AQUATIC EXERCISE ASSOCIATION

Deeper Applications 2

References for this workshop are available upon request – email julie@aeawave.com

Dive deeper into aquatic programming applications by taking advantage of current trends in fitness. Deeper Applications 2 offers updated information and creative new fitness formats to promote continued progression in your deep-water classes and personal training sessions. Experience suspended high intensity interval training (HIIT) concepts, including the Tabata protocol, which effectively target the cardio system while challenging the core.

INTRODUCTION

DEEP WATER REVIEW

Before we discuss some the formatting possibilities for deep-water training, it is important to include a brief overview of some key considerations for this unique exercise environment.

As a prerequisite for deep-water exercise, participants should be tested for the ability to return to a vertical position. A participant may enter deep water and lose control of vertical alignment, ending up in either a supine or prone position. This can lead to panic and a distressed victim situation if the individual is not able to regain an upright posture quickly and efficiently. (AEA 2010) Practicing vertical recovery can be included in the warm up of a deep-water training session – assuring participant safety while preparing the body for the workout to come.

It is a common misconception that exercising in deep water with a belt or vest reduces the training benefits. Research clearly indicates that proper posture and alignment is critical to efficient and effective deep-water training. (Bitts, et al., Bushman, et al., Frangolias, et al., Gehring, et al.)

AEA Standards & Guidelines recommend that deep-water exercise be performed with flotation equipment attached to the trunk of the body (flotation belt or vest) or attached to the upper arms (flotation upper arm cuffs). With proper progression and training, ankle cuffs may be an appropriate flotation option for some individuals. The safest placement of flotation equipment in deep water is

attached to the body, as it eliminates the potential for letting go of the buoyancy assistance device – even if the individual becomes panicked. Flotation equipment that requires an individual to hold on to the device, such as a foam log (noodle), kickboard, or hand bars, can create a false sense of well-being and could lead to a potential water rescue. The individual's swimming skills, core strength and personal comfort in deep water should all be considered when choosing equipment.

If you train clients or lead classes in deep water without flotation equipment attached to the body as recommended, ask yourself the following questions (AEA 2010):

- **What if the participant panics and releases the equipment?**
- **What if the participant lets go of the equipment and then grabs another participant in an attempt to remain afloat?**
- **What if the participant tips backward while seated on the equipment and is unable to regain vertical stability?**
- **What role do you play in the rescue and what is your professional liability?**

While moving in a suspended position, the hands play a vital role in maintaining stability, balance, form and proper technique. If holding the flotation device (as opposed to having it attached to the body as recommended), it is not possible to use the arms to achieve these important results. Additionally, suspending the body with handheld buoyant equipment for extended periods of time can compromise joint integrity. Many participants lack adequate muscular strength and body awareness to maintain neutral position of the shoulder girdle.

The hands are primarily utilized under the water for deep-water programming. Keeping the arms submerged and maximizing surface area with hand position will target upper body training benefits. Webbed gloves are a safe and popular choice for many deep-water programs because the gloves accentuate the training results, and are easily adapted to all ability levels. Another option to add intensity and further challenge the core is to include brief bouts of training with the arms above the water's surface. Note: this advanced technique is only appropriate for some populations.

An important component to successful programming is HOW you teach the workout. Being an aquatic fitness professional is both an art and science. Clearly it is important to have a strong understanding of anatomy, kinesiology and exercise physiology in order to create result based programming – thus the importance of the AEA Aquatic Fitness Professional Certification. However, an effective workout does not just rely on pure science.

Here are a few tips to help you engage your students and create the fitness experience. Use a variety of teaching styles – people learn in different ways, plus this keeps the class interesting and students attentive. Keep participants moving while giving instructions for the next exercise, drill or stretch. Not only does this keep students engaged, but it also keeps the class flowing and maintains the appropriate intensity. Plan to use more visual cueing. Make your body language and visual cueing dramatic, and always exemplify good form and technique. Come with a plan but respond to your

students. Plan all phases of the workout but observe how your students are responding and make adjustments as necessary.

Since the body has the ability to move in three planes of motion, it is important to integrate all three in our deep-water programming. Due to the multi-directional resistance of water, we can prepare the body for activities of daily living, specific skills and/or sports that move in all angles of motion.

When designing your deep-water workouts, consider utilizing the upper body in one plane while the lower body moves through a different plane. This not only adds to the creativity of your choreography, but it provides a mental challenge to participants and often increases the workload for the core muscles as well. For example, perform transverse shoulder abduction/adduction (arm sweeps parallel to the pool bottom) with hip flexion/extension (ski legs).

We often get into a rut of using the same movement patterns over and over, because they are "comfortable" to us, therefore easy to cue and require less mental effort on our part as the program leader. To keep all classes interesting and participant progressing, use the following techniques to modify your base moves.

Plan your upper body movement patterns, just as you do the leg combinations. Unilateral refers to one limb moving independently. Bilateral symmetrical movements are when the same joint action occurs at the same time – e.g. jumping jack arms. Bilateral reciprocal moves are when opposing joint actions occur at the same time, such as a cross-country ski - one arm swings forward while the other arm swings backward.

Use music to inspire new movement combinations by using various tempo and rhythm variations. Combining land and water tempos during a single exercise or movement pattern requires focused effort, which encourages participants to pay attention to their workout.

Incorporating travel and adding turns gives base moves a new look and a changed outcome, increase intensity, further engage the core muscles and add a level of mental complexity. Transitions for traveling patterns and turning movements should take into account the ability level and deep-water training experience of the participants. Sometimes a stationary exercise (holding pattern) is best inserted prior to a directional change to allow for reestablishment of body alignment.

Add physical challenge by moving the entire body from vertical – to a lateral angle (envision a sidle plank), forward/backward angle (picture a front plank or reverse plank). You can also transition from vertical to modified supine (think of lying in a hammock with the hips lower than the shoulders and feet). Moving into these positions, maintaining the position, and returning to vertical all increase the workload to the core muscles.

As you can see, basic does not need to be boring!

SHALLOW-DEEP COMBINED TRAINING

There are several benefits of offering an aquatic program that accommodates participants in both shallow and deep water simultaneously. Pools in many facilities are for mixed use and securing class times and space can be challenging. When times and space (available lap lanes) are limited, offering a class that allows people to spread out in both deep and shallow can be a solution.

Aquatic fitness participants often have a preference for deep or shallow. Offering this kind of class allows them to choose the depth they prefer. Additionally, as the program leader, you will no longer need to offer modifications for individuals who try to participate in a deep water class in the shallow end or vice versa.

This mixed format also creates a new class for the schedule, above and beyond the combo class that transitions between deep and shallow programming. Another bonus, you can increase the number of participants participating in a given class as you have twice the space available, making the class cost effective and keeping more members happy.

As with all formats, there will be some challenges as well. The instructor leading this class will have to carefully plan movement that can be executed safely and effectively in both depths. Transitional considerations will also need to be analyzed as they differ between deep and shallow water programming.

Other areas to consider before jumping into this exciting class format? Where and how you position yourself to teach may also have to be changed in order for students in both depths to see you. Music tempo and movement cadence will also need to be adjusted to provide safe and effective training for participants in both water depths. For most groups, 132bpm works well for this blended format.

Finally, equipment considerations will have to be carefully thought out. For example, participants in the shallow end will not be wearing flotation belts. Therefore, any moves that require repositioning of the body to isolate a muscle group, such as abs in the modified supine position will not work.

There are many movements that can be used in both shallow and deep water. Most exercises used for a deep/shallow program will be variations of these base moves.

- Jacks
- Cross Country Skis
- Kicks
- Knee Lifts/Jogs
- Leg Curls
- Ankle Reaches
- Moguls
- Tucks

You have a wide range of choreography options from this list once you consider all the possible variations based upon range of motion, travel vs. stationary, hand positioning, tempo and rhythm variations, and application of the physical laws.

However, some base moves cannot be performed in both depths effectively, at least not without significant modification. Let's explore some moves that don't transition so well between water depths and discuss why they are not effective options.

- **Rocking Horse –** ______________________________
- **Pendulums –** Side kick action – would work in deep
- **Vertical Flutter Kicks –** Skater position in shallow & kick works for deep)
- **Impact Levels –** Level 1 – 2 – 3 – not in deep
  - power – pop up – jumping jacks in deep
  - water jog – run up stairs – level 2

A simultaneous deep/shallow format consists of the same content as regular classes – a mixture of choreography, travel and drills will provide a well-rounded cardio segment. The program should begin with warm up/ preparatory moves and conclude with stretching and cool down activities. Muscle conditioning exercises, targeting upper and lower body as well as the core, can be included. Again, always consider techniques that will be appropriate for both water depths.

Helpful teaching tip: Once you plan your shallow/deep movement patterns – and BEFORE sharing with your class – head to the pool and practice in both deep and shallow water to make sure that the moves are achievable. While in the water, consider transitions and cueing for a safe, effective and enjoyable workout. This practice time will also build your confidence in the planned program, making your presentation to the class much more polished and prepared.

At the pool, we will experience a sample class that works equally well in shallow or deep water. We will only practice the moves in deep water, but AEA Training Specialist Mark Grevelding, created this workout for his own group exercise classes – so the techniques have been field-tested for you!

HIGH INTENSITY INTERVAL TRAINING (HIIT)

High Intensity Interval Training (HIIT) is a popular form of fitness programming that utilizes brief periods of very intense exercise, typically ranging from 80-90% to more than 100% maximal oxygen consumption, or VO2max. Recovery segments can range from passive recovery (very little to no movement) to active recovery of about 50%–70%. (Kravitz & Zuhl)

In order to be effective, HIIT programs must be planned to carefully consider the intensity and the duration of work; duration will decrease as intensity increases. Appropriate recovery periods must also be planned in regards to duration and intensity (active recovery or passive rest).

Some research indicates that HIIT can provide similar or even greater cardiorespiratory, metabolic and musculoskeletal improvements in less time than continuous training. (Kravitz & Zuhl) Additionally, improvements can be achieved in muscular endurance and strength, cardiorespiratory endurance and body composition.

A general suggestion for group exercise would be to utilize active recovery with aerobic intervals, and the longer rest periods between rounds of training. Deep-water movements for active recovery might include low-intensity knee lifts and slow cross country skis or jacks. Passive recovery is suggested with anaerobic interval formats. Options for deep-water passive recovery include true rest from activity (gently sculling of the arms as needed to maintain body position) or suspended stretches for those muscle groups previously targeted in the training round. Recovery periods, especially longer segments such as those between rounds, also provide an opportunity to rehydrate and review the next exercise with the instructor.

The Tabata training protocol is a specialized HIIT format of 20 seconds work and 10 seconds rest (2:1 work:rest ratio) repeated 8 times for a round of training. The round of 8 work cycles is commonly referred to as a Tabata. Within the fitness industry, a workout session may contain multiple rounds or Tabatas; 30 seconds to 1 minute of active rest is suggested between each round. The goal is to push to all out effort on each work cycle.

This training format is based upon a 1996 study conducted by Dr. Izumi Tabata with the Japanese speed skating team. Results showed improvements in both anaerobic and aerobic energy systems. Since then, these 4-minute rounds of extremely intense training have become popular with other athletes, as well as adapted to the fitness industry.

NOTE: The AEA continuing education workshop, AquaBata Shallow, goes into greater depth on formulating HIIT for the pool. Check out the CALENDAR section of the AEA Website to find the AquaBata Shallow workshop at a nearby location.

Today at the pool, we will sample a variety of HIIT formats to introduce the versatility of this methodology. Let's review formats and the movements designed by AEA Training Specialist, Lindsay Mondick.

Tabata Training. We will complete 2 rounds of the Tabata protocol – one a "true" Tabata using a single exercise and one a "modified" Tabata featuring four different exercises repeated in sequence. Tabata 1 is cardio-focused and based upon deep-water running skills with directional orientation variations. Tabata 2 changes to the focus to strength-based exercises, two targeting upper and two targeting lower body. The four exercises are then repeated (A,B,C,D,A,B,C,D) to complete the round of training.

40-30-20 Pyramid. The work:rest ratio is once again 2:1, but this format will pyramid the training from longer duration/lower intensity to shorter duration/ higher intensity. A round of training would include the following:

- Work HARD for 40 seconds / rest 20 seconds
- Work HARDER for 30 seconds / rest 15 seconds
- Work HARDEST for 20 seconds / rest 10 seconds

Repeat the 2 minute 15 second rounds, adding active rest periods as needed between rounds to accommodate the participant goals and abilities.

Dynamix Music has two CDs with this specific format, Tabata Bootcamp 2 and Tabata Bootcamp 4, which include vocal cues to guide the workout. These pre-cued formats allow you freedom to focus on motivational, form and correctional cueing to assure that your students and clients get a great workout! Let's quickly discuss cues that would benefit each of the 40-30-20 Pyramid training rounds that we will perform at the pool.

Round 1: Cardio Focus. "Running Stairs" – Wide Leg Run. Surge out of the water and stay up as long as you can (up the stairs), allowing yourself to come down momentarily (down the stairs) and then propel up again.

CUES: ______________________________

Good form: use arm movements to assist

Round 2: Upper Body Focus targeting biceps & triceps. "Forearm Flurry" with jog in place. Supinated palm, elbows bent. Fast, powerful elbow flexion and extension (bilateral reciprocal, i.e. alternating right and left). To add intensity, change the jog to a sprint.

CUES: ______________________________

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Round 3. "Double Frog Jog" with the hips externally rotated. This is like a vertical whip kick (breast stroke kick): focus on knees tucking up, legs extending out like a wide jack and then snapping powerfully together. To add intensity, elevate out of the water with each snap of the legs. Arms can balance with a scull or do simultaneous scoops with the legs.

CUES: No hyperextend of knees - stay vertical - avoid lumbar hyperextension

Round 4: "Cross Country Power Pops" – extended, extra-large range of motion Cross Country Ski. Each movement is meant to elevate body out of the water, achieved by powerfully pulling legs together under the body. To add intensity arms can be in neutral, either in the water or extended above head out of water.

CUES: _____

3-2-1 Circuit Interval. You flow from one 30-second interval to another with no stopping. Variations of this HIIT format have been around for a while. Fitness experts, such as Chris Freytag, Linda Shelton, and Jillian Michaels, have used variations of this 3-2-1 concept. We are going to see how we can effectively bring it to the pool. The 3-2-1 format stems from the areas of training overload, which creates the circuit format. You will spend 3 minutes focusing on strength moves, 2 minutes on cardio training, and 1 minute of active recovery via core conditioning. This is six minutes of intense work: 90% capacity during strength and cardio (5 minutes nonstop) and then "recover" to 70% capacity during the 1-minute segment of core training. There is no true rest.

Utilize a Gymboss Timer, an interval timing app, or a pace clock to time cycles. You need to cue and preview the next move 20 seconds into the current exercise and provide a 3-2-1 countdown for an instant, uninterrupted switch. Helpful hint: set a 20/10 interval for yourself with 12 cycles per circuit. This is for your cueing, not their work/rest ratio.

Each training circuit will include the following

- 3 minutes Strength = six 30-second bouts of training
- 2 minutes Cardio = four 30-second bouts of training
- 1 minute Active Recovery (Core/Balance) = two 30-second bouts of training

MUSCULAR RESISTANCE & FLEXIBILITY FOCUS

On land the proprioceptive mechanism for determining upright posture and maintain balance is primarily achieved through the ankle joints and contact with the ground. In deep water, we can no longer rely upon this strategy of proprioceptive feedback. The messages no longer come from the feet and ankles, instead the core postural muscles play a key role in the new strategy for balance and correct alignment These muscles are actively engaged 100 percent of the time in deep water. This constant activation is discreet, but clearly very important. We can further target core training in deep water exercise by adjusting body positions, adding travel and turns, and using various arm patterns as discussed previously.

We may also wish to perform focused core exercises, as well as other training techniques that target muscular resistance – as compared to more traditional cardio conditioning formats. And, not to be neglected, all fitness programs should include stretches, whether static or dynamic, to enhance flexibility and range of motion.

The final practical segment in today's workshop, designed by AEA Training Specialist Monique Acton, features muscular resistance exercises and suspended stretches to assure your deep-water program targets the total body. Notice that the exercises feature unilateral movement patterns, which challenge the core stabilizers and require mental focus (i.e. mindful movement).

Additionally, several of the exercises take the body from an upright vertical position to a diagonal or plank position (side, front or back). This change in body position adds a greater challenge to the core. Keep in mind, the body leans into the plank position as a unit while maintaining spinal alignment. These techniques are more advanced, and may not be appropriate for all ability levels. These moves can be modified for vertical positioning. Carefully observe participants/clients, if spinal alignment is compromised in the plank position, return to vertical until core strength and coordination is developed and the participant is able to progress to the more advanced body position.

QUESTIONS & ANSWERS

POOL PRACTICAL

SHALLOW-DEEP COMBINED TRAINING 30-Minute Workout

Choreography Combinations - 15 Minutes

Jog Forward x 2 sets (8)
Leg Curls x 2 sets (8)
Jog Backwards x 2 sets (8)
Jog in 3 (8)

Ankle Reach x 4 sets (16)
Jog/Sprint – land tempo – 7 & hold (16)

Ski 7 & Center (16)
Jacks Travel R x 4 (16)
Ski 7 & Center (16)
Jacks Travel L x 4 (16)

Jack Tuck x 4 (16)
Mogul R & center (4)
Mogul L & center (8)
Tuck & Shoot – *tuck and shoot forward & tuck and shoot down* (8)

Travel Techniques - 10 Minutes Focus on Posture & Alignment!
Use best available travel space based upon the pool layout.

Jog with pulling/assisting arms – bilateral reciprocal and unilateral

Jog with pushing/impeding arms – bilateral reciprocal

Ski 3 & Tuck (teaching tip: pull forward on the tuck)

Jack Tucks (teaching tip: pull forward on the tuck)

Drills - 5 Minutes
Perform 30 seconds for base move & 30 seconds for intensity progression

Jacks > progress to Elevated Jacks

Ski > progress to Ski with Double Arms (bilateral symmetrical)

Jog > progress to Sprints (land tempo)

Kicks > progress to Seated Flutter Kicks

Tucks > Shoot Front (both legs shoot front & drop to vertical)

HIGH INTENSITY INTERVAL TRAINING 30-Minute Workout

TABATA 1
Focus Cardio: Deep Water Running

Work = 20 sec Rest = 10 sec	Movement	Teaching Tips & Cues
Work Cycle 1	**Run Forward**	**Core engaged; don't lean too much; no bicycling motion.**
REST	RECOVERY	INTRO NEXT MOVE
Work Cycle 2	**Run Lateral R**	**Hips face "forward", travel to side.**
REST	RECOVERY	INTRO NEXT MOVE
Work Cycle 3	**Run Lateral L**	**Hips face "forward", travel to side.**
REST	RECOVERY	INTRO NEXT MOVE
Work Cycle 4	**Run Backward**	**Put on your rear view mirror, be aware of surroundings and do it with power.**
REST	RECOVERY	INTRO NEXT MOVE
Work Cycle 5	**Army Crawl Forward (prone position)** stomach	**Move as if crawling through mud with barbed wire 1-foot above you; knees out to the side and towards armpits.** 45° angle
REST	RECOVERY	INTRO NEXT MOVE
Work Cycle 6	**Run Forward**	**Core engaged, don't lean too much, no bicycle**
REST	RECOVERY	INTRO NEXT MOVE
Work Cycle 7	**Army Crawl Forward (supine position)** back	**Similar position to round 5, but on your back. Think like a bug stuck on its back and trying to move as fast as possible through the water.**
REST	RECOVERY	INTRO NEXT MOVE
Work Cycle 8	**Run "Up"** stairs **(in place)**	**All energy focused on elevating the move to propel body up & out of the water. No breath holding.**

Variations

TABATA 2
Focus Strength: Upper & Lower Body

Work = 20 sec Rest = 10 sec	Movement	Teaching Tips & Cues
Work Cycle 1	**Upper Body Focus – Horizontal Shoulder Ab/Adduction with sprint run. Run cadence keeps body in pace.**	**Legs work against arms to keep self in place. Training focus on muscles of back and chest. Move the water!**
REST	RECOVERY	INTRO NEXT MOVE
Work Cycle 2	**Upper Body Focus – Shoulder Internal/External Rotation with flutter legs.**	**Elbows at waist with palms facing each other, internal/external rotation.**
REST	RECOVERY	INTRO NEXT MOVE
Work Cycle 3	**Lower Body Focus – Bent Knee "Flurry Kicks"**	**Seated in chair position, perform knee flexion and extension. Force between right and left leg is equal and opposite so both quad and hamstring fatigue. To add core challenge, use neutral arms.**
REST	RECOVERY	INTRO NEXT MOVE
Work Cycle 4	**Lower Body Focus – Straight Leg Heel Pulldown**	**Straight leg kick with focus on heel pull to pool bottom to fatigue hamstring & gluteals.**
REST	RECOVERY	INTRO NEXT MOVE
Work Cycle 5	**Repeat Move 1**	
REST	RECOVERY	INTRO NEXT MOVE
Work Cycle 6	**Repeat move 2**	
REST	RECOVERY	INTRO NEXT MOVE
Work Cycle 7	**Repeat Move 3**	
REST	RECOVERY	INTRO NEXT MOVE
8	**Repeat move 4**	

40-30-20 PYRAMID

Round 1: Cardio Focus. "**Running Stairs" – Wide Leg Run.** Surge out of the water and stay up as long as you can (up the stairs), allowing yourself to come down momentarily (down the stairs) and then propel up again.

Intensity	Work Interval	Rest Interval
HARD	40 seconds	20 seconds
HARDER	30 seconds	15 seconds
HARDEST	20 seconds	10 seconds

Round 2: Upper Body Focus targeting biceps & triceps. **"Forearm Flurry" with jog in place.** Supinated palm, elbows bent. Fast, powerful elbow flexion and extension (bilateral reciprocal, i.e. alternating right and left). To add intensity, change the jog to a sprint.

Intensity	Work Interval	Rest Interval
HARD	40 seconds	20 seconds
HARDER	30 seconds	15 seconds
HARDEST	20 seconds	10 seconds

Round 3. **"Double Frog Jog" with the hips externally rotated.** This is like a vertical whip kick (breast stroke kick): focus on knees tucking up, legs extending out like a wide jack and then snapping powerfully together. To add intensity, elevate out of the water with each snap of the legs. Arms can balance with a scull or do simultaneous scoops with the legs.

Intensity	Work Interval	Rest Interval
HARD	40 seconds	20 seconds
HARDER	30 seconds	15 seconds
HARDEST	20 seconds	10 seconds

Round 4: "**Cross Country Power Pops" – extended, extra-large range of motion Cross Country Ski.** Each movement is meant to elevate body out of the water, achieved by powerfully pulling legs together under the body. To add intensity arms can be in neutral, either in the water or extended above head out of water.

Intensity	Work Interval	Rest Interval
HARD	40 seconds	20 seconds
HARDER	30 seconds	15 seconds
HARDEST	20 seconds	10 seconds

3-2-1 CIRCUIT INTERVAL 1

(6 min total)

TIME	SEGMENT	EXERCISE	CUES	INTENSITY (1-10)
30"	Strength	Wide Leg Flutters (double thumbs)	Wide leg & arm flutter kick. Flexed feet. Focus on tight core and glutes.	8 to 9
30"	Strength	Jacks w/ Narrow Crisscross	Jacks with fast crisscross ankle; focus on ab and adductor of legs.	8 to 9
30"	Strength	Wide Leg Flutters	Wide leg & arm flutter kick. Flexed feet. Focus on tight core and glutes.	8 to 9
30"	Strength	Jacks w/ Narrow Crisscross	Jacks with fast crisscross ankle; focus on ab and adductor of legs.	8 to 9
30"	Strength	Wide Leg Flutters	Wide leg & arm flutter kick. Flexed feet. Focus on tight core and glutes.	8 to 9
30"	Strength	Jacks w/ Narrow Crisscross	Jacks with fast crisscross ankle; focus on ab and adductor of legs.	8 to 9
30"	Cardio	Straight Leg Kicks	Vertical; focus on power and ROM. Hands reach to toes (reach thumb to toes)	8 to 9
30"	Cardio	Travel Run	Push to see how much distance can you cover during the 30 seconds.	8 to 9
30"	Cardio	Straight Leg Kicks	Vertical; focus on power and ROM. Hands reach to toes	8 to 9
30"	Cardio	Travel Run	Push to see how much distance can you cover during the 30 seconds.	8 to 9
30"	Abs/Core	V-sit Hold (Pike / Yoga Boat)	Pike position hold, heels up and out of water, palms supinated and hold.	6 to 7 (active recovery)
30"	Abs/Core	Vertical Aqua 100's	Kneeling position; arms straight at side with a push pull, palms facing back.	6 to 7

3' 2' 1'

3-2-1 CIRCUIT INTERVAL 2

TIME	SEGMENT	EXERCISE	CUES	INTENSITY (1-10)
30"	Strength	Horizontal Shoulder Ab/Adduction – Bilateral Reciprocal	Core strong, legs jog if needed for balance. One arm in front & one arm out at side; move in opposition. Hips forward.	8 to 9
30"	Strength	"Hanging" Biceps & Triceps	Arms in shoulder abduction ("making a T") with thumbs up. Elbows flex and extend moving parallel to the pool bottom. Legs jog as needed for balance.	8 to 9
30"	Strength	Horizontal Shoulder Ab/Adduction – Bilateral Reciprocal	Core strong, legs jog if needed for balance. One arm in front & one arm out at side; move in opposition. Hips forward.	8 to 9
30"	Strength	"Hanging" Biceps & Triceps	Arms in shoulder abduction ("making a T") with thumbs up. Elbows flex and extend moving parallel to the pool bottom. Legs jog as needed for balance.	8 to 9
30"	Strength	Horizontal Shoulder Ab/Adduction – Bilateral Reciprocal	Core strong, legs jog if needed for balance. One arm in front & one arm out at side; move in opposition. Hips forward.	8 to 9
30"	Strength	"Hanging" Biceps & Triceps	Arms in shoulder abduction ("making a T") with thumbs up. Elbows flex and extend moving parallel to the pool bottom. Legs jog as needed for balance.	8 to 9
30"	Cardio	Side Plank Ski – R Side	Lean to R at 45-degree angle (side plank position). Perform large ROM XC Ski; do not travel. R arm sculls for balance. Top (L) hand remains on hip >>> arm extends beside ear >>> arm abduct from body	8 to 9
30"	Cardio	X-Moguls	Fast tuck & extend, but draw an X below you – feet to front left corner, back right corner, front right corner, back left corner	8 to 9
30"	Cardio	Side Plank Ski – R Side	Lean to L at 45-degree angle (side plank position). Perform large ROM XC Ski; do not travel. L arm sculls for balance. Top (R) hand remains on hip >>> arm extends beside ear >>> arm abduct from body	8 to 9
30"	Cardio	X-Moguls	Fast tuck & extend, but draw an X below you – feet to front right corner, back left corner, front leftt corner, back right corner	8 to 9
30"	Abs/Core	Reverse Plank Frog	Lean body 45-degree to the back (reverse plank position). Externally rotate hips, tuck knees & reach toward heels.	6 to 7
30"	Abs/Core	Tuck & Shoot – Side-to-Side	Tuck the knees and shoot both legs out to R to a side-lying position (adjust angle as needed based upon core strength). Tuck and repeat to the L side. Knees and ankles stay together.	6 to 7

MUSCULAR RESISTANCE & FLEXIBILITY FOCUS 30 MINUTES

Upper & Lower Body Combined Training – Unilateral Patterns

Side Plank Cross Over Pull

Notes: The focus muscles of the upper extremity are the anterior deltoids, biceps and pectoralis (pecs) with the power phase, "pull" movement. Slicing back to the start position utilizes the posterior deltoid, triceps and latissimus dorsi (lats) but with less effort. For the lower extremity, focus muscles are the hip flexors and quadriceps muscles during the power phase or "pull" movement. Less effort is utilized when returning back to the start position using the gluteus maximus and the hamstring muscles.

Begin: The body is on a left diagonal (side plank position). The surface arm (right arm) is used to stabilize the body or braces against the buoyancy belt. The left leg is to remain still. The left arm will slice into shoulder flexion and right leg moves into hip extension to begin the exercise.

Execute: Powerfully "pull" the left arm into shoulder extension and right leg into hip flexion to target the focus muscles. Repeat for the desired number of reps. Switch to right diagonal and perform with the right arm and left leg.

Side Plank Reverse Cross Over Pull

Notes: The focus muscles of the upper extremity are the posterior deltoid, triceps and lats with the power phase, "pull" movement. Slicing back to the start position utilizes the anterior deltoid, biceps and pecs. For the lower extremity, focus muscles are the gluteus maximus and hamstring muscles during the power phase or "pull" movement. Less effort is utilized when returning back to the start position using the hip flexors and quadriceps muscles.

Begin: The body is on a left diagonal (side plank position). The surface arm (right arm) is used to stabilize the body or braces against the buoyancy belt. The left arm will slice into shoulder extension and right leg moves into hip flexion to begin the exercise.

Execute: Powerfully "pull" the left arm into shoulder flexion and right leg into hip extension to target the focus muscles. Repeat for the desired number of reps. Switch to right diagonal and perform with the right arm and left leg.

Front Plank Pecs w/ Alternating Knee Lift-Leg Press

Notes: The power phase is on the transverse adduction of the shoulder with less force on transverse abduction. Focus muscles are pectorals, anterior deltoids and biceps.

Begin: The body is in a front plank (partial prone position or front diagonal lean) with one knee tucked into the torso and the arms abducted at the shoulder and palms forward.

Execute: Powerfully move both arms into transverse shoulder adduction, as if to clap the hands together (the arms will be moving down towards the pool bottom because the body is in the plank position). At the same time, push the tucked leg down and back into hip and knee extension. Repeat again but with the opposite leg, so that the legs alternate with each repetition. Continue for the desired number of reps.

Reverse Plank Lats w/ Alternating Knee Lift-Leg Press
Note: The focus of this exercise is on the latissimus dorsi through powerful shoulder adduction; less force is applied on returning to the start position (shoulder abduction).
Begin: The body is in a reverse plank (partial supine position or back diagonal lean) both legs extended at hips and knees and the arms in shoulder abduction.
Execute: Powerfully pull both arms into shoulder adduction, leading with the palms of the hands; at the same time pull one leg into the torso with bent knee or single leg tuck. Then slice the hands and extend the leg to return to the start position. Repeat again but with the opposite leg, so that the legs alternate with each repetition. Continue for the desired number of reps.

Single Leg Swing Side (alternating front & back)
Note: The focus muscles are the hip abductors.
Begin: Vertical position with the arms used for stability. Lift the right leg as if performing a knee lift and then press the right leg down to the front (hip and knee extension), trying not to move the left leg. You will be in a stride position.
Execute: Power the right leg (which is in front) into hip abduction targeting the muscles of the outer thigh. Once in hip abduction, lift the right knee and step back, again as if in a stride position. Power the right leg, (which is now behind the body) into hip abduction. Repeat the desired number of reps and then repeat pattern with left leg.

Side Kick Pull Down
Note: The focus muscles are the hip adductors.
Begin: Vertical position with the arms used for stability. Perform a side karate kick out to the abducted position.
Execute: Powerfully adduct the hip, maintaining a long lever (knee extended). Perform the desired number of reps then repeat pattern with the other leg.

Double Extension
Note: Same side flexion and extension of the elbow and knee with power phase on extension. The focus muscles for the upper body are the triceps while the focus muscles for the lower body are the quadriceps.
Begin: Vertical position with the left arm used for stability. Flex the right elbow (slicing the hand) and at the same time flex the right knee.
Execute: Supinate the right forearm (palm towards the pool bottom0 and powerfully extend the elbow, while simultaneously extending the right knee. Perform the desired number of reps then repeat pattern with the other side.

Side Plank Scooter Leg
Note: Focus muscles are gluteus maximus and hamstrings. The surface arm & leg performs the exercise. The arm sweeps the water up in the direction of the head, while the leg carries the water to the back.
Begin: The body is on a left diagonal (side plank position). The right leg begins with hip and knee flexion (knee lift) and then moves into knee extension.
Execute: Powerfully extend the hip, maintaining a long lever (knee extended). Perform the desired number of reps then repeat pattern with the other leg.

Suspended Stretches

Single Leg Hug From vertical position, round the back and reach for one knee, shin or ankle to stretch the lower back and glutes. Return the leg to vertical, lengthen the spine and open the arms out to the side to stretch the pectoralis. Repeat this dynamic stretch for the designated reps, alternating the knee each time.

The following 3 stretches are performed in sequence:
Seated Hamstring Stretch with Ankle Support From an extended-knee seated position, dorsiflex the right ankle and place the toes of the right foot under the ankle of the left leg (the right knee will need to be slightly flexed). The right foot will gently "lift" the left leg to stretch the hamstring muscle group.

Figure Four Stretch Flex the right knee, externally rotate the hip and slide the right foot above the left knee. Next flex the left hip and knee as if sitting in a chair; hold the stretch, sculling the arms as needed for balance

Diagonal Drop Remain in the figure four pose while leaning the body diagonally to the right so the right knee is pointing towards the pool bottom. The left arm will reach towards the feet (side stretch / reach); right arm will scull to stabilize the body. Engage the core to return to vertical.

Repeat this 3-stretch series with the other side / leg

The following 2 stretches are performed in sequence
Single Arm Sweep Non-sweeping arm (left) remains positioned out to the side (abducted) while the legs perform alternating leg curls. The right arm sweeps across the front of the body with palm down, then opens out to the side (transverse abduction) with the palm up. Perform sweep 4 times and then move to next stretch.

Posterior Deltoid Stretch Right arm comes across the front of the body and is held into the torso with the left hand (either above or below the elbow joint). Keep the right shoulder pressed down (do not elevate the scapula) while performing this stretch.

Repeat this 2-stretch series with the other side / leg

Opposition Twist Rotate from the waist with the lower body turning left and the upper body right. Look over the right shoulder. The hands scull for balance. Then switch direction of upper and lower body with the look over the left shoulder.