The Aquatic Exercise Association (AEA), the world’s largest certifying organization for aquatic fitness programming, has set forth the following guidelines based on the current aquatic fitness research and knowledge of exercise physiology, biomechanics, kinesiology and the physical properties of water. These guidelines may help to minimize risk of injury and provide optimal benefit and enjoyment of fitness activities conducted in the aquatic environment.

• AEA acknowledges that Guidelines for aquatic fitness vary with different populations and programs. The following Guidelines apply to an average healthy adult without any known limitations or restrictions for engaging in an exercise program.

• AEA recommends that all individuals obtain physician approval prior to initiating exercise or when significantly altering an existing exercise program.

• AEA recognizes and promotes the American College of Sports Medicine (ACSM) Guidelines for Exercise.

• AEA recognizes and promotes the 2008 Physical Activity Guidelines for Americans published by the US Department of Health and Human Services.

• For additional information, AEA strongly urges you to consult the Aquatic Fitness Professional Manual.
Subject Guidelines

Class Format
An aquatic fitness program should be balanced in cardiorespiratory endurance, muscular conditioning and flexibility to promote general fitness. Exercises should be included for all major muscle groups to ensure muscle balance and reduce risk of injury. An aquatic fitness program should include the warm-up component (thermal warm up, optional pre-stretch and cardiorespiratory warm up), conditioning phase and cool-down component. Often the conditioning phase, which is the primary exercise mode, is cardiorespiratory in nature but the focus may also be strength or muscular endurance, flexibility, neuromotor exercise, skill-related training, or a combination of two or more options. It is recommended that enough heat be generated through gross movement, during the pre- and post-stretch, to maintain warmth needed to safely and effectively stretch.

Water Quality
Public and private pools offering aquatic fitness programs should be maintained by a licensed pool operator or manager with the appropriate credentials as designated by state, national, or international codes. For more information on appropriate guidelines for the maintenance of pools and details on becoming a certified pool and spa operator, check with the National Swimming Pool Foundation (NSPF) at www.nspf.org.

The Aquatic Fitness Professional should carefully observe pool conditions and notify management as needed. Strong chemical fumes, cloudy water and complaints from participants (rashes, eye or throat irritation, hair discoloration, excessive fading of clothing, etc.) may indicate that pool chemicals are not properly balanced.

Water Temperature
Water varying from 83-86 degrees Fahrenheit (28.3-30 degrees Celsius) is the most comfortable temperature for typical water fitness classes. This allows the body to react and respond normally to the onset of exercise and the accompanying increase in body temperature. Cooling benefits are still felt and there is little risk of overheating.

<table>
<thead>
<tr>
<th>POPULATION</th>
<th>RECOMMENDED WATER TEMPERATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive Swimming</td>
<td>78 – 82 F / 25.6 – 278 C*</td>
</tr>
<tr>
<td>Resistance Training</td>
<td>83 – 86 F / 28.3 – 30 C Minimum range</td>
</tr>
<tr>
<td>Therapy &amp; Rehab</td>
<td>90 – 95 F / 32.2 – 35 C** Low function program – cooler temperatures may be more appropriate for higher intensity programs and specific populations</td>
</tr>
<tr>
<td>Multiple Sclerosis</td>
<td>80 – 84 F / 26.7 – 28.9 C</td>
</tr>
<tr>
<td>Parkinson’s Disease</td>
<td>90 – 92 F / 32.2 – 33.3 C*** Ideal temperature</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>83 – 85 F / 28.3 – 29.4 C</td>
</tr>
<tr>
<td>Arthritis</td>
<td>83 - 90 F / 28.3 - 32.2 C*** 91 - 94 F (32.8 - 24.4 C) may be allowed with special considerations***</td>
</tr>
<tr>
<td>Older Adults</td>
<td>83 – 86 F / 28.3 – 30 C Moderate to high intensity, 86 – 88 F / 30 – 31.1 C Low intensity</td>
</tr>
<tr>
<td>Children - Fitness</td>
<td>83 – 86 F / 28.3 – 30 C</td>
</tr>
<tr>
<td>Children Swim lessons</td>
<td>84+ F / 28.9+ C* Varies with age, class length, and programming; ideal learn to swim programs is best suited for 84 – 89 F / 28.9 – 31.7 C when available</td>
</tr>
<tr>
<td>Infant programs (4 and under)</td>
<td>90 – 93 F / 32.2 – 33.9 C*</td>
</tr>
<tr>
<td>Obese</td>
<td>80 – 86 F / 26.5 – 30 C</td>
</tr>
</tbody>
</table>

* USA Swimming  
** Aquatic Therapy & Rehab Institute (ATRI)  
*** American Parkinson Disease Association (APDA)  
**** Arthritis Foundation
Program modifications will be required for water temperature outside the recommended range. Aquatic Fitness Professionals should know the water temperature and modify the program accordingly based upon the population and the program format.

Water temperature below the recommended range requires modifications in programming. The primary focus of the warm-up should be large, lower impact, rhythmic movements that gradually elevate core temperature of the body and may need to be extended by 5 to 10 minutes. The main segment must be of adequate intensity to maintain proper body temperature and prevent injury. Participants may find it necessary to wear specialized clothing to maintain body heat. The cool-down and post-stretch must be adjusted, in overall length as well as activity, according to the environmental conditions.

Water temperature above the recommended range also requires modifications in programming. The intensity and length of the main segment should be adjusted to prevent overheating. Encourage proper hydration and apparel (e.g. avoid swimming caps that prevent heat dissipation). An extended cool down with emphasis on stretching and relaxation is appropriate.

Some general guidelines for water temperatures are listed, but please note that variations to these recommendations may be necessary. Make adjustments in clothing and programming to assure participant safety. Also, specialized populations may require specific water temperatures for safe and effective programming.

- Multi-use pools are more cost effective to operate and thus adjustments in the suggested water temperatures are often required to accommodate a larger variety of programs.

- Please consult your local health department codes when adjusting pool temperatures as this may affect the ranges that are acceptable and may even alter the classification of the pool use.

Limited research is available regarding prenatal women and recommended water temperatures for exercise. The upper limit for safe water temperature for prenatal water exercise has not yet been defined, however the range listed in the chart is based upon research that indicates exercise in 85 F / 29.4 C is safe for pregnant women.

**Water Depth**

Shallow-water programs are typically performed in water that ranges from mid-rib cage to mid-chest in depth. This provides the benefits of reduced impact while still maintaining proper alignment and control of movement and allows for activities that sufficiently train all the major muscle groups against the water’s resistance. Specific programming options may require variations in water depth. Water that is below waist-depth will require that impact levels be modified to prevent musculoskeletal injury; this water depth will also reduce the water’s cooling ability during sustained exercise so intensity should be carefully monitored.

Pools with a depth range of 3.5-4.5 feet (1.07-1.37 meters) seem to be the most useful for typical shallow-water fitness classes; pools with a depth of 3-5 feet (0.91-1.52 meters) will accommodate nearly all heights of participants. A gradual slope of the pool bottom is preferred to accommodate varying heights of participants. A steep slope may lead to musculoskeletal stress.

Deep-water exercise is most successful at a depth where a body can be suspended vertically and is free to move in any direction and speed, without experiencing impact or weight bearing stress. A pool depth of 6.5 feet (1.98 meters) or more provides the ideal environment for a deep-water class.

In some situations, either due to the pool slope or water depth, it is necessary to perform transitional depth training. This describes water exercise performed in pools with water depths between 4 and 6 feet (1.2-1.8 m). Flotation equipment may be used, and shoes are recommended because there is some contact with the pool floor.

**Pool Entry & Exit**

The Americans with Disabilities Act (ADA) has set minimum requirements for making swimming pools accessible to people of all abilities. The ADA.gov website provides details to establish compliance.

Do not jump or dive into the pool wearing flotation or resistance equipment. Do not dive into pools unless the depth is clearly marked for diving and is at least 5 feet (1.52 meters) in depth.
Air Temperature & Humidity

Ideal air temperature and humidity levels are not easily determined as many factors must be considered.

Air temperature and humidity will affect both the participants in the pool as well as the aquatic professionals working on the pool deck. Programming should be adjusted to all environmental conditions, including the air temperature and humidity, to provide safe training options for participants in the pool. Aquatic professionals working from deck must account for these conditions as well by adjusting teaching style, wearing appropriate clothing and maintaining proper hydration.

The general recommendation for indoor pool air temperature is a range of 75 – 85 F (24 – 29.5 C). The general recommendation for indoor pool air humidity is a range of 50 – 60%.

Temperature and humidity can also impact operation and maintenance of indoor pool facilities. The air temperature should not exceed 85 F (29.5 C) for comfort of the aquatic professionals working on the deck. A lower than 50% relative humidity will cause a chilling effect on the participants when leaving the water and will also cause more evaporation of the water. The greater the evaporation of the water the more chemicals will be used and the greater chance of the water quality becoming unbalanced.

Outdoor pool air temperature cannot be controlled and will be influenced by wind, humidity and direct sunlight. Comfort and safety of the participants will also be influenced by the water temperature, class format as well as participant age, ability level and medical conditions. Appropriate attire should be considered and discussed with the participants.

When teaching at outdoor pools, it is suggested to designate upper and lower limits for both air and water temperature based upon the participants and the programming. Cancel classes if these limits are exceeded to maximize safety and minimize liability. Post this information for your clientele in advance for clarification and to eliminate confusion.

Air Quality

Air quality for indoor pool facilities should be monitored according to the country, state and local health department guidelines. Adequate ventilation is critical to maintain proper humidity and remove chemical fumes from the pool area. Humidity level and air circulation will also influence the comfort level of the participant and thus require constant monitoring.

Intensity

Aquatic Fitness Professionals can alter intensity through the physical laws of motion and the properties of water. Options would include the use of inertia, acceleration, action/reaction, drag forces of water, buoyancy, levers and frontal resistance to increase or decrease intensity. Varying the speed of movement can alter intensity, however movement speed should not compromise range of motion or muscle balance.

Many factors can affect the training heart rate, including stress, caffeine, medications, general health, and environmental factors. Additionally, research indicates that the exercise heart rate during aquatic exercise is reduced compared to the heart rate observed during exercise of the same intensity on land. This aquatic reduction is influenced by water temperature, reduced gravity, compression, partial pressure and reduced body mass. When monitoring heart rate in aquatic exercise, a 6-second count is suggested.

Research also indicates that a standard percent or a standard number of beats per minute may not be as accurate as a personalized deduction in determining aquatic heart rate calculations. At this time AEA recommends the use of the Kruel Aquatic Heart Rate Deduction with the Karvonen formula for determining target heart rates in aquatic exercise.

Rating of perceived exertion (RPE) is a subjective method of assessing effort, strain, discomfort, or fatigue experienced during exercise. It has been shown to be a viable method to measure exercise intensity without the influence of additional factors that can influence heart rate measurements. The AEA Aquatic Exercise Intensity Scale compares a numerical intensity rating and aquatic heart rate percentage with a standard description of perceived exertion, plus an added description to assist participants in assessing exercise level.

Monitoring intensity of resistance training is also important for achieving safe and effect results.
Tempo
Music with a tempo of 125-150 beats per minute (bpm) is recommended for shallow-water aerobic programs for the general population. The slower reaction time of submerged movement benefits from the music being utilized at half tempo (i.e., every other beat of the music) in most situations. Below are general cadence guidelines for various types of aquatic programs.

<table>
<thead>
<tr>
<th>CLASS FORMAT</th>
<th>RECOMMENDED BPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shallow-water</td>
<td>125 – 150</td>
</tr>
<tr>
<td>Cardiorespiratory</td>
<td></td>
</tr>
<tr>
<td>Deep-water</td>
<td>100 – 135</td>
</tr>
<tr>
<td>Cardiorespiratory</td>
<td></td>
</tr>
<tr>
<td>Aquatic Kick Boxing</td>
<td>125 – 132 Basic Techniques/</td>
</tr>
<tr>
<td></td>
<td>Skills &amp; Drills</td>
</tr>
<tr>
<td></td>
<td>128 – 140 CR Combinations/</td>
</tr>
<tr>
<td></td>
<td>Advanced Level</td>
</tr>
<tr>
<td>Muscular Conditioning</td>
<td>115 – 130</td>
</tr>
<tr>
<td>Interval – Shallow-water</td>
<td>125 – 150 Interspersed with</td>
</tr>
<tr>
<td></td>
<td>higher or lower tempos</td>
</tr>
<tr>
<td>Interval – Deep-water</td>
<td>100 – 130 Interspersed with</td>
</tr>
<tr>
<td></td>
<td>higher or lower tempos</td>
</tr>
<tr>
<td>Circuit Training</td>
<td>125 – 150 Aerobic Segments</td>
</tr>
<tr>
<td></td>
<td>115 – 130 Resistance Training</td>
</tr>
<tr>
<td></td>
<td>Segments</td>
</tr>
</tbody>
</table>

Arm Positioning
AEA recommends that the majority of arm movements be performed submerged in the water, but recognizes that some choreography, conditioning exercises and/or stretching techniques will take the arms above the water’s surface. Utilizing the arms under the water’s surface during aquatic exercise will maximize use of the water’s resistance for improving upper body musculature, developing balance and coordination and altering intensity. Range of motion above shoulder height should be included but in a careful and controlled manner; creativity should not compromise safety. Extended use of the arms in an overhead position is not recommended due to the potential stress to the cervical spine, shoulders and shoulder girdle. This may also create an inaccurate perception of aerobic intensity.

The hands are primarily utilized under the water in deep programming. They play a vital role in maintaining stability and balance, form and technique, as well as providing muscle conditioning for the upper body musculature.

In general, arms should stay either in the water or out of the water throughout the combination or pattern. If you need to make the transition from out of the water to in the water, consider using short levers to avoid stress on the shoulder and elbow joints.

You can add variety to the upper-body base moves in five basic ways in both deep and shallow water. See Upper Body Techniques in the Terminology section.

Equipment Considerations
Equipment should always be appropriate for the participant and the program. Aquatic Fitness Professionals should have a complete understanding of how the equipment can be safely and effectively incorporated.

AEA recommends 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 specifically designed for water exercise). With proper progression and training, ankle cuffs may be an appropriate flotation option for some participants. In deep water, flotation equipment that is attached to the body 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 noodle, kickboard, or hand bars, can create a false sense of well-being and could lead to a water rescue. The participant’s swimming skills, core strength, and personal comfort in deep water should all be considered when choosing flotation equipment.

Hand-held buoyancy equipment may be utilized for additional upper body resistance in both shallow-water and deep-water programs. If hand-held buoyancy equipment is used, AEA recommends providing options for participants who lack the ability or fitness level to use the equipment appropriately. Periods of
training with the equipment submerged should be limited and frequent breaks should be incorporated into the workout. Cue participants to maintain neutral alignment of the wrists and avoid tight gripping of the equipment. Carefully observe and cue to make sure that proper alignment of the shoulder girdle is maintained, including scapular depression and retraction.

**Proper Footwear**

AEA recommends the use of aquatic shoes for most shallow aquatic fitness, especially programs involving impact or traveling movements. Shoes reduce impact stress to the weight-bearing joints, allow for better footing during grounded techniques, increase traction during traveling patterns, protect the feet from injury and improve the quality of the workout. Shoes are especially important for individuals with the following special considerations: pregnancy, obesity, diabetes and musculoskeletal disorders.

For a traditional non-impact deep-water format, shoes would not be required and may not be preferred if they hamper full range of motion at the ankle, especially during plantar flexion. However, shoes (depending upon the type selected) may provide additional weight to the legs that can assist in maintaining correct vertical alignment. Additionally, specific resistance shoes are manufactured to enhance training benefits of water exercise and these may be incorporated for added intensity.

Shoes should be considered when walking on deck and in dressing rooms to reduce the chance for slips and falls. Shoes may also be needed for safe entry and exiting of the pool.

Street shoes should not be worn in the pool area to reduce contamination and the potential spread of disease as well as general safety considerations from possible slips and falls. Shoes worn in the pool should be used exclusively for this purpose.

Aquatic Fitness Professionals on deck should wear appropriate footwear to absorb shock, provide stability and prevent slipping.

**Proper Clothing**

Most aquatic fitness programs involve some degree of rebounding and thus it is important for Aquatic Fitness Professionals as well as participants to wear supportive clothing. Exercise clothing may provide more support, coverage and comfort than swim suits.

Aquatic Fitness Professionals and participants exercising in outdoor pools need also to consider protection from the sun, which might include hats/visors, sunglasses, waterproof sunscreen and sun-protective clothing.

Other outdoor considerations include cool air and/or water temperatures. Wearing vests or long-sleeve jackets designed for water exercise can help to maintain core body temperature, thus increasing comfort and safety.

Professionalism should be considered when selecting exercise attire.

**Hydration**

Aquatic fitness participants and professionals must maintain proper hydration even though the loss of fluids through sweating is not as obvious when training in the water. Drink water before, during and after all training sessions. Increase fluid intake when the water and air temperatures are above recommendations, when the workout is extremely intense, if you consume caffeine or other diuretics and if you are pregnant.

**Professional Education**

AEA recommends that Aquatic Fitness Professionals receive and maintain certification through an internationally recognized organization that specializes in aquatic fitness leadership. When working with special populations or specialized class formats, AEA recommends additional education and/or certification specific to that population or method of instruction.

AEA recommends that all Aquatic Fitness Professionals maintain cardiopulmonary resuscitation (CPR) training. AEA mandates that all AEA Certified Aquatic Fitness Professionals maintain current and valid CPR.
AEA recommends that all Aquatic Fitness Professionals are trained in proper use of an automated external defibrillator (AED). AEA mandates that all AEA Certified Aquatic Fitness Professionals maintain current and valid AED training.

AEA recommends that all Aquatic Fitness Professionals be trained in water safety techniques.

AEA recommends that all Aquatic Fitness Professionals be trained in standard first aid techniques.

AEA recommends that all Aquatic Fitness Professionals be aware of the pool facility’s emergency action plan (EAP) and know his/her role in the plan.

AEA recommends that all Aquatic Fitness Professionals teaching/training in private pools develop an EAP. This should be clearly posted for participants’ reference.

**Deck Instruction**

AEA recommends deck instruction as the preferred method of leading aquatic fitness in most situations. Deck instruction provides the highest level of safety for the participants by allowing better observation and quicker response to emergency situations. Deck instruction also provides greater visibility – of the Aquatic Fitness Professional to the participant and the participant to the Aquatic Fitness Professional. AEA recommends that the Aquatic Fitness Professional remain on deck when there is no additional lifeguard on duty, there are new participants in the program, or when new movements are being demonstrated.

The safety of the Aquatic Fitness Professional does not have to be compromised if proper precautions are taken. Suggestions for safe deck instruction include:

- Avoid high impact movement demonstration
- Utilize a chair for low impact demonstrations and balance needs
- Consider non-impact teaching techniques
- Wear proper footwear for deck instruction
- When available, use a teaching mat to reduce impact stress
- Wear appropriate clothing for the environment in which you work
- Drink sufficient water to stay hydrated and protect your voice
- Use a microphone when available or incorporate non-verbal cues
- Position the music source where it provides the least interference with vocal cueing
- Use caution when utilizing any electrical source – including sound systems – near a pool due to potential hazard of electrical shock
- Lead the workout rather than participate in the workout
- Train for endurance, strength, flexibility and balance within your personal workout program to assure the ability to perform safely on deck

**Classes Per Week**

The number of classes an Aquatic Fitness Professional can safely lead per week will be determined by many factors, including the individual’s personal health and fitness levels, environmental considerations, types of programs offered, length of classes, and of course the degree of leadership versus participation.

General recommendations would be for the Aquatic Fitness Professional to lead no more than 15 classes per week and to monitor for signs/symptoms of over-training and chronic dehydration. This recommendation is made assuming that the Aquatic Fitness Professional is utilizing safe deck instruction techniques and is leading the class rather than participating in the workout.

**Classes Per Day**

The number of classes an Aquatic Fitness Professional can safely lead per day will be determined by many factors, including the individual’s personal health and fitness levels, environmental considerations, types of programs offered and length of classes.

General recommendations would be for the Aquatic Fitness Professional to lead no more than 2 classes per day at a high intensity or up to 4 classes if the class format and the teaching style allows lower intensity performance. Monitor for signs/symptoms of over-training and chronic dehydration. Rest periods between classes will also influence the number of classes that can be safely taught per day. This recommendation is made assuming that the Aquatic Fitness Professional is utilizing safe deck instruction techniques.
**Class Size**

AEA recommends a space of 4’ x 8’ (32 square feet) per person for a typical shallow-water cardiorespiratory format without equipment. This space requirement may increase if equipment is added. To determine the number of students for your pool, measure the square footage of the useable area (based upon depth and bottom slope for shallow water) then divide by 32.

The working space for deep-water exercise is a little larger than shallow-water, because deep-water participants tend to drift. Ideally, each deep-water exercise participant should have 32-36 square feet of working space depending upon the level of the class, the type of programming and equipment choices. To determine the number of students for your pool, measure the square footage of the useable area (based upon appropriate water depth) then divide by 32-36.

A maximum of 25 students per Aquatic Fitness Professional is recommended when an additional lifeguard is not present. It is recommended to have a maximum of 50 students per Aquatic Fitness Professional when one additional lifeguard is on duty.

**Lifeguard**

Country, state, county and local codes relating to lifeguard regulations should always be followed.

For maximal safety of participants and limited liability for the Aquatic Fitness Professional and facility, AEA recommends that a certified lifeguard, in addition to the Aquatic Fitness Professional leading the class/session, should be on duty at the pool facility when aquatic fitness classes are being held.

If an additional certified lifeguard is not present during the aquatic fitness class/session, AEA recommends:

1. The Aquatic Fitness Professional to be certified in water safety and basic water rescue techniques.
2. The Aquatic Fitness Professional to remain on deck while leading the class/session unless it is a one-on-one session or small group training (2-5 participants) that requires in-water assistance or guidance.
3. The Aquatic Fitness Professional to be fully aware of the facility’s Emergency Action Plan (EAP) and his/her role in this plan.

**Thunder/Lightning**

Swimming pools are connected to a much larger surface area through underground water pipes, gas lines, and electric and telephone wiring. According to the National Lightning Safety Institute (NLSI), lightning that strikes anywhere on this metallic network could result in electrical shocks elsewhere. You must comply with state, county, and local safety codes. In an electrical storm, adhere to safety policies and know your role in the emergency action plans for all pools where you work or train.

The National Swimming Pool Foundation Pool and Spa Operator Handbook (NSPF 2014) follows the American Red Cross guidelines pertaining to outdoor swimming pools. Clear everyone from the outdoor pool and the surrounding deck area at the first sound of thunder or first sighting of lightning. When possible, move everyone inside and away from the water. Most organizations also recommend clearing indoor swimming pools during a thunderstorm. It is generally recommended to wait 30 minutes after the last observed lightning or thunder before resuming activities in or around the pool.
Standards and Guidelines for Aquatic Fitness Programming

Shallow-water Aquatic Training
Exercise typically performed in water that ranges from mid-rib cage to mid-chest. This provides the benefits of both reduced impact and grounding forces, allows for proper alignment and movement control.

Deep-water Aquatic Training
Exercise program performed suspended in water at a depth that allows participants to remain vertical while not touching the bottom of the pool. Flotation equipment is typically utilized to maintain correct alignment.

Transitional Depth Aquatic Training
Exercise performed in water depths between 4 and 6 feet (1.2-1.8 m). Flotation equipment may be used, and shoes are recommended because there is some contact with the pool bottom.

Body Positions for Aquatic Fitness

Supine
Lying in a “face up” position. Water exercise programs may utilize a modified supine position where the hips are slightly lower than the shoulders and the knees or feet.

Prone
Lying in a “face down” position. Water exercise programs may utilize a modified prone position or plank position where body is on an angle with the feet lower in the water (either touching the pool bottom or suspended) to allow the head to remain above the water’s surface.

Vertical
Most shallow- and deep-water fitness programs are conducted primarily in a vertical (standing) position, or modified vertical position (seated, Level II, or Level III), allowing participants with limited swim skills to safely and comfortably enjoy the water.

Focus on maintaining, or returning to, proper neutral alignment when training in the water, both shallow and deep programming. The following will influence body alignment: exercise/movement selection, speed of movement, transitions, and equipment.

Upper Body Techniques
Arms can be used to assist or impede movement and thus alter intensity, aid with balance, or create a challenge to the core muscles. Arms can be used both in and out of the water, depending upon the goals of the exercise and the abilities of the population. There are five basic ways to add variety using arm movements.
- Change “typical” arm and leg patterns.
- Create specific combinations with the arms.
- Use the arms above the water’s surface.
- Hold the arms in a neutral position.
- Float the arms on the surface of the water.

Surface area created by the hand position while moving through the water can alter exercise intensity.

Impact Options for Shallow Water

Grounded
Movements performed in an upright position, but one foot remains in contact with the pool bottom at all times.

Level I
Movements performed in an upright position that involve impacting. Both feet are off the pool bottom for a brief period of time and then land or rebound.

Level II
Movements performed by flexing the hips and knees to submerge the body to shoulder depth. Both feet are off the pool bottom for a brief period of time, but impact is reduced due to body position.

Level III
Movements performed with the hips and knees flexed to submerge the body and the feet do not touch the pool bottom (body is suspended). Simulates deep-water training in shallow water.
Power Tucks
Variations of movements performed in levels I, II, and III where the knees pull forcefully toward the chest and then the legs push forcefully away toward the pool bottom. Power tucks increase impact with level I moves.

Propelled
Plyometric movements performed in the water; jump training.

Movement Tempos
Water Tempo
Movement occurs on every other beat of the music.

1/2 Water Tempo
Water tempo movements with an added bounce or pause on every other beat of the music. A movement, including the bounce or pause, requires four beats of the music

Land Tempo or Double Time
The same speed of movement used on land; movement occurs at each beat of the music.

Transitions
Shallow-water
Basic
A transition where the next move begins where the previous move ended or it passes through neutral alignment. A basic transition passes from:
- a one-footed move to a one-footed move in the same plane
- a one-footed move to a two-footed (or vice versa) move with a center bounce
- a two-footed move to a two-footed move with a center bounce

Intermediate
A transition that requires more coordination and core strength to maintain safe alignment; the arms assist with balance as needed. An intermediate transition passes from:
- a one-footed move to a one-footed move in a different plane
- a one-footed move to a two-footed move (or vice versa) without a center bounce
- a two-footed move to a two-footed move without a center bounce

Advanced
A transition designed for experienced aquatic participants, fit participants, or athletes. An advanced transition passes from:
- a one-footed move to a two-footed move (or vice versa) with a change in impact level
- any transition that involves a change in plane and a change in impact level

Deep-water
Basic Transition
A transition where the next move begins where the previous move ended, or it passes through neutral alignment.

Transitional Move
The addition of a simple move, often a jog or vertical flutter kick, to allow more time to prepare for the next movement in a pattern; may be needed to change planes or direction of travel, or simply to stabilize the body.

Tempo Transition
A transition that uses 1/2 water tempo movements to aid in smooth transitions. A one-count return to the center position (pause center) or a center tuck replaces the ‘bounce center’ found in shallow-water programming. One can also incorporate “doubles” in Tempo Transitions for deep-water formats.