workout . . . 2 or 3 times a week

WEEK 4
Create your routine by . . . Doing all 8 moves in the order shown
Sets of each exercise: 1–2
Repetitions per set: As many as you can do with perfect form
Your total workout should be . . . 8–16 sets
Speed of each repetition: At least 3 seconds up and 3 seconds down
Rest between sets: 15-30 seconds
Do this workout . . . 3 or 4 times a week

SECTION A
SIDE BRIDGE (works obliques, shoulders)
Lie on your left side with your legs and feet together, your right hand on your right hip, and your left forearm on the floor so your elbow is beneath your shoulder. Raise your hips until your body forms a straight line from shoulder to ankle. Pause, slowly lower your body, and repeat, then switch to your right side.
WATCH YOUR FORM: Keep your neck in line with your torso as much as possible to avoid straining your trapezius and neck muscles.

SWISS-BALL TWIST (works obliques, shoulders to waist)
Lie on a Swiss ball so your head, shoulders, and upper back touch its surface. Your knees should be bent, your feet flat on the floor. Cross your arms over your chest. Slowly twist your upper body to the left until you're lying on your left shoulder. Slowly rotate back to the starting position. Repeat the move, this time rolling to the right.
WATCH YOUR FORM: Resist the urge to tilt your head excessively up to the side or down to look at the ball or the floor. Your head, neck, and spine should form a straight line and remain that way.

SECTION B
REACH-AND-TWIST HYPEREXTENSION (works lower back, erector spinae, obliques)
Lie on a hyperextension bench with your ankles under the ankle pads. Hold a light medicine ball to your chest and lean forward until your upper body is almost perpendicular to the floor. Slowly

raise your torso, twisting your upper body to the right and extending the ball away from you until your arms are straight. Rise until your body is just past parallel to the floor. Reverse the motion, then repeat, twisting and reaching to the left.
WATCH YOUR FORM: Go slowly: 3 seconds up and 3 down. Rushing uses momentum and increases risk of injury.

SWISS-BALL TWISTING HYPEREXTENSION (works lower back, erector spinae, obliques)
Lie facedown on a Swiss ball with your waist on top of it. Place your feet against a wall or under something sturdy. Cross your arms and bend forward until your upper body covers the ball. Slowly raise your torso off the ball, gently twisting to the right, until your torso is slightly past parallel to the floor. Lower yourself and repeat, this time twisting to the left.
WATCH YOUR FORM: At the top of the move, the top of your pelvis should rest on the Swiss ball. If you can feel the ball against your lower abs, you're not forward enough on it.

SECTION C
SWISS-BALL KNEE TUCK (works transverse abdominis, obliques, rectus abdominis)
Assume the pushup position with your shins on a Swiss ball and your hands on the floor, shoulder-width apart and beneath your shoulders. Keeping your head down and your abs drawn in, slowly pull your knees toward your chest. (The ball will roll slightly forward.) Try to keep your hips down to maintain the stress on your abdominals. Pause, then straighten your legs to roll the ball back out behind you.
WATCH YOUR FORM: Keep your belly button pulled in toward your spine. This engages your transverse abdominis, which helps protect your back.

CABLE CHOP (works obliques, transverse abdominis)
Use a weight that allows you to do no more than 12 to 15 repetitions. Stand with your right shoulder toward a high-pulley cable station and grab the rope or handle with both hands. Keeping your toes forward and knees bent, slowly rotate to your left as you draw your arms across and down. Pause when your hands are above your left thigh, then slowly reverse the motion. After a set, repeat the move with your left shoulder facing the stack.
WATCH YOUR FORM: Don't pull the weight with your arms or back. Keep your elbows at the same angle so your core muscles control the movement.

HANGING WEIGHTED TWIST (works lower rectus abdominis, obliques, transverse abdominis)
Hang from a bar and have a partner place a light medicine ball between your knees. Rock your pelvis upward, then slowly raise your knees up and to the left. Slowly lower your legs and repeat, this time to the right.
WATCH YOUR FORM: Raising your knees before your pelvis can cause you to engage more of your hip flexors--the muscles along the front of the thighs. Think of the move in two parts: Tilt your pelvis up first, then raise your legs.

V TWIST (works rectus abdominis, obliques)
Lie on your back with your knees bent 90 degrees and your feet off the floor so your thighs are per-pendicular to the floor. Fold your hands across your chest. Slowly straighten your legs away from you and to the right. (They should end up at a 45-degree angle to the floor.) As you go, crunch your torso upward and to the left while extending your arms forward. Slowly lower yourself back to the starting position. Repeat the exercise in the other direction.
WATCH YOUR FORM: Spend at least 2 to 3 seconds going up and the same going down. Rushing can disrupt your balance and force you to stop.