J R Coll Physicians Edinb 2006; **36:**93–95

STRESS AND THE HEART – CONFLICTING VIEWS

Sir,

Contrary to the conclusion of Professor N Boon[1] that there is little prospect of reducing coronary heart disease by reducing stress, the Lifestyle Heart Trial has shown that intensive lifestyle changes, including stress management and group psycho-social support, can result in the regression of coronary atherosclerosis and a reduction of cardiac events, sustained over one year and 5 years of study[2, 3]. Similarly, a randomised controlled trial had shown that over 16 weeks, the addition of stress management to usual medical care produced smaller reduction in left ventricular ejection function with mental stress testing, lower wall motion abnormalities and greater improvement in flow mediated dilatation of the brachial artery, compared to usual care alone.[4]

Furthermore, the association between stress and heart disease is stronger than suggested in Professor Boon's article. Mental stress has been consistently shown to trigger endothelial dysfunction in healthy and hypercholesterolemic subjects.[5–7] Since endothelial dysfunction is a precursor of atherosclerosis, a direct link between mental stress and subsequent atherosclerotic events has thus been established. Compared to matched controls, Japanese people with myocardial infarction have been shown to have put in longer hours at work, and to have insufficient sleep.[8] A fifteen-year follow-up had shown hostility and impatience to be associated with the risk of hypertension.[9]

There can be no doubt that stress increases the incidence of coronary disease in multiple ways.[10] However, the difficulty in studying psycho-social risk factors, and the absence of a simple pharmacological treatment, makes this an area busy clinicians often avoid. Instead of dismissing the role of psycho-social factors in cardiovascular disease, it is thus even more important that a review of stress and the heart be comprehensive, so as to encourage busy physicians to emphasise to their patients the value of stress management and lifestyle changes in reducing coronary disease.

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Author's response

Dr Ong's interesting and welcome comments confirm that this is a controversial issue but do not persuade me that there is any immediate prospect of reducing coronary heart disease mortality through stress management.

Psychological stress may have powerful effects on the circulation through the autonomic nervous system but remains a rather nebulous entity that is hard to measure and difficult to change. There is certainly very little hard evidence to support the view that stress management is a useful means of preventing major adverse coronary events.

The Cochrane collaboration has conducted a systematic review of psychological interventions for coronary heart disease.[1] Thirty-six trials involving 12,841 patients including 18 trials (5,242 patients) of stress management were examined. The quality of many of these trials was thought to be poor and there was no strong evidence of an effect on either total or cardiac mortality, nor coronary revascularisation. Although intervention was associated with a small reduction in non-fatal reinfarction (OR 0·78 (0·67–0·90)) there was statistical evidence of publication bias and the two largest trials (with 4,809 patients randomised) were null for this outcome.

In these circumstances it is easy to see why the newly published Joint British Societies' Guidelines on Prevention of Cardiovascular Disease in Clinical Practice[2] makes no mention of stress management and the draft SIGN (Scottish Intercollegiate Guideline Network) evidence based guideline for the prevention of Coronary Heart Disease[3] considers but does not recommend stress management training.

Finally, let's remember that the potential benefits of correcting conventional risk factors such as smoking, hyperlipidaemia and hypertension are massive and not in doubt.

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RELATIVE RISKS FROM CT PULMONARY ANGIOGRAPHY AND PERFUSION SCANNING TO THE MOTHER AND THE FETUS

Sir,

The recent review article on the diagnosis and treatment of thromboembolic disease in pregnancy commented on the low radiation doses of computed tomographic pulmonary angiography (CTPA) and perfusion scanning to the fetus but did not mention their relative toxicities.[1] A recent study has demonstrated that the absorbed doses to the fetus increase the risk of a fatal cancer by the age of 15 years from 1/1,000,000 to 1/280,00 from low-dose perfusion scanning as compared to CTPA (0·12 versus 0·01 milliGray).[2] This shows a perhaps unsuspected 3·7-–fold advantage to the fetus of CTPA over perfusion scanning. However, as your article states, the absorbed doses to the breast tissue are much higher with CTPA than perfusion scans. In fact, in the same study,[2] the maternal whole body dose was over three times greater for CTPA. This translates into a 34–fold greater risk of developing breast cancer.

In summary, these data would tend to favour perfusion scanning as the initial investigation of choice for pregnant women, especially those with a family history of breast cancer or who have had previous CTPA, despite the slightly higher risk to the fetus. However, it is still important to be aware of the modest increase to the fetus.

ARL Medford
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Authors' reply

We note with interest Dr Medford's comment, and agree that because of the increased absorbed doses to the maternal breast with CTPA this provides a rationale for keeping perfusion scanning as the first line investigation for suspected pulmonary embolism in pregnancy.

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Dr C Nelson Piercy
Consultant Obstetric Physician Guy's & St Thomas' Hospitals Trust & Queen Charlotte's Hospital, London, England

QUESTIONNAIRE INTERPRETATION

Sir,

I was interested to read your review of the survey relating to the popularity of *The Journal*. I note that only 14% of those circulated took the trouble to reply, and that 7% of this group did not read *Issue* 2 at all. It seems highly probable to me that the percentage of those who do not read the Journal would be significantly higher among the non-responder 86%. I suspect, of course, that embarrassment might prevent many non-readers from identifying themselves.

Have you considered asking those who do *not* wish to receive *The Journal* in the future to make their wishes known? The possible saving in circulating issues of *The Journal* which currently go unread would likely result in a considerable financial saving.

M Matthews
Retired Cardiologist, Former Antiquarian

Sir,

I enjoyed the December issue of the *Journal*; all the communications were read with profit as well as pleasure. But, then, more than twenty years into retirement, one has the time, and curiosity is no longer hindered by specialisation.

However, I did find one communication rather depressing. I refer to your presentation and interpretation of the results of the survey of readers.

It may well be that responses to surveys are conventionally considered successful if they elicit 14% of replies but few have ever qualified the outcome by a further sampling from among the initial non-responders. Your figures indicate that the College sends out 500 journals which are, promptly or otherwise, binned. There must be an opportunity here for worthwhile saving on postage and packaging.

It would be interesting to have some idea why 86% did not reply; out of total satisfaction or simply from indifference to its fate? Furthermore, if the survey is truly representative, nearly 4,000 Members or Fellows read it for 'less than an hour', and presumably, therefore, some for less than, say, ten minutes; which implies that nearly 90% of a publication of 80 pages is not read at all by them.

Perhaps such are the pressures of specialisation and workload nowadays that an eclectic choice of reading has become an unaffordable luxury yet the great majority of the replies supported the continuation of a printed *Journal*, as opposed to an electronic version.

Thus I have difficulty in fully sharing your conclusion that the response was encouraging.

I agree that *The Journal* is 'in good health' but the wants and well-being of the recipients remain uncertain.

W Sircus

Retired Gastroenterologist and Former Editor of Proceedings

Editor's response

Dr Sircus takes me to task for an over-optimistic interpretation of the results of the survey published in the last issue of *The Journal*. First, he laments the 14% response rate. I can only agree that more responses would have given us a more reliable insight into the views of our readers, and he is right that no assumptions can be made about the 86% who did not reply. As the commentary on the results stated, 'we cannot but wonder about the views of those who did not reply'. It is quite possible that their views would have been less encouraging. Unfortunately, responses to large online surveys such as this usually run in the range of around 10–15%. On the brighter side, 1,040 responses gives us sufficient information to have some confidence about the views of those who did reply. Is the glass half full or half empty? Whichever view one takes, Dr Sircus is right that there is room for improvement here.

Dr Sircus points out that about 7% of respondants did not read *The Journal* at all (representing about 500 wasted copies when extrapolated to the whole readership) and a further 41% read it for less than an hour (which could mean 5–10 minutes). Dr Matthews makes the same point and both wonder about the possibility of making savings. In fact, the College currently operates an 'opt-out' system for those Fellows and Members who do not wish to receive print copies of *The Journal* in their regular College mailings, but only a small number of individuals have chosen to avail themselves of this option – suggesting that receipt of The Journal is seen as part of the Fellowship fee. The College has also recently decided to pilot a small reduction (£20) in the subscription fee for retired Fellows and overseas Fellows and Members who wish to opt out of receiving *The Journal* and this information will be provided individually at the time of subscription renewal. On the other hand, a very respectable 50% read it for over an hour.

Underlying the results of this survey, Dr Sircus wonders about the place of a general medical journal in medicine today, which raises the question as to whether the Journal meets the needs or the wishes of its readers (in effect, asking what our non-responders think). Specialisation continues apace, and brings benefits to patients, but doctors will hopefully want to be professionals with a wide knowledge of medicine rather than become seen as narrowly-based technicians (however professionally they may behave), as full communication with patients requires that doctors have a wide knowledge of medicine. *The Journal* seeks to provide broad-based medical information and education in an interesting and easy to read form. Dr Sircus makes a very telling comment when he says that he can now enjoy the pleasures of a wide medical interest as retirement has meant that his 'curiosity is no longer hindered by specialisation.' We hope to persuade our readers that they too can be released to enjoy such pleasures four times a year without any constraint on their specialty reading and with benefit to them and to their patients.

I am grateful for the important points Dr Sircus and Dr Matthews have made in their letters and, looking back on my comments on the survey, I should have given more consideration to the less positive aspects they have detailed. We need to find out more about our readers' views, and as I said in my comment, 'We will be holding more surveys in the future, and meantime we hope readers (especially those who did not take part in the survey) will write to us with observations, suggestions and criticisms' – as Dr Sircus and Dr Matthews have done.