



PHYSICAL ACTIVITY AND THE HEART: An Update

Introduction

Physical inactivity roughly doubles the risk of coronary heart disease (CHD) and is a major risk factor for stroke. Although this topic was the subject of a factfile less than three years ago, the potential benefits of physical activity in terms of preventing cardiovascular disease in a community in which overweight and obesity are increasing (Factfile 7/99) justify an update.

Along with increasing life expectancy the rising rates of all degrees of overweight in the UK are inevitably associated with an increased incidence and prevalence of diabetes mellitus - an important risk factor for CHD. Evidence is accumulating that regular physical activity such as brisk walking, cycling, swimming, dancing or gardening are useful for both the prevention of and the rehabilitation after CHD events. Yet, despite these potential benefits many people take no physical activity during a typical week.

The Benefits of Physical Activity

Although evidence of benefit from regular exercise has existed for nearly 50 years the last 5 have seen the publication of several large studies which demonstrate the following effects. First, regular exercise reduces the incidence of obesity and can make a major contribution to weight reduction. The effects on abdominal obesity are particularly important and are associated with improvements in insulin sensitivity and a more favourable lipid profile with triglyceride concentrations falling and high density lipoprotein values increasing. These effects, as well as those on reducing blood pressure, are dose-dependent. Indeed, the huge nurses' health study based in the USA has confirmed that this applies to the prevention, not only of diabetes mellitus¹, but also of coronary heart disease. There is a strong graded inverse association between physical activity and the risk of coronary events². In the latter study, when women in the lowest quintile group for energy expenditure were compared with others in the four remaining quintiles, figures for relative risks of 0.77, 0.65, 0.54 and 0.46 were obtained. Those nurses who walked the equivalent of three or more hours per week at a brisk pace, had a relative risk of 0.65.

Additionally, the benefits of exercise training have been demonstrated in otherwise healthy older men³, with improvements in their overall levels of fitness and reactivity of their vascular endothelium suggestive of enhanced production of nitric oxide.

Besides these tangible benefits for the cardiovascular system, there are other health improvements in quality of life including the buffering of the effects of stress, alleviation and prevention of depression, reduced levels of anxiety and benefits to self-esteem. Finally, there is some evidence of benefit in reducing the incidence of colonic cancer⁴.

How much Physical Activity?

Based on these studies it is clear that regular, frequent aerobic physical activity of moderate intensity is desirable. This can be achieved by regular walking, cycling or swimming for an average of 30 minutes per day on at least five days of the week. Such activity makes people feel warm and mildly out of breath. Those who are initially sedentary should start at a lower exercise level and increase this gradually in terms of duration, frequency and intensity. The presence of ischaemic heart disease (angina or a previous heart attack) is not a contra-indication. But cardiac patients should take physical activity within the limits of their angina, breathlessness or claudication and avoid extremely cold weather or trying to walk through chest pain. Unaccustomed or erratic physical activity particularly vigorous forms can be hazardous in middle-aged people and those who are sedentary. However, people who take regular physical activity are much less likely to develop complications as a consequence of vigorous exercise⁵.

BHF and Walking the Way to Health

The British Heart Foundation and the Countryside Agency have begun a 5 year 'Walking the way to Health' initiative to encourage people who do little exercise to walk more in their own neighbourhoods. Doctors who recommend their patients to walk with this initiative can be confident that the safety of participants has been assured through risk assessments of routes, training of volunteers who lead walks, screening of participants for their readiness to take part and an independent accreditation system. No paperwork is required from GPs.

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Finally, the BHF national centre for physical activity and health has recently produced a physical activity toolkit entitled 'A Training Pack for Primary Health Care Teams' which will be distributed shortly to all primary care groups in England, Scotland and Wales.

References:

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Review Article

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