

**M**Y HISTORY OF running injuries is as long as my running career. First came iliotibial-band syndrome in the spring of 1980. The only treatment prescribed was rest. So rest I did. Three months and ten pounds later, it was like starting all over when I was finally able to run again.

Then I got stress fractures, three years in a row. To maintain my fitness while injured, I tried swimming, cycling and a combination of the two. But while these alternative activities kept me aerobically strong, they exercised muscles different from those I need for running. Each time I began running again I felt awkward, muscle-bound and very frustrated.

While training for the L.A. Olympic Games, though, I found a much better way to stay fit while injured. It was February 1984. I'd been running fine throughout the fall and winter, but with the Olympics only months away, I developed another stress fracture. I was devastated.

Dr. Doug Clement, head of the Sports Medicine Clinic at the University of British Columbia in Vancouver, where I was living at the time, suggested that I try running in water—keeping afloat in deep water by using my arms and legs the way I do when I run. He recommended that I follow a program of workouts in the water similar to my normal running routine.

With my sights set on the Olympic Games and keeping an optimistic attitude, I was determined this new form of training would work. I found it hard to adapt at first, but after a few weeks I developed a comfortable, effective technique.

The second week of April, after eight weeks of water-running, I was able to begin running on land again. Over two weeks' time I built up to a 40-minute run every other day while continuing to run in the water in between. I was able to run my distances quite comfortably.

Four weeks later I had one remarkable interval session on the track (4 x 800, averaging 2:12) that told me I was, in fact, fitter than I had ever been. I was so excited! Eight days later, in my first race, I ran a personal best in the 3000 meters and set a new Canadian record.

To many, my performance seemed unexplainable, but I knew exactly what accounted for it—running in the water. That summer I went on to win a bronze medal in the L.A. Olympic Games and improved all my times in distances from 800 to 5000 meters.

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*Lynn Williams was the bronze medalist in the 1984 Olympic 3000 meters.*

# Pooling Your Talents

Float through tough workouts  
by running in water.

By Lynn Williams

Since the Olympics, I've continued to be hampered by injuries, but when they've come, I've been ready with my water training. I've set more Canadian records on the track and have had great success in road-mile racing. All of this has come on an average of 30 miles per week, but with a consistent program of running in the water.

## Liquid Assets

I have found water-running so effective that I use it now even when I'm not injured. It allows me to concentrate on running technique without the stress of gravity. I do it for about 30 minutes three times a week, in place of my regular morning run. It's an effective break from pounding the pavement, and it helps me to avoid the "garbage-miles syndrome" (recording miles for the sake of higher totals but with little effect).

When I am especially tired, such as the day after a tough interval workout on the track, rather than drag myself through a slow jog on land, I run in water. That way I get an effective workout and stay fresh for training the next day.

If you decide to give water-running a try, start out very gradually. You will keep yourself afloat, with your head comfortably above water, by using a running form as

similar as possible to the form you use on land. Begin with five minutes of easy, steady water-running, and build up slowly, adding five minutes' worth each session.

At first you'll experience a muscular fatigue all over your body—the constant water resistance will give your running muscles a complete workout. Gradually you'll become stronger as you adapt to this weight-resistance training.

The effort you expend should be such that you can carry on a conversation, just as you do when you normally go for an easy run with a friend. When you have worked up to handling a 30-minute, easy, steady water run, you are ready to start a regular training program. The key is to be able to transfer the training you do on land to equivalent efforts in the water.

## Form in the Water

Imagine your own running gait. Your knee comes up in front at about a 45-degree angle; your leg extends to allow your heel to plant first; then your ankle flexes so that you can push off the ground with your toes as you drive your leg back behind you and the opposite leg begins the cycle once again. Your lower body should follow this same pattern in the water.

## WATER WORKOUTS

**Y**our water-running training program should bear a striking resemblance to the routine you follow on terra firma. When I take the plunge, I simply adapt the four components of my normal training: strength endurance, tempo endurance, speed endurance and speed workouts.

**STRENGTH ENDURANCE:** Relatively easy distance runs, the mainstay of my land-running program, translate nicely into water workouts. In the water, I maintain a cadence equal in effort to a comfortable "talking-pace" run (about 60 percent of maximal effort). For a good endurance water-running workout, run steadily for 20 minutes to one hour.

**TEMPO ENDURANCE:** The tempo endurance component of my regular running program includes longer intervals (repeats of 400 meters to 1 mile or equivalent timed distances on the grass, with short recoveries of 1½ to three minutes, depending on the interval), steady-state runs (hard, steady runs, 4 to 8 miles long, at a heart rate of 165 beats per minute) and "fartleks" (unstructured, change-of-pace runs over country roads and trails).

In order to adapt these workouts to the pool, I try to reproduce the same intensity and length of effort in the water, but I cut my recovery time between intervals to half what it would normally be on land.

The turnover of your arms and legs should be faster than when you're doing an endurance workout in the water, and you should hold your head slightly higher above the water. Concentrate on really pulling through with the hamstrings and using a good, strong arm action in front and behind you. Your effort should be 70 to 80 percent of maximum.

**SPEED ENDURANCE:** The intervals I run on land for speed endurance are shorter (between 200 and 600 meters) and faster than the strength-endurance kind. In the water, I do these intervals with a turnover of arms and legs that's much quicker still than the motion used for tempo endurance. Here, water resistance becomes a real factor.

Take extra care to maintain an upright body position: The harder the effort, the greater is the tendency to lean forward and "float," to make it easier. Work hard



*Bring your watch; you'll use duration, not distance, to gauge your efforts.*

to raise your head and neck high above the water. Your effort in these speed endurance sessions should be 85 to 90 percent of your maximum.

**SPEEDWORK:** My speedwork intervals are the shortest, fastest intervals I run. On land, they're 100 to 400 meters in length at a 95 to 100 percent maximal effort. They require long recoveries in between, as long as I feel is necessary.

In the water, however, I handle this component of my training a little differently. I include speedwork after almost every steady water run.

After a steady pool run, for example, I might do short, quick bursts of 15 to 20 seconds, with equal time in between for recovery. I concentrate on really driving my arms both forward and back in the water, so that in front my hand nearly breaks the water surface, and in back my elbow nearly breaks through. I pull hard with my hamstrings, keeping my tempo as quick as possible and forcing my head, neck and shoulders above the water. For the extra cardiovascular effort, I may hold my breath during all or part of each interval.

I am convinced that I have become stronger and faster because of the water strides. I may look a bit crazy out there in the water, blue in the face, frantically splashing the water and moving nowhere quickly—but it works!—L.W.

You may find it difficult to maintain a relatively upright body position, but this is one of the most important elements of water-running technique. You'll probably have a tendency to bend forward at the waist and allow yourself to "float," but you should be careful to find a motion that keeps your head comfortably above water. Staying upright relieves lower back tension and helps to strengthen your stomach muscles.

Avoid using a "dogpaddle" arm motion to stay afloat; instead, concentrate on reproducing the action your arm follows when you run on land. Be sure to bring your arms straight through the water in front of you and extend them all the way back behind you, holding your hands relaxed as you would when you run.

Concentrate on your own individual running motion, and exaggerate this motion only slightly in the water. In the beginning it helps to have someone who knows your running style (a coach or a friend) watch you and comment on your body position in the water.

Also avoid a "bicycling" motion. Extend your quadriceps forward rather than upward, and concentrate on using your hamstrings to pull the water back behind you. Just as you cup the water with your hand when you do the front crawl, the idea is to "cup" the water with your hamstrings as your leg finishes the running motion.

Forward movement is not important—you don't need to race to the other end of the pool. The idea is to develop a proper running technique that allows you to keep up a quick tempo with the turnover of your arms and legs. It takes me about 2½ minutes to "run" across the deep end of a 25-meter pool.

### Proper Preludes

Many runners would rather not even think about stretching, but proper stretching before a workout helps prevent injury by increasing the circulation of your blood and the range of motion of your muscles. As part of a cooldown it loosens and relaxes you and helps prepare you for your next day as well.

I do a series of about 10 or 12 flexibility exercises as part of my running program, and this routine doesn't change when I go for a run in the pool. I stretch both before and after I work out in the water. Flexibility is especially important, given the strenuous nature of a water workout.

Similarly, warming up and cooling down are as important in the water as they are on land. I always use a comfortable, talking-pace, steady 10–15-minute run in the pool to warm up before and cool down after a workout.

**Pool Clues**

Here are several helpful hints for water-running beginners.

**1. Start slowly.** Structure your water-running program so that you gradually progress toward longer workouts. Before you dive into any of the workouts I've described, you should be able to comfortably handle a steady 30-minute run in the water.

**2. Tailor your water-running to your needs.** A marathoner needs longer runs, longer and more numerous intervals and less speed-work than does a 3000-meter runner like me.

**3. Make it as pleasant as possible.** Find a pool with a large deep end or diving tank that is available at convenient times and not crowded with swimmers doing their laps or kids just playing around. That way, other swimmers won't be in your way, and you won't be in theirs. Sometimes it helps to explain kindly to fellow pool users what it is you are trying to accomplish, but the best solution is to work out during odd times of the day. Avoid lunch hour and after-work hours.

Scout around for a pool that offers piped-in music. Music really helps pass the time as you work out.

Find a partner. Make arrangements to meet and go for a "run" at the pool. Good conversation also helps pass the time; workouts are more fun, and there's always better motivation when someone else shares the load.

**4. Keep time.** Use a (waterproof) watch to time your runs and intervals, or find a pool with a large pace clock—the kind that lap swimmers use to time their intervals.

**5. Establish a training routine.** If you normally run in the mornings, for example, then find a pool for your morning workout. Doing what you are used to will be more motivating and enjoyable.

**6. Travel to different pools.** I have become something of a pool connoisseur. I enjoy a lot of variety in my training and drive to many different places to do my runs. It's the same for pool running. Different pools have different lengths, water temperatures, chlorine levels, colors, lighting, music, people. Running in different pools is another way to relieve the boredom factor.

**7. Use a flotation device if necessary.** If you are a nonswimmer or extremely uncomfortable in the water, or for whatever reason are having great difficulty maintaining your head comfortably above water, a flotation device may be helpful. If possible, though, I feel it is worthwhile taking the time to learn the proper technique without the use of any artificial aid. You have to work harder to maintain yourself upright without a device, and the training effect will be greater. □

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