



Physiotherapy

briefings for physicians



In this first of a series of *briefings for physicians* on the topic of therapeutic exercise, our focus is how physiotherapy can benefit women with breast cancer.

Recent Studies Demonstrate Exercise Safe and Beneficial for Women with Breast Cancer

Although mortality from breast cancer – the most common cancer diagnosed in Canadian women – has decreased considerably over the last two decades, secondary complications associated with the disease and its standard treatments continue to be significant. These complications include decreased quality of life, decreased shoulder mobility and strength, weight gain, sleep disturbances, poor body image and fatigue, and increased risk for osteoporosis, cardiovascular disease, premature menopause and lymphedema.¹

Exercise has been shown to positively impact quality of life and other aspects of health in a variety of patient populations, and recent studies are now providing preliminary evidence to suggest that exercise may be both safe and beneficial for breast cancer patients and survivors.

In July 2006, the first meta-analysis to focus solely on the effectiveness of exercise interventions in breast cancer patients and survivors was published in the *Canadian Medical Association Journal*. This clinically relevant work was led by physiotherapy clinician-scientist Margaret McNeely and concluded that exercise was an effective intervention to improve quality of life, cardio-respiratory fitness, physical functioning and symptoms of fatigue.²

The review included only randomized controlled trials that examined exercise interventions for breast cancer patients or survivors with quality of life, cardio-respiratory fitness or physical functioning as primary outcomes – a total of 14 studies involving 717 participants. The researchers also extracted data on symptoms of fatigue, body composition and adverse effects.

McNeely and colleagues noted that despite significant heterogeneity and relatively small samples, the point estimates in terms of the benefits of exercise for the primary outcomes were positive even when statistical significance was not achieved.

continued on back page...

“Women who have been treated for breast cancer can enjoy full, active lives. Supervised and graduated exercise training programs such as those offered by physiotherapists can lead to improved quality of life and fitness without increasing the risk of adverse effects such as lymphedema.”

Dr. Don McKenzie, sports medicine physician and professor with the School of Human Kinetics at the University of British Columbia.



Physical Activity and Survival after Breast Cancer Diagnosis

Not only can exercise improve quality of life for women with breast cancer – it may also reduce risk of death from the disease, according to a study published in the *Journal of the American Medical Association*.¹ The prospective observational study was based on responses from 2,987 female registered nurses in the Nurses' Health study who were diagnosed with breast cancer between 1984 and 1988, and who were followed up until death or June 2002, whichever came first. The researchers found that women who engaged in an amount of physical activity equivalent to walking one or more hours per week had better survival compared with those who exercised less than that or not at all.

¹ Holmes, M.D. et al. *Physical activity and survival after breast cancer diagnosis. JAMA* 2005;293(20):2479-86.

Therapeutic Exercise and Lymphedema

Lymphedema is one of the most concerning and prevalent of secondary complications of breast cancer treatments such as surgery and radiation therapy. Lymphedema treatment options include elevation, massage, compression garments, pneumatic compression pumps, and complex physical therapy. Traditionally, women at risk of lymphedema or with pre-existing lymphedema were advised to avoid strenuous or repetitive activities such as exercise because such activities were assumed to initiate or exacerbate the condition.

An in-press literature review (2006) of research on exercise and breast cancer-related lymphedema¹ examined eight studies directly related to breast cancer-related lymphedema and aerobic or resistance exercise. Six involved women who were at risk, and two involved women with pre-existing lymphedema. The reviewers found that exercise neither initiated nor exacerbated lymphedema.

The use of compression bandaging is recommended as a precautionary measure during exercise as it may provide a protective component against lymphedema. It is also advised that exercise programs be supervised and graduated and that upper extremity circumference (a measure of lymphedema) be closely monitored.

¹ Bicego, D. et al. *Exercise for women with or at risk for breast cancer-related lymphedema. Physical Therapy; in press for October 2006.*

...continued from front page

For example, four of the studies reviewed, which involved 208 patients, reported physical functioning or physical well-being components. Pooled results showed a statistically significant increase in physical function or well-being from exercise. There was a non-significant difference in the occurrence of lymphedema between exercise and control interventions.

While the results show that women with breast cancer can benefit from exercise, there is still some debate about the appropriate timing, type and intensity of the exercise. Harris and colleagues in their review note one study that suggests exercise interventions with clear limits in range-of-motion during the first few postoperative days and gradual progression over time aids recovery of range while avoiding additional morbidity. Current clinical practice guidelines, published in *CMAJ* in 2001,³ suggest that exercise involving the affected arm may be beneficial for women who have been treated for breast cancer.

Even vigorous exercise and intense strength training following adjuvant treatments can eventually be achieved by breast cancer survivors, without increasing their risk of adverse effects. Results of studies done on the dragon boat racing teams of *Abreast in a Boat*, made up of women with breast cancer, defy the myth that repetitive upper body exercise encourages lymphedema.⁴

Existing studies include a surprising diversity in exercise prescription, suggesting that various types of exercise can be beneficial for breast cancer patients and survivors, so long as it is graduated and monitored by a health professional, preferably a physiotherapist because of their specialized university education and regulated practice.

¹ Harris, S.R. et al. *Upper extremity rehabilitation for women who have been treated for breast cancer. Physiotherapy Canada* 2003;56(4):202-214.

² McNeely, M. et al. *Effects of exercise on breast cancer patients and survivors: a systematic review and meta-analysis. CMAJ* 2006;175(1):34-41.

³ Harris, S.R. et al. *Clinical practice guidelines for the care and treatment of breast cancer. 11. Lymphedema. CMAJ. 2001; 164:191-199.*

⁴ Harris, S.R. & Niesen-Vertommen, S.L. *Challenging the myth of exercise-induced lymphedema in breast cancer: A series of case reports. J Surg Oncol. 2000;74:95-99.*

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