

## The subject is complex, the story is clear

Overblown claims and contradictory messages on cancer can lead to confusion and scepticism. Health journalist **Simon Crompton** was recognised in the 2006 Best Reporter Awards for the clear and informative articles he has written for the Body&Soul section of *The Times* (UK). Below we reprint an example, which throws light on the link between exercise and cancer.

**W**e all know that exercise is good for you. We know that it prevents obesity, which is linked with heart disease, diabetes and some cancers. But what about the idea that exercise protects against cancer, full stop?

The notion that the more you exercise, the more you protect yourself from cancer used to sound dangerously cranky. Not any more.

In the past five years, almost unnoticed, there has been a fundamental change in the scientific consensus about the relationship between cancer and exercise.

Cancer Research UK, the biggest independent cancer research organisation in the world, hasn't exactly been shouting about its new conviction, but the past year has seen it state firmly for the first time that inactivity increases your risk of cancer significantly, even if you're not overweight, an idea that would have been laughed at a decade ago.

It isn't just talking about one kind of cancer either. Cancer Research UK is convinced that not moving around enough increases your risk of both colon and breast cancer, and says that inactivity may also be associated with cancers of the womb, lung and prostate.

A turning point came at the Labour Party conference this autumn [2005] when the charity held a meeting launching a manifesto for physical activity at which Professor Ken Fox, a Bristol University researcher funded by Cancer Research UK, stated that "independent of other lifestyle factors, you get a 20–30% reduction in all cancers if you are active."

And, early next year, the charity is to re-launch its Reduce the Risk campaign with "be active" prominent among the more conventional messages to "stop smoking", "eat and drink healthily" and "be sun-smart".

There has been a definite sea change, according to Professor Fox, who runs the department of exercise and health sciences at



# THE TIMES

Good advice. Measured and well-reasoned articles like this one are far more effective than any front-page scare story when it comes to helping people understand how they can lower their risk of developing cancer



Bristol University. “There’s now undeniable evidence that exercise has a direct effect on cancer, especially colon cancer and breast cancer,” he says. “I think the whole issue is just beginning to come on line with cancer research organisations calling for more research on cancer and exercise.”

The evidence has been stacking up over many years. The idea that exercise could prevent cancer was conceived 20 years ago, when David Garabrant, a young assistant professor at the University of Southern California, noticed that data on a cancer registry indicated that people who had more sedentary jobs tended to get more colon cancer. “I presented the data at a department meeting and they laughed at me; they hooted,” he said recently.

But Garabrant is now a professor of epidemiology at the University of Michigan and his contention has been backed up by study after study. In the 1990s, large studies from Italy and the US indicated that physical inactivity could cause 13–14% of all bowel cancer cases. In the same decade, a series of other studies in highly reputable journals indicated that – astonishingly

– being active probably halves your risk of getting colon cancer.

The link with breast cancer has been established more recently. A series of studies between 1997 and 2003, published in established journals such as the *Journal of the American Medical Association* and the *New England Journal of Medicine*, found that being active reduced the risk of breast cancer by 30–40%, and seemed to protect women both before and after the menopause.

Exercise seems to reduce the risk most in women who are active early on in life.

In Britain, a turning point came in 2002, when Professor Fox and his team from the University of Bristol published an extensive review of the evidence on exercise and cancer, concluding that not only could it help people to recover from cancer but the lack of it could be a significant and direct risk factor. This came a year after a review by the Scottish Cancer Foundation and the Cancer Research Campaign came to a similar conclusion on bowel cancer.

On womb, prostate and lung cancer, the evidence is less conclusive, although a recent

analysis of nine studies indicated that high physical activity reduced the risk of lung cancer by about 30%. And in a study in the new issue of *Urological Oncology* [vol.23, pp463–464], researchers from the Harvard School of Public Health conclude that regular physical activity slows the progress of prostate cancer and may reduce mortality.

Richard Davison, the director of policy and public affairs at Cancer Research UK, says the organisation's new public profile on the cancer–activity link reflects the number of sound studies carried out in the field – and the number of funding applications on the subject to the organisation. “I think perhaps physical activity has been ignored in the past,” he says. “The media tends to focus on diet and obesity, and perhaps it's time that changed.”

There may be another reason we don't hear more about the cancer–exercise link. Scientists have a natural fear of overestimating the benefits, when further research is still needed to fully understand the association.

One of the foremost researchers in the field, Dr Anne McTiernan, from the Fred Hutchinson Cancer Research Centre, in Seattle, says her fear is that people will start to believe that the reason they got cancer is that they didn't exercise. In most cases, that's likely to be untrue.

Some researchers, such as Dr Brian

Henderson, from Southern California's Keck School of Medicine, are also sceptical about how accurately existing studies have measured the benefits of exercise on its own. It's hard to measure how much exercise someone is taking and to eliminate other lifestyle factors that might affect their vulnerability to cancer, such as diet. Studies need somehow to ensure that they cancel out the complication that obesity is also linked with cancer (see box).

However, even taking such scepticism into account, there has been a significant change in our perception of the disease and its causes. Though lack of exercise is way behind risk factors such as age, smoking and diet, Cancer Research UK quotes estimates that it accounts for 5% of all cancer deaths. So if you want to act on the evidence, its advice on exercise is the same as every other organisation with a health promotion message. Try to exercise more intensely and more frequently than you do now, and aim for at least 30 minutes a day.

But you don't need to be slim for there to be a positive effect, and simply increasing your daily exercise dose by taking the stairs rather than the lift, or going for a walk in your lunch-break, could make a difference.

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## HOW CAN EXERCISE PROTECT US?

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- Exercise can reduce levels of insulin, some hormones and other human chemicals called growth factors, which dictate how and when cells divide. At high levels these substances can encourage tumour growth.
- Some types of breast cancer are linked to high levels of the female hormone oestrogen. There is some evidence that exercise causes a weaker version of oestrogen to be produced by the body, reducing the risk of breast cancer.
- Exercise also stops us accumulating fat. Studies have shown that being overweight can increase the risk of many cancers, including those of the breast, bowel, kidney, oesophagus, and womb. This is because body fat is active tissue which produces hormones, and high levels of some hormones can promote cancers.
- Physical activity leads to more bowel activity, so it may protect against bowel cancer by causing cancer-causing substances in undigested food to pass through the bowel more quickly. Exercise can also protect against bowel inflammation, which can be linked to some cancers.
- Being active may reduce lung cancer risk by improving lung efficiency, reducing the time cancer-causing chemicals spend in the lung and lowering their concentration.