



**AEROBIC
FITNESS**
2ND EDITION
By John Mason

NOTE

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INTRODUCTION/PREFACE

Aerobic fitness contributes more to your quality of life than perhaps any other aspect of fitness. If someone has reasonable aerobic fitness, they usually have a reasonably healthy heart, lungs and circulatory system. This means that they are able to breathe well, absorb plenty of oxygen into the blood, and efficiently transfer that oxygen throughout the body.

It also means that waste products are able to be easily removed from the body by being absorbed into the blood and carried effectively to where they can be eliminated.

A key ingredient for ensuring a long life is maintaining a healthy body and mind. By maintaining good aerobic fitness you will generally perform better in intellectual as well as physical pursuits; you will tend to resist illness better, live longer and find it easier to maintain a healthy mental condition.

This book will assist you to improve your aerobic fitness levels, and improve your overall health. You will also learn about the body, its functions and how to assist others in obtaining their aerobic fitness goals.

To remain aerobically fit, you need to regularly do something which will increase your heart rate above its normal level. This could be exercise, but it could also be work - in fact, it can be any physical activity that causes the heart to beat faster than normal. For this activity to be effective, the heart rate must be sustained at a raised level for at least 20 minutes in each session, and there must be at least three such sessions each week. If it is to be sustained at a raised level for 20 minutes, the session probably needs to go for at least 30 minutes, allowing time for the heart rate to gradually increase at the beginning, and then to gradually decrease at the end of the session.

A Modern Epidemic

The lack of aerobic fitness is in many ways a problem fostered by modern living. If you are not physically active at work or in your leisure, then it is likely that you could have a serious problem with your aerobic fitness. Combined with this, if you find physical activity difficult (e.g. climbing stairs, going for long walks, etc), and if you are overweight or frequently stressed, then you need to consider paying more attention to your aerobic fitness.

What Can You Do

The obvious way to improve aerobic fitness is to start exercising regularly by either attending classes or a gym, or perhaps jogging or walking regularly. Playing sport is another option but remember, you need three sessions a week, so playing sport once a week is not sufficient - even if it is for a couple of hours.

Many people simply find these options very difficult to commit to. If you feel that way, there are lots of other choices which can be equally beneficial - remember, anything that raises the heart rate can be effective. Consider working in the garden, taking up a part-time job that involves physical activity, playing with your children more often, or if you don't have children of your own, perhaps becoming a scout or guide leader and getting active with a group of teenagers.

DIFFERENCES BETWEEN AEROBIC AND ANAEROBIC EXERCISE

Exercises fall into two different categories:

1) Anaerobic Exercises

Anaerobic exercises concentrate on movements that require no, or minimal oxygen. They are quick, explosive actions that often last no more than 1.5 to 2 minutes. Anaerobic exercises concentrate on improving the strength, speed and power of muscular movements.

During the first 2 minutes of exercise, the body cannot get enough oxygen to supply the heart and muscles (which need to work faster than normal). This is referred to as 'oxygen debt'. Once the heart and lungs increase activity though, they are providing oxygen faster than normal to the body, allowing aerobic activity to supply sufficient energy for movement.

Anaerobic exercise utilises the ATP (adenosine triphosphate) and creatine phosphate already stored in the muscles to meet energy requirements for the first 15 seconds of exercise. Then the body utilises glucose in the blood and glycogen in the muscles, which still requires no oxygen. This energy system can continue for up to around 2 minutes before demanding oxygen. Energy demand then switches to the aerobic system, where the body can use and deliver oxygen to the muscles. The body therefore cannot work at a fast, powerful manner for longer than 2 minutes because of its need for oxygen. This first phase of exercise produces a quick rise in heart rate.

2) Aerobic Exercise

This phase focuses on making heart and respiration rates work more efficiently and, in doing so, they improve cardio-respiratory fitness. The heart rate will increase to a certain level and if it remains there then the aerobic energy system is predominant. Muscles are generally moved repeatedly and for a longer period of time when aerobically exercising and this occurs with the use of oxygen. The body wants more oxygen which it must breathe in allowing it to travel to the muscles (through the blood). Aerobic exercise normally burns carbohydrates already stored in the blood (glucose), muscle and liver (glycogen) to meet the energy needs and then resorts to burning fat to supply energy. This system usually kicks in after approximately 1 minute and can continue for up to an hour or longer.

EXAMPLES OF GENERAL AEROBIC AND ANAEROBIC EXERCISES

Anaerobic exercises are high energy, usually flat out and rely on stored fuel. A 100-metre sprint, shot put and high jump are all good examples, however aerobic exercise is continuous like cycling, swimming and walking. Even sitting and reading a book is aerobic because the body is breathing at a constant rate which can be maintained. The more intense an aerobic activity is, then the greater the level of fitness that can be achieved.

It can be said that aerobics classes, such as those commonly run at a gymnasium, are not just 'aerobic' - because of the varied intensity of exercise they have. Participants may find themselves doing anaerobic-type exercises at some stages during the class. This provides variety to purely aerobic exercise and enables other aspects of fitness to be improved as well, such as muscular strength and endurance.



Walking a dog is a common form of aerobic exercise