Water Temperature – AEA Guidelines

Water varying from 83-86 degrees Fahrenheit (28-30 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.

Specialized populations may require specific water temperatures for safe and effective programming. Some general guidelines are as follows:

Swim Team & Lap Swim	78 – 82 F = 25.5 – 27.5 C	Slightly warmer may be workable
Resistance Training	83 – 86 F = 28 – 30 C	
Therapy & Rehab	91 – 95 F = 33 – 35 C	Can be as low as 87 F for many types of therapy
Multiple Sclerosis	80 – 84 F = 26.5 – 29 C	Warmer water can cause adverse affects
Pregnancy	78 – 84F = 25.5 – 29 C	Warmer water can cause adverse affects
Arthritis	84 – 88 F = 29 – 31 C 86 – 90 F = 28 – 32 C	Arthritis Foundation minimum ATRI low function program
Fibromyalgia	86 – 96 F = 30 – 35.5 C	ATRI
Aerobic activity	84 – 88 F = 29 – 31 C	Arthritis Foundation
Older adults - vertical	83 – 86 F = 28 – 30 C 86 – 88 F = 30 – 31 C	Moderate to high intensity Low intensity

Children, fitness	83 – 86 F	=	28 – 30 C	
Children's swim lessons	82+ F	=	27.5+ C	Varies with age and class length
Obese	80 – 86 F	=	26.5 – 30 C	

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.

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 requires constant monitoring.

For more specific design questions, please contact Mick Nelson with USA Swimming.
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