

CALA

Canadian Aquafitness Leaders Alliance Inc.

Handout

Aquatic Cardiac Rehabilitation – Part 2

Article by C. Weerdenburg M.Sc. & C. Jasinskas M.Sc published in
CALA Wavelink newsletter Fall 1998



In regular aquafitness classes, many leaders report seeing more clients who are recovering from a heart condition or heart surgery participating. Other instructors observe an increase in the number coming to class with medications for high blood pressure, angina and irregular heart beats or dysrhythmias. In large cities with tertiary care hospitals, out patient clinics rehabilitate heart patients who have had coronary artery bypass grafts (a piece of vein or artery is sewn from the aorta to a point distal to the blockage to bypass the blocked artery), angioplasty (a small catheter with an inflatable balloon is used to compress the plaque and open the blocked artery) and other procedures. Patients attend these clinics and participate in land based fitness classes under the watchful eyes of nurses and physiotherapists. Patients work out until they attain a level of cardiac health that allows them to resume their daily lives and pursue fitness activities. Graduates from these programs can easily become clients in regular aquafitness classes and exercise as much as their cardiologist recommends. In less serviced areas, patients are discharged with a paper that says "Walk" and "Eat Healthy" on it.

What are the aquatic exercise guidelines for clients with heart disease, a bypass or those who have had angioplasty? The short answer is that there are very few guidelines. Research on aquatic rehabilitation of cardiac clients is scarce. Underwater monitoring of blood pressure and heart rate during exercise can be done. However, apprehension exists around aquatic rehab because of the risk of defibrillating a wet client on a wet pool deck. This risk and some technical difficulties discourage researchers from doing the experiments. If we look at our clients we often see deconditioned people further debilitated by surgical waiting lists. They may have joint problems and body composition (excess body fat, low muscle mass or osteoporosis) concerns exacerbated by years of disability. These clients often decide independently that they cannot move well enough on land to challenge and recondition their heart muscle. Intensity is limited by a shoulder, hip, or knee problem instead of heart or lung function. After struggling with a walking program they come to an aquafitness class. They reason that "it's got to be more comfortable to walk in the water where the joints feel a little less stressed." Water is an effective yet soothing modality for clients with concerns that limit their performance in the gym. Many find that the increase in strength acquired in the pool leads to success in land based programs.

Presently there are two common situations in which we may find cardiac rehab clients, first as clients in a regular aquafitness class or second as clients in a prevention or heart health class. In both cases attention must be given to safety concerns.

1. Qualified lifeguards with backups must be present for the class.
2. All instructors should have CPR training supplemented by frequent in service training sessions.

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3. An emergency telephone should be within reach of the pool.
4. Clients should bring their medications to class to a predetermined place.
`Meds' should be labeled with the clients name and instructions.
5. A dry area for emergency care should be set up. Defibrillation equipment and trained personnel must be on "stand by" for classes devoted to cardiac rehab.
6. Emergency files with all pertinent contact numbers, a complete health history and all medication listed must be readily available.
7. High risk clients must consult with their attending physicians prior to beginning an exercise program.

Some instructors encounter clients who should not be attempting rehabilitation of cardiac problems through exercise. These clients have absolute contraindications to exercise. Often they are much too ill to walk into programs but it's prudent to know who should not be in your class.

Absolute Contraindications to Exercise

1. Unstable angina
2. Uncontrolled congestive heart failure
3. Arrhythmia that affects hemodynamics
4. Uncontrolled hypertension
5. Acute myocarditis
6. Severe valvular stenosis
7. Hypertrophic cardiomyopathy
8. Acute pulmonary emboli

If you are uncertain about the advisability of a client continuing in an aqua fitness class then ask the client if you may speak to the attending physician. You are important in the health care of your client and a help in their recovery. The following is a list of conditions that are serious enough to warrant a call to the physician. They may not be absolute contraindicators of exercise

High Risk Conditions

1. Unstable angina (a media: decision - some people are fine at. low intensity)
2. Angina at low levels of activity
3. Low ejection factor
4. Exercise induced arrhythmia
5. History of Myocardial Infarction and with complications
6. Previous myocardial infarctions (MI)

Instructors that are working with clients with conditions should be working under the direction of a physiotherapist and physician. The pool should be equipped with defib equipment, a well trained emergency response team "911" call capacity and ambulance service with paramedics.

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1. Start slowly. Prolong the warm up. Teach the clients how to use the Heart Rate Reserve (HRR) or Karvonen Method to calculate their target heart rate.

$$\text{HRR} = (\text{max heart rate} - \text{resting heart rate}) \times 60-75\% + \text{resting heart rate}$$

Teach the Borg rate of Perceived Exertion

2. Work below the ischemic level or pain level. Many moves may have to be done at ½ tempo or ¼ tempo. Focus on form, alignment, execution of moves and the contraction of stabilizers. Enforce the use of alternating arm and leg motions. Clients lose the ability to command and monitor body parts after long periods of disability.
3. Do interval training. Many clients can do short bursts of activity followed by a recovery period. Remember to consult the physician if you have doubts about your clients ability to tolerate this type of training.
4. Respect your clients tolerance for intensity. They will determine the intensity of their work.
5. Monitor for pallor, light headedness, dizziness, fatigue, angina and arrhythmias. Teach your clients to self monitor for overexertion (prolonged fatigue, declining performance, listlessness, headaches, colds, increase in resting heart rate, swelling of lymph glands, moodiness, loss of appetite).
6. Do all movements from the CALA compendium of moves except the "Tuck" series. There is the theoretical possibility of a rise in pressure within thoracic cavity. Torso flexion and hip flexion in combination with water pressure may put unwarranted stress on the heart. More research needs to be done. Avoid this move for now.
7. Prolong the cool down and realization section. Clients need to stretch and learn the magic of water relaxation. Great techniques such as imaging and deep breathing can help soothe and renew.
8. Be discerning in your music selection. Too much energy may motivate the client to "just go for it"! That may have serious consequences. The instrumental music or low BPM (118-120) tropical theme step tapes.

Although many of these clients may have serious medical concerns, fitness is a way to deal with the stress of the diagnosis and the resulting changes in lifestyle. The reassurance that they receive from feeling their body respond to training can give them the power to become proactive in other aspects of remodeling their lives. Don't be surprised when they say to you "You've changed my life!" Remind them that did all the work and they deserve the credit.

Part III of Aquatic Cardiac Rehabilitation - specifics of the Exercise Design.