OUR MISSION:

The Aquatic Exercise Association (AEA) is a nonprofit organization committed to the advancement of aquatic fitness, health and wellness worldwide.
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.

**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 muscular fitness or flexibility, or even all three aspects. 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**

All pools that are open for aquatic fitness programs should be maintained by an operator certified by a nationally recognized organization and/or the facility should follow the guidelines set forth by Country, State and Local Health Department standards. In the United States, water quality monitoring will involve daily and weekly testing for specific levels as set forth by the State Pool Code.

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.

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 should last for at least 9-15 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 following chart is based upon research that indicates exercise in 85 °F / 29.4 °C is safe for pregnant women.

<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 – 27.8 °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 **** Appropriate range for the full Arthritis Foundation aquatic program; 91-94 degrees F (32.8-34.4 °C) for lower intensity with more range of motion exercises and no endurance component</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 for 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</td>
<td>90 – 93 °F / 32.2 – 33.9 °C*</td>
</tr>
<tr>
<td>(4 and under)</td>
<td></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
**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, depth or the height of the participant, it is necessary to perform a modified deep water workout. A modified deep format would incorporate flotation equipment but movement adaptation would be necessary as compared to typical deep water training. For example, full range of motion cross country skis would be modified to prevent striking the feet on the bottom of the pool.

**Pool Entry & Exit**

Many pools have ramps, walk-in access, chair lifts or shallow water areas where participants can enter and exit the water. However some pools still require the use of steps and ladders and this may restrict the participants that you can accommodate. Some individuals may require assistance where as others may not be able to enter/exit the pool via a ladder. All steps and ladders should be secure, slip resistant and have safety hand rails. When designing NEW pool facilities it is imperative to consider safe entry and exit options for all abilities.

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. It is important to remember that the pool water temperature and the space temperature must be discussed at the beginning of the design process. This has a major influence on the sizing of the dehumidification system. 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**

It is recommended that the Aquatic Fitness Professional alter intensity through the use of the physical laws of motion and/or 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. Although varying the speed of movement can alter intensity, this is not considered the most effective method as range of motion and muscle balance can be compromised.

When monitoring heart rates during exercise to assess training intensity level, research indicates a reduced heart rate response in water exercise, in particular when the water is greater than waist-depth. Aquatic suppression of exercise heart rates is dependent upon many factors including temperature, gravity, compression, partial pressure, dive reflex and reduced body mass as well as the individual’s fitness level and age.

There are many factors that will affect heart rate response including stress, caffeine, medications and general health. In the aquatic environment, heart rate can be influenced by the interaction of the water’s temperature, compressive forces on the body, reduced gravity, the law of partial pressure, the dive reflex and the reduction of body mass. Since using a straight BPM deduction can skew the numbers at the upper and especially the lower end of the target heart rate range, a percentage deduction is now more commonly recommended. In 1971, McArdle and colleagues recommended a heart rate deduction of 13% for aquatic exercise. Although this number is still utilized, research indicates that aquatic heart rates may be individual and may be even lower than this percentage for deep-water exercise. Recently, research in Brazil investigated the concept of an individualized aquatic heart rate deduction, referred to as the Kruel Aquatic Individual Heart Rate Deduction.

Heart Rate Monitors suitable for submerged use are available and may provide more accurate heart rate readings than manual palpitation of the pulse.

The Borg Scale: Rate of Perceived Exertion (RPE) or the modified Borg Scale are often selected for measuring exercise intensity during aquatic exercise due to the many factors that will influence heart rate response. Using a combination of heart rate measurement and RPE is recommended by the ACSM.

**Cadence**

Music with a tempo of 125-150 beats per minute (bpm) is recommended for shallow water aerobic programs for the general population. However, the slower reaction time for submerged movement necessitates that this music be utilized at one-half tempo, i.e. count every other beat of the music. 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/ Skills &amp; Drills</td>
</tr>
<tr>
<td></td>
<td>128 – 140 CR Combinations/ Advanced Level</td>
</tr>
<tr>
<td>Muscular Conditioning</td>
<td>115 – 130</td>
</tr>
<tr>
<td>Older Adults (as a special population)</td>
<td>120 – 145 Depending upon goals and abilities</td>
</tr>
<tr>
<td>Interval – Shallow Water</td>
<td>125 – 150 Interspersed with higher or lower tempos</td>
</tr>
<tr>
<td>Interval – Deep Water</td>
<td>100 – 130 Interspersed with 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 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 occasionally 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 in shallow water 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.

See Terminology section for more information on Arm Positions in Shallow Water Aquatic Exercise.

The hands are primarily utilized under the water in deep programming. They play a vital role in maintaining stability.
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 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.

Hand-held buoyancy equipment may be utilized for additional upper body resistance in both shallow and deep-water programs. If hand-held buoyancy equipment is used, AEA recommends that options are provided for participants with special needs and that periods of training with the equipment submerged are limited and/or frequent breaks are incorporated. Maintain neutral alignment of the wrists and avoid tight gripping of the equipment. Carefully observe and cue to assure that proper alignment of the shoulder girdle is maintained—scapular depression reduces the risk of impingement in the shoulder capsule. Carefully observe and cue to assure that proper alignment of the shoulder girdle is maintained.

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.

Professionalism should be considered when selecting exercise attire.

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 additional 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.

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 Cardio Pulmonary 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 and know his/her role in the plan.

AEA recommends that all Aquatic Fitness Professionals teaching/training in private pools develop an Emergency Action Plan. 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
• Install grounded outlets around pool areas to reduce 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 the length of classes.
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 optimum working space for deep-water exercise is a little larger than shallow water, because deep-water participants have a tendency to drift and float. 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. For an optimal situation, determine the maximum class size by calculating the square footage of deep water pool space and divide by 32.

AEA recommends that classes be taught with a lifeguard in addition to the Aquatic Fitness Professional whenever possible. If this is not possible, the Aquatic Fitness Professional should be properly trained in life saving skills, as he/she will be the primary rescuer in addition to being the program leader. 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.

Thunder/Lightning
AEA has chosen to maintain a conservative approach to lightning safety. Based upon the National Lightning Safety Institute (NLSI) it is recommended that all patrons and facility staff be cleared from the pool and deck area (indoor and outdoor facilities alike) at the first sounding of thunder or first sighting of lightning. Patrons and staff should not re-enter the pool area until 30 minutes after the last sounding of thunder or last sighting of lightning. According to the NLSI, Section 4.7 Personal Lightning Safety – Indoor/Outdoor Swimming Pool Safety, the following plan is suggested:

1. **Recognize the threat** with detection methods such as the TV weather channel, a weather radio and/or seeing lightning/hearing associated thunder.

2. **Identify in advance SAFE and NOT SAFE locations.**
   - SAFE = Dry areas inside permanent buildings
   - NOT SAFE = Near electrical conductors, electrical equipment, metal objects and water, including showers

3. **Take action to suspend activities.** When lightning is within 6-8 miles, evacuate people to safe areas; lifeguards should secure the entrance to the pool deck.

4. **Determine when activities should be resumed.** Wait 30 minutes after the last observed lightning or thunder.

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.
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Shallow Water Aquatic Training
Exercise typically performed in a vertical position in a water depth of waist to chest level. Lower impact than land-based training, but joint loading does occur.

Deep Water Aquatic Training
Exercise performed in water depths that allow the participant to remain vertical and yet not touch the pool bottom providing a truly non-impact workout. Flotation equipment typically utilized to maintain correct alignment.

Body Positions for Aquatic Fitness
- **Supine**
  Lying in a “face up” position. Modified supine position is often incorporated for aquatic abdominal training; hips slightly lower than shoulders and knees/feet.

- **Prone**
  Lying in a “face down” position. More commonly used in swimming strokes than water fitness classes.

- **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, equipment choices and location of leader in relation to student/client.

- **Arm Patterns in Shallow Water Aquatic Exercise**
  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 in a shallow water exercise program.
  - 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 out of the water.
  - Float the arms on the surface of the water.

- **Hand Positions**
  Surface area created by the positioning of the hand while moving the arm through the water will affect the amount of effort required by the associated working muscles.

Impact Options for Aquatic Fitness
- **Grounded/Anchored**
  Grounded or anchored movements are those where one foot remains in contact with the pool bottom at all times.

- **Level I**
  Rebounding type movements where the body pushes off from the bottom of the pool with varying degrees of force. Body position is vertical.

- **Level II**
  Reduced impact option. Modified vertical position where hips and knees are flexed so that shoulders are at the surface of the water (neutral position). Feet still contact pool bottom but without the rebounding/jumping forces.

- **Level III**
  Level II position but with feet elevated off the bottom of the pool (suspended). Simulates deep-water training in shallow water depths. May not be comfortable for non-swimmers.

- **Propelled and Elevated**
  Propelled movements are similar to plyometric training on land. The focus is to propel the body up and out of the water. Elevated moves, such as power or tuck jumps, also utilize acceleration to increase intensity. However, with elevated moves the focus is to forcefully pull the knees toward the chest and then forcefully push the legs away and toward the pool bottom.

- **Water Specific Movement**
  Movements that can be performed in the water but are impossible or considered high risk on land.

Movement Tempos
- **Water Tempo**
  Using the recommended cadence for the program format, a movement is basically performed on every 2nd beat when incorporating 4/4 music with the quarter-note counted as each beat.

- **1/2 Water Tempo**
  Using the recommended cadence for the program format, a movement is basically performed on every 4th beat when incorporating 4/4 music with the quarter-note counted as each beat.

- **Land Tempo or Double Time**
  Performing a movement on every beat. This tempo is generally only recommended for short periods of time and with short lever, stationary movements.
Transitions

• Shallow Water
  ▪ Basic
    A transition where the next move begins where the previous move ended or it passes through neutral alignment. Usually changes from a one-footed move to another one-footed move, or a two-footed move to another two-footed move and is generally performed in the same plane.
  ▪ Intermediate
    This requires more coordination and core strength to pass through the transition and still maintain safe alignment. Safe for the more fit or experienced participant without musculoskeletal or medical conditions. Requires additional cueing skills and choreography planning.
  ▪ Advanced
    Can be considered on programming for fit students or trained athletes. Requires additional core strength and coordination to pass through the transition safely. Many times the body does not maintain neutral alignment. Often involves a change in plane and/or impact level.

• Deep Water
  ▪ Basic Transition (T)
    A transition where the next move begins where the previous move ended, or it passes through neutral alignment.
  ▪ Transition Move (TM)
    This involves adding a simple move (most commonly a Knee High Jog) between two other moves to allow the transition to be safer and more fluid. Transition Moves are appropriate when changing planes or direction of movement.
  ▪ Tempo Transition (Tempo T)
    This style of transitioning involves the used of 1/2 Water Tempo movements in deep-water choreography to aid in smooth transitions. A one-count return to the center position (neutral postural alignment) or a pause center replaces the ‘bounce center’ found in shallow water programming. One can also incorporate “doubles” in Tempo Transitions for deep-water formats.