

Exercise Programming for Cancer Patients

By Jennifer Salter

Cancer is the leading cause of death in Canada, with the number of new cases expected to increase due to population growth and aging. In 2012, approximately 186,400 new cases of cancer (excluding non-melanoma skin cancer) were diagnosed in Canada. Of these, 75,700 cancer deaths occurred. Breast cancer is the most frequently diagnosed cancer in women, while lung cancer is the leading cause of death. For men, prostate cancer is the more commonly diagnosed, while lung cancer is also the leading killer. Nearly 40% of all cancer deaths in Canada are due to lung and colorectal cancers.

A cancer diagnosis is only the beginning of a complicated journey that involves countless doctor and hospital visits, treatment decisions, and most likely surgery, chemotherapy, radiation, and possibly ongoing drug therapies to prevent recurrence. Cancer treatment itself leads to challenging side effects which can include fatigue, nausea, reduced functional capacity, lowered VO₂ max, loss of muscle mass, and anxiety. The good news is that regular moderate exercise helps manage treatment side effects. Research demonstrates that moderate exercise reduces fatigue—the most frequent complaint during treatment—by 40–50 percent. In addition, regular exercise increases muscle strength, joint flexibility, bone health, and general conditioning, all of which may be impaired by surgery and some therapies. Exercise offsets the decline in VO₂ max that usually accompanies chemotherapy. Finally, exercise helps control weight—a crucial factor, as studies have shown that gaining weight during and after treatment raises the risk of a cancer recurrence, specifically breast, colon and prostate cancers.

A systematic meta-analysis published in the *Journal of the Canadian Medical Association* that analyzed data from 14 studies on the effects of exercise on breast cancer patients found that the benefits of exercise were positive even when statistical significance was not achieved. The outcomes measured were quality of life, cardiovascular fitness, physical functioning, fatigue, body composition, and adverse treatment effects. These benefits can be extrapolated to other types of cancer as well.

Regular cardiovascular and resistance exercise can also be used to manage depression and anxiety triggered by the trauma of a

cancer diagnosis. Cardiovascular and strength training appear to be equally beneficial in generating antidepressive effects. The greatest results occur after 17 weeks of training, although small changes can be observed after four weeks. In fact, British physicians now use exercise as a first-line treatment for depression, but it is vastly underutilized in the US. The benefit of exercise on anxiety is just as convincing.

When educating cancer patients on the advantages of exercise,

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concentrate on benefits that are easy to achieve in the short term and straightforward to measure (for example, improved mood or management of treatment side-effects). Although the long term wish of all cancer patients is recurrence prevention, it would be foolish for fitness professionals to make such promises. There are a multitude of reasons why some people recover from cancer and some do not. The most prudent way to address clients' fears of not recovering from the disease is to present research on the role exercise plays in treatment, while focusing on variables that can be seen, felt, and measured.

Programming Considerations

Develop Basic Counselling Skills. Personal trainers will be more effective if basic counselling skills are developed. Active listening, attentive body language, genuine compassion, and empathy will go a long way to enhance client compliance and satisfaction. Be sure to stay within your scope of practice by avoiding discussions about issues that are best left to a trained psychotherapist's office, such as marital difficulties, childhood trauma, or debilitating anxiety.

Attain Physician Clearance. Before embarking on an exercise program, the client must attain clearance from her oncologist. This must be in writing in accordance with the American College of Sports Medicine (ACSM) guidelines for clients with medical problems. Include details about what the exercise program will involve, and consider providing a bibliography of academic journal articles on the benefits of exercise for cancer patients.

Cardiovascular Assessment. One of the goals of cardiovascular exercise is to minimize the loss of VO₂max that usually occurs with chemotherapy. Utilizing a low-risk, sub-maximal assessment protocol will generate required information about the client's current fitness level, without putting him at risk of musculoskeletal injury. Simple cardiovascular tests such as the Rockport Fitness Treadmill Test (www.exrx.net) or the Ross Submaximal Treadmill Protocol are easy to administer and can be stopped immediately if the client feels unwell. Pair electronic heart rate monitoring with Rate of Perceived Exertion (RPE), as clients who have already begun treatment may not generate a very high heart rate, leading the trainer to underestimate how hard she is working. Do not compare the results of the test to age-specific norms—this is not motivating. Instead, explain that you are establishing a baseline with which to compare future progress. Heart rate recovery should also be monitored—your client's heart rate should return to its pre-exercise level within

five minutes, depending on client age and current treatment regimen.

Strength and ROM Testing. One- or even ten-rep max protocols are inappropriate for this group. For strength, utilize an informal, ongoing assessment model by commencing with a 15-20 rep max protocol, and keeping meticulous record of reps, sets and loads. Every few weeks, motivate your client by drawing attention to gains made. Of course, a client who was highly trained before diagnosis will be able to continue with his previous program if he is able. Assess ROM as you would a healthy client, with the exception of muscles that may have been affected by surgery.

Cardiovascular Training With Modified HIIT. Implementing cardiovascular training with modified high intensity interval training (HIIT) offsets decreases in VO₂max. HIIT segments can be between 65 and 90% of maximal oxygen consumption for 30 seconds to three minutes, depending on the client's pre-existing cardiovascular fitness level. Using a heart rate monitor is imperative to safely observe and adjust workload.

Include Strength Training. Strength training mitigates the loss of lean tissue associated with chemotherapy regimens. On days when your client feels unwell, manipulate variables that will not interfere with strength development—for example: rest periods between sets, exercise position (sitting instead of standing), and if necessary, reps. Do not reduce exercise load unless absolutely necessary.

Plan Your Sessions, But Prepare to Re-Work the Plan. Clients undergoing cancer treatment will have good and bad days, and exercise intensity and duration need to be adjusted accordingly. Do more on good days and spend time on bad days focusing on flexibility, functional training, and gentle corrective exercises.

Include Rest as Part of the Program! Communicate the importance of rest as part of the exercise program. Adaptations to exercise occur during the recovery period following workouts, not during the actual exercise sessions. Ignoring the need for rest will interfere with the achievement of training effects.

In conclusion, a skilled personal trainer can be a sea of calm during what is often the most stressful time in a client's life. By expanding your knowledge base of how exercise impacts cancer patients, you can meet the needs of this population safely and effectively.

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