

## **Aquatic Therapy and Rehabilitation Industry Standards**

A multidisciplinary committee of aquatic therapy professionals has created Standards for the Aquatic Therapy and Rehabilitation Industry. The project was completed over a two-year period, with written and oral input from therapists across the US and Canada.

The committee was made up of representatives from various disciplines including Physical Therapy, Occupational Therapy, Kinesiotherapy, Recreation Therapy, Athletic Training, Exercise Physiology, Aquatic Exercise, Massage Therapy, Physical Education and Adapted Aquatics. In addition, representatives of therapy management, the YMCA, the Arthritis Society, aquatic safety, aquatic and therapy academics, the legal profession and the Canadian therapy industry served on the committee to add their perspective to the project.

The goal of the Standards Committee was "to create standards for aquatic therapy and rehabilitation practitioners that, if these base criteria are met, will demonstrate the knowledge to provide clients with safe aquatic therapy and/or rehabilitation."

The committee began by developing this definition: "Aquatic Therapy and Rehabilitation is the use of water and specifically designed activity by qualified personnel to aid in the restoration, extension, maintenance and quality of function for persons with acute, transient, or chronic disabilities, syndromes or diseases."

After the definition was finalized, these standards were developed:

**I. Aquatic therapy and rehabilitation practitioners should have knowledge of Movement Mechanics and Science (anatomy, physiology, kinesiology and biomechanics) including knowledge of the cardiovascular, respiratory, circulatory, nervous, muscular and skeletal systems and their collective interactions; knowledge of basic anatomy, physiology and kinesiology concepts; knowledge of basic health care terminology; and knowledge of body terms, positions and movements.**

**II. Aquatic therapy and rehabilitation practitioners should have knowledge of aquatic principles including variations to movement quality using aquatic and physics concepts correctly, knowledge of how to choose equipment based on client need and goals, and knowledge of practical skills in aquatic therapy and rehabilitation.**

**III. Aquatic therapy and rehabilitation practitioners should have knowledge of basic principles and methods used in aquatic therapy and rehabilitation including indications, contraindications, precautions and opportunities for aquatic therapy and/or rehabilitation; knowledge of the client evaluation process; and knowledge of the treatment and prevention components.**

**IV. Aquatic therapy and rehabilitation practitioners should exhibit professional responsibility, including the proper education, certification, and/or license and training or their equivalent; knowledge of the allied health field; and knowledge of legal, ethical practices.**

**V. Aquatic therapy and rehabilitation practitioners should demonstrate health and safety consciousness by maintaining current certifications and training; they should be familiar with supervisory guidelines and possible emergencies; they should be able to maintain an overall risk management program, and personal and client safety.**

**VI. Aquatic therapy and rehabilitation practitioners should have knowledge of applicable regulations and legal considerations; comply with all applicable codes and laws relating to aquatics, therapy and rehabilitation; know and apply the limits of practice as they relate to base competencies within the medical system; and generally know basic reimbursement factors.**

Full definitions of each standard are available below.

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**AQUATIC  
THERAPY  
AND  
REHABILITATION**

***STANDARDS  
FOR  
THE  
INDUSTRY***

AQUATIC THERAPY & REHAB INSTITUTE, INC.

[www.atri.org](http://www.atri.org)

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# **STANDARDS FOR THE AQUATIC THERAPY AND REHABILITATION INDUSTRY**

**I. Aquatic therapy and rehabilitation practitioners should have knowledge of Movement Mechanics and Science (anatomy, physiology, kinesiology and biomechanics) including knowledge of the cardiovascular, respiratory, circulatory, nervous, muscular and skeletal systems and their collective interactions; knowledge of basic anatomy, physiology and kinesiology concepts; knowledge of basic health care terminology; and knowledge of body terms, positions and movements.**

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**I. Aquatic therapy and rehabilitation practitioners should have knowledge of Movement Mechanics and Science (anatomy, physiology, kinesiology and biomechanics) including knowledge of the cardiovascular, respiratory, circulatory, nervous, muscular and skeletal systems and their collective interactions; knowledge of basic anatomy, physiology and kinesiology concepts; knowledge of basic health care terminology; and knowledge of body terms, positions and movements.**

**they should be able to apply basic anatomy, physiology and kinesiology concepts including but not limited to**

Cardiorespiratory/circulatory

venous return  
central venous pressure  
pulmonary blood flow physiology  
maximal myocardial oxygen consumption  
cardiac output  
oxygen consumption  
stroke volume

Neuromuscular/skeletal

planes/axes  
levers  
articulations  
muscle balance  
physiological principles  
physical fitness components  
principles of training  
joint range  
muscular contractions  
central and peripheral nervous systems changes  
major postural deviations (including consideration of general landmarks) and potential injury  
proper body alignment (static and with movement in and out of the water)

**they should be able to use basic health care terminology including but not limited to**

basic references and standards  
basic structure (prefixes, suffixes, abbreviations and acronyms) of medical terminology  
terminology pertinent to disease conditions encountered in the Aquatic Therapy and Rehabilitation setting

**and they should be able to describe body terms, positions and movements including but not limited to**

anterior / posterior / superior  
ventral / dorsal / lateral / medial / supine / prone  
sagittal / frontal (coronal) / transverse / multiplanar / anatomical position  
flexion / horizontal flexion / extension / horizontal extension / hyperextension /  
agonist / antagonist

abduction / adduction / horizontal abduction / horizontal adduction /  
circumduction  
rotation / opposition / dorsiflexion / plantar flexion  
supination / pronation / inversion / eversion / elevation / depression  
concentric / eccentric / inferior  
proximal / distal

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**II. Aquatic therapy and rehabilitation practitioners should have knowledge of aquatic principles including variations to movement quality using aquatic and physics concepts correctly, knowledge of how to choose equipment based on client need and goals, and knowledge of practical skills in aquatic therapy and rehabilitation.**

**they should be able to apply variations to movement quality using aquatic and physics concepts correctly including but not limited to**  
resistance

drag forces	frontal area/bow wave	surface tension
turbulent (resistant) flow	laminar (streamlined) flow	viscosity
eddy drag	skin friction	tail suction
Bernoulli's principle		

buoyancy

specific gravity	Archimedes principle	buoyancy resisted
force absorption	buoyancy assisted	buoyancy supported
center of gravity	center of buoyancy	relative density
suspended moves	rebound moves	

acceleration

mass	speed	force
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fluid properties

hydrostatic pressure	specific heat	thermal conductivity
refraction	Pascal's law	

physics concepts relating to water

action vs. reaction	leverage	range of motion
traction	inertia	momentum

**they should be able to choose equipment based on client need and goals by**  
knowing the indications and contraindications of general aquatic equipment  
being familiar with the principle underlying selected equipment  
being familiar with equipment rationale and protocols

**they should know practical skills in aquatic therapy and rehabilitation such as**  
role of positioning  
specific functional biomechanics  
body alignment  
breath control

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**III. Aquatic therapy and rehabilitation practitioners should have knowledge of basic principles and methods used in aquatic therapy and rehabilitation including indications, contraindications, precautions and opportunities for aquatic therapy and/or rehabilitation; knowledge of the client evaluation process; and knowledge of the treatment and prevention components.**

**they should know the indications, contraindications, precautions and opportunities for aquatic therapy and/or rehabilitation through but not limited to**  
the basic pathologies and conditions and their response to immersion  
the effects of hydrophysics on bone density; circulation; muscle tone and balance; the visual, auditory and tactile senses; urine output and spasticity  
the application of hydrophysics for treatment  
the utilization of patient position changes to vary treatment effects  
the positive lifestyle change enhancement (recreational, social, fitness) and appropriate community based referrals

**they should be able to describe the client evaluation process, including but not limited to**  
clinical and aquatic assessment of client situation  
functional improvement goals for both water and land  
program development  
treatment and intervention prioritization related to functional activity needs of the client

**they should be aware of treatment and prevention components including but not limited to**  
the purpose of each activity  
the quantification of short term and long term goals  
the procedures, equipment, frequency, duration and intensity of treatment  
the referral to other professionals in treatment program as appropriate  
listing examples of suggested protocols and/or treatment techniques for the identified dysfunction

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**IV. Aquatic therapy and rehabilitation practitioners should exhibit professional responsibility, including the proper education, certification, and/or license and training or their equivalent; knowledge of the allied health field; and knowledge of legal, ethical practices.**

**they should have the proper education, certification, and/or license and training** and continually expanding knowledge

**they should understand the allied health field including**

the treatment role of various allied health professionals in the care of the client  
the ability to make effective and timely referrals as defined by each discipline's professional organization

**they should follow legal, ethical practices including**

respecting confidentiality  
complying with laws and regulations  
practicing informed consent, non-discrimination, beneficence ("do no harm"), and fiduciary responsibility to the consumer  
acknowledging patient concerns, rights, and responsibilities  
reasonable and appropriate consumption of resources  
appropriate documentation

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**V. Aquatic therapy and rehabilitation practitioners should demonstrate health and safety consciousness by maintaining current certifications and training; they should be familiar with supervisory guidelines and possible emergencies; they should be able to maintain an overall risk management program, and personal and client safety.**

**they should have current certifications and training to demonstrate professionalism** with certification by a national organization recognized in their discipline, in the field of aquatic therapy and an emergency certification.

**they should have the ability to maintain personal safety and client safety** including awareness of immersion time, thermoregulatory issues, transfers, entry and exit, equipment and body positioning, and communication avenues.

**they should have knowledge of supervisory guidelines** including surveillance issues and requirements, precautions and contraindications, infection control policies, and understanding of bioethics.

**they have responsibility to recognize emergencies** and precursors to emergency situations including the knowledge to perform facility evaluations and daily inspections with regards to safety, water chemistry, air and water temperatures, humidity, and pool closure factors.

**they should understand and implement an overall risk management program** including legal issues, rescue plan, extrication options, ADA and OSHA requirements, state/local codes, and an Emergency Action Plan (EAP) written in compliance with guidelines.

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**VI. Aquatic therapy and rehabilitation practitioners should have knowledge of applicable regulations and legal considerations; comply with all applicable codes and laws relating to aquatics, therapy and rehabilitation; know and apply the limits of practice as they relate to base competencies within the medical system; and generally know basic reimbursement factors.**

**they should comply with all applicable codes and laws relating to aquatics, therapy and rehabilitation by**

meeting the standards of care from both the aquatic and therapy/rehabilitation professions

being covered by corporate, facility and/or individual personal liability insurance  
knowing the plan of facility operation including outlined policies and procedures with defined structure, process and outcome criteria

citing the department of health regulations (city, county, state) regarding pool and therapy pool facility requirements

following state practice guidelines regarding activity restricted to a specific profession

having medical information forms for physician referral

**they should know and apply the limits of practice as they relate to base competencies within the medical system**

with a plan for continuity of care through collaboration with other professionals

stating limits of professional qualifications

in knowing legal limits, operating within those limits, and referring to other professionals when necessary

regarding "best practice" treatment plan within a health care continuum

**they should know basic reimbursement factors including but not limited to**

which services are generally private pay and which are reimbursable

how to document outcomes

terminology for Managed Care, PPO's, HMO's, medicare, workman's compensation and per diem reimbursements

how to determine competitive and reasonable rates for private pay clients

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**The Standards and Steering Committees utilized the following as their definition of Aquatic Therapy and Rehabilitation:**

*The use of water and specifically designed activity by qualified personnel to aid in the restoration, extension, maintenance and quality of function for persons with acute, transient, or chronic disabilities, syndromes or diseases.*

These standards are designed to separate the aquatic therapy practitioner from land-based therapists and from aquatic fitness professionals.

These standards should allow all practitioners in the field to bring themselves to a base level of knowledge in all six categories. Practitioners with different backgrounds will find themselves above or below standards in different categories. For instance, a Physical Therapist practicing in a clinic may fall short in the "Aquatic Principles" or "Health and Safety" categories where an Adapted Aquatics instructor practicing in the schools may fall short in "Principles and Methods Used in Aquatic Therapy."

Practitioners in some disciplines will have more extensive knowledge in specific categories. Each discipline will continue to specialize and have specific discipline standards, licenses, credentialing, and certifications.

Conforming to Standards does not make a practitioner an aquatic therapist.

The Standards and Steering Committees members are listed on the previous pages.

### **THE AQUATIC THERAPY & REHAB INSTITUTE, INC.**

The Aquatic Therapy & Rehab Institute, Inc., is a nonprofit educational organization dedicated to the professional development of health care professionals involved with aquatic therapy. ATRI offers continuing education courses at conferences and workshops that will advance the knowledge and skills of the aquatic therapist.

ATRI provides information to the public on aquatic therapy topics.

ATRI works with organizations whose members are health care professionals to serve them in the area of aquatic therapy.