WHAT IS FUNCTIONAL MOVEMENT AND
HOW CAN IT BE TRAINED SUCCESSFULLY IN THE WATER?

The #1 Reason for introducing Functional Movement into an aquatic program is to help people complete a specific task or objective and daily activities, including sports and social activities, in the most efficient manner without placing unnecessary stress on the body.

The #1 Exercise for Functional Movement is Posture and Balance

In order to perform functional movement successfully there usually is a need to re-train posture and balance. This helps to distribute weight more evenly over the skeletal system to place the minimum amount of stress on the supporting joints. Walking through the water and dragging arms will help people with Kyphotic posture (forward rounding of upper back) to maintain well being.

The #1 Goal for Functional Training Is Mobility –
- Keep people active throughout the program
- Train the muscle groups that provide movement for all activities
- Imitate Daily activities in the water
- Incorporate changes of direction and agility moves
- Retrain the fast twitch muscle fibers
- Maintain or improve present levels of fitness for those already active

Before you Start a Program

Be aware of Health Conditions. Many people in the class might have health conditions such as arthritis and a hip or knee replacement, lower back problems, diabetes, MS, heart problems or just general depression with growing older and maybe living alone. Encourage everyone to do as much or as little as they wish at their own pace.

Participants should be screened.

Have everyone fill out Par Q and/or disclaimer form before starting a program. Establish who might have pain, poor range of motion and/or muscle strength. Be aware that some participants will have their good and bad days. Always remind them not to overdo their workout – advise stopping if pain becomes a factor.

“If it Hurts Don’t do it!!”

Advise participants to wear shoes to prevent slipping and improve stability. Suggest aquatic mitts to enlarge the area of support and help with balance in the water.
Dress appropriately - don’t get cold! If the pool water is cool suggest dressing with a thermal vest, polyester shirt or tights, or a cap.

PUTTING A FUNCTIONAL WATER PROGRAM TOGETHER:

For Safety and Success: Assist participants in and out of the pool when necessary:

- Take time to help beginners, weaker clients and non-swimmers become adjusted to the water temperature and the change from gravity to buoyancy.
- Always identify non-swimmers and set boundaries for their comfort and safety.
- Take a water break every ten minutes or so and make it part of the program. Remember to always drink water before, during and after any physical activity.

Teach skill and drills as soon as you get into the pool:

- Recovery to vertical standing position
- Sculling for balance and movement
- Walking with correct foot action forward,
- Discovering the buoyancy and resistance of water
- Using water for assistance and resistance
- Finding correct water depth
- Give Permission to go at own skill, speed and comfort levels
- Demonstrate working positions to modify or increase the intensity for the same basic moves.
- Teach the progressive levels to “body-check” for balance and stability.

Begin the program at a low intensity and duration: Blending a program will depend on pool temperature, the client’s skill, physical and motivation levels, and health history.

- Increase duration before intensity.
- Always work through good range of motion to target the muscle through its full length.
- Emphasize a longer muscle is a stronger muscle.

Start With a Thorough Buoyancy & Joint Warm Up: The warm up can be the most important part of any program since it sets the body up for the work out to come. It is especially important to a functional program. There is no exact rule for a warm up format. It is not necessary to start from the head or shoulders and then move down to the feet. The important criterion is to provide the correct warm up for the program advertised using sufficient comfortable movement to release synovial fluids to the joint areas to prepare for the workout to come. Start movement through short lever action then gradually progress to longer levers. Work through all 3 planes of movement to incorporate all major muscle groups.

Encourage a longer warm up and use more caution and care for anyone with pain or the problematic client. If the water is cool and the participants have sufficient mobility and leg strength it is more effective to get moving right away since the large muscles in the lower body will generate the most body heat. Start warm and stay warm. You can use this part of the program to evaluate participants’ range of motion to help you design the exercises to progress mobility throughout the workout.

There may be contraindications to any exercise for people with chronic conditions such as Arthritis or Movement Disorders so remember to re-cue to “go at your own pace and do what feels good to you” throughout the program. Emphasize that if anyone has difficulty performing a movement to let the instructor know and a modification or substitution for a move can be suggested.

Upper Body Preparation: Neck, Shoulders, Arms and hands: Roll shoulders backwards, walk backwards and “bicycle” alternate elbows. Train the shoulders to go both “down and back” to minimize Kyphotic or forward slumping posture. Good upper body posture and cueing these movements will help to set up good upper back posture and loosen the shoulder and neck areas. Pulling the arms down and back at the sides (as when walking) will help to secure better upper back posture. Discourage imitating a dog-paddle move, reaching the arms too high in the water or taking them in and out which changes the resistance and places stress on the shoulders.
Reach or stretch across the chest on the forward diagonal keeping the shoulders, elbows, arms and hands in the water, submerged and protected. Add a rocking movement (forward and backward) using “conductor” arms.

Add lots of forward walking with arms swinging down and back in opposition. Add a side to side rock with easy elephant trunk or figure eight moves. This will also help with trunk or thoracic spine rotation. Add more walking patterns. Look in the direction of travel to incorporate tilting, gentle turning or rotation of the neck. Do not force the range of motion.

Introduce a forward and backward rock move to start training for balance. Use a biceps curl to flex and extend the elbow. Cue the hands to slice, then fist, then web to add size. Use small splash balls (2-3 inches in diameter) to push and pull through the fingers. Add shoulder external and internal rotation with single arm figure of eight movement. This easy pattern will offer a variety of movements and planes to prepare the upper body area to move within a range than feels good and with little interference. Often they do can more without noticing any limitations.

**Lower Body Preparation: Hips, Knees, Feet and Ankles.**

Walking forward, backward, sideways and using diagonal patterns may be the best way to warm up the body. However, space may be an issue for some programs therefore using a mixture of the working positions neutral and extended to create the modified rebound movement can be an excellent way to get the body warm and the lower body joint actions prepared in a small area. Additionally this is a safe way to warm up the hip and knee joints for anyone with orthopedic problems where any type of bouncing or rebounding must be avoided. The Modified Rebound movement also trains body awareness rather than using momentum in the water.

The hips extend, flex, externally rotate, internally rotate as well as abduct, adduct, horizontally adduct and abduct. The knee is a hinge joint that flexes and extends using the hamstrings and quadriceps. The knee is not designed to rotate so it is critical to help people learn correct function. Keeping the hips, knees and toes aligned will add support to many weight bearing patterns.

Wearing shoes is critical to help anchor the foot against buoyancy and maintain proper alignment. Generally speaking people do not articulate properly with the ankle joint. Therefore, learning how to utilize correct footwork such as a heel to toe forward walk or a toe to heel release as they walk backwards is key to balanced movement. Be sure to align the toes, knees, and hips with each step and add pedal movements with the feet to help learn how to cushion the impact with the metatarsals or the break of the forefoot.

To progress range of motion for a correct walking pattern, start with small steps and expand to larger strides. Add variations to the walking movements such as a knee lift, a curl or knee bend at the back, a small lift leg either forward or backwards. Focus on keeping the weight back on the heels and the knees soft with all movements to take the stress off the back and knee joints. Try to go down and up like a squat to prepare the hips as well as engage the hip stabilizing muscles. Add lots of side walking to prepare the abductors and adductors for the exercise to come.

Often knee problems occur from locking the joint or twisting at the knee so cue to keep them soft. Do not point the toe too much to lock the knee. Keep knees over the toes (do not let the knees go past the toe such as with deep knee bends). Adding oppositional movement such as hand to opposite foot or knee is important to daily function however, make sure that the rotational movement happens from a flexed hip rather than torquing the knee. Add ankle pops and “froggies” movements that can be done in neutral or
even suspended. Adding a noodle may provide support to do any suspended movements.

The above photo show a froggie movement.

For the main part of the workout:

Alternate cardiovascular conditioning with strength & flexibility training.

For gentle cardiovascular work with minimal impact use the modified rebound working position. This incorporates the down-up walking pattern which is used frequently in daily activities such as, stepping off a curb, going up stairs, moving from a sitting to stand position. Use all the basic moves, adding travel patterns to use the assistance and resistance of water as well as properties such as inertia and turbulence. Check for balance frequently.

Target overall body strengthening:
Practice good posture throughout the program and incorporate muscles of the abdominal core. Target the upper body – Rhomboids, Latissimus Dorsi, Posterior Deltoids and Triceps. Target the lower body Hamstrings and Quadriceps, Adductors, Adductors and Gluteals. Endurance exercise for all upper body muscle groups can be done in a neutral working position to protect the shoulders or can be moved deeper to a more transitional depth. (Feet on the pool floor) For people with a limited ROM working in an extended working position might be more comfortable.

Stretching: Stretch frequently throughout the program – especially the muscles that have been specifically strengthened. Target all the tight muscles, especially the hip flexors and pectorals.

Work on Agility - Provide changes of direction but be aware of inertia currents. Cue to stop before the change if the participant is not skilled or has a severe back, hip or knee joint condition. These people should not make a fast change of direction. Stay in straight planes of movement and use exercises such as lines facing each other and travel forward and back, or use diagonal travel or circle patterns with cues to change direction.

Introduce functional daily living activities -
- Use the modified rebound working position or squat like moves with all the basic moves. This two foot to one foot move involves knee and hip flexion to knee and hip extension. The down-up move will effectively target the quadriceps and gluteus maximus muscles for all sit to stand and stair climbing movements.
• Walking is the number one functional activity to maintain independence on land. Use the arms to assist or resist travel to walk in all directions. A variety of walking moves may be utilized for stretching, balance exercises, cardiovascular training as well as posture and fun.
• Imitating vacuuming, stirring a pot, picking up groceries or sports activities using flex paddles. The arms may pull or push the paddle to simulate all these moves as well as targeting all upper body muscles for strength exercises.
• Go Shopping. Walk and then pick up something. Move and stop, change direction and height of movements.
• Practice getting in and out of the bathtub/cars. Add a noodle to simulate lifting the leg up and over something or getting in and out.
• Sculling involves lots of wrist action to strengthen the brachioradialis muscles of the forearms to assist opening a door or twisting a jar top. You may progress to flex paddles or mitt work.
• Washing windows or reaching for objects. Take the arms in many movement patterns and simulate these actions.
• To mimic taking pots of stove and emptying. Add the Macarena for fun.
• Add Hi 5’s exercises with partner fun to help reaching a high shelf.

The Warm down (not the cool down): Keep moving, as much as practical at the end of the program using the water to stretch, maintain heat and get out of the pool while still warm. Extend the duration of the warm down with active stretching using Tai Chi movement and relaxation techniques to safely bring participants back to land, decrease intensity and re-stretch the typically tight musculature.