

THE ROLE OF EXERCISE

Many people have the luxury of living in a world of sophisticated computer and satellite technology, requiring minimal activity in the form of physical effort or exercise to carry out tasks of daily living.



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One could live and work quite easily in the comfort of one's own home and never have to walk out the front door. Thus, free to choose, many people do not exercise. This lifestyle has produced a significant number of overfed, overweight and sedentary people, often unable to cope with the physical or mental demands of society. This results in an increase in the prevalence of physical and psychological risk factors and disease processes and in certain circumstances these reach epidemic proportions. Many people assume that because they are not suffering from a disease, they are healthy. Often this is not true. The health care practitioner is very often asked by people for a special diet or the latest 'pill' or an exercise programme to help lose weight in order to improve physical appearance. The reason for the request is often not to improve fitness and exercise endurance as a way of reducing risk factors for disease. People are more worried about what they look like. However, this is the opportunity that the health care practitioner has to use to promote a healthy lifestyle. Although I believe that the responsibility for maintaining health and physical fitness lies with the individual, I also feel that it is vital for health care practitioners to provide sound advice and guidance about diet and exercise. People need to be encouraged to incorporate physical activity into their daily routine. This should start with providing up-to-date knowledge about exercise training and physical fitness in a way that is easy to understand and that can be practically implemented. I also believe that it is reasonable that the health care practitioners who encourage exercise should also be living examples of health and physical fitness.

WHAT IS PHYSICAL FITNESS?

Physical fitness is more than the ability to handle the physical demands of everyday living. Rather it is an enhanced functioning of the interacting physiological systems of the body: heart, blood vessels, lungs and muscles to manage periods of increased physical exertion. Total physical fitness involves 4 health-related components. Muscle strength is the ability of the muscle to perform a forceful contraction against resistance. Stronger muscles ensure that any exercise becomes easier. Muscle endurance is the ability of the muscle to sustain repeated contractions or to hold a fixed contraction over a period of time. Doing sit-ups or push-ups is an example of this. Flexibility is the ability to move a muscle through a full range of motion. A lack of flexibility may impair exercise performance or increase the risk of injury. Cardiorespiratory endurance is the ability of the heart, lungs, blood vessels and muscle to function optimally together during exercise.

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BENEFITS OF REGULAR EXERCISE AND PHYSICAL FITNESS

As health care practitioners we are well versed in the physical and psychological benefits of physical exercise. Regular exercise training helps to reduce resting pulse rate and blood pressure measurement, improves glucose tolerance, cholesterol profile and exercise capacity; studies have shown all of these to be important predictors of all-cause cardiovascular morbidity and mortality, as well as many other causes of mortality and morbidity. The psychological benefits include reduction of anxiety and stress and improved mood, self confidence, self esteem and an overall feeling of well-being. Thus a physically fit person has the ability to function well and manage the demands of daily living.

BASIC GUIDELINES FOR EXERCISE

Many people are not sure of how to exercise and where to start. An exercise programme should be individualised and tailored for the current baseline physical condition of the person. People who have been complete-

ly sedentary should be advised to consult a health care practitioner before starting an exercise programme.

There are 4 basic principles that should be included in an exercise programme. These are:

- exercise intensity – level of exertion
- exercise duration – the length of exertion
- exercise frequency – number of workouts per week
- and lastly the mode of exercise or type of activity.

Exercise intensity

In order to make improvements in cardiorespiratory fitness the exercise has to be of an intensity that increases heart rate during exercise. The best way of setting the intensity of exercise is to advise a heart rate range and then to monitor heart rate during and after exercise. The American College of Sports Medicine (ACSM) Guidelines for Exercise Prescription advise that in order to improve fitness and exercise safely exercise should be done at 70 - 80% of maximal heart rate. Calculate maximal heart rate by subtracting a person's age from 220 and then multiplying this figure by 0.7 and then 0.8 in order to determine the 70 - 80% range. This rationale cannot be applied to patients using cardiac drugs that reduce resting heart rate. These patients should rather have an exercise stress test to measure the maximal heart rate. The heart rate range can then be calculated as a percentage of the maximal heart rate achieved on the exercise test. The heart rate can either be continuously monitored during exercise with a heart rate monitor or the pulse can be counted immediately after exercise for a 1 minute period.

Exercise duration

Exercise duration is directly related to exercise intensity. By exercising in a

target heart rate range, exercise can be sustained over a longer time period than at a higher heart rate level.

Studies indicate that exercising in the target heart rate range for approximately 30 - 40 minutes should be enough to produce the positive physiological adaptations necessary for an improvement in physical fitness.

However, someone starting an exercise programme may not be able to maintain exercise for 30 minutes and therefore may need to start with shorter exercise periods interspersed with rest periods, gradually increasing the exercise duration. As a guideline increase the exercise duration by 10% per week.

Exercise frequency

Adhering to a regular exercise programme, which incorporates consistency and self-discipline, is important for achieving goals of physical fitness and a health benefit. Although training gains can take time and require effort, deconditioning and positive exercise adaptations can be lost very quickly. Gains in physical fitness can be achieved by exercising 3 - 4 times per week as a minimum. The greater the number of exercise sessions per week the greater the fitness benefit.

Exercise mode (type of activity)

The exercise activities that use continuous rhythmic motion involving large muscle groups, such as brisk walking, running, cycling and swimming, seem to have the most beneficial cardiovascular adaptations. It is advisable that the person choose a mode of activity that they enjoy and that is suited for their physical and medical profile, as this will improve compliance with the exercise regime.

CONCLUSION

The health care practitioner has a responsibility to be well versed in exercise prescription and to be aware of what facts are anecdotal and what facts are evidence based. As health care practitioners we need to continually advance our knowledge on the benefits of exercise and pass this knowledge on to our patients, for their benefit.

References available on request.

IN A NUTSHELL

Lack of physical activity results in overweight and unfit people.

People generally ask their doctors for advice on diet and exercise in order to look better.

Regular physical activity contributes to overall wellbeing and not simply to improved appearance.

Total physical fitness results in improved muscle strength, improved muscle resistance, flexibility and cardiovascular fitness.

This can be achieved by exercising for at least 30 minutes for a minimum of 3 times a week.

Cycling, swimming, walking and running are excellent forms of exercise because they use the large muscle groups.

People should aim to exercise at 70 - 80% of their maximum heart rate (calculated as 220 minus age – unless on rate-reducing cardiovascular drugs).