

Factsheet: Stress and heart disease

What is stress?

Stress can mean different things to different people. Stress is often defined as a mismatch between the demands placed on us and our ability to cope with these demands. The way we cope with these demands will depend on the way we think, our personality and our previous life experiences *etc.*

Stress is difficult to measure, but we all know what it feels like and how we cope in stressful situations. For some, it can threaten to take over their lives while for others, once they are aware of its causes and effects, stress can add excitement and challenge to their lives. It can be positive when it motivates us to get things done, however, it can be negative when we feel constantly pressurised or traumatised by too many demands.

Stress and your heart

In recent years, there has been evidence to show that psychosocial factors such as depression, anxiety, hostility, anger and periods of chronic stress have been linked to heart disease. Chronic stress can include things like low social support, low socio-economic status, work stress, marital stress and caregiver strain¹. Compared to either biological or lifestyle risk factors, such as smoking, physical inactivity or high cholesterol *etc.*, psychosocial factors are harder to measure in relation to stress, as stress is **subjective** and may be open to bias.

How stress affects your heart?

Stress is thought to affect the heart by its influence on the process of coronary atherosclerosis^{2,3}. Coronary atherosclerosis is hardening and narrowing of the arteries supplying blood and oxygen to the heart. Smoking, high blood pressure and high concentrations of bad cholesterol cause coronary atherosclerosis.

Stress may affect the heart by;

- ❑ Increasing blood pressure
- ❑ Increasing bad cholesterol
- ❑ Affecting the blood clotting system by making blood clot and thicken easier
- ❑ Increasing the levels of stress hormones in the body (cortisol & adrenalin)
- ❑ Higher obesity levels

Not only does stress affect the body but in addition it can also affect behaviour. For instance some people may;

- ❑ Smoke or increase their smoking
- ❑ Change their dietary habits
- ❑ Become physically inactive
- ❑ Increase their alcohol intake
- ❑ Increase their coffee intake
- ❑ Sleep less

Work related stress – the evidence

There is evidence to show that stress at work can contribute to heart disease in some individuals. Research has shown that those in high demand situations with low control are much more likely to suffer from stress ⁴. Equally if an individual's abilities and skills do not match the job or if there is a mismatch between environmental demands such as noise or shift work, stress can occur. In addition, lack of reward or recognition of effort invested by the worker may lead to repeated and continuous dissatisfaction, feelings of unfairness and stress ⁵

Economic burden of stress in the EU

Work related stress is the biggest occupational health problem in the EU 15 , second to back pain. 28% of employees in the EU report they are affected by stress. Stress is estimated to cost the EU at least €20 billion per annum in lost time and health costs. Over 50% of absenteeism is thought to be due to stress.

Women report the highest levels of stress, but it is a problem for both sexes at all levels in an organisation. An estimated 16% of male and 22% of female cardiovascular diseases in the EU are due to stress. ⁶.

Stress in Ireland

According to the Small Firms Association Report 2006 stress is replacing back pain as a key cause of absenteeism from work in Ireland. In Ireland, absenteeism costs small business 692 million per annum. The national average for absenteeism is 9 working days - for smaller firms, this average is 7 working days and 10 days for larger firms ⁷.

Key messages

- ❑ Work off stress- Physical activity helps to produce endorphins which gives a feel good factor. Try and be active for at least 30 minutes most days of the week.
- ❑ Eat a balanced diet and a wide variety of foods
- ❑ Cut down on caffeine
- ❑ Cut down on alcohol
- ❑ Try and quit smoking- contact the National Smokers Helpline on 1850 201 203
- ❑ Get enough sleep and rest to recharge your batteries
- ❑ Take one thing at a time
- ❑ Try and manage your time better
- ❑ Get support from family friend and work colleagues
- ❑ Learn to say “no”
- ❑ Take up a hobby
- ❑ Learn to relax-try listening to music, walking or going for a walk

References

1. Rosengren, A. Hawken, S. Ounpuu S. Sliwa, K, Zubaid, M, Akmahameed, WA, Blackett, KN, Sitthi-amorn, C, Yusuf, S for the INTERHEART investigators. Association of psychosocial risk factors with risk of actual myocardial infarction in 11 119 cases and 13 648 controls from 52 countries (the INTERHEART STUDY) : case control study 2004
The Lancet 2004; 364: 953-962
<http://www.thelancet.com/journals/lancet/article/PIIS0140673604170190/fulltext>
2. Von Kanel R, Mills, PJ. Fainman. C, Dimsdale JE.
Effects of psychological stress and psychiatric disorders on blood coagulation and fibrinolysis : a behavioural pathway to coronary artery disease?
Psychosomatic Medicine 2001; 63: 531-544
<http://www.psychosomaticmedicine.org/cgi/content/abstract/63/4/531>
3. Brydon, L. Magid. K, Steptoe, A. Platlets, coronary heart disease, and stress
Brain behaviour and immunity 20 (2) 2006; 113-119
4. Karesk RA, Theorell T. Healthy work. Basic books, New York 1990
5. Siegrist, J. (1996) Adverse Health effects of high-effort/ low-reward conditions
Journal of Occupational Health Psychology 1 (1) : 27-41
6. Paoli, P. , Merllie, D., 2001 Third European Survey on working conditions 2000. European Foundation for the improvement of living and working conditions. Luxemburg: Office of official publications of the European Communities
European Foundation: Third Survey on Working Conditions 2001
7. Small Firms Association Absenteeism Report 2006 –1/05/2006
<http://www.sfa.ie/Sectors/SFA/SFADoclib4.nsf/wvPressReleasesCurrent/E7FA7DC20E396EF18025715E00416E1C?OpenDocument>

Bibliography

1. Theroell, T, Kristensen.T, Kornitzer, M, Marmot, M, Orth-Gomer, K, Steptoe, A.
Stress and coronary heart disease European Heart Network Brussels 2005