EDITORIAL

Exercise really is good for you

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When it comes to reducing the risk of coronary heart disease, it may never to be too late to start exercising and benefit from the effects of moderate physical activity

Over the last 50 years since the pioneering work of Professor Jerry Morris in the United Kingdom,[1] numerous prospective epidemiological studies have consistently shown an inverse association between physical activity and coronary heart disease (CHD).[2] The evidence for the role of physical activity in preventing CHD is compelling.[2] Leisure time physical activity is associated with a 30–50% reduction in risk of CHD and a pooled analysis of 16 cohorts indicates a dose–response relation between physical activity and risk of CHD.[2 3] Randomised trials have shown physical activity to reduce atherosclerotic risk factors such as obesity, insulin resistance, blood pressure and blood lipids.[4] A sedentary lifestyle is now considered to be one of the major risk factors for CHD. With increasing obesity and sedentary lifestyle in both western and developing countries[5 6] the importance of promoting physical activity has been on the agenda in most government health initiatives. The question of whether it is ever too late to start and how much exercise needs to be undertaken has been a key topic of research and discussion in recent years.

LIFETIME PHYSICAL ACTIVITY PATTERNS AND CHD

Most earlier studies on physical activity and CHD examined the relation between physical activity measured at one point in time and subsequent risk of CHD. The influence of lifetime physical activity patterns on CHD risk has seldom been explored. It is only in recent years that population prospective studies have addressed the effects of changes in physical activity in later life on coronary risk. There is evidence that both remaining active into older age and taking up physical activity in later life are beneficial in men and women.[2 7 8] The case–control study data presented by Rothenbacher *et al* in this issue of *Heart*[9] provide further evidence that taking up physical activity in later life is beneficial and show that a lifetime pattern of physical activity confers the greatest benefit. Physical activity patterns were assessed from an interview. Subjects who were inactive throughout their early (20–39 years) and late adulthood (> 40 years) have the highest risk of CHD, while those who were active in early adulthood and remained active in late adulthood showed the lowest risk. Inactive men who took up physical activity in later life (aged 40 or above) showed significant reduction in risk of CHD, largely due to those who became very active. Men who were active in early life but became inactive in later life still showed lower (but non-significant) reduction in risk. Because of the small numbers it is not possible to infer from this study whether there is some lasting beneficial effect of physical activity or whether physical activity has to be ongoing to confer benefit as suggested in other studies.[10]

TYPE OF PHYSICAL ACTIVITY

The study by Rothenbacher *et al*[9] has several limitations. This is a case–control study, which may be subject to recall bias. The controls were occasional blood donors and are therefore more likely to be healthier and possibly more active than the general population. Nevertheless, the findings are consistent with other prospective studies showing that taking up physical activity in later life is beneficial.[7 8] The study does not address the important issues of type of exercise required to achieve such benefit in later life or gender effects, nor does it address the issue of physical activity specifically in the elderly (> 65 years), in whom physical activity tends to decline. The issue of how much activity is required to achieve benefit has been a topic of debate for decades. While a study by Morris and colleagues in 1990 suggested that vigorous activity was essential to achieve benefit,[10] later studies have indicated that moderate intensity activities such as brisk walking is sufficient to achieve benefit.[2] In 1995 the US Centers for Disease Control and Prevention and the American College of Sports Medicine issued new physical activity recommendations for at least 30 minutes of moderate intensity activities most days of the week, and these are also the current guidelines for physical activity in the UK.[11]

Since these guidelines were issued the question of how intensely one needs to exercise has been addressed by numerous studies with conflicting results. While many studies show that moderate intensity exercise is sufficient to reduce risk of CHD, some studies, including a recent report from the Caerphilly study, conclude that only heavy or vigorous activity conferred benefit.[2 12] Although data in the study by Rothenbacher *et al*[9] are limited and no information is provided on the type of activity, the findings seem to indicate that only those who became very active showed benefit while those who became lightly active showed no benefit.[9] However, it has been pointed out that the level of exercise required to achieve benefit may be dependent on age, sex and the level of fitness

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of participants.[12] Among those at the lower end of the spectrum of physical activity—that is, more sedentary or less fit people such as women or older men—moderate intensity activity is sufficient. In those more active or physically fit or younger, vigorous activity may be needed to provide additional benefit.[12] This may also be true of the control group in the study by Rothenbacher *et al*[9] as these were blood donors who are more likely to be healthier and fitter than the general population and thus more intense activity may be required to achieve benefit.

BENEFIT OF MODERATE ACTIVITY

The large body of evidence that moderate intensity activity is sufficient to produce benefit must come as good news for many.[2 7 8 12] Despite the widely acknowledged benefits of physical activity, the majority of people in the UK take little or no exercise. The latest Health Survey for England (data from 2003) showed that only about 37% of men and 24% of women meet the current guidelines of 30 minutes of moderate activity on most days suggested by the government[6] and this decreases to 17% and 12%, respectively, in the elderly (> 65 years). In the United States the situation is similar with only 36% of men and 21% of women engaged in regular leisure time physical activity.[13] The growing body of literature suggest that middle-aged and older people may obtain significant health benefit by maintaining or increasing physical activity and that even moderate intensity activity such as walking is sufficient to achieve benefit.[2 7 8] In these sedentary populations encouraging inactive people to take up moderate intensity exercise such as regular brisk walking for their health is more likely to be attainable than requiring inactive people to engage in vigorous activities such as sporting activities.

Physical activity not only reduces risk of CHD—there is increasing evidence that regular exercise reduces the risk of type 2 diabetes.[14] Regular physical activity may also prevent stroke[2] and prevent and reverse disability.[15] With the increasing elderly population, physical activity becomes of particular importance and should be positively encouraged and facilitated in elderly people.

Optimal benefit for coronary risk appears to be seen in people who undertake physical activity from an early age and maintain this through later adulthood.[9] Thus encouraging participation in physical activity should start early. But for those who have been inactive for most of their adulthood, it is never too late to start.

No conflict of interest

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STAMPS IN CARDIOLOGY

World Health Day

The theme for World Health Day in 1992 was ''Heart Beat: The Rhythm of Health''. Nigeria issued a set of four stamps; two depicting a sphygmomanometer, one the heart and great vessels, and the fourth the thorax. Each stamp bears the World Health Organisation logo. The stamps are relatively rare for the issue being imperforate pairs.

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