Aquatic Inclusion Strategies

DISABILITY	CHARACTERISTICS	INCLUSION STRATEGIES
ADD/ADHD – ADD causes chronic inattentiveness, ADHD causes hyperactivity along with inattentiveness.	• Often fidget and squirm. • Display excessive physical activity • Have difficulty waiting turn. • May not grasp or understand the complete picture. • May concentrate on something extraneous. • Can be highly imaginative and creative. • Are often confused about what to do or what directions mean.	• Give only one or two directions at a time (giving visual examples and having students repeat a direction is helpful). • Set up/stick to a routine. • Avoid distracting stimuli when teaching skills (toys, equipment not being used). • Communicate with family frequently about techniques for controlling behavior.
Amputation – absence or loss of limb or portion of limb (congenital = at birth, acquired = loss or removal after birth)	• Balance is affected by loss of limbs. • Functioning ability is influenced by number of missing limbs, level of amputation, and portion of the limb remaining. • May need assistance entering and exiting pool (removing/replacing artificial limbs	• To overcome balance and/or propulsion deficits use devices like handheld floats, kickboards, fins or hand paddles. • During water adjustments (to adapt to perceptual impairments) do underwater activities, negotiating obstacles, and moving in varying water depths. • Breathing occurs as the swimmer turns opposite the intact or strong side or as swimmer thrusts forward and lifts head.
Arthritis – inflammation of the joints causing movement limitations, swelling, stiffness, redness and pain in the joints.	• Movements that increase joint pain, such as fast-paced kicking, are contraindicated. • Increased water and/or air temp and water resistance contribute to fatigue.	• Warm water has been proven to be beneficial. • Warm water exercises performed with a slow steady rhythm relieve stiffness, reduce pain, and joint swelling, and increase range of motion and strength.

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Autism – developmental disability affecting verbal and nonverbal communication and social interaction, responses to sensory experiences also affected	• Sensory overload from excessive noise, light, reflection, waves may result in resistive behaviors and withdrawal. • Tendency to avoid touch. Restrict use of flotation devices and assistance from instructor.	• Allow swimmer to return to referent point after successful task completion. • Nonverbal communication and physical prompting are most effective. • Toys hold attention and aid instruction. • Warm water reduces sensory overload. • Repetition and consistency helps teach safety!
Cerebral Palsy – nonprogressive lifelong physical disorder affecting movement caused by malfunction or damage to the brain	• Spasticity: hypertension, muscle contractures, scissor gait, jerky movements, postural deviations. • Athetosis: uncontrollable constant involuntary movement (intensify with excitement). • Ataxia: balance deficits, uncoordinated movements, staggered walking, poor muscle tone. • Rigidity: stiffness, hyperextension of body parts, muscle tightness. • Tremor: involuntary, uncontrolled, rhythmic pendular appearing movements. • **(can be a combination of all)**	• Warm water is desirable (86-90 deg.). • In chest deep water, assisted walking and bobbing are accomplished (enhancing mobility and respiratory endurance). • Use flotation devices to allow for independent movements (Floatbelts help for vertical position, noodles and barbells for horizontal). • Slow symmetrical movements are easier (whip kicks, sculling, breaststroke, elementary backstroke).
Cerebral Vascular Accident (Stroke) – disorder caused by stoppage of blood circulation to part of the brain. Right side brain damage causes left hemiplegia or paresis (weakness); Left side brain damage causes right hemiplegia or paresis.	• Person who is left hemiplegic experiences diff. interpreting visual information, orienting to the env., performing perceptual motor skills. • Person who is right hemiplegic experiences difficulty understanding spoken and written language, retaining, recalling and recognizing info. • Both right and left brain damage cause visual neglect, contractures, spasticity, seizures, and shoulder sublaxtion.	• Warm water and water walking reduces spasticity, increases strengths, stamina, range of motion and endurance. • Nonverbal communication cues are used so proper interpretation takes places. • Continual practice of returning to either a vertical or horizontal position in the water helps participants feel more comfortable in the water.

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DISABILITY	CHARACTERISTICS	INCLUSION STRATEGIES
Developmental Disability – lasting disability which is caused by a mental or physical impairment, results in substantial functional limitation in 3 or more areas: self care, receptive/expressive language, language, learning mobility, self direction, capacity for independent living, and economic self sufficiency	• Language delays/verbal deficiencies • Lower level of physical fitness • Less accurate in motor skills • Medical concerns may exist.	• A circle formation provides structure and opportunity for modeling others. • Establish routine, structure, and compliance with safety rules. • Synchronize verbal directions with demonstration.
Down's Syndrome – chromosomal disorder causing heart abnormalities, some degree of mental retardation, and distinctive physical features of broad/short skull, small ears, broad hands with short fingers	• Low muscle tone and loose joints • Reach developmental milestones later than other children their age. • Most have mild to moderate mental retardation • May be delays in speech and self care	• Showing examples when giving directions is very helpful. • Use repetition. • Games and challenges help motivate the student to work on skills.
Epilepsy/Seizure –a convulsive disorder marked by seizures and periodic lapses of consciousness	• Some people will experience a sensation called an "aura" which tells them when a seizure is coming. • *tonic clonic* – includes loss of consciousness, convulsions, salivation, yelling, jerky movements • *absence seizures* – staring or smiling (appearance of day-dreaming), droopy head, jerky movements, twitching arms and shoulders, rolling eyes or no reaction to dropping an object	• Extreme temp. changes, excitement, intense reflections off the water, and hyperventilation can trigger seizures. • If seizure occurs in the water the primary need is to keep the participants face above water so breathing occurs. • Seizures use energy so the time allowed to swim should be adjusted to avoid fatigue.

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DISABILITY	CHARACTERISTICS	INCLUSION STRATEGIES
Hearing Impairment – describes a hearing loss which interferes with the ability to communicate with others **Deaf** – a person who is unable with or without a hearing aid to process linguistic information **Hard-of-Hearing** – a person who is unable without a hearing aid to process linguistic information	• May lack proper speech development. • Hearing aids are usually removed when swimming. • May use a variety of techniques when communicating (sign, lip read, and oral speech with sign). • Going underwater causes pressure in the ears so the swimmer may not appear apprehensive prior to a bob but upon recovery may exhibit fear.	• Demonstration, guided discovery, and modeling are used more than verbal communication. • Instructor should position themselves close to participant, have participant come to front of class. • Enunciate clearly, and face the participant when talking. • Learning basic ASL, finger spelling, and/or common words such as “look,” “stop,” “go,” “yes,” “no,” “float”, “kick”, etc. will be extremely useful.
Learning Disability – specific developmental disorder resulting in inadequate development in language, speech, motor skills and specific academic subjects like math or writing	• May tend to be highly distracted. • Can have a low frustration tolerance. • Visual and auditory memory deficits, and perceptual motor deficits.	• Include a review of skills from previous session each meeting. • Focus on general form rather than precision, as frustration builds and diminishes attention when coordination is emphasized. • A circle formation provides structure and opportunity for modeling others. • Establish routine, structure, and compliance with safety rules. • Synchronize verbal directions with demonstration. (show how to use arms for front crawl as you discuss it). • Give positive feedback throughout each meeting.
Mental Retardation – lifelong cognitive impairment evident with sub average intelligence and limitations in self care and Activities of Daily Living.	• Possess limited social skills. • Don’t retain learning for long periods of time. • Have short attention spans.	• Use repetition and review, but avoid have the student work too long on one skill. • Physical guidance along with verbal cues will aid swimmers in learning new skills.

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Multiple Sclerosis – chronic, degenerative disease of the nervous system, characterized by periods of exaggeration and remission with progressive disorder resulting in muscle weakness and movement limitations (nerve endings become scarred and messages from the brain to the muscles are interrupted)	• Participants tire more easily after exertion. • Warm water is not easily tolerated (above 86 degrees). • As disease progresses seizures, spasticity, and tremors in the lower limbs occur. • Length of illness and stage of intensification or remission affect cognitive and motor functioning.	• MS water walking enhances endurance and reduces muscle stiffness. • Relaxation, stretching, stretching and breathing exercises reduce muscle tension. • Demonstration accompanied by verbal information ensures comprehension. • When beginning a program give participant frequent breaks, to reduce overexertion.
Muscular Dystrophy – progressive disorder resulting in muscle weakness and movement limitations	• As the disease progresses, mobility, self-care, and fitness are reduced and participants become susceptible to respiratory infections. • Lack control and strength in muscles. • With weakness in the neck and shoulders, the participant experiences difficulty raising the face out of the water to breathe.	• Range of motion exercises and movement exploration counter joint deformities. • Floats add stability and enable use of remaining limb function. • Fatigue exacerbates progression of the impairment so intermittent rest periods should be incorporated.
Paralysis/Spinal Cord Injury – Loss of sensation, voluntary motion, or both. **Hemiplegia** – Motor and sensory paralysis of one side or half of the body **Paraplegia** – Lesion of the spinal cord resulting in complete or incomplete loss of sensation and movement in legs and the lower trunk **Quadriplegia** – lesion of the spinal cord resulting in complete or incomplete loss of sensation/ movement in all four limbs.	• Water pressure on chest wall negatively affects breathing and causes fear. • With high level injuries, little neck and head control is present so staff stands behind the participant's head, grasping the shoulders and bracing the head between their lower arms. • A participant's response to staff and the aquatic experience us affected by emotional state; depression, anger, fear, and low self-esteem result in lower enthusiasm and motivation.	• Monitor fatigue level by observing tremors, pulse rate, change of color in face and extremities. • Water walking, stretching , and pushing against resistance counter contractures and develop upper torso strength. • Balance and buoyancy problems and drag created by nonfunctioning limbs are managed by using arm and leg floaties. • Warm water promotes relaxation and helps to offset spasticity.

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Spina Bifida – several degrees of spinal cord defect noted at birth that can result in a loss of sensation, bowel and bladder control, and limb control from lesion level downward	• Depending on type of Spina Bifida motor and sensory impairments may be evident. • Paralysis and loss of sensation n the lower extremities result. • The bones of the lower extremities fracture easily so care is taken to protect against injury/damage. • If there is an imbalance between upper and lower body weight, participants have a harder time with balance in the water.	• Floatation devices are used to offset balance problems. • Bilateral strokes and underwater recovery are more effective (breaststroke and elementary backstroke). • During initial classes, participants should practice losing and regaining upright, supine, and prone positions to ensure breath control and water safety.
Traumatic Brain Injury – an insult to the brain by an external force that produces an altered level of consciousness and temporary or permanent impairment of function	• Left brain injury or right hemiplegia affects language and comprehension; response to new situations is slow, disorganized and anxious. • Right brain injury or left hemiplegia affects judgment and visuo-perceptual functioning; persons tend to be self-centered, overestimate their abilities, deny their impairments, and are insensitive to the needs of others. • Perceptual deficits affect balance, depth perception, and awareness of self in relation to objects and others. • As the level of cognitive function improves, less structure, fewer demands (more choices), and less one-on-one supervision are needed.	• Warm water helps relaxation and reduces spasticity, yet contributes to fatigue so time in the water should be closely monitored. • Affective teaching strategies: Repetition, modeling (showing them the skill first), physical cues combined with verbal cues, behavior management, and frequent redirection of behaviors and reinforcement.

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DISABILITY	CHARACTERISTICS	INCLUSION STRATEGIES
Vision Impairment – limited vision in which, even with correction, requires modification or adaptation **Blind** – a person with less than 20/200 visual acuity in the better eye or less than 20 degree field of vision after correction	• Many persons with visual impairments perceive light or motion. • Balance and coordination may be affected. • Limited mobility may interfere with social interaction.	• Directional cues like relationship of objects to the numbers on the face of a clock help independent mobility. • The swimmer might count the number of steps from end to end or the number of strokes from side to side. • Establishing an auditory warning cue prior to instruction helps independence and safety. • Tactile and auditory sensations are used with demonstration. The instructor describes the course of action prior to assisting the swimmer. • Talk to the participant when ears are out of the water. • Allow the student time to familiarize/orient themselves to the pool, pool deck, and facility prior to first meeting.