HKSH Physiotherapy Centre

Happy Valley
Hong Kong Sanatorium & Hospital
5/F, Li Shu Pui Block
2 Village Road, Happy Valley, Hong Kong
Tel: (852) 2835 8685
Fax: (852) 2892 7523
Email: physio@hksh-hospital.com
www.hksh-hospital.com

Service Hours
Monday to Saturday: 9:00 am – 5:00 pm
Closed on Sundays and Public Holidays
Consultation by Appointment

For enquiries and appointments,
please contact us

PHY.023i.H/E-04-072022

Physiotherapy in Oncology Rehabilitation

養和物理治療中心
HKSH Physiotherapy Centre

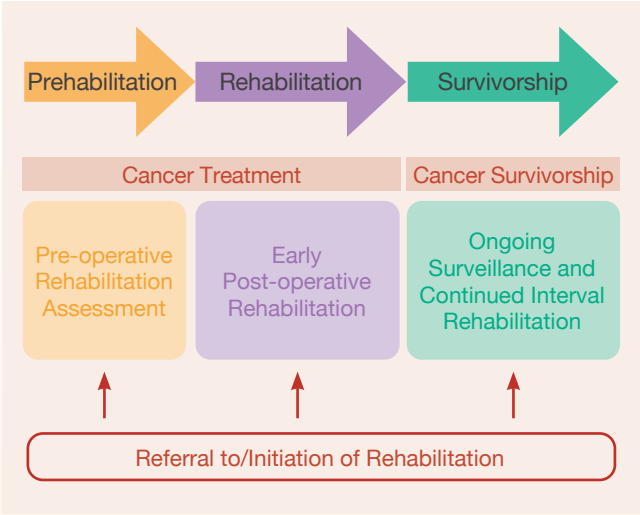
www.hksh.com

Improvements in cancer diagnosis and treatment have led to an increase in number of people surviving and living longer. A new strategy to fight cancer is to focus on restoring health and quality of life. Despite improved survival, patients still need to face various problems from the disease itself and the side effects of the treatments. These include cancer-related fatigue, muscle loss, lymphedema, radiation-induced fibrosis, etc. Some of these problems may last for years. It hinders patients from resuming their normal daily routine. It also affects some patients' ability to return to work. Our physiotherapists can provide an integrated and individualised rehabilitation programme to identify, address and mitigate these difficulties throughout the recovery journey.

Introduction of Oncology Rehabilitation

1. What is Oncology Rehabilitation?

Oncology rehabilitation is divided into 3 stages:
(1) Prehabilitation, (2) Rehabilitation, and
(3) Survivorship



The 3 Stages of Oncology Rehabilitation

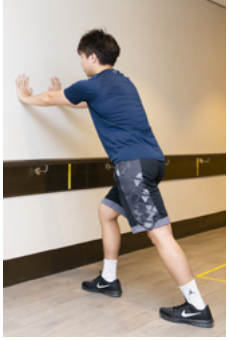
2. What Problems Would Patients Anticipate During the Battle of Cancer?

Cancer treatments can cause a variety of side effects. Some common problems are listed as follows:

Cancer Treatment	Physical and Behaviour Complications
1. Surgery	1. Quality of life
2. Radiation Therapy	2. Cardiovascular fitness
3. Chemotherapy	3. Physical function
4. Immunotherapy	4. Sarcopenia and increased risk of falls
5. Hormone therapy	5. Osteoporosis (increased risk of fracture)
6. Steroid	6. Numbness
	7. Lymphedema
	8. Scar
	9. Pain
	10. Incontinence

3. What are the Objectives of the Different Stages of Oncology Rehabilitation?

Period	Objectives
Prehabilitation	
• It is the time after cancer diagnosis and before any acute treatment. It is applicable to any treatment option including surgery, radiotherapy and chemotherapy	It is a preparation period. Physiotherapists will examine patients' baseline fitness level, provide education, and enhance their physical fitness and psychological well-being for consequences of the disease and the side effects of the treatment. Exercise intensity will usually be set at moderate level
Rehabilitation	
• It is the time during active cancer treatment • It usually lasts from 1 to 6 months	The aim of this stage is to enable patients to maximise their functional ability, minimise and treat any side effects, such as fatigue, pain and lymphedema. Exercise intensity is usually lower at this stage
Survivorship	
• It is the life after active cancer treatment. It is for people with a stable disease or being disease-free	• Monitoring and management of short-term and late effects of cancer and treatment are the focus • Exercise training will target at optimising patients' physical fitness • The programme will help prepare patients to return to society and work



4. Content of Oncology Rehabilitation

Physical Problems	Corresponding Physiotherapy Services
• Cancer-related fatigue • Cardiomyopathy	Aerobic training improves cardiopulmonary function
• Sarcopenia • Osteoporosis	i. Strength training ii. Weight-bearing exercises
Balance problems	i. Balance training ii. Fall prevention programme
Lymphedema	i. Manual lymphatic drainage ii. Pressure garments and bandaging iii. Day-to-day care e.g. during travel on the plane
Scar	i. Manual therapy ii. Scar management device
Numbness	Joint mobilisation stretching exercises
Pain	Pain modality device e.g. Transcutaneous Electrical Nerve Stimulation (TENS)
Functional decline	Functional training

Prehabilitation and Rehabilitation

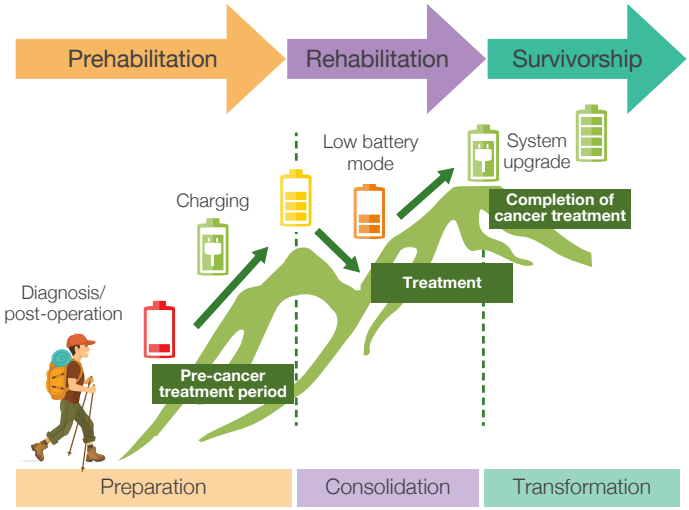
1. Benefits of Physical Activity

It is evident that physical activities are beneficial to cancer patients. Exercise will improve cancer-related fatigue, physical fitness, muscle strength, lymphedema and reduce joint stiffness. The benefits are especially prominent in patients with breast, prostate and hematologic cancers.

During active cancer treatment, a decrease in fitness level is inevitable. Prehabilitation helps patients to prepare the mind and body to function at full potential before undergoing the tough and energy-draining cancer treatment. It is like charging a "battery" before a mountain run (Figure 1). Exercise helps maintain as much functional independence as possible and reduce unnecessary disability. It offers an effective route to improve quality of life. The exercise intensity level can be monitored with heart rate measurement and the Borg Scale.

2. What is Cancer-related Fatigue?

Cancer-related fatigue is a common problem. It means extreme tiredness most or all the time. It is not relieved by rest or sleep and can affect you physically and emotionally. It can be very disruptive and makes it difficult to do even very simple things, e.g. getting dressed.



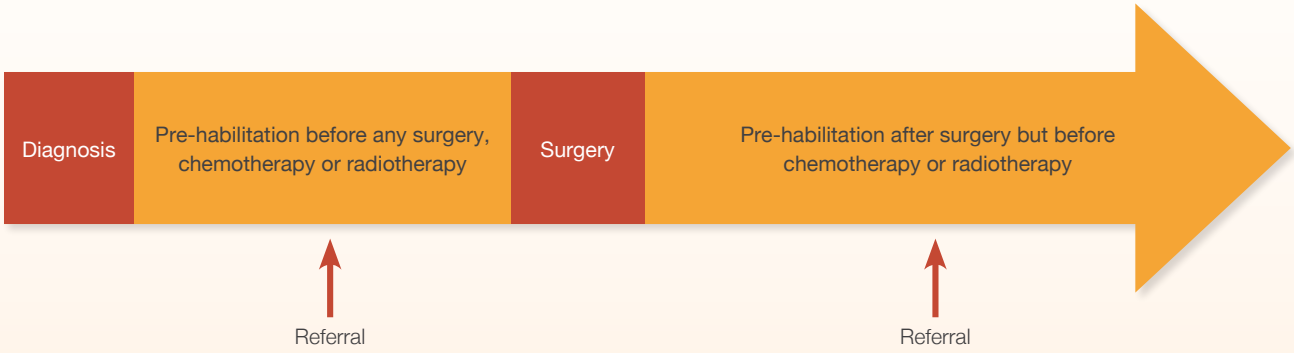
(Figure 1) Oncology Rehabilitation Journey

3. When is the Best Time to Start Exercise?

i. Once cancer is diagnosed and before any active treatment

ii. After surgery but before any high-intensity cancer treatment. This is another good starting point if patients are not able to start exercise before surgery

In general, it takes at least two weeks of exercise training to show improvement in the cardiovascular system, muscle strength and functional ability.



**A doctor's referral is required for physiotherapy service.*

Survivorship

Cancer treatments and medications are getting more advanced in the past decades. Many cancer survivors are still facing physical problems due to the late effects that occur months or years after cancer treatments. These include cancer-related fatigue, lymphedema, numbness and tingling (peripheral neuropathy), pain, incontinence, etc.

1. Cancer-related Fatigue

More than 50% of cancer survivors experience different levels of fatigue. It may persist for years after treatment. Mere rest or sleep cannot relieve cancer-related fatigue but will give rise to a vicious cycle. Contrarily, exercise can alleviate fatigue. Simple exercises like walking, lifting dumbbell, sit-to-stand training can help. If you experience significant fatigue, diminished energy, or increased need of rest that is disproportionate to any change in activity level, please consult your physician and physiotherapist for further investigation and management.




2. Lymphedema

Lymphedema is most commonly caused by the removal of or damage to the lymph nodes as a part of cancer treatment, including surgical excision and radiation therapy. It results in blockage of the lymphatic system and leads to swelling. The more the lymph nodes are removed, the higher the risk is. Generally, about 30% of cancer survivors are being affected, particularly in breast, gynecological and prostate cancer survivors. Lymphedema can develop several months or even years after initial cancer treatment. Prevention of skin injury in patients with lymphedema is very important. Skin care includes regular application of unscented moisturiser, sunscreen, and insect repellent. It is also good to avoid spa or sauna. Cuts, scrapes and burns can lead to infection. If the lymphedema is not treated in a timely manner, excessive protein will accumulate in the body tissues and progress to skin changes and fibrosis.

Lymphedema can be divided into four stages. Symptoms can be reversible and controllable if it is detected and managed early.

Stage 0 (latent)	There are no visible changes at this point. You may notice some differences in feeling, such as mild tingling, unusual tiredness or slight heaviness. It can be confirmed by bioimpedance measurement. Condition is reversible.
Stage 1 (mild)	It appears mildly swollen with protein-rich fluid starts to accumulate. When you press the skin, a temporary small pit appears (pitting edema). Condition is reversible.
Stage 2	It is more swollen at this stage. The swelling will not be relieved by elevating the affected limb. There is no pitting edema. There are changes in the skin, such as hardening, thickening or inflammation. Condition is non-reversible but controllable by treatment.
Stage 3 (severe)	This is the most advanced stage. The affected body part becomes very large and misshapen. The skin takes on a leathery and wrinkled appearance. Condition is non-reversible but controllable by treatment.

Cancer survivors are advised to have regular bioimpendance measurement to measure the amount of fluid in a limb. The test is painless and only takes several minutes. If early stage of lymphedema is detected, immediate treatment is recommended to prevent deterioration.

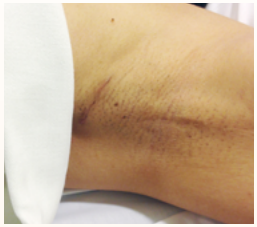
Lymphedema management includes manual lymphatic drainage (MLD) and the use of equipment to improve the lymphatic circulation. Swelling can be reduced and controlled with the combined application of compression stocking or bandaging. Laser can also help to soften fibrotic tissue.

Exercise is sometimes avoided by patients for the fear of worsening lymphedema. In fact, many research studies showed that exercise can improve lymphatic circulation without any adverse effect. You can perform exercise safely by wearing a prescribed and properly fitted compression garment.

Exercise with arm sleeve

Lymphedema

Manual lymphatic drainage



Cording limits joint range of motion

Bandaging

3. Numbness and Pain

Cancer and its treatment can sometimes cause compression and damage of nerves in the body, i.e. peripheral neuropathy. It is characterised by numbness, weakness, tingling, pain or burning in hands or feet. Around 30-50% of cancer survivors are being affected. The symptoms can last for years, affecting the daily function and the quality of life.

Neuropathy of upper and lower limbs can cause much inconvenience in daily life, affecting balance, writing, buttoning and picking up small objects, etc. Even touching cold things can lead to severe pain. Training and exercise in strength, balance, fine hand function and desensitisation trainings can help survivors to improve their daily function, reduce fall risks and improve their quality of life.

If you cannot feel your hands or feet, you are at risk of injuries and infection. Therefore, you need to take precautions during physical activities, e.g. wearing appropriate footwear to protect your feet and to maintain balance. Exercise under supervision is also recommended.

TENS treatment

Mobilisation of joints

4. Incontinence

Cancers in the pelvic region, including prostate cancer, uterine cancer or bladder cancer, can lead to incontinence. The older the survivors, the higher the risk. The best treatments depend on the cause, type, duration and severity of incontinence. Pelvic muscle exercises, biofeedback, urge suppression techniques are usually effective.

5. Self-care

For those who are in a stable condition and have good exercise compliance, they only need to consult physiotherapist for reassessment, revision and enhancement of exercise goals when necessary.