

HEART

Benefits of exercise when young could be undermined in people with poor ability to cope with stress

Tackling stress and promoting exercise both needed to help reduce heart disease

Young people who exercise may be less likely to benefit from it in terms of avoiding heart disease later in life if they are prone to have a poor ability to cope with stress, reveals research published online in **Heart**.

Researchers from Sweden and the UK found that the worse a person deals with stress when they are an adolescent, the more likely they will develop heart disease later in life and exercise might make little difference.

Previous studies have identified that exposure to psychosocial stress (stress experienced by people when they perceive a threat that they feel they cannot deal with) has been identified as a risk factor for coronary heart disease as well as other health problems.

However, the role of stress resilience (the ability to cope with stress) in adolescence, relevant to chronic stress, is less well understood. It is also generally believed that high physical fitness in adolescence is linked to a reduced risk of heart disease in later life.

Researchers, led by the Department of Clinical Epidemiology and Biostatistics at Sweden's Örebro University, set out to investigate the relationship of how well people dealt with stress in adolescence with subsequent heart disease risk and to examine the role of fitness in this.

They used information gathered on 237,980 men born between 1952 and 1956 who were eligible for military conscription and included in the Swedish Military Conscription Register.

At the time, conscription was compulsory for all male citizens of appropriate age (18 and 19) and the conscription examination included extensive medical, psychiatric and physical assessments to establish health, fitness and psychological profiles.

The subsequent risk of heart disease was assessed from 1987 (when the Swedish National Patient Register attained full coverage) to 2010.

Stress resilience was measured as part of the compulsory military conscription examination as part of an interview with a psychologist.

Overall, 10,581 diagnoses of heart disease were identified amongst the group between 1987 and 2010 and the researchers examined if there was any association of stress resilience with heart disease, with adjustment for established heart risk factors.

They found that low-stress resilience in the men was linked to higher risk of heart disease and this association remained even after they adjusted the results to take into account physical fitness and other established heart disease risk factors, indicating the potentially damaging effect of stress itself.

Also, the teenagers with low stress resilience were less likely to be physically fit, but strikingly, even good physical fitness did not seem to provide protection from heart disease among those with low stress resilience.

The authors concluded: “Low-stress resilience in adolescence was associated with increased risk of coronary heart disease (CHD) in middle age and may diminish the benefit of physical fitness.

“Our results further suggest that physical fitness varies by stress resilience level and that the protective effect of fitness in adolescence is reduced or eliminated in those with low-stress resilience. Effective CHD prevention might focus on promoting both physical fitness and tackling stress.”

(See the full text version of this paper to view the video abstract).