THE NEW ZEALAND MEDICAL JOURNAL
Journal of the New Zealand Medical Association

The importance of promoting physical activity for cancer survivorship

Justin W L Keogh, Lynnette Jones

Cancer is one of the leading causes of death in many countries, including New Zealand. Projections suggest that New Zealand will have over 22,000 new cancer cases in 2011, a substantial increase from the 15,000 cases reported in 2005.[1] This increased number of new cancer cases may reflect the ageing of the population, insufficient levels of physical activity, poor dietary choices, other unhealthy lifestyle choices such as smoking as well as improvements in cancer detection.[2] Improvements in treatment modalities for many common cancers also appear to be contributing to many more individuals with cancer living longer post-diagnosis.[3]

Regardless of the treatment option, many cancer patients (survivors) experience significant fatigue, physical disability and reductions in overall quality of life.[4] Moreover, these decrements often become more pronounced over time or with additional treatment(s).[4] Fatigue and physical impairment imposes many challenges on the lives of cancer survivors by significantly interfering with their ability to perform self-care, work and leisure activities,[5] thus further contributing to reductions in their quality of life.

These debilitating side-effects of treatment may also prevent many cancer survivors from engaging in sufficient physical activity for health benefits[6] and increase their risk of developing metabolic syndrome.[2] As a result, we would argue that more services and resources need to be allocated to target these key psychosocial and physical issues facing the burgeoning population of cancer survivors worldwide. One way to address this shortfall could be the development of physical activity programmes for cancer survivors that focus on improving their quality of life and overall health.

The rationale for this is recommendation is that many cross-sectional studies[7] including the paper by Keogh and colleagues[8] reprinted in this issue, have demonstrated a link between levels of physical activity and quality of life in a range of cancer groups. Further, recent systematic reviews of experimental research in this area have demonstrated that general physical activity and structured exercise programmes have many physiological and psychosocial benefits for cancer survivors.[2,9,10]

These and other reviews indicate that resistance training and aerobic training (although possibly to a lesser extent) can significantly improve body composition, muscular strength and endurance, aerobic fitness, functional performance in activities of daily living and various aspects of quality of life as well as reduce fatigue in a variety of cancer groups. Some evidence also suggests that exercise may improve immune function and reduce markers of cancer progression, postponing the need to initiate treatments with known side-effects, thereby possibly leading to increased longevity and healthier survivorship.

Unfortunately, many cancer survivors do not perform sufficient physical activity for health benefit. For example, Keogh and colleagues[8] reported that only 45% of prostate cancer survivors were physically active—i.e. performing 150 minutes of moderate intensity or 60 minutes of vigorous physical activity per week. It would therefore appear that more research needs to be conducted into determining ways to increase physical activity levels (perhaps via structured exercise programmes) in cancer survivors.

The article in this issue by Szymlek-Gay and colleagues[11] addresses this concern in a number of ways. It not only presents some of the evidence for the benefits of exercise in a variety of cancer groups, but also discusses some of the common barriers and motives to exercise for those with cancer and the issues surrounding the relative lack of specific cancer exercise programmes available in New Zealand and many other countries.

Of particular interest to readers of the *New Zealand Medical Journal*, Szymlek-Gay et al[11] discuss the important role that cancer clinicians such as surgeons, oncologists, urologists, physicians and practice nurses have in discussing quality of life concerns and encouraging regular physical activity in their patients. Such a recommendation is consistent with the theory of planned behaviour (the most widely used psychological theory to explain exercise behaviour in cancer groups)[7,8] and is supported by Jones et al[12] who found that cancer survivors significantly increased their level of physical activity when recommended to by their cancer clinician.

Based on these findings[12] as well as the evidence for the benefits of physical activity,[2,9,10] we would like to challenge all those who work with cancer patients and survivors (especially cancer clinicians) to focus more on improving the quality of life and not just the quantity of life these individuals may have left. Based on the evidence provided in this editorial and the paper of Szymlek-Gay and colleagues,[11] one way to achieve this could be to develop better interdisciplinary links with local clinical exercise specialists and providers. Such collaborations could arguably lead to the development of a number of evidence-based, accessible physical activity programmes for cancer survivors throughout the country, with the likely result being improvements in many cancer survivors' quality of life and overall health.

We would therefore argue that the development and availability of such physical activity programmes is an important national health care issue, one with particular relevance to the New Zealand Cancer Control Strategy. Some progress has been made in this area with three breast cancer exercise programmes (Beyond Pink, YWCA Encore and Pink Pilates) available in some parts of New Zealand. Unfortunately, there appears to be very few options available for survivors of other cancers (with the possible exception of Club Physical's Cancer Wellfit programme in Auckland), particularly for cancers affecting men. This is hopefully set to change with the introduction of a programme for men called Steel Pilates in the near future.

In conclusion, while regular physical activity and structured exercise have many benefits for cancer survivors,[2,9,10] most cancer survivors do not engage in sufficient physical activity to improve their quality of life and overall health.[6] Cancer clinicians are in an ideal place to improve this, as their recommendations can significantly increase the physical activity levels of their patients.[12] However, a barrier to long-term

physical activity in cancer survivors may be a lack of suitable programmes and on-going support.[6]

Thus, we would strongly encourage cancer clinicians to develop better links with local cancer support workers and clinical exercise specialists, so that they can confidently refer their patients to evidence-based physical activity programmes in their region. If no such programmes are currently available in their region, we would encourage cancer clinicians to lobby the relevant authorities for their introduction. By these actions, cancer clinicians will further contribute to maximising the health and quality of life of cancer survivors nation-wide.

For those interested in these cancer exercise programmes, contact details can be found at:

- Beyond Pink: Dr Lynnette Jones, lynnette.jones@otago.ac.nz
- Encore: http://www.breastcancersupport.co.nz/Support/Coping+with+breast+cancer
- Pink Pilates: http://www.pinkpilates.co.nz/
- Cancer Wellfit: http://www.clubphysical.co.nz/
- Steel Pilates: http://www.pinkpilates.co.nz/mens-cancer-programme

Competing interests: None.

Author information: Justin W L Keogh[1,2,3] and Lynnette Jones[4]

1. Person Centred Research Centre, AUT University, Auckland, New Zealand
2. Centre for Physical Activity and Nutrition Research, AUT University, Auckland, New Zealand
3. Faculty of Health Sciences and Medicine, Bond University, Gold Coast, Australia
4. School of Physical Education, University of Otago, Dunedin, New Zealand

Correspondence: Associate Professor Justin Keogh, School of Sport and Recreation, AUT University, Private Bag 92006, Auckland, New Zealand. Fax: +64 (0)9 9219960; email: justin.keogh@aut.ac.nz

References:

1. Cancer Control Task Force. The New Zealand Cancer Control Strategy: Action Plan 2005-2010. Wellington: Ministry of Health and the New Zealand Cancer Control Trust; 2005.
2. Newton R, Galvão D. Exercise in prevention and management of cancer. Curr Treat Options Oncol. 2008;9:135-46.
3. Etzioni R, Tsodikov A, Mariotto A, et al. Quantifying the role of PSA screening in the US prostate cancer mortality decline. Cancer Causes Control. 2008;19:175-81.
4. Baker F, Denniston M, Smith T, et al. Adult cancer survivors: how are they faring? Cancer. 2005;104:2565-76.
5. Truong PT, Berthelet E, Lee JC, et al. Prospective evaluation of the prevalence and severity of fatigue in patients with prostate cancer undergoing radical external beam radiotherapy and neoadjuvant hormone therapy. Can J Urol. 2006;13:3139-46.
6. Thorsen L, Courneya K, Stevinson C, et al. A systematic review of physical activity in prostate cancer survivors: outcomes, prevalence, and determinants. Support Care Cancer. 2008;16:987-97.

7. Blanchard CM, Stein KD, Baker F, et al. Association between current lifestyle behaviors and health-related quality of life in breast, colorectal, and prostate cancer survivors. Psychol Health. 2004;19:1-13.
8. Keogh JWL, Shepherd D, Krägeloh CU, et al. Predictors of physical activity and quality of life in New Zealand prostate cancer survivors undergoing androgen-deprivation therapy. N Z Med J. 2010;123:20-9.
9. Spence RR, Heesch KC, Brown WJ. Exercise and cancer rehabilitation: a systematic review. Cancer Treat Rev. 2010;36:185-94.
10. Keogh JWL, MacLeod RD. Body composition, physical fitness, functional performance, quality of life and fatigue benefits of exercise for prostate cancer patients: a systematic review. J Pain Symptom Manage. in press. doi:10.1016/j.jpainsymman.2011.03.006
11. Szymlek-Gay EA, Richards R, Egan R. Physical activity among cancer survivors: a literature review N Z Med J. 2011;124(1337). http://www.nzma.org.nz/journal/124-1337/4746
12. Jones LW, Courneya KS, Fairey AS, et al. Effects of an oncologist's recommendation to exercise on self-reported exercise behavior in newly diagnosed breast cancer survivors: a single-blind, randomized controlled trial. Ann Behav Med. 2004;28:105-13.