

Cross Training for Athletes

By Lynda Huey, M.S.

LyndaHuey@CompletePT.com

Founder of Huey's Athletic Network
and CompletePT Pool & Land Physical Therapy



Overuse Injuries

- A sprinter runs fast and faster, over and over for speed. On land, only a few sprints before fatigue and danger.
- An NFL kicker punts and kicks field goals repeatedly to make technique flawless. Only so many kicks before his leg must be protected.



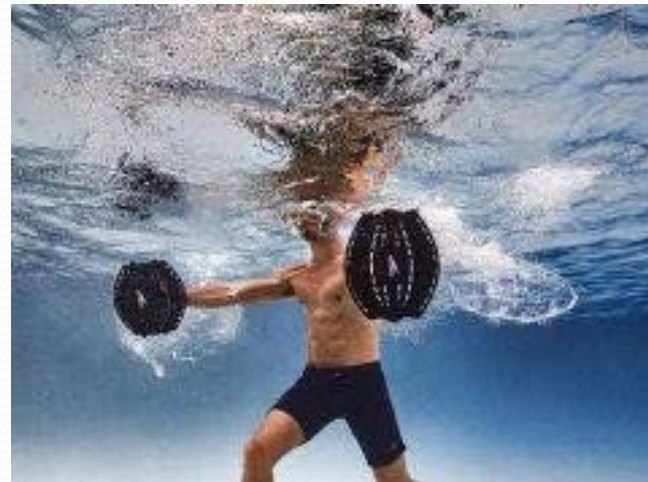
Overuse Injuries

- A marathoner trains 60-80 miles per week. On roads, only so many miles before a chance of stress damage.



Preventing Overuse Injuries

- Coaches and trainers look for ways to train without overuse:
 - Sustain high velocity without overstressing speed mechanisms.
 - Recruit maximum muscle fibers, not straining connective tissue.
 - Train the body's endurance systems even when fuel depleted.
- Use the water to remove impact, decrease stress, focus on good form.



Evolution to Cross Training Athletes

- Early 1980s, few athletes cross trained proactively.
- Athletes went to the pool *only* when injured, last resort.
- Mid-1980s, NFL and MLB teams started using pools for practicing techniques known to cause overuse injuries: punts, bat swings.



Evolution to Cross Training

- By 1987, Bobby Kersee, UCLA head women's track coach, could see patterns, sent athletes to the pool *before* an injury.
- Cross training was planned into the annual calendar.
- Preventative cross training came *after* athletic water rehab.



When to Cross Train in Water

- Use pool to prevent injuries:
 - In transitions from early season to competition season
 - During shift to maximum speed, distance, effort.
- Use pool to retain basic fitness and neuromuscular coordination during off season and “active rest” time.



History of Water Rehab/Cross Training

- We learn from our athletes. Create your own success stories.
- Knowledge accumulates to help others.
- 1976 Patty Van Wolvelaere, #1 American hurdler, sprained ankle, we made up hurdle drills.
- 1983 Al Joyner, Olympic gold medalist in triple jump did 1-legged Frog Jumps in place.



Cross Training Sprinters

- Jeannette Bolden, stress fracture in foot, 1984. Ran tethered intervals wearing float belt. No track workouts, won gold medal in 4x100M relay.
- Florence Griffith Joyner, hamstring strain, 1988. Sprinted at top speed on tether and it didn't hurt her hamstring. PR for 300M first day back.
- The world's fastest sprinters could stay in competitive shape doing only pool workouts because the arms get strong working against water's resistance.



Cross Training Jumpers

- Willie Banks, stress fracture in shin. 1-Legged Frog Jumps closely duplicated his triple jumping technique on the runway. Willie jumped across the pool, sweeping his arms powerfully.
- Mike Powell, long jumper, skeptical, but desperate, came to the pool trusting Willie's success. Mike made the leap of faith to focus on pool.
- Back on the track, no loss in coordination. Retained jumping confidence and technical skills from good form in chest-deep water.
- Willie and Mike both set World Records in their jumps.



Professional Athletes

- 1990s, Wilt Chamberlain (NBA) one of first pro athletes to cross train in the pool; volleyball, tennis, and paddle tennis.
- John Lloyd (Tennis), hamstring strain, ran on tether to maintain quickness; took racket into pool to maintain stroke technique.



More Pros

- Luc Robataille (NHL), broken ankle taped to immobilize while we modified Power Walk into sport-specific skating motion; he didn't feel clumsy when back on the ice.
- Bo Jackson (NFL & MLB), White Sox had first Swim-Ex in pro training room, had me create speed program for Bo Jackson.



Pool Training in Collegiate & Pro Sports

- Two NBA centers cross trained in the off season to “rest” their bodies while they balanced both legs, both arms.
- These days nearly all collegiate and pro sports teams have a pool rehab or cross-training program.



Segments of the Athletic Pool Program

- Fitness portion – respect any weak links; keep athlete as pain-free as possible during this segment.
- Technique Work – help athletes retain specific neuromuscular coordination and skill of the sport.
- Key Position Practice – keep the muscles strong to be able to get into the key position. Simulate those positions with many repetitions.

The more closely you duplicate the exact skill, the better the work transfers back to land.



Balancing Training and Recovery

- Rest, a key ingredient. Exercise + Recovery Time = Fitness Gains
- Active rest season can be up to 4-6 weeks while the body rebuilds areas of microtrauma, repetitive stress that can lead to injury.
- Lack-lucked athletes love the great cardio they get in the water during active rest while various tendons, joints, and muscles recover.



If a Rehab Portion is Needed

- Expect some pain/discomfort when addressing the injury site.
- Work slowly to regain motion, strength, and function.
- Be cautious the first day; the athlete will want to do too much.
- Toss out athletic work ethic. **When in doubt, don't.**
- NO pain during the Fitness portion, but expect some in rehab.



Rehab Portion Guidelines

- Find the “Red Line,” the edges of the limitation where pain begins.
- Don’t cross the Red Line!
- Expect the Red Line to withdraw slightly most sessions.
- **If it hurts, don’t do it!** Yet.
- Pain? Discomfort? Slow the movement; narrow the ROM.
- Can’t yet move the injured joint? Move the joint above or below to strengthen the muscles.



Fitness Portion Guidelines

- Train as hard as possible with no jarring or discomfort at any injury sites.
- Respect any weak links. Slow the deep or shallow intervals and the kicking series as needed to protect possible injury sites.
- Start exercises slowly, gradually increase speed after warming up.
- Use good form; improve any faulty biomechanics.
- Start anything new with low volume, see results, add more.



UCLA sprinter, Danny Everett won gold in 4 x 400M relay and bronze in the 400M in the 1988 Games.

Create New Techniques for Other Sports

- Volleyball: jump to block, bend to dig
- Martial arts: kick and punch practice
- Baseball: bat swing both directions
- Basketball: Wiltie Spins, sprint and rebound



The Mental “Work” of Pool Rehab

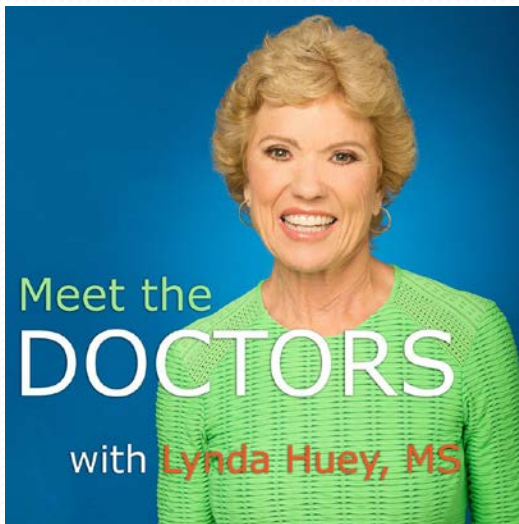
- Push the athlete to appropriate effort levels; talk to them, clap and yell.
- Add the mental component by adding visualization:
 - T& F: Talk them through the distance using 15 seconds for every 100M. Tell them where they are on the track, picture it. Add their fiercest competitor in the lane next to them.
 - Basketball/Soccer/Lacrosse: Have them sprint down the court or field, then perform a technique from their sport. Then sprint again.
 - Make them face mental challenges in the pool.



French sprinter Marie Jose Perec won Olympic gold medals in 200M and 400M, 1992

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Q & A

Time for your questions



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