



ESSENTIALS OF CANCER EXERCISE®

.....

MedeXN
fitness
INSTITUTE

 **CETI CANADA**
Cancer Exercise Training Institute

RELATIVE CONTRAINDICATIONS CANCER TREATMENTS

CHAPTER 3

.....
By Andrea Leonard
BA, CES, PES, CPT

Cancer can be treated by surgery, chemo, hormonal, targeted (including immunotherapy such as monoclonal antibody therapy), and radiation therapy, as well as synthetic lethality. The choice of therapy will depend upon the location and grade of the tumor, the stage of the disease, and the general state of the patient (age, current fitness level, general health). A number of experimental cancer treatments are also under development.

Treatment may be considered local or systemic. The goal of localized treatment, like radiation, is to minimize the damage to surrounding tissue while attacking cancer cells that may have been left behind after surgery and preventing local recurrence. Systemic therapy is designed to attack cancerous cells that have spread throughout the body.

Removal of the cancer without damage to the rest of the body (that is, achieving cure with near-zero adverse effects) is the ultimate goal of treatment. In some early-stage cancers this can be accomplished by surgery, but the likelihood of cancers to invade surrounding tissue or to spread to distant sites (metastasis) often limits its effectiveness. Chemotherapy and radiotherapy can have a negative effect on normal, healthy, cells, making it nearly impossible to achieve a cure without adverse effects.

In some instances, treatment may be used to suppress the cancer to a subclinical state and maintain that state for years of good quality of life, and may also be used palliatively, to relieve the symptoms when a cure is not available) for advanced-stage metastatic cancers.

Below you will find the most common surgical procedures, listed by cancer type, and their specific contraindications.

CANCER TREATMENTS

External Beam Radiation

Contraindications:

- Client will be at risk for lymphedema in the treated area. Follow all lymphedema precautions and recommendations.
- If client vomits or has diarrhea, they should not exercise for 24-36 hours
- Because of increased risk of damage to the heart and lungs, cardiovascular training will be a critical component of workout routine.
- Client will usually have excessive fatigue.
 - Sessions should only be 20-30 minutes 3-4 times a week at a level that they can tolerate.
 - Energy level can change from minute to minute. Make sure to check in with them regularly and modify as needed.

- They should always feel better and more energized at the end of session; if not, reduce intensity/duration.

Brachytherapy Internal) Radiation

Contraindications:

- Keep workout area free and clear of obstacles; client will have increased risk of bleeding and bruising.
- Use caution with placement on equipment, making sure that it does not cause pain or discomfort in the area of treatment
- If client vomits or has diarrhea, they should not exercise for 24-36 hours
- Client will usually have excessive fatigue.
 - Sessions should only be 20-30 minutes 3-4 times a week at a level that they can tolerate.
 - Energy level can change from minute to minute. Make sure to check in with them regularly and modify as needed.
 - They should always feel better and more energized at the end of session; if not, reduce intensity/duration.
- With Temporary High Dose, if combined with external beam, follow all recommendations stated previously.

Stereotactic Radiosurgery

Contraindications:

- If being treated with steroid medications for long periods, due to swelling, there will be an increased risk of osteoporosis. Weight bearing exercise will be essential to increase bone density.
- Client will usually have excessive fatigue.
 - Sessions should only be 20-30 minutes 3-4 times a week at a level that they can tolerate.
 - Energy level can change from minute to minute. Make sure to check in with them regularly and modify as needed.

- They should always feel better and more energized at the end of session; if not, reduce intensity/duration.
- If client vomits or has diarrhea, they should not exercise for 24-36 hours
- Look for changes in personality, gait, coordination, thinking, ambulation, etc. that may have been affected by procedure.

Radioactive Iodine Therapy

Contraindications:

- If client vomits or has diarrhea, they should not exercise for 24-36 hours

Chemotherapy

Contraindications:

- If client vomits or has diarrhea, they should not exercise for 24-36 hours
- Clients' immune system is usually compromised. Take the following precautions:
 - Don't train someone if you are even the slightest bit sick. It is extremely dangerous for them.
 - Keep area impeccably clean and sanitized
 - Have client use a clean towel on shared mats or surfaces
 - Instruct them to bring their own water bottle and don't drink from fountains
 - Advise them to wear exercise gloves and/or wash their hands frequently
- Client will usually have excessive fatigue.
 - Sessions should only be 20-30 minutes 3-4 times a week at a level that they can tolerate.
 - Energy level can change from minute to minute. Make sure to check in with them regularly and modify as needed.
 - They should always feel better and more energized at the end of session; if not, reduce intensity/duration.
- Because of increased risk of damage to the heart and lungs, cardiovascular training will be a critical component of workout routine.
- Keep workout area free and clear of obstacles; client will have increased risk of bleeding and bruising.

- Client will have an increased long-term risk of osteoporosis and diabetes. Weight bearing exercise and maintaining lean muscle mass will be critical in the prevention and management of both.
- Client may have chemo-induced menopause. Weight bearing exercise will be critical in the prevention and management of osteoporosis. Client will likely experience weight gain and need to lose body fat through cardiovascular training and the assistance of a registered dietician specializing in oncology.
- Clients may have extreme weight loss (cachexia). Working with a registered dietician, specializing in oncology, may be beneficial. Gaining weight may prove difficult due to sores in the mouth, food tasting peculiar, appetite changes, etc.
- Client may have “chemo brain” (short-term memory loss). Keep things simple and free of distraction.
- Client may have peripheral neuropathy (tingling, burning, pain, numbness) in the hands or feet.
 - They should see doctor to rule out diabetes, as peripheral neuropathy can be a side-effect of that as well.
 - If it’s in feet, avoid high impact activities and those that require balance and coordination.
 - If it’s in the hands, avoid exercises that require fine motor skills. Holding dumbbells or bands may prove dangerous to them or you.

Absolute contraindications that should be reported immediately to the doctor:

- Unexpected bruising
- Small red spots under the skin
- Pink or reddish urine, or black or bloody bowel movements
- Bleeding from gums or nose
- Fever
- Chills, cough, sore throat
- Sweating
- Loose bowels or burning feeling with urination
- Unusual vaginal discharge or itching
- Redness or swelling, especially around a sore, pimple, or boil

Hormonal Therapy

Contraindications for men:

- Increased risk of osteoporosis, loss of lean muscle mass, and breast tenderness or growth. Weight bearing exercises will be essential to prevent/manage both. It will be challenging to build lean muscle, however, in the absence of testosterone.
- Client will likely experience weight gain and need to lose body fat through cardiovascular training and the assistance of a registered dietician specializing in oncology.
- Client will usually have excessive fatigue.
 - Sessions should only be 20-30 minutes 3-4 times a week at a level that they can tolerate.
 - Energy level can change from minute to minute. Make sure to check in with them regularly and modify as needed.
 - They should always feel better and more energized at the end of session; if not, reduce intensity/duration.

Contraindications for women:

- Client may have therapy-induced menopause. Weight bearing exercise will be critical in the prevention and management of osteoporosis. Client will likely experience weight gain and need to lose body fat through cardiovascular training and the assistance of a registered dietician specializing in oncology.
- Clients also experience weight loss due to loss of appetite. Consulting with a registered dietician, specializing in oncology, may be beneficial.
- If client vomits or has diarrhea, they should not exercise for 24-36 hours
- They may experience bone or joint pain. Always have them consult with their doctor to rule out any other issues. Avoid exercises that cause any additional pain or discomfort.
- Shortness of breath and chest pain with SERM's (selective estrogen receptor modulators). Exercise at a level of intensity that they can handle and does not bring on symptoms. If it is ongoing, end session and suggest they call their doctor.

Cryosurgery

Contraindications:

- When used to treat skin cancer, there may be nerve damage and loss of sensation in treated area. Choose exercises wisely and make sure they don't pose risk of injury.

- When used to treat bone cancer, can lead to destruction of nearby bone tissue and result in fracture. Choose exercises wisely and make sure they don't pose risk of injury.

Photodynamic Therapy

Contraindications:

- Client must wear protective clothing and eyewear.
- If client has any of the aforementioned temporary side-effects, have them wait to begin exercising until they are asymptomatic.

Hyperthermia

Contraindications:

- There may be discomfort, or even significant local pain in about half the clients treated. Avoid exercises that cause any additional pain or discomfort.
- It can also cause blisters and burns which can turn into open sores, a perfect medium for infection, and increase the risk of lymphedema to the treated area (if someone is already at risk for lymphedema because of lymph node removal or radiation).

Autologous Bone-Marrow Transplant

Contraindications:

- If client has undergone radiation and/or chemotherapy, see all contraindications stated previously.
- If clients' immune system is compromised, take the following precautions:
 - Don't train someone if you are even the slightest bit sick. It is extremely dangerous for them.
 - Keep area impeccably clean and sanitized
 - Have client use a clean towel on shared mats or surfaces
 - Instruct them to bring their own water bottle and don't drink from fountains
 - Advise them to wear exercise gloves and/or wash their hands frequently
- Client will usually have excessive fatigue.
 - Sessions should only be 20-30 minutes 3-4 times a week at a level that they can tolerate.
 - Energy level can change from minute to minute. Make sure to check in with them regularly and modify as needed.

- They should always feel better and more energized at the end of session; if not, reduce intensity/duration.
- If client vomits or has diarrhea, they should not exercise for 24-36 hours
- Clients may have extreme weight loss (cachexia), exacerbated if they have Graft vs. Host Disease. Working with a registered dietician, specializing in oncology, may be beneficial. Gaining weight may prove difficult due to sores in the mouth, food tasting peculiar, appetite changes, etc.
- Graft vs. Host Disease (the transplant attacks the host body). It is unlikely that this person would be exercising, however, you should know the symptoms.
 - Soon after transplant, it would be evident if GVHD has affected the lungs or digestive system.
 - Jaundice
 - Gastrointestinal problems such as nausea, vomiting, watery and sometimes explosive diarrhea
 - Skin rash anywhere on the skin surface - mostly seen on the hands, feet, abdomen, and face.
 - Loss of elasticity and tightness of the skin
 - Shortness of breath
 - Obstructive lung disease
 - Severe dry eyes and sensitivity to light
 - Difficult or painful swallowing
 - Weight loss
 - Muscle cramps or weakness

Allogeneic Bone-Marrow Transplant

Contraindications:

- If client has undergone radiation and/or chemotherapy, see all contraindications stated previously.
- If clients' immune system is compromised, take the following precautions:
 - Don't train someone if you are even the slightest bit sick. It is extremely dangerous for them.
 - Keep area impeccably clean and sanitized
 - Have client use a clean towel on shared mats or surfaces

- Instruct them to bring their own water bottle and don't drink from fountains
- Advise them to wear exercise gloves and/or wash their hands frequently
- Client will usually have excessive fatigue.
 - Sessions should only be 20-30 minutes 3-4 times a week at a level that they can tolerate.
 - Energy level can change from minute to minute. Make sure to check in with them regularly and modify as needed.
 - They should always feel better and more energized at the end of session; if not, reduce intensity/duration.
- Graft vs. Host Disease (see Autologous BMT)

Peripheral-Blood-Stem-Cell Transplant

Contraindications:

- If client has undergone radiation and/or chemotherapy, see all contraindications stated previously.
- If clients' immune system is compromised, take the following precautions:
 - Don't train someone if you are even the slightest bit sick. It is extremely dangerous for them.
 - Keep area impeccably clean and sanitized
 - Have client use a clean towel on shared mats or surfaces
 - Instruct them to bring their own water bottle and don't drink from fountains
 - Advise them to wear exercise gloves and/or wash their hands frequently
- Client will usually have excessive fatigue.
 - Sessions should only be 20-30 minutes 3-4 times a week at a level that they can tolerate.
 - Energy level can change from minute to minute. Make sure to check in with them regularly and modify as needed.
 - They should always feel better and more energized at the end of session; if not, reduce intensity/duration.
- Graft vs. Host Disease (see Autologous BMT)

Apheresis

Contraindications:

- If clients' immune system is compromised, take the following precautions:
 - Don't train someone if you are even the slightest bit sick. It is extremely dangerous for them.
 - Keep area impeccably clean and sanitized
 - Have client use a clean towel on shared mats or surfaces
 - Instruct them to bring their own water bottle and don't drink from fountains
 - Advise them to wear exercise gloves and/or wash their hands frequently
- Client will usually have excessive fatigue.
 - Sessions should only be 20-30 minutes 3-4 times a week at a level that they can tolerate.
 - Energy level can change from minute to minute. Make sure to check in with them regularly and modify as needed.
 - They should always feel better and more energized at the end of session; if not, reduce intensity/duration.
- Graft vs. Host Disease (see Autologous BMT)

Immunotherapy

Contraindications:

- If your client has a fever, ABSOLUTELY no exercise
- Client will usually have excessive fatigue.
 - Sessions should only be 20-30 minutes 3-4 times a week at a level that they can tolerate.
 - Energy level can change from minute to minute. Make sure to check in with them regularly and modify as needed.
 - They should always feel better and more energized at the end of session; if not, reduce intensity/duration.
- If client vomits or has diarrhea, they should not exercise for 24-36 hours
- Client may have severe blistering and peeling. This can turn into open sores, a perfect medium for infection, and increase the risk of lymphedema to the treated area (if someone is already at risk for lymphedema because of lymph node removal or radiation).

- It can cause dizziness and irregular heartbeat. In either case, exercise should cease, and client should contact their doctor.
- Client may have extreme weight loss. Working with a registered dietician, specializing in oncology, may be beneficial. Gaining weight may prove difficult due to sores in the mouth, food tasting peculiar, appetite changes, etc.
- Client may experience bone or joint pain. Always have them consult with their doctor to rule out any other issues. Avoid exercises that cause any additional pain or discomfort.
- Client may experience shortness of breath and chest. Exercise at a level of intensity that they can handle and does not bring on symptoms. If it is ongoing, end session and suggest they call their doctor.
- Clients may bleed or bruise easily. Keep area free of obstacles and avoid exercises in which they might lose their balance and fall.

Embolization

Contraindications:

- With chemoembolization, see all contraindications previously mentioned under chemotherapy.
- If your client has a fever, ABSOLUTELY no exercise

Corticosteroids

Contraindications:

- Likelihood of increased blood pressure. Avoid Valsalva Maneuver and isometrics
- Increased appetite and weight gain. Client will likely experience weight gain and need to lose body fat through cardiovascular training and the assistance of a registered dietician specializing in oncology.

Thalidomide

Contraindications:

- Client may experience bone pain and/or muscle weakness. Always have them consult with their doctor to rule out any other issues. Avoid exercises that cause any additional pain or discomfort.

Bandages increase pressure against the skin during exercise. The pressure, coupled with the contraction of their muscles, encourages the lymph to move. Exercise, in and of itself, will help to pump the muscles, improve circulation, and move lymph from congested areas into an area where it can drain more efficiently. It is important to start out very slowly with few repetitions and wait until the next day to see how the affected limb has responded. You can gradually increase their repetitions, based on what the limb will tolerate. Have clients take their time and use good form and posture.

Infections are possible at any stage of lymphedema, but occurrence becomes greater as stages progress. A swollen limb, left untreated, becomes hard (fibrotic) and full of lymph fluid which is high in protein and a perfect medium for bacteria and infections.

REMEMBER: the risk of lymphedema doesn't increase or decrease with time!



ESSENTIALS
OF CANCER
EXERCISE®

.....

MedeXN
fitness
INSTITUTE

 CETI
Cancer Exercise Training Institute

<http://medexn.com/>

.....
By Andrea Leonard
BA, CES, PES, CPT