RUNNING DRILLS

by John Stanton

HIGH-KNEE DRILL

This drill will work your feet, ankles, Achilles tendons, calf muscles, abdominal muscles and the driving muscles in your butt. Take it easy, this is high-quality stuff. In addition to all the muscle groups, you should also be working on your rhythm and coordination.

- Start with high-knee walking, lifting your knees as high as you can.
- Drive your knees forward to waist height.
- Rise up on your toes.
- Lean slightly forward, but keep your posture erect.
- Think of the lift coming from your abdominal muscles.
- Start with a distance of 25 m and gradually work your way up to about 100 m.
- Think of a slow-motion action.
- Progress to high-knee running.
- Foot strike is quick and light. Imagine you are on hot coals!
- Think high knees and fast reflex action–you are prancing.

OLD GOOSE-STEP DRILL

This is no Mother Goose drill: it looks easy, but once you try it you will discover that it's a great workout for your feet, ankles, quadriceps and hamstrings.

- Run up on your toes
- Kick your legs forward keeping them straight.
- Keep your knees locked.
- Your arms should be bent at a 90-degree angle.
- Keep your steps short and fast.
- Chase the old goose for only about 50-100m. Remember you're looking for quality, not quantity.

BEAST HILL WORKOUT

My long-time training partner Mike O'Dell started this one when he spotted a killer hill of 150 m with what looked like a grade of 60%. The rules call for only one hill repeat. No crawling is allowed and cheering is compulsory for everyone who reaches the top.

PEDAL-TO-THE-METAL BURSTS

This drill is a fun power acceleration in which you start slowly and then continuously accelerate for 100 m. Try to maintain the form and coordination that you have been practicing in the other drills. Relax, keep your breathing regular and concentrate on a steady acceleration. Even if you start slowly, you will find that you quickly reach your maximum speed. Learn to dig out that extra effort to find the additional speed within yourself–it is a great reward to find the extra speed that has been hiding from you.

PARK BENCH JUMP

Run a loop of about 150 m and jump over a park bench. Hands are permitted.

YAHOO JUMP

Most of us can recall this one from our youth. If we had done 20 of these a week, we would have developed all of the running muscle groups well, particularly the hip flexors.

- Stand with your feet together, flat on the ground.
- Jump forward, keeping your feet together.
- Kick both legs forward.
- Land with your feet together.
- Swing your arms to assist in the jump.
- Do a total of about 75–100 m.
- Holler a loud "Yahoo!" (optional)

FOLLOW-THE-WACKY-LEADER FARTLEKS

The running blahs descend on all of us from time to time. They may come from a long period of intense training for a particular goal, or a recent bout of inclement weather can set you off. The best way to rid yourself of the blahs is to get some fun back in your running. I have used this fun drill with my running clubs over the years when things seem to be getting too serious.

First, call out a number as you point to each runner to number everyone in the group–it doesn't matter whether there are just two runners or a large group. Head out on your run, starting with five minutes of easy running to keep the group together. In order, each runner must decide on a fun fartlek or drill that the rest of the group has to participate in. Each drill should be 5 to 10 minutes long.

KICK SOME BUTT

This probably sounds like just the kind of drill you've been looking for to vent some of that non-running stress. Well, I have some good news and some bad news. The good news is that you get to kick some butt; the bad news is that it's your own butt you'll be kicking. The primary purpose of this drill is to work on your body position while improving your coordination and flexibility. We have all seen runners who seem to sit back as fatigue sets in during the later stages of a long run. This drill will help you attain a slight forward lean, which improves your form and ultimately your running times by getting your old buddy gravity to do some of the work for you.

- Look slightly in front of where you are running.
- Keep your arms and hands loose at your sides.
- Get up on the front of your feet.
- Run with your feet kicking back.
- Try to kick high enough to kick your own butt, so to speak.
- Do repeats of 50-75 m.
- Your arms will help to balance you, although it will feel awkward at first. RR

STRENGTH TRAINING

by John Stanton

Body Weight Strength Exercises

While stretching helps reduce the risk of injury by keeping muscles and fibrous tissue from becoming rigid and inflexible, strengthening helps to prevent injury by keeping weak muscles from being overpowered by stronger ones. The three basic opposing muscle groups for training include:

- Abdominal vs. lower back
- Quadriceps vs. hamstrings
- Anterior shin muscle (front of leg, below knee) vs. calf/Achilles.

Also important is the iliotibial band, as this band is vital in stabilizing the lower leg during running. It is the most commonly inflamed structure on the outside of the knee, and in runners it is a frequent cause of pain and soreness at the outer hip.

The hamstring is vulnerable to strains if it is overpowered by the quadriceps' strength. The hamstring therefore demands both stretching and strengthening in a total conditioning program. While your quadriceps are often strong already, they can also benefit from further strengthening to help prevent many of the overuse problems that involve the kneecap.

Strengthening exercises should be done after running, rather than before. For maximum benefit it is recommended that you follow this routine three to four times per week.

Foot Exercises

Why train the foot? Well, the longitudinal rib and the cross rib of the foot take a great deal of punishment during running, particularly during the landing and push-off phases. The ligaments and the aponeurosis plantaris that directly support the two ribs are passive tissues that cannot be trained; instead, the muscles of the foot can and must be trained in order to reduce the risk of injury. Your feet do a great deal of work for you during running, so give them some special attention each day and watch your strength improve over time.

Start with this simple exercise: drop a towel on the floor, stand with one foot on the towel and one off, and try to pick up the towel with your toes. After several weeks, proceed to this next exercise, which will strengthen your foot muscles, toe joints, ankles and knees; stand in a bucket filled with sand or rice and squeeze the sand or rice with your toes for 10 minutes.

Ankle Exercises

Your ankle acts as a powerful lever during running. Over time, runners develop powerful running-specific muscles, but they sometimes neglect the development of improved coordination. Spend some time on these two drills and not only will they help improve your base running but they may help prevent a turned ankle on one of your runs.

The Flamingo

Start by balancing on one leg for 30 seconds without touching down with the other leg. When this balance becomes easy, try it with your eyes closed. (figure 7-a) You will notice it's much harder to hold a balanced position without visual cues. After mastering the blind flamingo, try bending your raised leg slightly at the knee and then do some toe raises. (figure 7-b, figure 7-c)

Over the years I have spent a fair amount of time in airport lineups, and I have found the flamingo to be the ideal exercise—not only do you get some interesting looks, but you must be careful not to lose your space in the line while your eyes are closed. (By the way, while the flamingo does require the one-legged stand, the pink tights are optional.)

Balance Kicks

This drill can be done on a flat surface, or to increase the complexity try it on a rebounder. Stand on one leg, kick your other leg back, balance and hold for 20 to 30 seconds. (figure 8-a) Switch legs and repeat. Repeat the exercise with kicks out to the side and in front of you. (figure 8-b. figure 8-c) These positions will seem awkward when you first try them, but over time, as your balance improves, they will become more fluid—you may even think of signing up with the Dallas Cowboys cheerleading squad.

Push-ups

Yes, I am sorry to break the news to you, but your old phys-ed teacher was right; push-ups are good for you. Push-ups work on all the upper body muscle groups, improving your running form and posture. We all know how to do them; it's getting around to doing them that's a problem. This single exercise could replace a lot of time in the weight room if only we didn't find it so boring. Check off a daily 25 or so. Be sure to keep your back straight. (figure 9-a, figure 9-b)


(figure 7-a)


(figure 7-b)


(figure 7-c)


(figure 8-a)


(figure 8-b)


(figure 8-c)


(figure 9-a)


(figure 9-b)

Sit-ups (the right way)

We have all seen the many infomercials on the benefits of the latest abdominal equipment on the market. Well, save yourself a few bucks; do these sit-ups as part of your daily routine and those abs of steel will be yours! The great benefit of this sit-up is it works all the abdominal muscles from the rib cage through to the groin area. You, too, could have that infomercial "six-pack belly."

Lie flat on your back with your knees bent and your feet flat on the floor. Be sure to do an abdominal tuck to flatten the small of your back against the floor. (figure 10-a) Now extend your arms to put your hands on your thighs and then curl up your upper body, sliding your fingertips up to your knees. Keep the small of your back on the floor. (figure 10-b) Hold for a count of 10 and then lower yourself back to the floor. Start with about 25 repetitions and build from there.

Step-ups

Find a sturdy bench you can step on that isn't too high (your knee shouldn't bend tighter than 90 degrees when your foot is on the bench). Step up onto the bench and stand up straight before you step down. Alternate your feet each time. This drill works the upper leg muscles and hip flexors. (figure 11-a, figure 11-b)

Calf Raises

Stand on the edge of a step with your heels hanging over so that your toes carry your weight. (figure 12-a) Slowly raise and lower yourself. (figure 12-b) Start with both feet and then try one foot at a time. You can add a light weight after a few weeks of single-leg raises. This drill improves the strength and flexibility of the lower leg muscle group.

Benefits of Strength Training

- Helps reduce the risk of injury.
- Prepares your muscles for faster running.
- Makes you stronger on hills.
- Enhances the rehabilitation of skeletal and muscular injuries.

A Belly Full of Strength

Achieving your personal goals may revolve around improving your core strength. So stop ignoring your weak pelvis and turn your attention to some core abdominal and pelvic strength.

Runners get plenty of leg development through running. Many runners incor-

figure 10-a

figure 10-b

figure 11-a

figure 11-b

figure 12-a

figure 12-b

porate hill training, intervals for leg strength and some resistance weight training for the upper body. The muscles in your pelvis are continually stressed by running. Yet, many runners totally ignore the abdominal and psoas muscles*.

The pelvis is the platform of your body. During running it absorbs shock and transfers the weight of your torso and upper body to the legs. The stronger the platform, the better it absorbs the shock of each foot strike. Our body absorbs three to four times our weight on each foot strike, so maintaining strong pelvic muscles will reduce the risk of injuries.

The abdominal muscles provide stability to the body, and the psoas creates the impulse of energy that initiates leg movement. Abdominal muscles, the washboard muscles in our stomach area, are easy to identify and see. The psoas you cannot see. This long muscle works through the pelvis and inserts on the inside of the top of your thighbone. It is the primary initiator of your running movement. To prevent muscle imbalances and all sorts of injuries, both the abdominal and psoas muscles need to be strengthened.

Relax and enjoy this circuit routine. Start by laying flat on your back with your knees up and together. Your feet should be flat on the floor, about a foot from your butt.

*Muscle, psoas: Muscles of the lower back (the loin). There are two psoas muscles on each side of the back. The larger of the two is called the psoas major and the smaller the psoas minor. The word "psoas" is Greek for loins, the muscles of the lower back.

The Crunch

Place a towel between your knees and squeeze, contracting the inner thigh muscles. (figure 13-a) Curl your upper back to your thigh muscles while doing a pelvic tilt; keep your lower back tight to the floor. (figure 13-b) Hold this for 5 to 10 seconds. Return to the starting position, take a breath and relax and then repeat a total of 10 times to a count of 5 to 10. This crunch will work the abdominal, the psoas and the adductor muscles of the inner thigh.

The Hipster

Sit upright perpendicular to the floor. Use your arms for support, lean back and place your hands palms down on the floor shoulder width apart. (figure 14-a) Keep your knees together, extend your legs straight out and bring your knees back towards your chest. (figure 14-b) The heels are kept 6 in. off the ground throughout the routine. Repeat 20 times with a smooth and steady action. This builds strength in the psoas, hip flexors and lower abdominal.

figure 13-a

figure 13-b

figure 14-b

figure 14-b

The Crossed Leg Crunch

Rest your right ankle on your left knee. (figure 15-a) Now curl your left shoulder up towards the inside of your right knee. (figure 15-b) Hold the crunch for 5 to 10 seconds, repeating 10 times. Now cross your legs the other way and repeat on the opposite side for 10 repetitions. This routine will strengthen your oblique stomach muscles and help prevent upper body rotation while running.

Knee slider

Place the palms of your hands on your thighs. (figure 16-a) Slowly slide your hands towards your knees and lift your upper back. Contract your abdominals and keep your lower back tight on the floor. (figure 16-b) Curl hold for a count of 5 to 10 and repeat 10 times. This strengthens your upper abdominals. Do this circuit training three times per week and watch your running times improve!

Quadriceps

Terminal Extensions

Sit down, bend one leg and extend the other. Place a rolled towel under the knee of the extended leg. Lean back on your elbows. (figure 17-a) Straighten the extended leg and lift 2 in. above the towel. (figure 17-b) Hold for three seconds. Complete 10 repetitions; then repeat with the other leg.

Hamstrings

Hip Extensions

Lie on your stomach with legs extended. Raise one leg 6 in., keeping your knee straight. Hold for three seconds. Keep hip muscles relaxed. Complete 10 repetitions; then repeat with the other leg. (figure 18-a)

Tibialis Anterior

Ankle up-and-down

Sit down with your legs extended and together. Place a loop of Thera- Band around your feet. Bend one knee and pull that foot towards your head. Hold for three seconds. Complete 10 repetitions; then repeat with the other leg. This exercise helps prevent shin splints. (figure 19-a)

(figure 15-a)

(figure 15-b)

(figure 16-a)

(figure 16-b)

(figure 17-a)

(figure 17-b)

(figure 18-a)

(figure 19-a)

Post Tibialis

Ankle Eversion

Sit down with your legs extended and together. Place a Thera-Band loop around your feet and hold. (figure 20-a) Point your toes down and out. (figure 20-b)

Peroneals

Ankle Inversion

Repeat previous with your legs crossed. (figure 21-a, 21-b)