

AQUATIC ATHLETIC REHAB: INNOVATIVE TRAINING TECHNIQUES AND IMPORTANT CONSIDERATIONS

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In my work in aquatic athletic rehab, I'm always looking for innovative techniques to simulate land-based sports skills and drills. Some of the techniques I've incorporated are: Retro Training, Lateral Training, "Shallow to Deep to Shallow" Training, "Poolometrics" (Pool Plyometrics), and Multi-dimensional Interval Training. In this article I will describe these techniques, how they relate to land-based athletic training and how they can be concurrently therapeutic and challenging. In addition to describing a variety of aquatic athletic rehab techniques, I will also touch on some important considerations when working with this unique population.

AQUATIC ATHLETIC REHAB TRAINING TECHNIQUES

One of the best ways to move fitness forward is to have your clients move backwards. Many sports require moving backwards: tennis players in retrieving a lob, football and basketball players in defending an opponent) so **RETRO TRAINING** in the pool makes sense. Posture in Retro Training is critical. In fact, the biggest mistake most clients make in performing retro moves is leaning backwards to travel backwards. By necessitating the ability to find/maintain neutral spine, Retro Training improves overall trunk

stability and posture. It also emphasizes different muscles than performing the same movement forward, challenges balance and generally requires more energy than forward movement.

LATERAL TRAINING

Lateral Training in the pool is not only critical for racquet sports, basketball and football, it can also improve knee stability for athletes in any sport. Like Retro Training, Lateral Training also requires greater core stabilization than moving forward and in particular really fires up the lateral core muscles - especially the obliques. Most movements done forward or backward can also be done sideways. For all directional training in the pool, I tell my clients that if I took a snapshot of them while they are moving in different directions in the pool, I shouldn't be able to tell what direction they are traveling in based on their alignment in the photo.

“SHALLOW-TO-DEEP TO SHALLOW” TECHNIQUE

This technique is kind of a “kitchen sink” technique where I use the whole length and width of the pool for maximum traveling and incorporate multiple techniques including Retro and Lateral Training. This technique is also practical if your pool is limited in depth or length. It's also a great way to increase intensity and variety. Here's an example of a fun, challenging shallow to deep drill: I have the client perform aquatic running and other aquatic multi-sport movement to each of the four walls of the pool and with forward and backwards, sideways and plyometric movements. While at the deep water wall, I have the client run or do other multi-sport movements at the wall and up the wall or even sideways on the wall.

POOLYMETRICS (POOL PLYOMETRICS”)

Plyometrics, also known as "jump training" or "plyos", are exercises in which muscles exert maximum force in short intervals of time, with the goal of increasing power. While performing plyometrics in the pool decreases speed, the buoyancy of the water allows the individual to perform plyometric movements with far less risk of injury. I mostly use Poolymetrics in combination with other training techniques, such as the Shallow-to-Deep-to-Shallow Technique. “Poolymetrics” can be effective in: restoring speed post-rehab; developing and/or enhancing power, speed, and reaction time for performance, injury prevention, and general fitness. An aquatic step works well for conducting Poolymetrics drills.

INTERVAL TRAINING is defined as performing repeated bouts of higher intensity exercise interspersed with intervals of comparatively light exercise. Most athletes already perform interval training on as part of their land training, so this a natural training technique to incorporate into your aquatic athletic rehab sessions. Here are some ideas for using interval training with this population.

Timed intervals: Using a stop watch or timing clock, alternate picking up the pace for any length of time - start with just 30 seconds, working up to 2-5 minutes with anywhere from 1- 5 minutes of light exercise in between. You can match the recovery with the interval or vary it. Pyramid intervals are a fun challenge. For example, you might start with 30 sec on, 30 off, 45 sec on, 45 off, 60 sec on, 60 sec off, 75 sec on, 75 off, 90/90 then back down the pyramid, with 75 sec on, 75 off, 60/60, 45/45, 30/30 - you can also make the intervals of the pyramid longer throughout.

Musical Intervals

Make a CD or a playlist on your Ipod of your clients' favorite upbeat songs and have them exercise very vigorously every other song, dropping the intensity during the songs in between.

Pool Lengths Intervals

Use pool lengths to alternate your intensity. For example, with the shallow to deep training technique, you might have a client travel the full length of the pool at a vigorous pace and then recover with backwards moves at an easy pace.

For Perceived Exertion monitoring, I recommend using David Brennan's modified scale of PE for aquatic athletic training:

- 1-very light (like a brisk walk)
- 2- light (like an easy jog)
- 3- somewhat hard (brisk run)
- 4- hard (5 or 10k race pace)
- 5-very hard (short sprints of less than 800 meters)

Always have your client do a 5-10 min warmup before and a cool down after an interval session. Make your interval sessions creative, fresh and fun!

IMPORTANT CONSIDERATIONS WHEN WORKING WITH AN ATHLETIC POPULATION

Although not a requirement, it helps in working with this population if you have yourself been an athlete at some point in your life and, even more so, if

you have experienced athletic injuries. Empathy for what the injured athlete is experiencing is really helpful, so if you have suffered your own athletic injuries, draw on those experiences. **This is a SPECIAL population** - both **physically and psychologically**. Whereas many of our non-athlete clients have to be pushed to exercise, athletes - especially competitive or formerly competitive athletes- thrive on daily, vigorous physical exercise and they suffer psychologically when they're unable to do so. That's why aquatic athletic rehab is so ideal for athletes: it enables them to continue exercising while promoting healing, avoiding compensation and relieving stress. I find that I often have to hold athletes back a bit in the beginning, because they're likely to want to push too hard. I have found this to be true of former athletes as well. Often less is more initially. Also, it's important to recognize that most athletes have a high pain threshold and may have been coached to ignore pain and push through it.

RHABDOMYALISIS

While it is still relatively rare, there are an increasing number of cases of **Rhabdomyolysis (a.k.a. Rhabdo)** being reported among collegiate athletes at the beginning of their training season as well as recreational athletes participating in hard-core Cross Fit programs and training for extreme Spartan events. Rhabdo is the destruction of skeletal muscle that can happen when the body is pushed too hard too soon, such as performing new exercises, too many sets or reps, or too much training to failure especially after a training layoff. The extreme muscle strain damages the muscle membranes wherein the muscles dump so much myoglobin into the bloodstream that it clogs up the kidney's ability to filtrate it adequately, which can even lead to renal failure. In some serious cases athletes have to

go on dialysis for a few days. Symptoms of Rhabdo include: muscle pain and swelling, stiffness, brown-colored urine and sometimes flu-like symptoms. Athletes diagnosed with Rhabdo must rest to allow the muscles to fully heal as resuming training or activity too soon may result in further damage. Aquatic athletic rehab is a great way to transition athletes who experience Rhabdo gently back to their land training. Also it's important to be aware that Rhabdo may go undiagnosed initially so be on the look out when an athlete you're working with complains of chronic muscle pain days after a hard workout. You might also see Rhabdo in older athletic clients, especially those who are taking statin medications as Rhabdo is a possible side effect of taking those drugs.

Speaking of pain, it is an important warning sign of injury and an indicator of a problem of the body's function. Unfortunately, increasingly athletes are under pressure from coaches and themselves to train and compete through the pain until faced with a more serious injury that can't be ignored. Further complicating this issue of pain is that for the past decade doctors have increasingly written prescriptions for pain rather than prescribing alternatives such as aquatic therapy. Some athletes abuse NSAID and opioids to continue training and competing through their pain. Chronic use of NSAIDs can actually delay healing of injuries by suppressing prostaglandin production. Chronic use of opioids can lead to rebound pain, tolerance and eventually addiction. Multiple steroid injections to reduce pain and inflammation can also harm soft tissue and impair their ability to heal fully.

Self-Empowerment Techniques to Reduce Pain and Stress

In the past couple of years, I've tried to empower my clients with alternative pain-relieving and stress-reducing techniques that they use both in and outside of the pool. **Self Aqua Stretch**, developed by Connie Jasinkas, is a self-administered version of the Aqua Stretch technique you can teach to your clients. It allows them to apply myofascial release on themselves anytime - and anywhere - pool or land.

Nose Breathing is another technique that helps calm the flight or flight sympathetic nervous system which is typically heightened with pain. Instead, nose breathing (inhaling and exhaling through the nose) stimulates the naturally-calming parasympathetic nervous system response. Whether at rest or during exercise, nose breathing facilitates a sense of calm and relaxation and a deeper connection between body and mind. With practice, nose breathing can even be used during aerobic exercise and can eventually facilitate performance and recovery enhancement.

When someone is experiencing physical pain, especially chronic pain, emotional pain is almost always present as well and, in fact, it is common knowledge that any kind of emotional stress can impede the natural healing potential of the human body. Athletes who are injured are typically under a lot of stress because when injured they are unable to release stress physically. The **Emotional Freedom Technique**, or EFT (often known as Tapping or EFT Tapping), is a mind/body healing tool that can provide impressive results for physical, emotional, and even performance issues. EFT can be applied solely to physical symptoms for relief without exploring any emotional contributors. However, for the most powerful, longest lasting

results with EFT, it's best to identify and target related emotional issues. These, in turn, often provide benefits for performance and physical issues. The theory behind EFT is that all physical and emotional pain shares the same basic cause: a disruption of the body's energy flow. Just as the use of acupuncture needles helps release energy blocks, so does the tapping of specific meridian points with the finger tips. If you're interested in learning more about EFT there are several books available on the topic as well as Youtube videos.