

PHYSICAL FITNESS

Run—to Protect Citizens and Yourself

By
STEPHEN D. GLADIS
Special Agent
Federal Bureau of Investigation
Washington, D.C.

Conclusion

(Part I—appeared in
April issue)

Running Safely

If fitness is vital to the police officer, and running is one of the best means to that end, there are four major areas which you should know about before you set one foot on the ground: Motivation, equipment, stretching and warmup exercises, and basic running techniques. Perhaps the most important of these is motivation. The journey of 1,000 miles must begin with the first step and for many it's the most difficult. Generally, "habituation process" is the most effective motivator. Man is a creature of

habit and most of us are ruled by the clock. This phenomenon can be used to an advantage in running. Running at the same time of day will become part of your normal routine, and therefore you will tend to do it daily out of habit.

There are other motivators too. Many people run with another person or with a group. You tend to run if you know someone else is waiting for you. Still others keep charts of their daily fitness as a contract with

themselves. A glance at a calendar chart left empty for 2 or 3 days straight will motivate you to get out and run. In addition, the President's Council sponsors a Presidential Sports Award program, which provides patches, pins, and certificates for logging specific mile distances on an individual basis. Information on this is available from: Presidential Sports Award, P.O. Box 129, Radio City Station, New York, N.Y. 10019.

Whether you use the calendar, the habit phenomenon, or the group ap-

47844

"If fitness is vital to the police officer, and running is one of the best means to that end, there are four major areas which you should know about before you set one foot on the ground: Motivation, equipment, stretching and warmup exercises, and basic running techniques."

proach, what does matter is that you motivate yourself to run. Running is a positive addiction. After a few months of daily running, you reach the point where you become dependent upon it. Your body begins to crave the exercise. Runners who get sidetracked with injury or illness ac-

"Running is a positive addiction. After a few months of daily running, you reach the point where you become dependent upon it."

ually go through withdrawal symptoms. This phenomenon has been reported by Dr. William Glasser in his book *Positive Addiction*: ". . . running creates the optimal condition for PA (positive addiction) because it is our most ancient and still most effective survival mechanism." Glasser has suggested that running is also a good cure for negative addictions, such as smoking, alcoholism, and drug abuse.¹⁵

Now that you are motivated to run, the next step is the right equipment. Above all else, running shoes are basic and essential. You can take or leave all of the beautiful warmup suits and emblazoned T-shirts, but a good pair of shoes are a must, not a luxury. The old adage, "you get what

you pay for," is true regarding running shoes, and with more than 100 brands now being manufactured, there is a large variety to choose from.

There are some basics to follow when shopping for a good running shoe. First, make sure that there is adequate heel padding to absorb the tremendous shock of footstrike on hard surfaces. At least $\frac{1}{4}$ to $\frac{1}{2}$ inch in the heel region is needed. Next, look at the shank of the shoe, the portion under the arch. Make sure that it is solid and rigid, so it can absorb the impact of the footstrike. Commercially made arch supports which are put into shoes are of little use. Normally, if you are in need of supports, they should be individually made for you by a competent podiatrist; however, a com-

"[R]unning is also a good cure for negative addictions, such as smoking, alcoholism, and drug abuse."

mercially manufactured heel counter is a must in a good shoe. The counter is a plastic or stiff fiber cup which holds the runner's heel snugly in place and minimizes movement and knee injuries that can result from such movement. Nylon upper shoes are preferable to leather as leather tends to dry out, get hard, and lacks the flexibility of nylon.

Since shock absorption is more of a key factor in preventing injury, look for a heavy shoe. A 10 to 12 oz. shoe will minimize impact shock and the injuries associated with it.¹⁶

Additional hints for purchasing running shoes are: Always try on the shoes with the same sock you will be wearing when you run. Put *both* shoes on and run around the shoe store for a "road test." Shoes feel differently when in motion. Don't be talked into a pair of shoes that don't feel right to begin with. Be satisfied when you leave that these are *the shoes* for you. Don't be sparing when it comes to getting a good shoe. It's a small investment relative to the hours of fitness and pleasure you'll derive. Poorly made shoes cause many injuries.

Running requires little other equipment to get started. An old pair of shorts and a T-shirt will do the job. If the budget allows, nylon shorts (\$3 to \$4) and a nylon tank top (\$4) are advisable. Nylon is durable, requires merely a rinse out and a quick drying time, is chafe proof, and needs no ironing. Socks are optional and after the feet get toughened are not really necessary. A sweatband is nice during the summer to keep the salt sting out of your eyes.

Knee pains, shin splints, and Achilles' tendonitis can plague the runner, particularly the new runner. The rea-

son is simple—new runners know little or nothing about stretching exercises. Warmup or stretching exercises are probably the most neglected routine of many runners until they get injured. Muscles are stiff and need to be extended prior to and after vigorous exercises. If not, they tend to pull and sometimes tear. Injuries of this nature take a long time to heal and are the reason that many quit running soon after they get started.

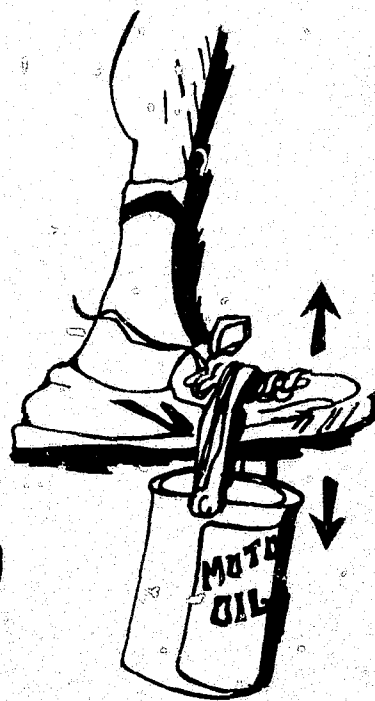
Many injuries can be prevented. The following basic stretching exercises suggested by the National Jogger's Association should be done regularly before and after each run to prevent injury: Hamstring stretcher, toe raises, wall stretch, the plow, quad and dorsi flex, and abdominal curls.

Quad and Dorsi Flex

The prime movers during a jog are the leg muscles at the rear of the leg. In order to maintain good balance, the muscles at the front of the leg must also be stretched and strengthened, particularly to help stabilize the knee, which may be traumatized during jogging. These exercises require a 3-to-5-pound weight, easily made from some rags (to act as a strap) and a couple of bricks or a can filled with sand or stones.

Quad Flex—Sit on a high table or bed with your leg outstretched, weight over your foot. Straighten your leg into a tight contraction, flexing your quadriceps and the muscles on each side of the knee. Hold for 6 to 10 seconds and then relax, allowing your leg to bend no more than 15° at the knee, as this puts too much stress on the knee and can lead to injury. The knee may be bent to 90° to put the weight on and off. Repeat 10 times with each leg.

Dorsi Flex—This flex will strengthen the relatively underdeveloped shin muscles at the front of the lower leg, reducing shin pain and helping to develop a full range of motion in the foot. This will also help stretch out the foot. Sit on the same bed or table and allow your leg to hang. Flex your foot at the ankle, pulling your toes up toward your shin. Hold for 6 to 10 seconds, pulling your toes as close to your shin as possible without strain. Relax, stretching your foot as fully down as you're able. Repeat 10 times with each foot. A variation is to not hold the flex, but to assume the flex, return immediately to the relaxed position, stretching down, then flexing up again. Repeat with each foot 20 to 30 times. (Not pictured.)

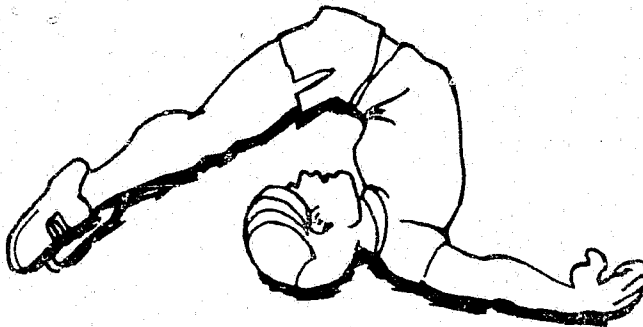


The Plow

With practice many people describe this position as their favorite, as it can be very relaxing. It contributes not only to strength and flexibility, but also to balance and good upper-body carriage. This is especially good for loosening the lower back muscles tightened in our day-to-day activities and while jogging. *People with any history of back trouble should be especially cautious and gentle while trying to enter this posture. Do not strain.*

Using a thick rug or mat to protect you from the floor, lie flat on your back with your arms at your sides. Allow your body to relax. Breathe. If you so choose, close your eyes and relax for a minute. This may help tune you in to how tired or fresh you really are.

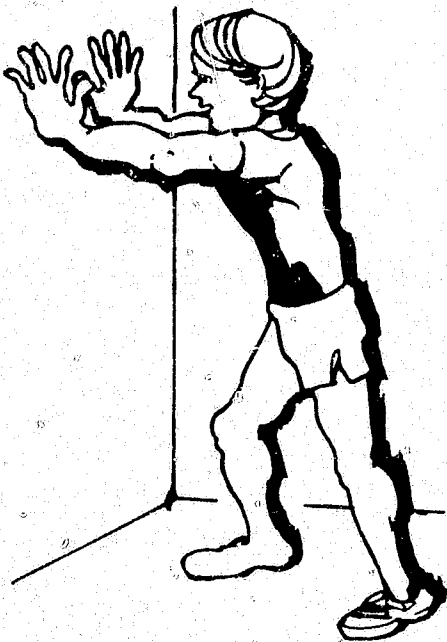
With your palms against the floor, tense your abdominals and curl your knees up to your chest. Roll backwards until your weight is behind your head. Hold for 20 to 30 seconds, knees bent if necessary. Breathe.



Wall Stretch

Place your rear foot flat, *heel down*, toes straight ahead. Lean into the wall, stretching your posterior lower leg. Hold for 30 to 60 seconds. Repeat with other leg.

Repeat, this time bending each knee slightly and exaggerating the stretch even more fully. Hold 30 to 60 seconds. Repeat with other leg. Repeat both variations 2 to 5 times.

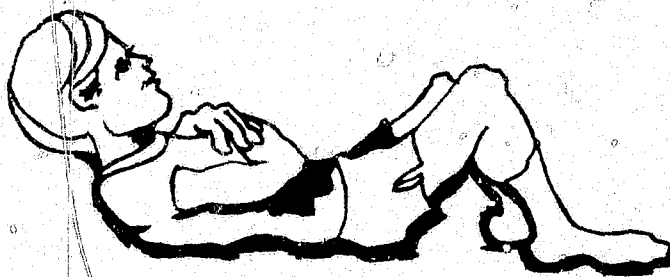




Hamstring Stretcher

This exercise stretches the posterior thigh muscles without stressing the lower back as can happen with more traditional toe touches.

Stand and cross one leg in front of the other. The toes of the front leg, but not the entire foot, should touch the floor parallel to the rear foot. Slowly bend forward from the waist and hips, keeping your rear leg straight, heel to floor. Relax your neck and arms and bend forward as far as comfortable. Hang, breathe regularly and deeply for 20 to 40 seconds. Stretch the other leg in the same manner. Repeat twice for each leg.



Abdominal Curl

The basic abdominal curl should be mastered before variations are tried. It particularly works the upper abdomi-

Illustrations courtesy of *The Jogger*, May 1976

nals and takes the place of more traditional situps, which tend to strain the lower back. This exercise limits your motion to that part of the situp which uses your abdominals. Try not to jerk or bounce while doing it, as quality is just as important to good development as quantity. At first it may seem awkward.

Lie on your back with your head raised, knees bent, feet flat on the floor, arms folded across your chest. Curl yourself up only far enough so that your shoulder blades break contact with the floor. (Note, your lower back should always remain fully supported by the floor in order to reduce any chances of strain.) Do not hold. Lower yourself back and relax. When you are curling up concentrate on your upper abdominals and allow them to do the work. Hold your head in a stable position and don't jerk. When you are uncurling it is not necessary to lower your head fully to the mat. Repeat 5 to 30 times. When you can complete 30 curls, try holding the flexed position for 6 to 10 seconds.

Strong stomach muscles provide the frontal support your back needs for pain-free posture and a smooth jogging style. The lack of this frontal support is often the cause of considerable back pain.

If you do everything as you should and you still get injured, by all means see a podiatrist. Anyone who has been injured by running will tell you that most of the time the injury is foot-structure related. Each one of us has minor imbalances and flaws in our foot structure. In the everyday sedentary American life where automobiles and desk jobs abound, these imperfections never develop into a problem. But when you begin to add the stress of exercise to these congenital defects, injuries begin to occur. These injuries do not always confine themselves to the foot, but affect knees, hips, and shins as a result of foot imbalance and imperfection. Thus you need to see someone who knows about the biomechanical structure of

feet—the podiatrist.

Now that your motivation is in high gear, your running shoes are ready, and your stretching is complete, you are ready to begin. The concept of a "lifestyle" approach to running is most important. If you look upon running as just another fad, you are cheating yourself. In order for running to benefit you to the fullest, it has to be a habit much like eating and brushing your teeth. The greatest success with "habitualizing" running comes with choosing a particular hour of the day which is set aside for running. Morning running is highly recommended whenever possible. In the summer it is the coolest part of the day, the pollutant levels are the lowest, and it is an excellent way to get a stimulating head-start on the day—you will also require only one shower, an excellent way to conserve water.

A physical exam from your doctor is a most important step in starting. Ask him to pay special attention to your heart and lungs, and tell him you want to embark on a moderate jogging program. Take it easy the first few weeks. Many people make the serious mistake of trying to do too much too soon. They try to run before their muscles are prepared and they try to run faster and farther than they should. If you have spent years getting out of shape, devote a few weeks to walking before you actually begin running.

People who have been completely inactive physically should begin with brisk daily walks. Do one block only on the first day and add about one block every other day for the first week. Then devote another week or two to brisk walking, progressing gradually to as much as 8 city blocks or about 2 to 2½ miles. (Pay no attention to the time required to cover this distance; it is the continuous effort that matters.) After the initial walking

period, you can begin mixing in some jogging—a slow run, just faster than a walk.

Increase the distance and pace gradually. Be patient. As a rule of thumb, an overweight person who has been completely inactive should progress to a 1-mile nonstop jog within 6 months or less, including the initial walking period. An average person should work up to a steady 1-mile jog in 2 to 4 months. And the "regular exerciser" can work up to a mile jog in 2 weeks. In all cases, do not increase by more than one block or one lap (on a ¼-mile track) per day. (See Time Standard.)

The best place to start to talk about running technique is, of course, the foot. The basic footstrike of a long distance runner should be the heel. Many people erroneously run on the balls of the feet and several weeks later have Achilles' tendon problems. The stress is too great on the tendon if the ball of the foot hits first, so concentrate on heel first, or a flatfooted step. Your stride should be natural. Don't try to stretch it out. Let your legs go the way they want to. Run from the hips down—you don't need a lot of sway or bobbing up or down to help. Pick an object in the distance and concentrate on it while you run. If it moves quite a bit then you are bobbing too much. Your arms should be at least a 90° angle or even greater. Don't hold them too high—it's just a waste of energy that should be saved for the legs. Don't clench your fists tightly, just a loose fist will do. Good erect posture is essential and allows good airflow down the windpipe. Don't lean over or swing your arms across your chest as both are counterproductive. In running, the desired movement is forward, not upward or sideward.

One basic principle of long slow-distance running is the simple yet effective aerobic "talk test." It insures that you're not running too fast for

TIME STANDARDS

Ages	¼ Mile	½ Mile	1 Mile	2 Miles	3 Miles	5 Miles
14-39	under 2:00	under 4:15	under 8:30	under 18:00	under 28:00	under 48:00
40-49	under 3:00	under 5:15	under 9:30	under 19:00	under 29:00	under 49:00
50-59	under 3:30	under 5:45	under 10:00	under 19:30	under 29:30	under 49:30
over 60	under 4:00	under 6:15	under 10:30	under 20:00	under 30:00	under 50:00

Note: Beginning runners should not attempt to measure their performances against these average times until they have achieved a level of conditioning that should include six months of running. The time standards are suggested by "Runner's World."

your level of conditioning. The concept is that you should run at a pace which will allow you to talk and run at the same time. If you're too breathless to converse—*slow down*.

Running on hard surfaces will not bother you if you have bought good shoes. Don't be afraid of concrete or tar. Alternate running on different sides of the street as all streets are pitched at a 3° to 5° angle to allow water runoff. This angle doesn't mean much until you begin to run and add pounds of pressure to your legs. Even a slight angle has an effect and can cause knee problems, so alternate. Stay away from rocky areas. One stone bruise on the heel will put you out of action for a month or more.

Generally, the extreme seasons, winter and summer, provide the greatest hazard to the runner. Here are some practical hints to reduce the discomfort and possible risks associated with winter and summer outdoor exercise.

Winter

1. Wear layers of clothing rather than one bulky piece.
2. Nylon stops wind effectively.

3. Wool insulates well even when wet from sweat. Cotton does *not*.
4. Mittens are more effective than gloves in cold weather.
5. A thin coat of petroleum jelly or altitude cream keeps your face from getting chapped.
6. Run out against the wind and back with the wind to avoid freezing sweat.
7. Always wear a wool hat in winter—over 40 percent of heat loss is through the head.
8. On the coldest days (-0°) wear a wool scarf over your mouth to warm the air.

Summer

1. Wear lightweight shirt and shorts to permit evaporation and leave shirt untucked for ventilation.
2. Force ingestion of fluids.
3. Avoid running during the heat of the day (stick to early morning or evening).
4. *Never* wear a rubber suit to "lose weight"—that kind of weight loss can kill you.

5. Runners should keep track of their early morning weight to prevent chronic dehydration. (Sharp body weight differences of two to three pounds in any one day may indicate a problem.)

With the how and the when to run taken care of, the next to be considered is the where. The simple answer is anywhere. Whether a high school track or sidewalk, the joy of running is that it is an anywhere, anytime sport.

Whatever turf you trod, whatever make of shoe you wear, whatever time of day you choose, you will be part of the fastest growing of all sports—running. That first step will be the hardest. If you're running alone, don't be self-conscious about it. Look straight ahead and feel good about the fact that you're running toward a fitness that may save your life, or the lives of those you have sworn to protect when the action "goes down." ¹⁵

FOOTNOTES

¹⁵ Dr. William Glasser, *Positive Addiction*, Harper & Row, New York, 1976.

¹⁶ Bob Anderson, (Ed.) *Runner's World Magazine*, (shoe issue), October 1977, pp. 33-89.



END