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ABSTRACT

Because of the relative weightlessness factor, water exercise is an excellent low-impact aerobic activity for people with physical difficulties. Participants should inform their physicians of intentions to begin aquatic exercise, and physicians should advise participants that water exercise is exertive. Program instructors must be prepared to handle minor and major medical emergencies. Special populations tire sooner, so staff should understand sources of fatigue. Aquatics for special populations should progressively overload with regard to intensity, duration, and frequency, but never to the point of fatigue. Several reasons exist for keeping people out of a program (e.g., open wounds, infections, and fear of water). Proper spinal alignment is essential. New participants should stay in shallow water and hold on to the edge, gradually moving to deeper water. Water temperatures should vary from 82-96 degrees Fahrenheit to maintain its therapeutic effects. Program leaders should get to know students and determine their personal fitness goals. They must set clear objectives, offer assistance, work participants at their own pace, be proactive, and avoid situations that may cause problems. Safety is essential. Quality instructors should have good interpersonal interaction skills, use positive reinforcement frequently, and be optimistic, offering praise and encouragement. (SM)

WORKING THE CONTINUUM BETWEEN THERAPY AND EXERCISE

Because of the relative weightlessness of participants, water exercise is an excellent low-impact aerobic activity for people who are experiencing some physical difficulty. Most aquatic exercisers lose 60 to 90% of their body weight by exercising in the water. With every footfall on land, the legs bear 2 to 5 times the body weight. A participant exercising in the water will have very little body weight and very little impact due to the lessened effect of gravity. Since exercisers are protected by the cushioning effect of the water, injuries and stress are far less likely to occur than with land-based exercise. This makes water the exercise medium of choice for those millions of people who are overweight, pregnant, suffering from arthritis, back or knee pain, those needing rehabilitation or therapy or those recovering from recent surgery or childbirth.

GENERAL PRECAUTIONS

HEALTH HISTORY AND PHYSICIAN'S APPROVAL

Although water exercise is one of the safest ways to work out, participants should be advised that this is an exertive program. All participants should inform their physician of their intention to take part in aquatic exercise. Exercisers with a history of any type of medical problem should obtain their physician's approval along with possible suggestions to adapt the program to the individual's needs. It is vital to have every participant fill out a health history form. Physician's approval forms will not only protect the agency in case of libel, but also give the program more credibility with the participant and physician, and give suggestions for modifications.

If exercisers experience pain during any workout, they should be advised to stop exercising and walk slowly in place. Participants may become nauseated, red faced or breathless, experience extreme weakness, profuse sweating, chest pain or discomfort, lightheadedness or dizziness, feel excessively fatigued, experience focused musculoskeletal discomfort, ataxic

(unsteady) gait or confusion. These symptoms are all more common when working with special populations. Staff needs to be prepared to handle minor and major medical emergencies. CPR, First Aid, and Emergency Water Rescue certification are strongly recommended.

LIKELY PROBLEMS

Special Populations tire sooner. The staff should understand the sources of fatigue so the symptoms listed above can be eliminated.

Hyperthermia

Hyperthermia is overheating of the body which can happen in warm water, warm air, high humidity or poor air circulation. The participant will feel an overall loss of energy. Many special populations tend to have poor circulation and weak thermoregulatory systems. Pay special attention to pregnant women, the obese, fibromyalgia, and MS patients, the elderly, and children.

Glycogen Depletion

Glycogen depletion causes graduated and overall fatigue. Keep the workout at low to moderate intensity for short periods and gradually overload to avoid glycogen depletion. The body gradually learns to have more glycogen on hand and to create more more easily.

Musculoskeletal Fatigue

Musculoskeletal fatigue is often recognized by a pain in a bone, joint, or muscle. Overuse of any one exercise movement can cause musculoskeletal fatigue. Balance the number of reps with fatigue and success in mind.

Lactic Acid Accumulation

Lactic acid accumulation, "the burn," comes on relatively fast and is usually very focused in one particular muscle group. It usually occurs from too many reps. Lactic acid accumulation can be avoided by shortening the duration and intensity of the workout. It can also be avoided by varying the exercise, moving slower, or at a lower intensity.

SPECIAL CONSIDERATIONS

Aquatics for special populations should progressively overload with regard to intensity, duration and frequency. Exercise should never be executed to the point of fatigue. The setting should be relaxed and informal rather than demanding. Full, controlled movements should be substituted for choppy, jerky ones. Anything that causes pain should be stopped immediately and replaced with another move. Keep any medication at the pool edge.

The following should be considered as reasons not to include someone in the program:

*open wounds and sores and wound seepage

*soft tissue infections

*urinary tract infections

*uncontrolled cardiac problems

*allergies to pool chemicals

*fever or other illness

*uncontrolled seizures

*lack of adequate waterproof dressing

*fear of water

Use proper spinal alignment. Seen from the side, the spine has three natural curves. The curves that move toward the front of the body are called lordotic curves and are located in the cervical area of the spine (neck) and the lumbar area of the spine (low back). The curve that moves toward the back of the body is in the thoracic area of the spine (middle or behind the rib area) and is called a kyphotic curve. From the side the ears should align straight above the shoulder joint, the hips straight below the shoulder joint, and the ankles in a straight line below the hips. Many people with low back pain have an excessive lordotic curve in the lumbar area of the spine. Participants will need to learn pelvic tilts to reduce the curve.

Circle formations will usually not work as they leave the weaker participant behind and challenge all body systems excessively.

GENERALIZATIONS

Water Depth

New participants in class who are unused to water will want to stay in the shallowest portion of the pool and hold on to the edge. Gradually they can move a little deeper and support themselves. They should be encouraged to stay in the portion of the pool where they feel safe and secure. Water depth for the average participant should be midriff to armpit. Problem areas (hips, knees, shoulders) should be submerged.

Water Temperature

Water temperatures varying from 82 to 96 degrees Fahrenheit have been used. (Heart rates are directly influenced by water temperature.) The therapeutic effects of warm water are:

*increases the extensibility of collagen

*decreases joint stiffness

*relieves pain and muscle spasms

*has a sedative effect

*increases localized blood flow

*assists in reducing inflammatory filtrates, edema, and exudates

Water temperature of 84 degrees and over seems appropriate for most individuals with physical limitations. The participant with MS (multiple sclerosis) is the exception. Optimal pool temperature for MS patients seems to be in the 78 to 82 degree range. This cooler water prevents increasing body core temperature which could exacerbate the disease process.

LEADERSHIP

Getting to know participants and finding out what their personal fitness goals are and if their personality types (sociable, assertive, competitive, etc.) can help to place the student in the right exercise program.

Set clear objectives with concise instructions. Repeat instructions a couple of times.

Participants should work at their own pace or modify the exercises according to their own unique limitations.

Offer appropriate assistance. Otherwise let participants be independent.

SAFETY TIPS

In order to be happy, people need fun, success and variety. Good leadership can offer that. The momentum of the class begins as soon as the students enter the pool, so the environment needs to be set already.

The instructor should be proactive rather than reactive and try to foresee and eliminate situations or conditions that may result in problems. This is especially important in entry and exit from the pool.

Participants should be especially cautious while walking on the deck of the pool. It is recommended that they wear aqua shoes with gripping soles to avoid falls.

Instructors should identify the basic purpose for all exercise moves and always use safer alternatives if available. The benefits of each exercise should be explained to the students.

It is unnecessary to correct the participant's technique unless something dangerous is being done.

Participants are often talented and experienced, and understand their own body's limitations far better than an instructor.

INSTRUCTORS

Good instructors are usually distinguishable by their interpersonal interaction skills. Instructors should be themselves, be sensitive to their students, encourage personal interaction with students before and after class, allow their students to express their feelings, look for their students non verbal messages to them and be good listeners.

Use positive reinforcement frequently with specific feedback on technique or improvements.

Except for the children's classes the instructor should avoid talking to or treating the participants as children.

The instructor should always try to be optimistic and positive, treat each participant as an individual, be a good listener and provide positive feedback.

Use careful questioning. "Did you feel that here? Does that feel comfortable to you? Do you feel any strain?"

As with everyone, these participants appreciate praise, compliments, encouragement and warmth.

Author

Ruth Sova, MS, an internationally known speaker, author and consultant, is founder of six different businesses including the Aquatic Therapy and Rehab Institute, the Aquatic Exercise Association, Living Right Magazine, America's Certification Trainers, Armchair Aerobics Inc, and the Fitness Firm. A leader in the health and wellness industry, she also draws on her vast experience as an entrepreneur to teach others what it takes to assume the risk of business and enterprise. Ruth is on the Wisconsin Governor's Council on Physical Fitness and the author of numerous articles and eleven books on her specialties of wellness and business. She is the recipient of the:

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