

Why ‘plenty of bed rest’ could be bad advice

Survivors to be prescribed exercise as cancer care ‘catches up’ with cardiology

→ Peter McIntyre

Evidence from a growing number of robust studies points incontrovertibly towards the benefits of regular, moderate activity not just in preventing cancer, but in rehabilitation for survivors and protection against recurrence. The question, as ever, is how to help those who need it most to get the message and act on it.

Not everyone can be like Lance Armstrong. Following treatment for testicular cancer with lung and brain metastases, he famously went on to win the *Tour de France* seven times, and now he has retired from competitive cycling, he runs marathons.

“I view running as a hobby and a necessity,” he said in April 2008, just before completing the Boston marathon in 2 hours 50 minutes and 58 seconds.

Nor can all cancer patients be like Jane Tomlinson from Leeds in England, who, given six months to live at the age of 36, swam, ran marathons, cycled to Rome and back, and cycled across America raising £1.75 million (€2.2 million) for cancer care.

Jane died in September 2007, having outlived her six-month prognosis by nearly seven years, and having achieved her ambition to see her children through their early childhood – her youngest was 12 when Jane died.

These are exceptional people. One is still alive and the other is not, but in both cases exercise represented a focus of the will to win and the will to live.

However, a growing tide of research shows that

the benefits of exercise for cancer patients do not depend on running marathons. Even ‘moderate’ daily exercise – such as brisk walking or energetic housework – is important in the rehabilitation of cancer patients. Doctors are increasingly advising their patients to take moderate exercise five times a week, to speed their recovery, improve their quality of life and help prevent the return of the cancer.

Fernando Dimeo runs a specialist referral centre for cancer patients with fatigue at the Charité Universitätsmedizin in Berlin. He says simply, “If there is no clear contraindication for exercise, all cancer patients should exercise. That means that we are putting the argument on its head. Usually doctors recommend their patients not to exercise, unless they have a good reason to do so.”

Anna Campbell has researched the effects of exercise on patients with cancer in Scotland and now runs cancer rehabilitation training courses across the UK (www.canrehab.co.uk). She is focusing on how to introduce into cancer care packages evidence-based practice on exercise.

“There is something protective about being active post diagnosis. For people who have already had a



“Racing dragon boats is physically and mentally demanding, which makes you focus and forget your problems momentarily. Every woman rises to the challenge. You gain your confidence back and are able to face life again, head-on. Perhaps the most important thing is the fun – whether it is sunny, raining, hail or snow, we go out on the water and have a laugh!”

Wendy de Corte, Pool of Life

WILF HOLDEN

Rowing back to health. Dragon boat racing is becoming a very popular form of exercise among breast cancer survivors. Pictured here is the UK Pool of Life team (www.pooloflife.net) from Liverpool, on a 42-km paddle along the Leeds/Liverpool Canal this May, to raise awareness about the importance of early detection

cancer diagnosis, 30 minutes of moderate exercise five days a week will cut by half the risk of colorectal or breast cancer compared with someone who has a very sedentary lifestyle. There is no patient who could not incorporate some kind of physical activity, whether home-based or in a group setting or a one-to-one programme into their daily life.”

Both specialists say that exercise improves quality of life and can often begin during treatment, though there are caveats for patients who suffer exercise-related pain, poorly controlled hypertension or diabetes, unstable heart disease, or other comorbidity.

Cancer care is taking time to catch up with cardiovascular medicine in understanding the beneficial role of exercise, says Dimeo. “For 20 years now, we have recommended patients with cardiovascular disorders or lung disorders to start exercising or increase physical activity. But for cancer patients, some doctors recommend that patients do not exercise during anaemia or immunosuppression. If you ask them why, they cannot give you a reason.”

Exercise is now becoming an issue wherever the number of cancer survivors is increasing, such as in colorectal or prostate cancer. There is increasing interest in encouraging children with leukaemia to exercise and there are studies showing benefits for patients with myeloma and non-Hodgkin’s lymphoma. There is also evidence that exercise improves quality of life for patients receiving palliative care.

THE EVIDENCE IS STACKING UP

The evidence showing the benefits of exercise before and after diagnosis is stacking up fast. It is estimated that inactive lifestyles could account for up to 5% of all cancer deaths, 13–14% of all bowel cancer cases

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and 11% of breast cancer cases. A recent study from Poland, where 9,000 women are diagnosed with breast cancer every year, showed that women who were in the most active group were 20% less likely to develop breast cancer than women in the lowest activity group. Beata Peplonska and colleagues at the Nofer Institute of Occupational Medicine in Łódź, found particularly strong benefits for women who increased activity levels in their 50s.

The benefits of exercise post diagnosis is also becoming clear. One of the most dramatic results was

shown in a study by Meyerhardt and colleagues in the *Journal of Clinical Oncology*. They followed 573 women with stage 1–3 colorectal cancer, and found that cancer-specific death was 60% lower in women who exercised six or more hours a week (walking at average pace) than in those who exercised for less than one hour a week. The reduction in deaths from all causes was almost as large. A second study of more than 800 patients with stage 3 colon cancer showed that mortality was reduced by half in the group that had exercised six hours a week or more.

Exercise can also help with the fatigue that many patients suffer long after treatment. A Cochrane review published in April found that “exercise can be regarded as beneficial for individuals with cancer-related fatigue during and post cancer therapy”. It called for further research to decide the best type, intensity and timing of exercise.

Dimeo’s group in Berlin enrolled 32 cancer patients with mild-to-severe persistent fatigue in a research programme that involved 30-minute sessions on a treadmill with resistance exercises for the major muscle groups. After three weeks, the patients showed a significant increase in physical performance and reduced overall fatigue scores by a mean average of 25%.

However, when Dimeo analysed detailed fatigue scores, he found no significant effect on cognitive fatigue, depression or anxiety.

“I have had patients here working out for six or eight weeks, and we observe a very clear improvement in their physical performance, but at the end, some go on feeling mentally tired. Why do they continue to feel lack of motivation and have cognitive problems? The first idea was exercise – we were very ecstatic about exercise and the improvement in physical performance. Now we are certain that the problem of fatigue is much more complex than that, and that the patient also has problems in other areas.”

Dimeo says that we need better definitions of mental fatigue to distinguish, for example, between patients who feel run down and lacking in motivation and those who become forgetful and unable to

The studies

Examples of the growing body of literature testifying to the importance of exercise in survivor quality of life, primary prevention and preventing recurrence include:

- *Adulthood lifetime physical activity and breast cancer.* B Peplonska, J Lissowska, TJ Hartman et al. *Epidemiology*, March 2008
- *Benefits of supervised group exercise programme for women being treated for early stage breast cancer: pragmatic randomised controlled trial.* N Mutrie, A Campbell, F Whyte et al. *BMJ*, 16 February 2007
- *Effects of an endurance and resistance exercise program on persistent cancer-related fatigue after treatment.* F Dimeo, S Schwartz, N Wesel et al. *Ann Oncol* published online 1 April 2008
- *Exercise for the management of cancer-related fatigue in adults.* F Cramp and J Daniel, *Cochrane Database of Systematic Reviews* 2008 Issue 2 Art. No. CD006145, April 2008
- *Exercise for women receiving adjuvant therapy for breast cancer.* M Markes et al. *Cochrane Database of Systematic Reviews* 2006 Issue 4 Art. No. CD005001, October 2006
- *Impact of physical activity on cancer recurrence and survival in patients with stage III colon cancer: findings from CALGB 89803.* JA Meyerhardt, D Heseltine, D Niedzwieckiet al. *JCO*, 1 August 2006
- *Physical activity and survival after colorectal cancer diagnosis.* JA Meyerhardt, EL Giovannucci, MD Holmes et al. *JCO*, 1 August 2006

“Inactive lifestyles could account for up to 13–14% of colorectal cancers and 11% of breast cancers”

Even patients who do not seem to have made progress exercising during treatment often feel the benefits later

concentrate when reading a book or watching a film.

“The instruments we have are very unspecific. We have to ask the patient: what exactly do you mean when you feel mentally tired? You cannot concentrate or you are forgetful or what? The next step is to define the limitations of the patient, and after that we can start to evaluate different therapeutic approaches.”

LATE EFFECTS

However, Campbell says that even patients who do not seem to have made progress during the exercise programme during treatment often feel the benefits later. She was involved in research in Glasgow, Scotland, that randomised 203 women with early-stage breast cancer to a 12-week exercise programme during their treatment or a control group, and then followed them up six months later.

The women attended two 45-minute exercise classes a week and were encouraged to do one other exercise session at home. After 12 weeks they showed

physical and psychological benefits compared to the control group. However, the difference in general quality of life first emerged at the six-month follow-up. Of cost-benefit interest is that the exercise group spent fewer nights in hospital and made fewer visits to their doctor, compared with the control group.

This was the first randomised controlled trial of exercise in breast cancer patients in the UK, and, like Dimeo, Campbell thinks there is a complex story underneath the figures.

“When you look at any group studies post-treatment, when you give them a physical exercise programme they not only get fitter, able to be more active and stronger, but their quality of life improves. We found that when you are doing an intervention with physical activity during chemo- or radiotherapy, it is much more difficult to see an overall improvement in quality of life. We think that during the treatment there are other issues and side-effects of treatment, which perhaps mask the overall improve-

ment. The interesting thing is that when we followed up the women six months later, when they finished their treatment, surprise, surprise, the women who have been given exercise, their quality of life has improved, compared with the women who haven't been given the exercise.”

Group exercise appears to have some extra benefits

Long-term benefit. These survivors are part of the 203-strong randomised clinical trial that demonstrated a significant impact of the CATS (Cancer and Tiredness Support) exercise programme on quality of life. Lead researcher, Anna Campbell is pictured leading the class, in Renfrew, Scotland



CATHY MCINTYRE



Group dynamics. The Czech Dracice team (www.dracice.org) is one of the more recent additions to the European breast cancer survivor dragon boat racing scene. They are pictured here (centre) taking part in the Prague Dragon Boat Festival this June

over exercising alone, according to Campbell. “Definitely the group dynamics did have some effect, so there were two plusses. But it came out very strongly that the women were not interested in just sitting around the table talking about their cancer. The physical functioning improved and they showed reduced fatigue and a greater range of movement.”

One manifestation of this group effect is the success of dragon boat racing amongst breast cancer survivors, as a way of combining exercise with fun and group support. This is a huge sport in Canada, North America and Australia, and has spread to Europe, with teams in the Czech Republic, Germany, Italy, Poland and the UK. This September, the European Dragon Boat Racing championships, hosted in Sabaude, Italy, will feature for the first time a race for breast cancer survivor teams.

LEARNING FROM CARDIAC CARE

Campbell is involved in trying to get physical exercise into routine cancer rehabilitation care as part of NHS treatment in the UK, working with healthcare and exercise professionals to develop properly validated training and educational courses. She too believes that cancer care professionals should learn from cardiac care.

“Cardiac rehab is a fantastic example of where the patients, after a triple bypass or whatever, have a 12-week structured programme with exercise and are also given information on health lifestyle such as diet, smoking and alcohol consumption. At the end of the 12 weeks they are straight into community-based pro-

grammes near them in the local gym. That is what I would love to see take place for cancer rehabilitation.”

Making exercise part of rehabilitation care would be a great help in getting people started. But as every health club knows, it is one thing to start exercise and another thing to make it a part of your daily life. A study in Alaska showed that breast cancer patients who were given step counters and encouraged to walk “like they were late for an appointment” were taking more exercise after three months than those who were simply given verbal encouragement, but after six months the difference was no longer significant.

Campbell says that those setting up exercise programmes have to pay close attention to the motivators and the barriers to taking part, especially to attract the patients who may be the least likely to attend.

“You may find that younger women weren’t coming in after a diagnosis of breast cancer compared to older women. The main factors may be things like childcare, or they are keen to get back to work and the timing does not suit them, or the treatment they are getting is slightly more aggressive and they are finding it harder to cope. I am looking at how to overcome the barriers so you can incorporate people who maybe cannot travel to a local gym or who have comorbidities. Like everything else, the first to take it up are the more socially and educationally advantaged people. You really want to target the people who are not coming along, but need it the most. But many health professionals would like more training in helping patients to change behaviour.”

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