

**Aquatic Cardiac Rehabilitation – Part 1**

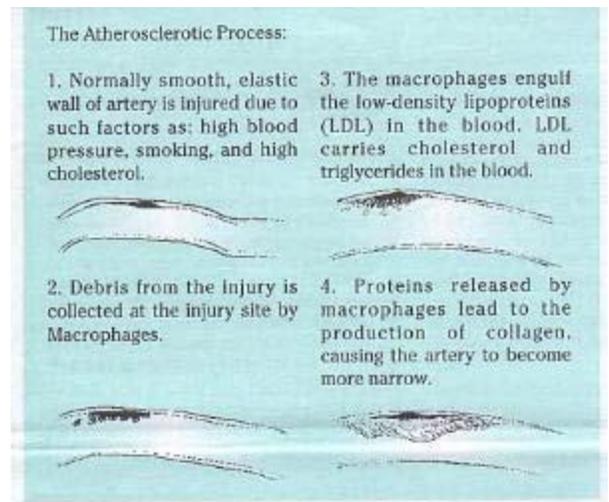
Article by C. Weerdenburg M.Sc. published in CALA Wavelink newsletter Summer 1998

**Introduction:**

The prevalence of heart disease in Canada is staggering. Three million Canadians are afflicted with cardiovascular disease (CVD). CVD refers to more than twenty different diseases of the heart and its blood vessels. Cardiovascular disease is the leading cause of death world wide and accounts for at least 41 % of all deaths in Canada. Deaths aren't the only consideration, however. A diseased cardiovascular system can substantially decrease the quality of life.

Many people fear cancer more than they fear CVD. If all forms of cancer were eliminated, total life expectancy would rise by only 3 years. If CVD ceased to exist, we could all expect to live an extra 10 years! More than 80% of North Americans are likely to have at least one risk factor for CVD. Four major risk factors for CVD (smoking, high blood pressure, high cholesterol, physical inactivity) are directly related to lifestyle. Research has shown that these risks can be controlled or eliminated with healthy living choices. In fact, fewer than 25% of us need to quit smoking, while a whopping 60% need to get active!

The majority of our clients groan when we speak of low fat foods, exercise programs, giving up smoking and reducing alcohol intake. "Oh no," they moan, "the Aerobocops!". As aquafitness instructors we have a not-so-secret weapon. *Water*. Few of our clients have the same dread and loathing of water that they have of the aerobics floor or the weight room. The seductive magical properties of water can infiltrate a disastrous lifestyle and get the client hooked on health before they can say, "omega-3-fatty acid". Getting wet to get fit becomes a lot more attractive. Once our clients notice changes in how they feel, they tend to become more proactive in other areas of their lives.

**Coronary Artery Disease (CAD)?**

The heart is a muscular pump with amazing endurance. During an average lifetime, it will circulate 159 million liters of blood by beating about three billion times! Through a series of events which are connected to heredity and lifestyle, the arteries of the cardiovascular system can develop deposits or plaques on their smooth linings. The process of plaque build up is called Atherosclerosis. The heart has its own blood supply, circulated by the coronary arteries. When atherosclerotic plaques restrict blood flow in the coronary arteries, ischemia, or lack of blood supply to the heart muscle, results. This painful condition is called Anin.

When a coronary artery is completely obstructed (blood clot), the area of the heart muscle supplied by that artery is damaged. This is referred to as a heart attack, or myocardial infarction (MI). About a third of people who have a heart attack will not survive it.

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### **Risk Factors for CAD:**

#### **Major Risk Factors**

1. Smoking
2. High Blood Pressure
3. High Cholesterol
4. Physical Inactivity

#### **Uncontrollable Risk Factors**

1. Personal History
2. Family History
3. Male
4. Age

Atherosclerosis can lead to blocked blood vessels in other areas of the body besides the heart. In the brain, it causes a stroke. In the extremities, it is referred to as Peripheral Vascular Disease. The legs lose function due to lack of circulation and the resulting pain.

*Treatment of CAD:* A heart-friendly diet and cessation of smoking are two important ways to fight CAD. Inactivity is also a killer. When clients understand the role and benefits of exercise, they are far more likely to consider or stick to an active lifestyle.

### **Role of Exercise:**

- Primary prevention of CAD: to prevent development of CAD
- Secondary prevention of CAD: to prevent further progression of Atherosclerosis
- Rehabilitation: to assist individuals to regain control of active daily living (ADL)

### **How does exercise prevent CVD / CAD?**

Fitness trains the heart muscle, making it larger and stronger, increasing its blood and oxygen supply. Fit individuals have coronary arteries that are larger, more elastic, and better able to expand during the demands of exercise. These attributes extend into old age if activity levels are maintained. Another important factor is that fit people are less likely to smoke, drink excessively, or eat extremely unhealthy diets. They are generally more health-conscious.

### **Benefits of Exercise:**

- 🔗 *Increased functional capacity or V02 max.*- This is the maximal ability of the body to activate its energy systems to cope with the demands of exercise. *Improved cardiac efficiency:* increased tolerance for and practice of ADL, reduced heart rate, blood pressure, and rate of perceived exertion when exercising at submaximal levels.
- 🔗 *Reduced symptoms of CAD:* Reduced Angina threshold, reduced pain.
- 🔗 *Increase in Myocardial Perfusion:* improved blood supply to the heart muscle
- 🔗 *Reduced CVD risk factors:* reduced total cholesterol, reduced triglycerides, reduced resting blood pressure, improved control of Type 2 Diabetes, better control of body fat.

# CALA

Canadian Aquafitness Leaders Alliance Inc.

Handout

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*Improved psychosocial well being:* reduced anxiety, muscular tension, reduced depression, increased self confidence, greater ability to cope with stress.

How much exercise is necessary to improve heart health? Active Daily Living (ADL) which consists of 30 minutes per day of moderate physical activity is enough to promote positive changes. Exercise of greater length and intensity has larger benefits.

As aquafitness leaders, we are in the perfect position to educate our clients about the positive cardiovascular (and other) benefits of regular physical activity. With the CALA training and philosophy, we can make each class pleasurable as well as productive in the fight against heart disease.

Knowledge of purpose is a powerful tool to encourage exercise adherence. Share your knowledge of the magical powers of aquafitness and you're more likely to see their smiling faces next class, and the next...

**\*Part II of Aquatic Cardiac Rehabilitation - specifics on the "Cardiac Class".**