



Blood Cancer & Exercise

Blood Cancer (hematologic malignancies) denotes a large number of diverse diseases occurring within the blood, bone marrow, and lymphatic system, including leukemia, lymphoma, myeloma, myelodysplastic syndromes and myeloproliferative diseases.

Why is Exercise Important?

Common blood cancer-related effects such as thrombocytopenia, neutropenia, nausea, and pain can make it challenging to maintain physical activity, particularly during stem cell transplantation, chemotherapy, and high doses of corticosteroids usually administered during treatment. This can result in long periods of being physically inactive, which in turn has detrimental effects on fatigue, and emotional health, with high levels of physical deconditioning. Evidence suggests positive trends regarding the immune response with exercise, and how this could correlate with blood cancer populations during and post the active treatment phase, which includes:

- ◆ Improving bone health, fatigue management, and physical functioning
- ◆ Reducing anxiety, depression, and further psychological impact
- ◆ Improving cognitive health and reducing incidence of therapy-related toxicities
- ◆ Potential towards enhancing T-Cell and NK-Cell functioning, reducing circulating monocyte counts, and encouraging an acute heightened immune surveillance with reduced immunosuppression.

Exercise Recommendations

- ◆ Encourage graduated progression towards:
 - ◇ At least 150 minutes of moderate-intensity, or 75 minutes of vigorous-intensity aerobic exercise (e.g. walking, jogging, cycling, swimming) each week; and
 - ◇ Complete 2-3 resistance exercise sessions each week involving moderate-to vigorous-intensity exercise
- ◆ Engaging in relaxation techniques including mindfulness meditation, deep breathing exercises, guided visualisation, and progressive muscular relaxation
- ◆ Choose enjoyable activities, promote peer-exercise, and utilise social support networks
- ◆ Ensure the exercise plan is tailored to treatment-related effects, anticipated disease trajectory, and health status

Exercise Precautions

- ◆ Thrombocytopenia is a common side effect of therapies in blood cancer, leading to a low platelet count. Avoid high-impact activity, and try to choose lighter exercises, with a low falls risk.
- ◆ Ensure normal breathing throughout activity
- ◆ Bone lesions can occur which increase risk of fracture. Considerations will need to be made in regards to appropriate exercise modifications
- ◆ Immunosuppression increases risk of infection, and ensuring hygienic exercise environment will be important
- ◆ Experiencing high levels of fatigue is common. A low haemoglobin count will require adjustment in exercise intensity; avoid exacerbating fatigue, and closely monitor exertion levels during and post-activity
- ◆ High dose chemotherapy can increase resting heart rate. Avoid undertaking exercise if resting heart rate is >100bpm

References:

Sitlinger A, Brander DM, Bartlett DB. (2020). Impact of exercise on the immune system and outcomes in hematologic malignancies. *Blood Adv.*

Knips L, et al (2019). Aerobic physical exercise for adult patients with haematological malignancies. *Cochrane Database Syst Review.*

Campbell, K.L., et al. (2019) Exercise Guidelines for Cancer Survivors: Consensus Statement from International Multidisciplinary Roundtable. *Med Sci Sports Exercise.*

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