Deep Water: Fluid Moves

By Monique Acton

Deep water is such a unique environment as it allows an individual to workout in a way that is non-impact yet still offers the benefits of exercise. Taking a typical move performed in the shallow end of the pool and then executing it in the deep gives the move a completely different feel. With the feet not striking the pool's bottom the proprioceptors in the ankle and foot do not send back what a typical message would be. The body has sensory receptors called proprioceptors found in the muscles, joints, tendons and the inner ear. These receptors take information obtained from the muscles, joints, tendons and inner ear then send it to the central nervous system, (CNS) for processing what is needed to get the job done. In this information includes even the most subtle changes of the body's position, tension, force and movement. For instance the receptors of the feet may signal the brain that the ground is rocky or soft as it makes contact. Without making contact with the surface, the body has to rely on other ways for feedback. Exercising in the deep places more focus on the core muscles now for stability. These muscles are always active the entire time when in the deep water. When people attend deep water classes on a regular they display good and/or improved posture due to the continuous contraction.

The core works to stabilize the body and provide a firm foundation for performing movement. There are many muscles that make up the core. They include the rectus abdominus, obliques, transverse abdominus, erector spinae, multifidus, lats, rhomboids and traps. The core muscles extend to the entire length of the torso. A core that is stable and strong is more efficient at moving energy from the center of the body out to the arms and legs. A weak core forces the surrounding muscles of the limbs to take up the slack of the weak core. Use the resistance of the water to strengthen the core. A strong torso is vital for functional movement on land since that is where we reside. Use the resistance and support of the water to build up and stabilize the core muscles.

Purposeful Movement

A functional move means that there is a purpose behind it. It serves as a purpose for a particular need or activity to the individuals of the class. A person who has strong core muscles is better equipped in handling their activities of daily living. The muscles help regulate movement, transmit energy, shifting the weight of the body in all directions of movement. Benefits of a strong core include decreasing the risk of back injury, the ability to distribute the pressure of weight bearing, improvement of postural imbalances which lowers the risk of injury. People notice increased in body awareness, improvement in their steadiness and mobility when the core muscles are targeted.

Intensity Changes

Since the feet do not push off the bottom how can the intensity of a move be increased in the deep? There are several ways to increase the intensity including action / reaction, propulsion, elevation, acceleration, inertia, switching to longer levers when possible and altering the frontal surface area.

Appling these changes to a move may sometimes be quite different in the deep as opposed to shallow water exercise.

For action / reaction some of the movements will be comparable to those performed in the shallow such as jogging shallow and jogging deep. The moves are almost identical for the jogs for the pattern of the arms and legs but there are other times the arm placement may need to be changed based on the move being performed such as going from a shallow water jumping jack to a deep water jack. In shallow water the traditional arms mirror the legs but in the deep the arms will be reversed to allow the body to remain in the upright vertical position. The deep water jack consists of the legs first performing hip abduction while at the same time the arms are performing shoulder adduction. Next when the legs move into hip adduction, the arms will also move into shoulder abduction.

To apply propulsion and elevation to a move also becomes a challenge since the body is too deep to push off the poll bottom like one would do in shallow water to incorporate a propelled or elevated move. The deep water move becomes elevated by cueing to "pull the knee up" and "push the legs down". This adds power to the move. To propel a move in the deep, the focus now shifts more to the arms and legs. The arms can work together in a way that moves the water towards the pool bottom which in turn will lift the body out of the water. A couple of examples include stressing the downward motion of shoulder adduction or sculling the hands in a way that lifts the body higher out of the water. The legs can also do the same. The legs can move in a way that pushes the water down such as a whip motion when performing hip adduction which in turn will raise the body higher out of the water.

Increasing the intensity through acceleration involves taking the selected move and applying more force against the water itself. The tempo used to perform the movement remains the same with the force being applied by the arms and legs using more effort against the water itself with the movement. Again since the feet do not push off the pool bottom, which is one of the ways to use this physical law in the shallow water, in the deep this does not work. Acceleration can be used in since the second way to apply this law is to apply more force against the water itself. This is achievable in the deep as the effort can be placed on the limbs moving through the water. Some additional ways to increase the intensity is the same whether in the shallow or deep water like changes in frontal surface area, speed and lever lengths.

Don't forget that the hand position can also increase or decrease the intensity of the exercise. A hand slicing sideways or in a closed fist format provides minimal resistance. A hand that is in a flat palm position and leading with the palm or back of the hand provides a moderate resistance. Then for the greatest resistance cup the hand into a "claw" position with the hand open and the fingers cupped.

Movement & Vertical Position

As previously mentioned the feet do not make contact with the pool bottom when performing moves in the deep water. Balance will be challenged since there are no anchor points so the body's center of gravity and center of buoyancy need to stay in vertical alignment to remain upright. Some of the movements will be easier to perform than others. Alternating symmetrical movements are the easiest to master AND stay in the upright vertical position. This type of movement would include: jacks and cross country skis, jogging. These moves are balanced and easy to accomplish. Even the new participant to the deep water can feel successful performing these moves since they are less compromising to one's alignment. As far as cueing goes, make sure the participant is moving equal distance from the midline for balance.

Asymmetrical movements are more difficult to execute and to maintain vertical position. The limbs are positioned unevenly in the movement which can cause the torso to deviate from the vertical position. These types of movements would include moves such as: moguls, tucks that move into shoot-through. These moves actually make the core work harder to maintain vertical position. The participant that is new to the deep environment may not be ready for this move yet as the body will feel off balance when performing these exercises. The move is performed correctly when the body is able to maintain vertical alignment with control. In other words, not jerking or flailing to return to vertical alignment. A jerking motion could lead to low back pain due to the postural muscles being overstressed.

An asymmetrical move is considered advanced so be cautious when adding these into the workout. Know your class participants and their abilities to perform these exercises correctly. It may be advantageous to have an individual try the movement in the deeper area of the shallow water pool if available. Making contact with the pool bottom, while minimal, can provide tactile feedback when someone is first learning the movement so the body knows how it should move. Also helpful to someone first learning is to add in a transition that returns the body back to neutral before and after teaching the asymmetrical move.

Correcting the common errors seen in the deep environment can make a difference between a great class and one that is just mediocre. Some of the more common mistakes include the following:

- Forward head
- Lumbar hyperextension,
- Leaning to one side,
- Shortened range of motion and
- Not keeping their legs underneath the body

Equipment

There are many benefits of exercising in the aquatic environment and a couple of those benefits would be that it is a great place for creating dynamic strength and stability. The property of

buoyancy provides less stress to the joints along with supportive stability in the multi-directional resistance which allows for a balanced muscle workout.

Equipment is not essential for deep water other than some type of buoyancy device that can be attached to the body as opposed to holding like a belt. A buoyancy belt allows the body to remain in vertical position freeing up the limbs to move and focus on the activities being performed. Additional equipment can be added for additional resistance and variety. Keep in mind that whatever type of equipment selected that it does not take away from the time or format of the class.

Think outside of the box to add some fun and creativity!

To have our participants continue in their fitness program and make working out become a habit, then the component of "fun" needs to be considered. Placing activities that are fun can make the workout go by quick and it becomes enjoyable.

Changing the rhythm of the move, having activities that involve partners or having the participants move into groups to complete a task can make the workout feel fun. This is a great way for everyone to get to know each other which can make one more committed to coming back to the class. New friendships can develop from coming to the workout on a regular basis.

Another fun factor to add into the class is to take the traditional movement pattern and place the move on a diagonal. Moving on the diagonal brings new awareness to the body as it moves through the water and also makes the move feel different. The diagonal position requires additional core strength to keep the body in that position while performing the specific movement pattern.

Take the basic move performed in the deep and see if there is a way to progress it. There are a number of ways to do this just like in the shallow water. The basic move is taught along with the form cues and posture awareness of alignment. Once this is mastered, change the move by inserting one or more of the following suggestions:

- See if the arms can be changed to a different plane of the lower body movement.
- Change the arms to opposing arms or even a single arm moving with the lower body
- Try the move on the diagonals, in modified prone and modified supine position
- Vary the tempo of the move

Take the basic leg curl for example, which is knee flexion / extension, while moving in the deep. The body is in vertical position. While performing the specific leg pattern, decide what arms might well with this leg pattern. Paring the elbow flexion / extension with the knee flexion / extension worked well. Then try the move on the diagonals as well as modified prone and supine. Did the move work or does it need some adjusting? After testing this move, I discovered it was a fun move to perform where every 8 counts the body would move in and out of vertical position to either a diagonal or modified prone or modified supine. A fun, yet challenging move!

Remember it is best when the body works in all three planes of motion so to be sure to target the major muscles of the body in a single workout. Sagittal plane movements are movements of the body where the joint performs flexion and extension. Frontal plane movements are movements of the body where the joint performs abduction and adduction. Transverse plane movements are movements

where the joint performs rotation, movements that are parallel to the pool bottom, along with transverse adduction and transverse abduction.

So go ahead and jump into the deep! Experience the variety of ways the body can move in this non-impact environment. Adjusting the program of moves through how it is delivered by using the various types of choreography links can help to keep the moves feeling fresh. Changing the intensity, angles at which the moves are performed keeps the moves exciting! Using the three ways to transition a move will help it feel like it flows smoothly from one to the next. And last but not least, add in your own style to give the move character as well as making it a fun and effective workout!

Deep Water: Fluid Moves Pool Practical

Warm up

C1 Jack & tuck
Side plank & tuck
Rhythmic stomps (wide 2, narrow, wide)
Cross straddle (cross, wide, cross, cross)
Repeat stomp cross combo again

C2 Hacky sack
Hurdles 6 & tuck hold
Heel slide swing
Repeat combo again

Hacky sack 4
Hurdle/heel combo: hurdle 6 tuck hold; 2 alternating heel slide swing

C3 Power ski with hip rotation (1/2 WT)
Tuck & plank back, tuck & return to vertical X3
Tuck plank to back – hip abduct/ hip adduct X2
Mountain climb 3 and hold
Jog: out, out, in, in
Front karate kicks – repeater 3 each leg x2

C4 Rocker leg curls
Hip abduction & adduction *Transition into transverse plane*
Transverse hip abduction & adduction

Hip blaster**:** 1-Hip T ABD, 2-Hip T ADD, 3-Hip Ext, 4-Hip Flex.
Repeat with left leg

Tuck shoot through (Front, Left, Back, Right)
Diagonal ski 3 & hold, ski 3 & together

C5 ½ Pendulum; right knee lift & left side leg lift
3 knees and hold – in place
3 knees and hold moving on the diagonal
Kicks around the world

Cool down & stretch