

# Progression Principles

by Lynda Huey

The first day in the pool with a new patient or client is often considered a “diagnostic” session. That is, we’re looking at what that patient can do easily and what is difficult; which movements cause pain and which do not. Basically, we’re assessing if the patient moves comfortably, is well coordinated and easily follows verbal or manual cues – or does the patient have difficulty following directions and are many exercises difficult to learn? Most patients will be somewhere in between those two ends of the spectrum, and our job is to begin choosing the appropriate exercises to be performed at the correct gradient of difficulty for each patient.

Patients of all levels often tell us that they can perform exercises with greater ease and decreased pain in the water than doing their exercises on land due to the therapeutic effects of warm water, buoyancy, resistance, and hydrostatic pressure. In fact, many patients will want to overdo their exercises during the first pool visit because of their sudden ability for greater movement and decreased pain in water. Perhaps they haven't been able to run, walk, or bend for quite some time in the way they can in the pool, and therefore they want to make up for lost time. Our job is to exert strong vigilance and educate the patients appropriately while reigning in those over-eager ones to prevent increased pain and soreness on the second visit. Patients can be advised that the first visit will be gentle, but that the workload will be increased gradually if they come back feeling better the next time. Progression should begin immediately upon the second visit if the patient experienced no increase in pain or symptoms beyond the expected delayed onset muscles soreness or other musculo-skeletal pain that was resolved within twenty-four hours.

When the patient returns for the second visit, there are many ways to begin increasing the difficulty of the program so that they are continually challenged. You will normally want to add something to the patient's program every time they return feeling good.

The most common options are:

- Increase the repetitions of an exercise
- Add a new exercise or two
- Increase the speed of deep-water intervals
- Stop bracing a patient on the steps or bars for the kicking series when core and back strength can tolerate kicking in a "floating" position holding the side of the pool

- Add resistance equipment to the ankles for slower, large-motion kicks that require power
- Add speed to the kicks that can be done quickly (flutters, bicycles)
- Add resistance pieces to lower extremity exercises performed standing at the side of the pool
- Add buoyancy cuffs to ankles for total hip and total or partial knee patients to increase ROM
- Add step work for patients having difficulty with stairs; move the step into shallower water as the patient progresses
- Introduce plyometric jumping exercises with belt and shallow water running
- Add other exercises from *The Complete Waterpower Workout Book* as needed for high-level patients

If a patient returns to the pool with increased pain either due to an unexpected increase in activity level or the previous pool session proved too aggressive for them, a modification to their program is required to help alleviate the pain or discomfort. The most common options are:

- If a specific exercise hurts the patient, either move to deeper water (increase the buoyancy), decrease the speed, or narrow the range of motion
- Reduce or remove buoyancy or resistance equipment
- Slow the deep-water intervals or decrease the duration
- Consider deep water running to shallow water running to eliminate patellar tracking problems
- Eliminate any exercise the patient suspects as contributing to the pain
- Swap out exercises you suspect as causing pain with easier ones
- Do fewer reps, less time

Regardless of whether a patient enters the pool with a smile or a limp, try to change something every time. If they are in pain, you'll want to take things more slowly and dial it back a little. Those who feel good will appreciate it if there's even one new exercise or one increase in reps on the upper or lower extremity exercises, those changes are what progress the patient along.

In busy pools with multiple therapists, patients may schedule with different people on different days. One patient may see two or three therapists in their first few weeks. When that happens, it's easy for each new therapist to think, "I haven't seen this patient before, I'll be conservative with the treatment." That might mean that the patient with

three therapists had three easy sessions doing the same exercises without making any noted progress. Therapists seeing a patient for the first time should take it upon themselves to communicate with the previous therapists. Having tools such as a water-proof cordless phone accessible makes it possible for pool therapists to communicate with land therapists about a patient's plan of care. Each therapist can progress the patient forward, not settling for the same program as the last session.

After a few visits, buoyancy cuffs can be added to patients' ankles so that lateral leg raises, forward/back leg swings, and leg circles can help improve hip ROM, and quad extensions and hamstring curls can help improve knee ROM. Most patients will start with mini-cuffs and progress to the standard buoyancy cuff. After range of motion has been increased, patients can work on gaining strength with resistance pieces placed on the ankles or feet. There are low, medium, and high-level resistance pieces from which to choose. Similarly, after a few visits of performing upper extremity exercises using just the resistance of the hands against the water, aqua bells of various resistance levels can be added.

Once a patient is ready for increased weight-bearing, it's time for the running and jumping exercises. This usually takes place about halfway in the plan of care of moderate to high-level patients. Low-level patients may never reach the ability to do lunges, squat jumps, straddles, frog jumps, and front kicks, but don't underestimate them. With a flotation belt and the proper guidance, they may be able to enjoy the fun of gently jumping and splashing in the pool that awakens their childhood sense of play and fun. They can jump up and the belt catches most of their weight as they land. These exercises put huge smiles on patients' faces.

Always have the patient wear a flotation belt the first time they perform the running and jumping exercises. This protects them from too much impact that might cause pain or discomfort. Start with two-legged exercises so that every time the patient jumps, there's one strong leg to count on with each landing. Examples of two-legged exercises are lunges, jumping jacks (with arms under the water), squat jumps, and frog jumps. Shallow water running while wearing a flotation belt also begins when the patient begins the running and jumping exercises.

The day the flotation belt comes off is a big day. That means the patient has developed enough musculoskeletal resilience to tolerate the impact that comes from catching their own body weight in the water – it's much less than it would be on land, but still an increase nevertheless. After some sessions of shallow water impact exercises, patients can often set their sights once again on their former best-loved sports and recreational activities.