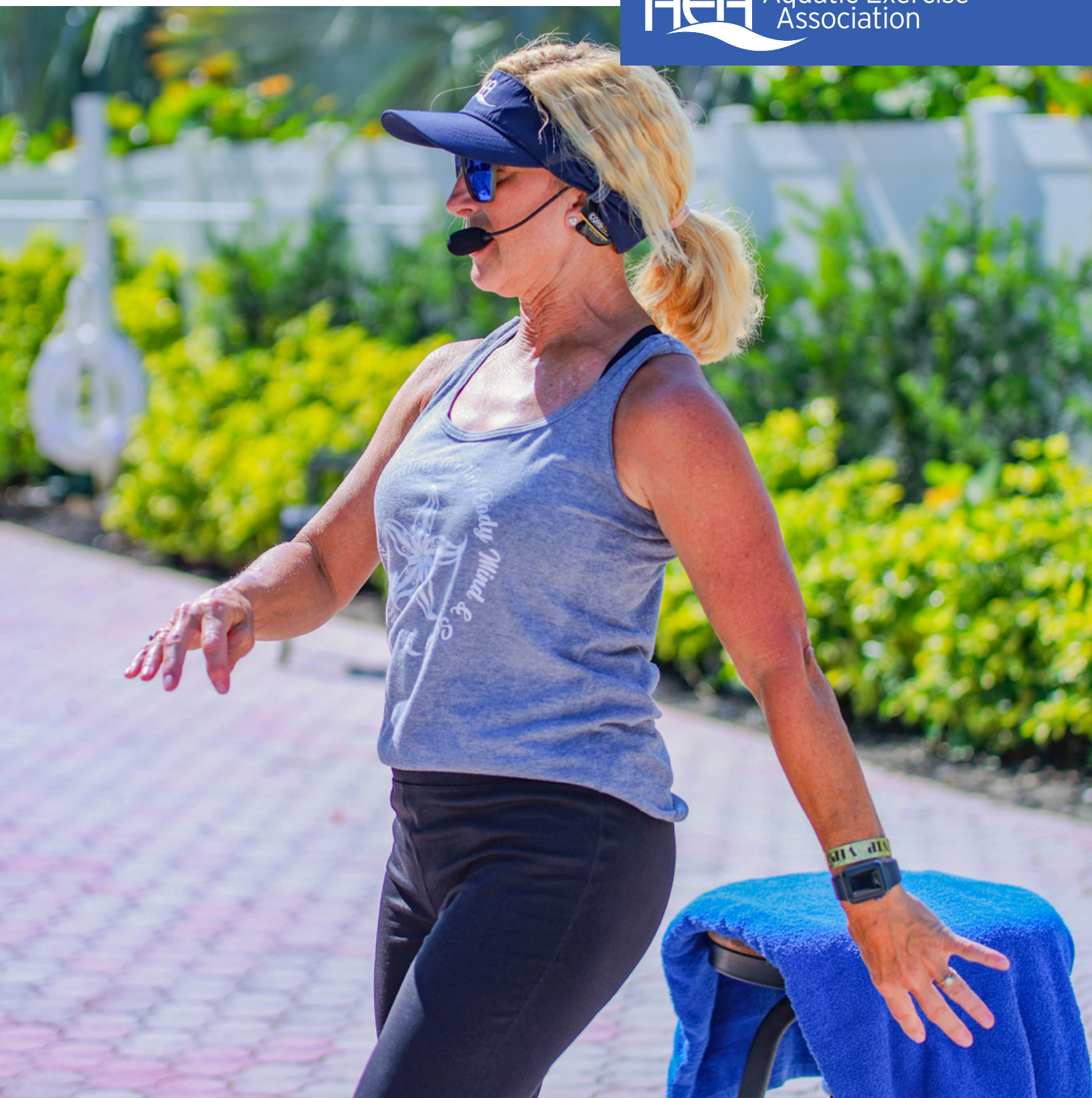
Aquatic Fitness Programming

Standards and Guidelines

Aquatic Exercise Association



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OUR MISSION:
The Aquatic Exercise Association (AEA) is a nonprofit educational organization committed to accessible and inclusive aquatic exercise for better health and wellness worldwide.

OUR PURPOSE:
AEA is committed to increasing awareness, education, and networking opportunities to benefit professionals as well as the general public. With AEA, achieving healthy lifestyles through aquatic fitness is a global team effort. AEA desires to embrace cultural diversity in our industry to ensure that individuals worldwide can enjoy and employ the benefits of aquatic fitness programming regardless of age, ability, goals, or interests.

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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 recognizes and promotes the American College of Sports Medicine (ACSM) Guidelines for Exercise, including when it is recommended to have a physician's approval for initiating exercise or a new exercise program.
- AEA recognizes and promotes the Physical Activity Guidelines for Americans published by the US Department of Health and Human Services.
- For additional aquatic fitness information, recommendations, and research, please consult the AEA Aquatic Fitness Professional Manual, 8th Edition.

Subject Guidelines

Aquatic Programming

Program format, or how the class or session is arranged, is designed around a multitude of factors. You must consider participants' needs and abilities, pool size and shape, equipment availability, session purpose, water temperature, and many other elements relating to the program, the participants, and the environment. Although these factors will help you determine the appropriate formatting for your situation, the basic components of the class or training session will remain somewhat consistent. Based on the American College of Sports Medicine (ACSM) recommendations, each exercise session should include three main components: warm-up, conditioning, and cool-down. Each component serves a physiological purpose to enhance the training process while minimizing risk.

The aquatic warm-up (thermal warm-up, optional prestretch, and cardiorespiratory warm-up) provides physiological preparation for exercise and should last at least five minutes. The conditioning phase consists of the primary exercise mode. Options could include cardiorespiratory training, strength or muscular endurance, flexibility, neuromotor exercise, cognition training, or skill-related training. The conditioning phase may include a mixture of two (or even all six) options, depending on the program purpose and on participants' needs and abilities. The cool-down (cardiorespiratory cool-down and poststretch) follows the conditioning segment and generally consists of 5 to 10 minutes of slower, lower-intensity, controlled movement to help the body recover to preexercise values.

Using these general recommendations for program components, numerous formats can be designed to keep aquatic classes and sessions engaging, provide training variety, and motivate a wide range of participants. Exercise programming is strongly influenced by the dynamic nature of the aquatic environment.

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 and grounding forces, allows participants to maintain proper alignment and control their movements, and to 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 the body can be suspended vertically and is free to move in any direction and speed, without experiencing impact or weight bearing stress. There is no contact with the pool bottom. A pool depth of at least 6.5 feet (2 m) deep will accommodate all participants in a vertically suspended position. Note: Water that is a few inches less than the participant's height will allow deep-water training since the body is suspended with the head above the water's surface.

Transitional depth training is performed in water depth too deep for typical shallow-water exercise but too shallow for conventional deep-water exercise. Typically, water depths between 4 and 6 feet (1.2-1.8 m) based on the height of the participant. The participant may have minimal contact with the pool bottom during some movements but will not be able to rebound. Flotation equipment may be used, and water shoes are recommended because there is often some contact with the pool bottom.

Water Temperature

A water temperature of 83 to 86 degrees Fahrenheit (28-30 °C) is recommended for most moderate- to vigorous-intensity programs. This range allows the body to react and respond normally to the onset of moderate to vigorous exercise and the accompanying increase in body temperature. Physiological changes caused by water temperature are minimal in this temperature range. Cooling benefits are felt as body temperature increases with the level of activity, so there is little risk of overheating when exercising in this temperature range.

In water below 78 degrees Fahrenheit (26 °C), physiological responses are altered. Metabolic rate and heart rate decrease, and the majority of the blood remains near the core of the body to keep the organs warm and functioning. When circulation is reduced to the extremities, the muscles become cold and inflexible, increasing risk of injury during exercise. Reduced circulation related to immersion in cold water also limits available oxygen for the muscles in the extremities, which may lead to muscle cramping.

Water temperatures at or above 90 degrees Fahrenheit (32 °C) also affect physiological responses, including increased internal body temperature, elevated metabolic and heart rates, and increased circulation and fluid distribution. This temperature is too warm for moderate- to vigorous-intensity exercise programs; overheating can occur as heat dissipation is hindered. This temperature is better suited for therapeutic-type activities, Watsu®, and rehabilitation exercises for musculoskeletal injuries. This water temperature also works well for water tai chi, Ai Chi, Pilates, yoga, low-level arthritis-based programming, and stretching.

Each participant will have a temperature preference and will respond differently to aquatic exercise. Encourage participants to self-monitor for comfort and intensity. If they are too warm, they should slow down; if they are too cold, they can increase activity or intensity levels. Also encourage participants to dress appropriately for the pool environment in order to remain comfortable based on the pool temperature and the planned program.

PROGRAM TYPE	RECOMMENDED WATER TEMPERATURE
General mixed population cardiorespiratory training	83-86 °F (28-30 °C)
General mixed population resistance training	83-86 °F (28-30 °C): minimum range
Arthritis	83-90 °F (28-32 °C): general programming 91-94 °F (33-34.5 °C): low intensity
Mind–body formats	86-94 °F (30-34.5 °C)
Older adults	83-86 °F (28-30 °C): moderate to high intensity 86-88 °F (30-31 °C): low intensity
Children (fitness)	83-86 °F (28-30 °C)
Infant (4 and under) or parent-child	90-93 °F (32-34 °C)
Pregnancy	83-86 °F (28-30 °C)
Multiple sclerosis	80-86 °F (26.5-30 °C)
Parkinson's disease	90-92 °F (32-33.5 °C): ideal temperature
Therapy and rehabilitation, general	90-95 °F (32-35 °C) Low function program—cooler temperatures might be more appropriate for higher-intensity programs and specific populations
Cardiac rehabilitation	92-95 °F (33.5-35 °C)

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.

Air temperatures two to five degrees above water temperature will help to prevent participants in the water from becoming chilled. Additionally, maintaining the air temperature as warm as possible will help reduce evaporation, which reduces pool water heating requirements. However, according to the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) guidelines, it is generally recommended that air temperature not exceed 86 degrees Fahrenheit (30 °C). However, some pools, such as those designed for therapy or for swim schools for children, may increase air temperatures for participant comfort.

The general recommendation for indoor pool air humidity is a range of 50 to 60 percent; relative humidity lower than 50 percent can have a chilling effect on participants when they exit the pool (ASHRAE 2023).

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 and 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.

Water & Air 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 Centers for Disease Control and Prevention Model Aquatic Health 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.

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.

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. The AEA Aquatic Fitness Professional Manual, 8th Edition includes current information on ACSM's recommendation for determining maximal heart rate, the Karvonen formula for measuring intensity, and the Kruel Aquatic Heart Rate Deduction for adjusting to the aquatic environment - including worksheets to calculate various formulas

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 effective results.

Music & Movement Tempo

Music is not required for aquatic fitness programming but does offer exercise benefits. Music can be used to motivate, maintain tempo, and achieve a desired intensity. Music can also be used to help achieve a specific response, such as slowed breathing patterns, reduced heart rates, and muscle relaxation. Research has shown that exercising with music has positive effects on psychological (mind), physiological (body), psychophysical (mind–body), and performance aspects.

You must also consider whether the program goal is (1) music/tempo driven with a cadence to follow (e.g., a group exercise class working in synchrony with a choreographed pattern) or (2) intensity driven (e.g., an interval where each participant is cued to work at their maximal effort). Also consider your program goals; not all training is focused on maximal effort. For example, the AEA Arthritis Foundation Aquatic Program (AFAP) focuses on full range of motion for joint health and encourages individuals to self-monitor and self-adjust training, including movement speed.

When using music (or another method to delineate tempo), AEA suggests general beat-per-minute (BPM) guidelines based on feedback from a wide range of aquatic fitness professionals. Programming is broadly delineated into three categories (cardiorespiratory, resistance training, and range of motion) and into water depths (shallow compared with deep, transitional, and multidepth formats).

CLASS FORMAT	RECOMMENDED B P M
Shallow-water cardiorespiratory focus	125-140
Shallow-water resistance training focus	115-130
Shallow-water range-of-motion focus	0-120
Deep-water, transitional depth, multidepth cardiorespiratory focus	115 – 130
Deep-water, transitional depth, multidepth resistance training focus	105-120
Deep-water, transitional depth, multidepth range-of- motion focus	0-110

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. To make the transition between environments, use short levers or streamlined arm and hand positions 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 people. 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, a kickboard, or a set of 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 floatation 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 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.

Professional Attire

AEA recommends the use of water 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 should wear shoes, especially when leading impacting activities, to reduce joint stress, provide stability, and prevent slipping.

Since many aquatic program involve some degree of rebounding, it is important for Aquatic Fitness Professionals, as well as participants, to also 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 to also 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. Professional attire can help foster feelings of inclusion and belonging for all participants without emphasizing gender, age, or body type, shape, or size.

Hydration

The demand for water increases through exercise, heat, and general exertion; therefore, water consumption must also increase. 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. Include water breaks during your aquatic classes or sessions.

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.

Leading from deck can be challenging. 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 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, length of classes, and the degree of leadership versus participation.

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.

A maximum of 20 students per Aquatic Fitness Professional is recommended when an additional lifeguard is not present. In this scenario, the Aquatic Fitness Professional should teach from the pool deck, be certified in water safety and basic water rescue techniques, and understand their role in the facility's emergency action plan. When designated lifeguards are on duty during the class, class size could increase to 50 participants per Aquatic Fitness Professional.

Electrical Safety

Electricity and pool water can be a deadly mix, resulting in injury from electrical shock. Keep electrical devices away from the pool unless they are approved for poolside use and are labeled as safe to use around water with a sticker from NSF International, UL Solutions, or a similar organization. Refer to the CDC Model Aquatic Health Code, which is based on the latest science and best practices; this detailed resource can help ensure healthy and safe experiences in public pools.

Lightning is another potential risk associated with electrical shock. There is no safe place outdoors during a lightning storm; clear everyone from an outdoor pool and the surrounding deck area. When possible, move everyone inside and away from the water. Once indoors, individuals should stay away from the metallic plumbing system that can conduct electricity (they should not take a shower), avoid the use of landline telephones, and avoid exiting the building into an unprotected parking lot. Although there are variations in protocols for indoor pools, some 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. Ultimately, you must comply with state, county, and local safety codes. In an electrical storm, adhere to safety policies and know your role in the EAPs for all facilities where you work or train.

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 programs 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 their role in this plan.

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, training, 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 their 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.

Diversity, Equity, Inclusion, and Accessibility

Our goal is to create a welcoming atmosphere where people feel accepted, comfortable, and empowered to achieve their personal health or fitness goals within the aquatic environment. Whether working one on one with a client, offering small-group sessions, or leading group exercise classes, it is important to recognize and mitigate potential barriers to exercise participation. Create an environment that allows everyone to feel comfortable and experience the benefits of movement in the water.

Diversity, equity, and inclusion (DEI) represents closely linked values designed to support different groups of people within society, within an industry, or within a company or association. These values are key to expanding the scope of wellness to all individuals, owing to the interconnectedness of social factors and issues that affect health. Applying DEI to exercise and fitness involves the collaboration of the industry, educational organizations, facilities, and professionals. The AEA Code of Ethics and Conduct for Aquatic Fitness Professionals (AEA 2025) encourages DEI on an individual level.

Accessibility to exercise programs may be influenced by geographic barriers (safe locations for walking), financial barriers (affordable programs), physical barriers (entrance to facility dressing rooms and pools and appropriately sized and designed equipment), or even barriers to achieving specific exercises (need for additional support or assistance with balance).

Terminology

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.

Multidepth Programming

Aquatic exercise that utilizes shallow water, deep water, and possibly transitional depths, within the same program. Participants might in various depths based upon preference or available space, or the program could be designed to move to different depths for different activities.

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 the 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.

Base Moves

Base moves are the smallest parts or segments in choreography or movement patterns and can be modified or changed to create intensity and variety. Base moves for exercise design typically focus on a movement of the lower body. In shallow water, the three lower body base move categories are:

- Moves that land on alternating feet
- Moves that land on both feet (jump)
- Moves that land repeatedly on one foot (hop)

In deep water, participants will not land on their feet. Instead, participants move using the pool bottom as a reference for foot placement. Therefore, deep-water base movements are categorized as:

- Moves that use an alternating foot pattern
- Moves that use a double-foot pattern, in which both legs or feet simultaneously perform the same or opposition action
- Moves that use a repeated single-foot pattern

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

Impact level and intensity are not directly related— you can achieve various levels of intensity at all impact options.

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.

Since deep-water movements are suspended, all exercises are nonimpact. However, the body position can be altered to mimic shallow-water impact options. This can be helpful when instructing multidepth programs.

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 Transition

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 Transition

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 Transition

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.