

## Water Running: An Excellent Form of Cross Training

In 1994 the founder of Presidio Sport & Medicine, Chris Chorak, began water running out of a personal necessity to continue her Ironman training while allowing an injury to heal. Most runners think cross training is a dismal and distant second to running outside. These same runners face a fear of not being able to train due to an injury or fatigued muscles. Water running form closely follows land running form and is a very effective, safe way for athletes to stay conditioned when they are not tolerating exercise on land, want to recover after a high mileage run, or are looking for a excellent non-impact form of cross training.

### Water Running Principals:

- Water allows for buoyancy/floating therefore there is less or no impact. This is an ideal principle especially when recovering from an injury.
  - When the water is deep enough that the feet do not touch the bottom of the pool, then you have a 100% non-weight bearing environment for exercise
  - Water chest deep allows for 75% non-weight bearing exercise
  - Water waist deep allows for 50% non-weight bearing exercise
  - Water mid-thigh deep allows for 25% non-weight bearing exercise
- Water density is greater than that of the human body and much greater than that of air which creates both compression (which can decrease swelling in the body) and resistance (which makes it more challenging to move forward than it would be on land).
- Heart rate during running in the water is approximately 15-18 beats lower per minute than running on land at the same intensity.
- One's center of gravity on land is at the hips. One's center of buoyancy in the water is at the lungs. This difference must be considered when working on form to avoid a forward lean. Be sure to recruit the core muscles to maintain an upright posture while water running.

Combining these principles of buoyancy, compression, resistance and run mechanics make water running an excellent substitute for land running. If done correctly, the challenge and benefit can be the equivalent of ~85% effort of a flat terrain land run.

**Deep Water Running Form:** Use of an aqua jogging belt provides additional buoyancy so that focus can be on form and propelling forward instead of keeping your head above water. Try to simulate land running in the water as best as possible. Here are some pointers to maintain excellent form:

- **Head and Torso:** Maintain very upright posture with abdominal muscles contracted.
- **Arms:** The opposite arm and opposite leg should pull through the water under the surface. Hands can be kept in a gentle fist as in land running or hands can act as paddles to create more resistance.

## Water Running: An Excellent Form of Cross Training, continued



- **Legs:** Move one leg forward to approximately a foot in front of the body, with the knee extended and the toes up. As the leg begins to move back, the knee is slightly bent and the ankle is loose. The leg continues to extend under the body and pushes the water backwards behind the body, which should be felt in the gluteal (butt) and hamstring muscles. Key elements: focus on driving the leg back and don't over stride in front (i.e. don't flex hip more than 30-45°), no pain should be felt in the hip flexor (due to overstretching leg back) or the back (due to over arching in back)
- **Feet and Calves:** Should remain relaxed to avoid cramping. Feet should simulate the heel strike and toe push off of land running.

### The Workout:

Now put all the components together and propel yourself forward. You can run from end to end, run in circles in the deep end, or tether yourself to the wall and run in place. Workout modifications can be made based on desired intensity, injury type and confidence level.

### Adding Intensity:

- Do interval training, switching between your walking pace, speed walking, jogging, running 10k pace, and sprinting
- Run with arms out of water
- Change up the stride with a lengthened stride and or shortened, fast stride
- Run backwards
- Run without a buoyancy belt

### Modifications with an Injury:

Modify your form with the suggestions below or stop exercise if in pain.

- Foot issues: Keep foot and calves relaxed to avoid cramps
- Knee issues: Keep stride length short, reduce knee bending, and you may want to keep stride more in front
- Hip/back issues: Do not arch back or slump forward, do not force hips too far back, stretch the hips out without arching the spine
- Shoulder issues: Do not push too much water with the arms/hands or do not use them

Check at your local pool to see if they offer a water running class. If you can't find a class, pull some of your running buddies together and create one of your own. Push each other, make it fun and reap the rewards. You're running legs will thank you!

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