EXERCISE AND CANCER

PUBLIC

WHAT IS CANCER?

The term cancer describes a disease in which abnormal cells multiply without control. While there are more than 100 different types of cancer, melanoma, prostate, bowel (colon and rectal cancers), breast, and lung cancer account for 60% of all cancers diagnosed in Australia. More than 134,000 new cases are diagnosed yearly, and one in two people will be diagnosed with cancer by the age of 85 years. Survival after cancer varies and is influenced by cancer type and stage at diagnosis. Survival rates exceed 90% for melanoma, prostate and breast cancers (1), and are progressively improving for most other types.

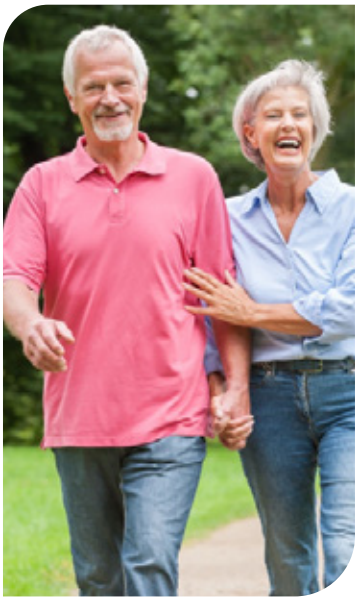
HOW DOES EXERCISE HELP PEOPLE WITH CANCER?

Exercise is important for those diagnosed with cancer just as it is for those without cancer. However, a diagnosis of cancer and receiving treatment for cancer makes exercise before, during and after treatment even more important. Before treatment for cancer starts, exercise can help reduce subsequent treatment-related complications and enhance post-surgery recovery. During treatment, exercise can minimise the number, duration and severity of side effects (Table 1). Following treatment, exercise can improve the speed of recovery, aid in achieving a full recovery, and can prevent the development and/or improve the management of long-term side effects (e.g. fatigue or "chemo brain") (Table 1). Also, exercise post-cancer can reduce risk of cancer returning or developing a new cancer, as well as reduce risk of other chronic disease including obesity, osteoporosis, cardiovascular disease, and diabetes (2, 3, 4).

Table 1: Benefits of exercise during and following treatment for cancer

PRESERVATIONS OR IMPROVEMENTS	REDUCTIONS
• Muscle strength, mass and power • Quality of life • Body composition and bone health • Physical functioning and fitness • Immune function • Cancer treatment adherence • Body image, mood and self esteem • Cognition • Sleep quality	• Duration of hospitalisation • Psychological and emotional stress • Depression and anxiety • Number and severity of treatment-related symptoms and side effects (e.g. pain, fatigue, lymphoedema, and nausea) • Sexual dysfunction • Risk of cancer recurrence and mortality

WHAT TYPE OF EXERCISE IS BEST FOR CANCER SURVIVORS?



Recommended target: 150 minutes of moderate-intensity exercise, or 75 minutes of high-intensity exercise (or an equivalent combination of these) every week. Two sessions of resistance exercise (muscle strengthening exercise) are also recommended each week.

Additional health benefits may be possible from higher volumes of exercise (e.g. 300 minutes/week of moderate-intensity exercise and/or incorporating high-intensity into aerobic- or resistance-based sessions). Importantly, an exercise program should be individualised according to past and current fitness level, previous and planned cancer treatment, disease- and treatment-related risk factors, the presence and severity of treatment-related symptoms, and side effects, as well as an individual's interests and preferences. For some people, particularly immediately after surgery or during treatment, the general guidelines may be unrealistic. In these cases, people should be encouraged to follow the general rules outlined on the next page.

A comprehensive overview of specific exercise programs can be found in the ACSM's exercise guidelines for cancer survivors (5), and the position stand of ESSA, Optimising cancer outcomes through exercise (6). In the absence of contraindications, cancer survivors should be encouraged to explore exercise options that they enjoy or that are optimal for achieving individual goals.

IS EXERCISE SAFE FOR CANCER SURVIVORS?

Exercise is considered safe when commenced at an appropriate level and progressed gradually. Pre-exercise screening may be valuable in triaging the level of supervision required to maximise the safety of exercise (e.g. unsupervised, group-based sessions or individual supervised sessions). General exercise prescription guidelines should be followed (e.g. for people who have heart and lung problems), particularly as cancer treatment can increase risk of cardiovascular events. Extra caution may be necessary with regards to:

- choosing activities for certain survivors (e.g. those with balance concerns may need to walk on a treadmill rather than on uneven sidewalks);
- exercise locations for survivors with weaker immune systems (e.g. public exercise environments may increase the chance of infections); and
- support and supervision for people experiencing fluctuating treatment-related side effects and new side effects, and for those who have little or no history of exercising.

It is important to note that there are some reasons why you should not to exercise. Specifically, exercise may not be suitable for cancer survivors when experiencing fever, low blood cell counts, and/or a recent adverse change in treatment-related symptoms. With worsening symptoms or side effects, consulting a doctor as soon as possible, to remain as active as symptoms allow and to gradually return to exercise when symptoms resolve, is advised.

Exercise is generally considered safe and can improve quality of life, even if the cancer is no longer responding to treatment. During palliative care, exercise recommendations will depend on a person's goals, abilities and preferences, with potential benefits including delaying physical decline, controlling symptoms, and maintaining independence.

BARRIERS TO EXERCISE

Cancer survivors may experience unique barriers to exercise as a result of their disease and treatment (e.g. nausea, fatigue, the discomfort of exercising in a wig, and restricted time-availability due to multiple medical appointments). Some barriers require extensive modification to a standard exercise program (e.g. peripheral neuropathy may necessitate exercises to be performed seated for a period of time), but typically, creativity can be used to accommodate individual challenges and optimise the exercise that can be completed. It is often helpful for an individual to have a "tool-box" of solutions to help overcome specific barriers. These may include modified exercise programs for days when symptoms are particularly intense, personalised goals focussing on reinforcing an individual's motivation for exercising (e.g. increase strength in preparation for return to work, improve sleep, or reduce risk of recurrence), and the option of accessing an allied health professional with expertise in helping cancer survivors become and remain active (e.g. Accredited Exercise Physiologist/Physiotherapist).

GENERAL RULES FOR EXERCISING AFTER A CANCER DIAGNOSIS

- Limit sedentary behaviours, such as sitting or lying down.
- Maintain or gradually return to 'typical' activities of daily living.
- Gradually introduce planned exercise. Aim to build up to the recommended intensity and duration slowly.
- Include both aerobic- and resistance-based exercises.
- Aerobic- and/or resistance-based exercise sessions should preferably be spread out over the week.
- Aerobic-based exercise could include walking, cycling, or swimming and should be performed in sessions of at least 10 minutes duration;
- Muscle strengthening exercises may include free- or machine-weights, body weight, or theraband exercises for the major muscle groups. Allow at least 48 hours rest between sessions.
- Set short- and long-term exercise goals, look for barriers to achieving these goals, and explore ways to overcome these barriers.

Some exercise is better than no exercise, and more is generally better than less.

RELATED INFORMATION AND REFERENCES

Prepared by Dr Sandi Hayes / Dr Rosa Spence

Exercise is Medicine Australia www.exerciseismedicine.org.au
Exercise Right www.exerciseright.com.au
Find a Physiotherapist www.choose.physio
Find an Accredited Exercise Physiologist www.essa.org.au

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5. Schmitz KH, et al. 2010. American College of Sports Medicine Roundtable on exercise guidelines for cancer survivors.
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