

Using sport and exercise therapy in the field of oncology

The path to more physical activity
and a better quality of life despite cancer



“All life is movement,
movement is life”
(Leonardo da Vinci)







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Foreword

Dear patients and readers,

In the context of oncological diseases and their treatment, the topic of exercise, sport and physical activity is becoming more and more significant. Engaging in physical activity through exercise and sport can have positive effects on the body, mental health and social environment of people with cancer.

Scientific studies show that a physically active lifestyle helps reduce complications and side effects related to medical therapy and improves the overall prognosis.

For this reason, the Schleswig-Holsteinische Krebsgesellschaft (Schleswig-Holstein Cancer Association) decided to publish a brochure to help people begin and maintain regular physical activity. The brochure will contain the most up-to-date knowledge on the topic and describe specific exercises and training options. Each chapter is compiled by experts from Schleswig-Holstein, so the relevant contacts are close to hand.

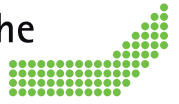
We hope that by publishing this brochure, we can help support you.



PD Dr. med. Katharina C. Kähler
First Chairperson



Harriet Heise
Patron



Foreword

Dear patients and readers,

“All life is movement, movement is life” – this quote from Leonardo da Vinci not only describes the positive effects of exercise on health but also the continuous advancements in oncological research and treatment. In the past, the consensus was that cancer patients should rest following surgery, chemotherapy or radiotherapy; however, in recent years studies have demonstrated the positive impact of physical activity and exercise in the field of oncology.

Nowadays, physical activity and exercise are fundamental components in the treatment of cancer patients. They are addressed in the acute care clinic setting and should continue to be used in rehabilitation clinics and at rehabilitation group meetings organised by local organisations.

Physical activity and exercise help reduce the side effects of medical therapy and improve therapy tolerance. This information brochure offers useful recommendations for physical activities. This brochure is a supplement to existing information material and contains practical tips, example exercises and the contact information of institutions and associations active in the region of Schleswig-Holstein.

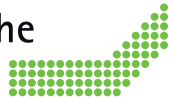
PD Dr Thorsten Schmidt
Head of Supportive Therapy

Exercising with cancer – what does it look like?

Until recently, oncology patients were told to avoid physical activity. To avoid over-exertion and complications, they were usually advised to recuperate and rest. Despite evidence to the contrary, this assumption remains widespread and can cause uncertainty. For a long time, therapists and physicians were unsure of the effects of exercise and physical activity as part of therapy. Nowadays, exercise is an integral element in the treatment of oncological diseases. A growing number of physiotherapy and sports therapy clinics and sports clubs are engaging with the topic of exercising with cancer. Exercise groups for cancer patients and sport for oncological patients are now available in many cities. Some cancer patients are introduced to exercise and physical activity during exercise therapy sessions at acute care clinics. Exercise therapy is a general term for all types of exercise indicated and prescribed by physicians and carried out by specialist therapists. In the acute care clinic setting, treatment is provided by physiotherapists or sports therapists. After discharge from an acute care clinic, follow-up treatment is provided by specialist rehabilitation clinics.

Scientific testing and studies help define exercise recommendations. Numerous studies show that exercise and physical activity positively affect disease progression, symptoms and therapy. It has also been proven that for certain types of cancer, the risk of recurrence is reduced. For this reason, groups offering exercise for cancer patients and sport in the context of cancer aftercare are becoming increasingly important.





There are various types of exercise options available during and after oncological illness. Sports and exercise therapy courses during drug-based treatment, following surgery or in the rehabilitation aftercare phase are individually tailored to each patient and participant depending on the type of cancer (entity), therapy phase, stage of the disease and side effects. This can involve returning to a form of exercise the patient used to enjoy before getting ill or starting a new type of activity. Even though there are no sports or exercises specifically used in oncology, some exercises may be better than others depending on the circumstances of the individual case.

Many medical practices and sports clubs offer oncology-specific training therapy and rehabilitation at sports groups for oncological patients. These courses provide exercises that improve strength, stamina, flexibility and coordination. Depending on the type of cancer, specific focuses are defined, e.g. pelvic floor exercises after prostate cancer, improving shoulder and arm movement after breast cancer or strengthening the auxiliary respiratory muscles and posture following lung cancer.

Why is regular physical activity so important?

It is now proven that physical activity leads to a reduction in various types of disease. An active and healthy lifestyle reduces the risk of metabolic and cardiac illnesses, muscular and skeletal conditions, as well as oncological diseases. Furthermore, physical activity has positive effects on mental health, including improved mood and reduced stress levels.

A sedentary lifestyle and an extended recovery and rest phase cause a loss of muscle mass, resulting in reduced physical performance capacity. Consequently, physical and strenuous daily activities are avoided, leading to a further reduction in physical performance – promoting a vicious circle of too little physical activity.

Exercising and playing sport with cancer

Physical activity and exercise are now proven to have positive effects on our physical, mental and social wellbeing. For example, it has been shown that physical activity and exercise positively affect performance capacity and reduce surgery- and therapy-related side effects. Regular training helps combat physical deterioration and helps maintain physical performance capacity.

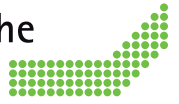
Effects on physical health:

- Maintains physical performance capacity
- Prevents or reduces postoperative movement limitations
- Reduces pain levels
- Strengthens the cardiovascular system
- Prevents osteoporosis
- Promotes everyday movement
- Combats loss of strength

The mental and social effects of oncological sports and exercise therapy play as important a role as the physical effects. This is because the disease can cause those affected to temporarily give up their hobbies, which in turn reduces their social interactions.

For many cancer patients, participating in activities and exercising helps them regain control over their situation and gives them the feeling of proactively doing something to combat the disease. Particularly physical training as part of a sports group allows patients to interact with one another and prevents social isolation.

Sharing experiences with others in a similar situation often provides helpful insights, advice, encouragement and support. These benefits are amplified by the increased performance capacity stemming from regular training. All these aspects combine to increase self-confidence, improve quality of life and combat feelings of helplessness and waiting.



Effects on mental health:

- Reduces fatigue syndrome
- Increases self-confidence
- Aids the management of anxiety and stress
- Improves quality of sleep
- Improves quality of life
- Reduces feelings of helplessness
- Reduces depressive moods



Effects on social wellbeing:

- Promotes contact and sharing of experiences with those in a similar situation
- Offers chances to experience happiness and fun
- Prevents isolation

Summary: Regular physical activity has positive effects on physical, mental and social wellbeing. At oncological exercise courses, the disease, phase of therapy, disease- and therapy-related side effects and the stage of the disease are all taken into consideration and a specially tailored training focus is set. The aim is to maintain or improve physical performance capacity and provide relief from side effects. Other crucial factors are improving quality of life and preventing social isolation.



Exercise and physical activity during each stage of the disease

Numerous studies report that people can safely engage in physical activity and exercise during and after an oncological disease and that this has a preventive effect in terms of risk reduction. Physical activity can also help reduce side effects and the risk of recurrence.

For these reasons, seeking information about available options and services for physical activity and exercise during the acute phase, i.e. during ongoing therapy (e.g. chemotherapy or radiotherapy) is recommended. The training should aim to define a different focus for each of the main motor skills depending on the type of cancer, stage of the disease, therapy stage and the side effects of the therapy. Sports and exercise therapy during the acute phase is carried out exclusively by sports and exercise specialists, physiotherapists or physical therapists.

Physical activity during the aftercare phase, e.g. at rehabilitation, sport for all or therapeutic sports courses at a local sports club, should aim to continue with the exercise and movement programme taught at the rehabilitation clinic at home, as well as helping to continue to reduce the side effects of the therapy.

Patients with less previous experience of exercise should begin by integrating less strenuous activities into their daily routine, such as taking the stairs instead of the lift, taking a walk or going for a bicycle ride.

People who were physically active before cancer should also begin with small goals. Ask a specialist whether you can continue with the activities you used to participate in.

If you decide to participate in instructor-led rehabilitation exercise courses, these take place under specialist supervision. The instructor will discuss the exertion and focus of the training with you.

Tips for implementing a more active lifestyle:

- Build exercise into your daily routine
- Set small goals to increase motivation
- Schedule fixed training times
- Find a training partner
- Find a fun activity



Optimal training

A complex interplay of various factors determines physical performance capacity, which includes gross motor skills. They include endurance, strength, coordination, mobility and speed. In oncological rehabilitation, speed plays a lesser role due to the increased risk of injury. Below, we explain each of the relevant gross motor skills along with awareness and relaxation training.

Endurance

Endurance is defined as maintaining physical exertion for an extended period followed by a rapid recovery time. The majority (>1/6) of the musculature is used during global endurance training.

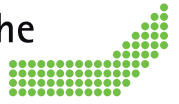
An aerobic level should be maintained to ensure the training is as risk-free as possible. This means the muscles have an adequate oxygen supply during the training. Recommended types of endurance exercises include walking, Nordic walking, jogging and cycling.



Various types of exercise can be used to increase endurance levels. The most common, with the lowest risk, is continuous endurance training characterised by a steady speed, continuous movement and constant respiratory rate. This method also features steady or slightly varied (but always continuous) exertion over an extended period. Depending on how it is applied, this can improve baseline endurance, general and specific stamina, as well as local muscular endurance.

Continuous endurance training is characterised by the following:

- Pulse at 60% of the maximum heart rate
- The ability to talk without affecting the respiratory rate
- No breathing difficulties



Strength

Humans need muscular strength for all activities, making adequate strength capacity essential.

In the context of exercise, strength is the ability to overcome resistance. Depending on the type of musculature being exercised and the type of muscle activity, distinctions are made between different kinds of strength. Strength depends on the cross-section of muscle fibres, the number of muscle fibres, muscular structure, and intra- and intermuscular coordination. Strength training aims to maintain or improve muscle mass and overall strength.

Special machines or free weights, such as dumbbells or everyday objects, e.g. water bottles, can be used for strength training. Your body weight can also be used. This means strength training is an activity that can be done at home.

Scientific findings regarding the benefits of strength training in oncology have been very positive to date. Strength training combined with medical therapy can help reduce the loss of muscle mass linked to being less active and limit age-related loss of function and physical capacity. It can also reduce the potential side effects of drug-based therapy, e.g. antihormonal treatment, which can have negative effects on bone structure and, in some cases, cause loss of muscle mass. The positive impact of strength training in cases of secondary lymphoedema, e.g. after breast cancer, has also been well-documented.

The authors of numerous studies have concluded that strength training for the upper body is possible and can reduce lymphoedema severity.



Mobility

In this context, mobility refers to the range of conscious joint motion. The greater the range of motion, the greater the mobility. The training objectives are to expand the range of mobility and prevent poor and adaptive posture and the resulting muscular imbalances.

Mobility training related to oncology aims to increase joint mobility and improve the capacity of the muscles to contract. It also seeks to achieve a loosening and relaxation of the muscles and prevent postural problems. Furthermore, it has stimulating effects on blood circulation and metabolism, which positively affects the physiopsychological state. Overall, mobility training aims to optimise an individual's range of mobility.

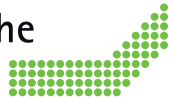
Coordination

A critical component of exercise therapy is coordination training. Coordination is the term used to describe the interplay between skeletal musculature and the central nervous system during a sequence of movement. Coordination training aims to maintain and improve everyday actions, compensate for strength loss and preserve mobility. Training can result in more refined and efficient movements.

Coordination training plays a significant role in all phases of sports therapy treatment and is an essential element alongside endurance and strength training. As a result of immobilisation, injury or surgical intervention, the conscious awareness of the position of individual parts of the body or the efficient application of strength can be more difficult. Coordination exercises can be individually tailored regardless of the disease progression and state. They should be put into practice throughout the rehabilitation process, from acute care to rehabilitation clinics and rehabilitation exercise groups.

The general aims of coordination training for cancer patients:

- Improving movement efficiency
- Improving motor learning capacity
- Increasing motor skill adaptability to non-standard situations
- Improving reactions and balance



As with the general aims, the specific aims have a preventive character. Starting during acute care treatment, they aim to reduce physical, immobility-related limitations, such as shortening of the muscles, reduce adhesions and prevent the subsequent development of an adaptive posture.

The holistically positive effects, the rapid improvements and the low risk of injury mean coordination training can be recommended to patients during all therapy phases. Additionally, many exercises taught by the rehabilitation exercise instructors can easily be integrated into daily routines.

Awareness and relaxation

Awareness and relaxation training can help you find rest, manage stress, relieve tension and cramping, reduce anxiety and help reinforce your inner strength and resources. Better awareness of your body – “listening to the body’s inner voice” – can help you to better cope with disease and its effects. Combined with psychological or psychotherapeutic interventions, this can help cancer patients to emotionally process their disease or deal with worry in the event of the cancer returning.



Relaxation patterns and techniques

In one sense, relaxation means finding relief from a tense state and switching to a calm state. Alternatively, relaxation can also describe a temporary or longer-lasting mental and physical state of calm.

We need to differentiate between personal relaxation patterns and the targeted application of relaxation techniques. Relaxation patterns are individual methods of recreation – everyday activities and behavioural patterns that people find helpful in order to relax (e.g. listening to music, visiting a sauna, physical activity, exercise, etc.). Relaxation and body awareness techniques are when targeted processes are used to achieve a state of relaxation or when the everyday relaxation patterns – the individual methods of recreation – are insufficient to achieve the necessary and targeted recovery and relaxation.

Relaxation or the targeted use of relaxation techniques causes a normalisation and calming of the sympathetic nervous system, which is responsible for activation, performance, tension and reacting to stress-inducing situations.

Awareness and relaxation training are accompanied by physical sensations of heaviness, warmth, lightness and relief. In a psychological sense, people experience feelings such as calmness, cosiness, wellbeing and contentment. Physical and mental relaxation is associated with an optimistic attitude towards life. It frees us from stressful emotions and anxiety, and we find that our personal problems feel less of a burden. Relaxation is achieved when the person is freed from active alertness as much as possible without transitioning into falling asleep.

Sensorimotor training combining awareness and coordination

Sensorimotor or proprioceptive training, in its broadest sense, can be used for awareness and sensitivity of the body or parts of the body. It includes aspects of awareness as well as coordinative learning.

Studies show that sensorimotor training results in neuromuscular adjustment, leading to improved coordination and balance control that, in turn, minimises the risk of falling and injury.

Significance in the context of oncological rehabilitation exercise

Certain chemotherapy components (platinum derivatives, vinca alkaloids, taxanes) can cause a disease of the peripheral nervous system (neurotoxicity) known as polyneuropathy (PNP). This causes the fibres of the peripheral nervous system to react sensitively to some of the substances used in chemotherapy, causing the destruction of nervous fibre structures. The patient experiences this in terms of sensitivity and motor function, often reporting numbness or pins and needles in their extremities. They also experience weakening of their intrinsic muscle reflexes and dysfunctional sensitivity to vibration. Sensorimotor training causes neuromuscular adjustment that can help combat these side effects. Also, the improved processing and implementation of sensory information into appropriate movement helps improve balance control, provides injury prophylaxis thanks to shortened reaction times and increases body awareness and coordination.



**Standing with legs
at shoulder-width**



**Tandem stance, place the feet one
behind the other in a straight line with
the toes pointing forward**



**Standing on both legs with
the feet together**



**Semi-tandem stance, the
feet slightly spaced one
behind the other in a stepping
position**



Standing on one leg

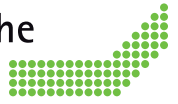
Training recommendations

To help improve physical performance, an appropriate level of intensity is required during training to trigger a homeostasis imbalance (a body function imbalance) and improve body function adjustment. The recommended training intensities are listed as the FITT principle (Frequency, Intensity, Time and Type) in the latest specialist publications. This enables exertion to be individually adjusted during training in relation to cancer- and therapy-specific side effects.

Determining intensity levels for endurance and strength training takes place during a performance test. Alternatively, the levels can be subjectively determined by the patient using a self-assessment scale.

1	Very slight
2	
3	Moderate
4	
5	Severe
6	
7	Very severe
8	
9	Very, very severe
10	





Exercise during special therapy-related situations

Although an active lifestyle is recommended, the benefits have not been proven to be equally effective for all types of side effects. This is primarily due to the incomplete state of the research. It can be assumed that research will be able to replace weaker proof of efficiency with stronger evidence in the coming years. Stronger evidence could be presented to prove the efficacy of physical activity and specific FITT principle in relation to fatigue symptoms, depressive episodes, quality of life, lymphoedema and general bodily functions. Moderate proof of efficacy is available for bone health and sleep, while weaker proof of efficacy exists for polyneuropathy, risk of falling and cognitive function. Despite there being no specific FITT principle for the latter aspects, training recommendations can still be given.

The basic rule is that following surgery, the stress capacity of the surgical wound healing area must be considered. Mobilisation under the supervision of a physiotherapist takes place in the acute care setting, meaning in most cases everyday movement capacity is rapidly regained.

The following strength and endurance training recommendations apply the corresponding FITT principle for the different side effects and after effects:

Endurance:

Frequency: 3x per week

Intensity: 65% of the max. heart rate/self-assessment moderate to severe
(depending on training habits, up to 80% of the max. heart rate)

Time: 30 minutes

Strength:

Frequency: 2x per week

Intensity: 60% of the maximum strength level/self-assessment moderate to severe

Time: 2x 15 repetitions

Metastases (secondary tumours)

Participation in sports and exercise therapy is possible for patients with metastatic cancer. Before beginning training, a consultation should take place to define exertion levels.

General information:

Before exercising, a consultation is recommended to exclude any contraindications related to the individual training plan. Contraindications do not mean a general ban from sports or exercise and alternatives can be discussed if contraindications are identified.

Physical activity and exercise with certain types of cancer

In addition to the therapeutic background and practical recommendation for physical activities and exercise in the context of oncological diseases, below you can find specific exercises you can do at home. Despite there being no cancer-specific exercises, some exercises are recommended for certain types of cancers due to the surgical procedure, the phase of therapy, the stage of disease and the side effects.

Earlier in the brochure, we presented the FITT principle as an orientation aid to determine exertion levels. This principle is found in the following exercises, allowing exercise to be carried out without problems and optimised to the relevant exertion-level. The FITT principle should always be closely correlated to the physical performance capacity of the individual patient.

Strength training is an essential component of exercise therapy for those with cancer. Preoperative training helps create awareness of movement required and forms a muscular basis. It can also help provide relief from side effects during the acute therapy phases. (Re-)starting strength-building exercises in the postoperative phase is recommended to prevent the development of an adaptive posture and loss of muscle mass.





Exercising using resistance bands

Resistance bands offer a flexible and space-saving form of strength training. Depending on the manufacturer, different colours correspond to different resistance levels. These are generally listed on the product packaging. Changing the resistance level by selecting the appropriate intensity is recommended for each exercise. Band resistance changes depending on the distance from the fixation point. Make sure that you maintain the same distance from the fixation point so that the training sessions are comparable.

Exercising using water bottles

Using water bottles is a variable and cost-effective form of training. The water bottles are used like dumbbells. From a coordination perspective, exercises with water bottles are generally more demanding than those with resistance bands, as the starting position is often more complex. The obstacle is quickly overcome with practice and with the help of a mirror to ensure correct posture is maintained during training.

Breast cancer

Due to the tumour localisation associated with breast cancer, the choice of exercises focuses on the upper body. The aim of the exercises is to strengthen the shoulder girdle and the upper back muscles, to stimulate lymph drainage associated with any potential lymphoedema. This also helps to prevent the patient from developing an adaptive posture of the upper body via targeted mobilisation and strengthening of the shoulder girdle and thoracic spine.

Lymph drainage stimulation

The lymphatic vessels, lymph nodes, bone marrow, tonsils and spleen make up the lymphatic system. Having breast cancer may mean lymph node removal is necessary, increasing the risk of lymphoedema developing. Lymphoedema is a lymphatic system blockage, resulting in the lymph fluid not being drained.

The following physical activities are recommended to actively aid lymph drainage.

Mobilisation and stretching exercises for the shoulder-arm area

Especially after surgery, mobilisation of the shoulder-arm area is very important. Promptly resuming adequate low-threshold upper body movement helps prevent the development of adaptive posture and immobilisation. Furthermore, mobilisation and stretching exercises help patients regain more confidence in their own bodies and reduce anxiety. Mobilisation exercises consist of low-intensity movement and high repetitions. This enables the muscles and joints to be moved without overloading. Stretching exercises provide targeted relief from adaptive posture or correct existing poor body posture. With low-level movement dynamics and an individually tailored range of movement, patients can practice stretching exercises during all phases of therapy.

Exercise recommendations for breast cancer patients

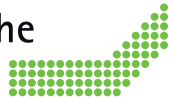
The recommended specific exercises for breast cancer patients start on page 29. The selected exercises are not solely for breast cancer patients. Exercises especially recommended for breast cancer patients are marked with a red dot.

Prostate cancer

Prostate cancer is often directly linked with incontinence, especially after surgical removal of the prostate. Preoperative pelvic floor training is recommended to combat the possible development of incontinence. This helps patients to gain an awareness of their pelvic floor from an early stage. Strengthening the muscles linked to underlying pelvic floor tension is also advisable.

Exercise recommendations for prostate cancer patients

The recommended specific exercises for prostate cancer patients start on page 31. The selected exercises are not solely for prostate cancer patients. Exercises especially recommended for prostate cancer patients are marked with a blue dot.



Lung cancer

Reduced lung capacity can be a consequence of lung cancer surgery. The targeted strengthening of the auxiliary respiratory muscles can make breathing easier. Exercises to improve upper body posture are also recommended, because a straight upper body helps to facilitate breathing. Targeted strengthening and stretching exercises are recommended to obtain adequate upper body posture. When conducting strengthening exercises, you should try to breathe out during the exertion phase and breathe in during the relaxation phase of the exercise. This conscious breathing method avoids the potential for forced expiration.

Recommended exercises for lung cancer patients

The recommended specific exercises for lung cancer patients start on page 29. The selected exercises are not solely for lung cancer patients. Exercises especially recommended for lung cancer patients are marked with a green dot.

Bowel cancer

Depending on the clinical picture, an artificial bowel outlet (stoma) may be needed. When fitted with a stoma, certain parameters are to be observed when exercising. Regardless of the wound healing stage, begin with a targeted and moderate training programme for a slow return to your previous physical performance. Abdominal wall strengthening without excessive abdominal pressure is recommended. In this context, exercises using the stabilising torso musculature can be helpful.

Recommended exercises for bowel cancer patients

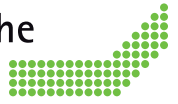
The recommended specific exercises for lung cancer patients start on page 29. The selected exercises are not solely for bowel cancer patients. Exercises especially recommended for bowel cancer patients are marked with a yellow dot.

Types of specific sports and exercise courses

All information listed above provides an overview of why physical activity is advisable for those with an oncological disease and what an optimal training programme should include to be effective in special therapy-related situations. Furthermore, we also provided explicit exercise recommendations for the most epidemiologically relevant types of cancer. Due to the various types of therapy, the physical performance capacity and previous experience with exercise, an initial sports consultation is recommended. Due to the different progressions of the therapy phases, which make adaptation of the exercise programmes necessary, training under expert supervision is advisable. Participation in organised and scheduled exercise sessions in individual or group courses helps to make exercise part of a patient's routine and provides opportunities for social interaction. The chart on page 26 provides an overview of the types of courses available. These differ from one another both in content and how they are organised.

Oncological training therapy

Many practices and clinics now offer oncological training and exercise therapy. This includes training using strength and endurance equipment. In many cases, the costs are covered by statutory health insurance providers. In cases where the health insurance providers do not cover the costs for oncological training therapy, physical therapy using training devices can offer an alternative. Like oncological training therapy, physical therapy using equipment aims to positively affect physical performance and the individual consequences of the disease and therapy. Specialist sports scientists and physiotherapists lead the personalised training and exercise programmes.



Rehabilitation exercise groups

Rehabilitation exercise groups offer the opportunity to become physically active under supervision. In general, rehabilitation exercise courses act as a self-help aid and aim to enable the participants to independently lead a healthy and active lifestyle. The group setting also acts as a motivator and promotes social interaction.

The groups do not need to be disease-specific – it is normal that people with a wide range of diseases exercise together in a group under expert supervision. However, there are clubs that offer exercise courses exclusively for people with cancer to help create a protected social environment.

Participation in rehabilitation exercise courses usually requires a prescription from a physician and is then authorised by the respective statutory health insurance provider. Those with private insurance plans pay in advance and then clarify on a case-by-case basis whether the costs are covered by their provider. There is also the option of the costs for rehabilitation exercise courses to be covered via a prescription from the German Pension Fund following rehabilitation or follow-up treatment.

Training-therapeutic rehabilitation aftercare (T-RENA)

The German Pension Fund provides training-therapeutic rehab aftercare (T-RENA) as a tailored group exercise course, up to 26 sessions of which can be prescribed after follow-up care (AHB). The prescribed courses can be billed via certified providers. T-RENA aims to maintain and build upon the improvements in physical performance capacity obtained during follow-up therapy. The costs for the course must be borne by the participant or fully or partially covered by their health insurance provider.

To be prescribed T-RENA, the patient must also have received an orthopaedic diagnosis which can be unrelated to the cancer diagnosis.

Gesundheitssportangebote mit onkologischer Spezialisierung

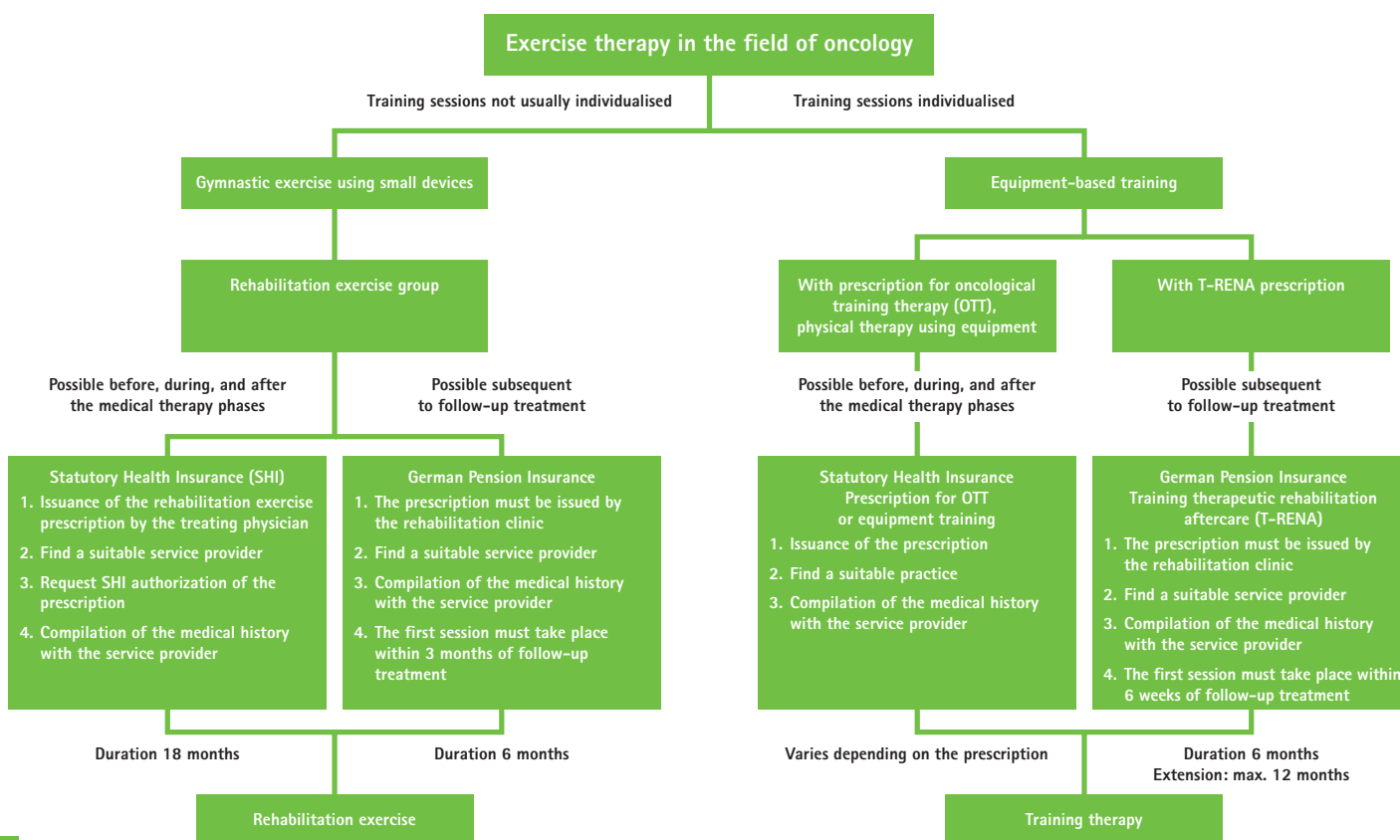
Health-orientated exercise courses specialising in oncology have the same aim as oncological training therapy and T-RENA. The differences between them lies in the way they are accessed. Patients can participate in cancer-specific health-orientated exercise courses after diagnosis and also during the various phases of therapy before follow-up therapy. The costs for the course must be borne by the participant or fully or partially covered by their health insurance provider.

The providers of such courses may be non-profit or commercial institutions. Information on suitable facilities in your area can usually be obtained from the Department of Oncology at the hospital responsible for your treatment.

Summary

The following diagram lists and sorts the available courses based on duration, content and potential start date. This compact overview of the abovementioned exercise therapy courses can be used as a guide to finding suitable options.

Guide to exercise therapy in the field of oncology





Training

Before beginning with training, talk to your attending physician about potential contraindications. Start all exercises slowly and stop immediately if you feel unwell or experience any pain. Especially at the start, ensure sufficient rest times (1-2 days) between training days. You can still go for a walk, etc., on training-free days.

Exercise selection

We have compiled a short selection of relevant exercises for the aforementioned oncological diseases. The list below complements the recommended physical activity with specific exercises that can be incorporated into your everyday routine.

Along with the exercises listed below, we also recommend general endurance training as part of walking-based training. Start with short sessions, e.g. walking briskly three times for 5 minutes each time, taking 3 to 5 pauses in between (walking slowly). This type of training is suitable for you to do several times per week, as long as you feel good and confident during training.

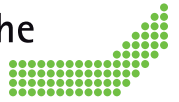
For the strength exercises, start with 20 repetitions which you can increase to 2x 20 as the next step. For exercises using a resistance band, choose a suitable length of time that allows you to achieve the intended number of repetitions. The right level of strain is when you can feel a slight to moderate strain after completing the exercise.

Each exercise below is marked with one or more coloured dots, which indicate which exercises are recommended for patients with each type of cancer. Often the same exercise is beneficial for several types of cancer patient and is marked with multiple dots.

Oncological condition

Colour coding of exercises

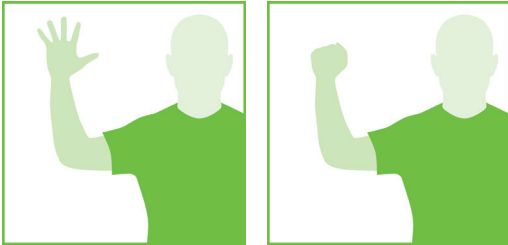
Breast cancer	●
Prostate cancer	●
Lung cancer	●
Bowel cancer	●



Active pumping motion with the hand ●

Category: lymph drainage

Entity: breast cancer

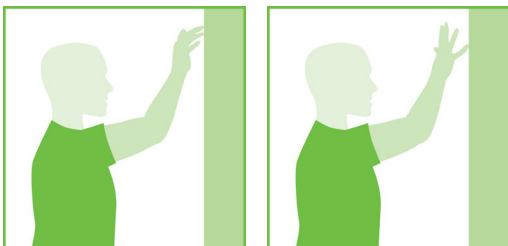


Lift your hand into the air so that your hand and elbow are higher than your heart. Make a pumping motion by opening and closing your hand

Playing piano (for lymphoedemas) ●

Category: lymph drainage

Entity: breast cancer

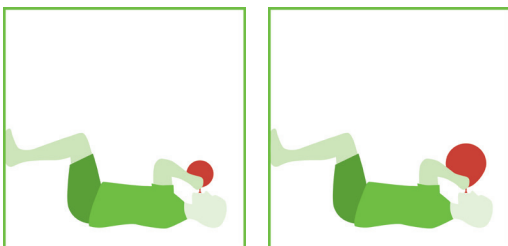


Stand in front of a wall. Put one arm above your head with your elbow extended. Your palm should be close to the wall but not touching it. Tap your fingertips on the wall as if you are playing the piano.

Breathing exercise using a balloon ●

Category: breathing

Entity: lung cancer

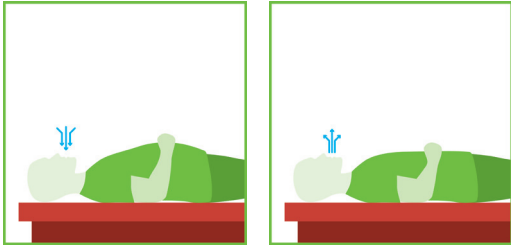


Lie on your back and bend your hips and knees to a 90 degree angle. Hold a small ball between your knees and press them together. At the same time, blow up a balloon by breathing in through your nose and out through your mouth. Pause between breaths (count to 3). Repeat the exercise until the balloon is inflated (approx. 4 breaths).

Abdominal breathing ●

Category: breathing

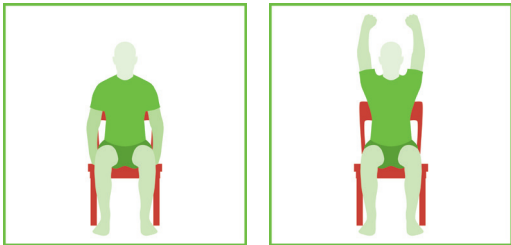
Entity: lung cancer



Press lightly against your abdomen using your hands to create resistance, then breathe in and then out again.

Breathing exercise while sitting ●

Category: breathing



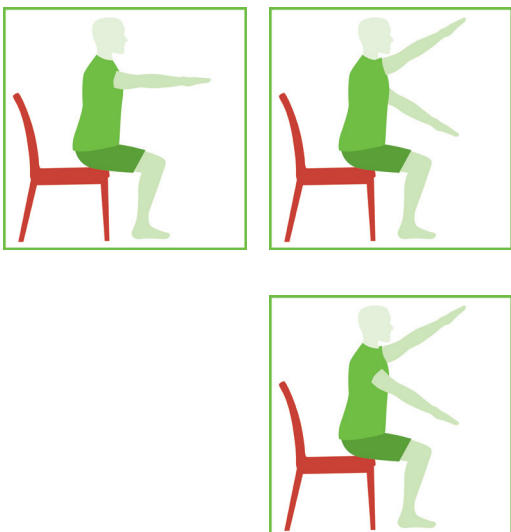
Entity: lung cancer

Sit down with your back straight. Breathe in slowly through your nose while raising your arms above your head. Then, breathe out slowly through your mouth while letting your arms fall.

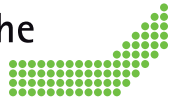
Paddling motion while sitting ● ●

Category: strengthening

Entity: breast cancer, bowel cancer



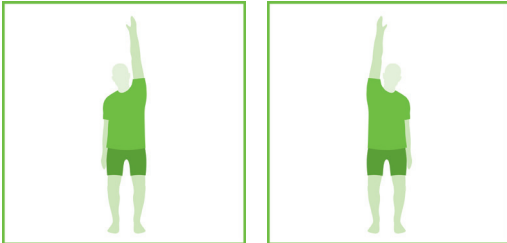
Sit up straight on the edge of a chair. Keep your feet flat on the ground and your upper body stretched and tilted forward (approx. 30 degrees). Stretch both arms out in front of you. Lift up one arm while simultaneously lowering the other. Then reverse the motion by moving the lower arm upwards and the upper arm downwards. Repeat the movement several times in a smooth motion.



Picking apples ● ●

Category: mobilisation

Entity: breast cancer, lung cancer

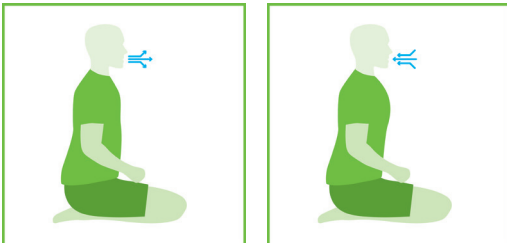


Raise alternate arms, as if you were trying to pick an apple from a tree.

Breathing and pelvic floor activation ●

Category: pelvic floor

Entity: prostate cancer

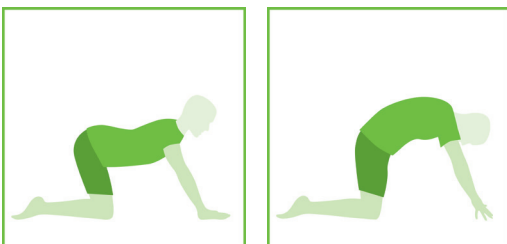


Kneel down, sitting back on your lower legs and keeping your back straight. If needed, place a cushion under your lower legs. Activate your pelvic floor muscles using the muscles that you use to hold in urine. Breathe out while pulling your navel slightly inwards. Breathe in and repeat.

Stretching the back while on all fours ● ●

Category: pelvic floor

Entity: lung cancer, prostate cancer

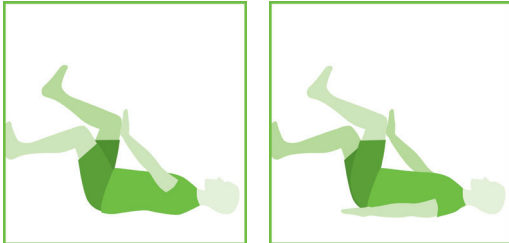


Go down on all fours. Activate your pelvic floor muscles using the muscles that you use to hold in urine. Breathe out while pulling in your abdomen (going from top to bottom, like a zip) and round your back, making it into a humped shape. Relax your torso, then repeat. Ensure your hips stay above your knees and your hands stay slightly in front of your shoulders.

Lateral stretching (with the pelvic floor) ● ●

Category: pelvic floor

Entity: bowel cancer, prostate cancer

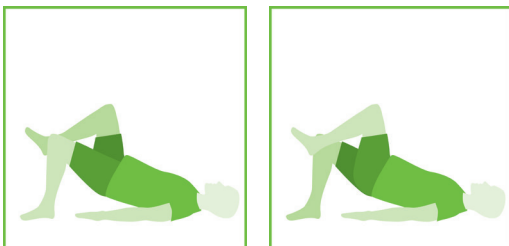


Lie on your back. Put your feet against a wall and bend your hips and knees to 90 degrees. Try to tense your pelvic floor while breathing in and out. Move one knee toward your chest while pressing it with your opposite hand. Maintain pelvic floor contraction when breathing out. Breathe in again while moving your foot back towards the wall then repeat the exercise on the other side.

Back bridge ● ●

Category: pelvic floor

Entity: bowel cancer, prostate cancer

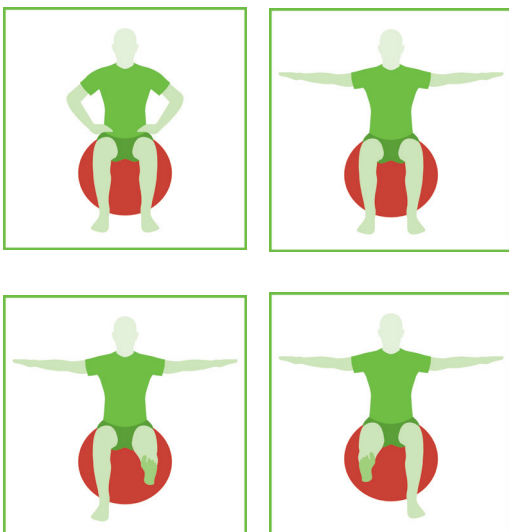


Lie on your back with your knees bent. Lift your pelvis upwards. Lift your weight onto each foot in turn while keeping your pelvis pointing upwards. Maintain the position, then lower your pelvis back to the floor. Repeat the exercise with increased intensity by using a weight placed over your pelvis.

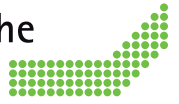
Torso activation using a gym ball ● ●

Category: strengthening

Entity: bowel cancer, prostate cancer



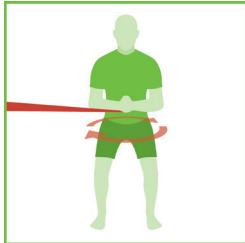
Sit down on a gym ball with both arms stretched out and your feet close together. Activate your torso musculature by tensing your pelvic floor muscles and transversal abdominal muscles. Stretch one leg outwards while maintaining balance. Then put your foot back on the floor. Repeat the movement on the other leg. Hold on to a solid object when you start this exercise to avoid falling. If you have bone metastasis, omit this exercise.



Stir the pot ● ● ●

Category: strengthening

Entity: bowel cancer, prostate cancer, breast cancer

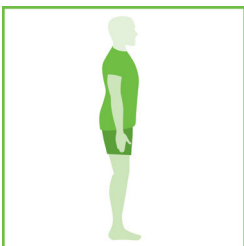


Fix a training band to a point in front of you, roughly at chest height. Hold the taut band with your hands and stretch your arms forward while making a circular movement with your arms like you are stirring a pot. Make sure your body does not turn while resisting the tension of the band. Turn 180 degrees and repeat the exercise.

Squats ● ● ● ●

Category: strengthening

Entity: bowel cancer, prostate, breast cancer, lung cancer

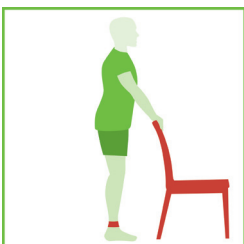


Stand with your feet a little more than shoulder-width apart. Distribute your weight evenly across the soles of both feet. Place your arms in front of you and move your buttocks downwards. Lower your buttocks until the angle between the lower leg and upper leg is approx. 90-100 degrees. Return to a standing position and then repeat.

Hip extension using a mini band ● ●

Category: strengthening

Entity: prostate cancer, bowel cancer

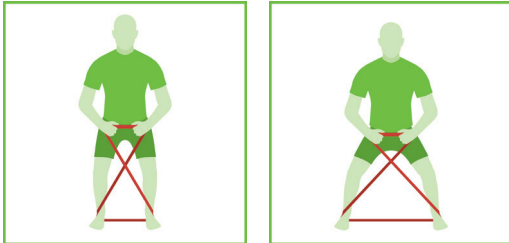


Place a mini band around your ankles. Stand up straight, holding onto a chair if necessary. Lift one leg behind you in a backwards motion, keeping your back straight and looking forward. Then return to the starting position

Hip abduction using a training band ● ● ● ●

Category: strengthening

Entity: prostate cancer, bowel cancer, breast cancer, lung cancer

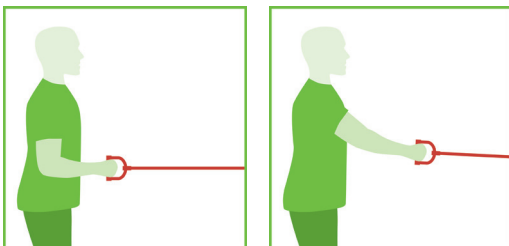


Place a training band on the floor in front of you and stand on top of it with your feet shoulder-width apart. Cross the band in front of your legs, creating an X shape. Hold the end of the band at hip level. Bend your knees, keeping your back straight while moving your legs several steps apart. Make sure your knees do not bend inwards

Narrow rowing using a training band ● ● ● ●

Category: strengthening

Entity: prostate cancer, bowel cancer, breast cancer, lung cancer

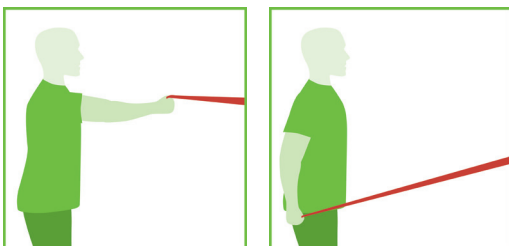


Stand up straight, fix a training band to a point in front of you at waist height and hold the end tightly in your hands. Move your arms backwards by bending your elbows and pressing your shoulder blades together, as if you are rowing a boat. Return to the starting position and repeat.

Pulling the training band with stretched arms ● ● ● ●

Category: strengthening

Entity: prostate cancer, bowel cancer, breast cancer, lung cancer



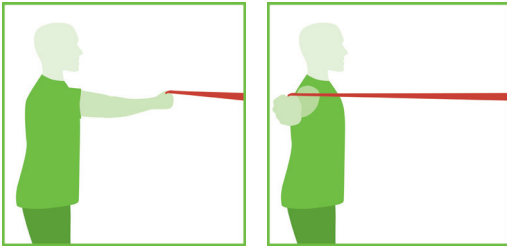
Fix a training band to a point in front of you at forehead height; stand up straight, slightly bend your knees, tense your abdominal muscles and lift your chest upwards. Ensure your chin remains in a neutral position (it should not be pushed outward). Maintain this position throughout the exercise. Hold the ends of the band in your hands with the palms facing downwards and arms stretched. Pull down on the band slowly down towards your side, starting the movement in your shoulder blades by pulling your shoulders back and down. Then, slowly return to the starting position.



Horizontal abduction using the training band ● ●

Category: strengthening

Entity: breast cancer, lung cancer

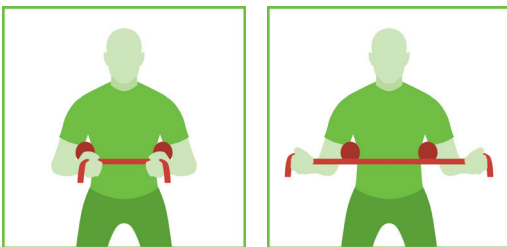


Fix a training band to a point in front of you at shoulder height. Hold one end tightly in each hand with the elbows slightly bent. Keep your elbows in this position with shoulders down, chin tucked in and torso stable, while pulling the band as far down as possible by moving your arms outwards and pressing your shoulder blades together. Slowly return to the starting position and repeat.

Outward rotation using a training band ●

Category: strengthening

Entity: breast cancer

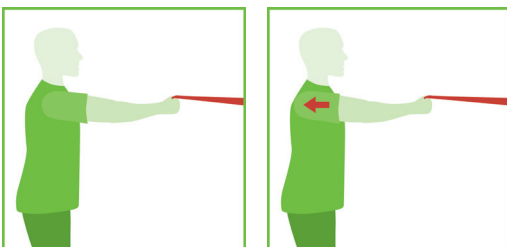


Place two rolled-up towels or small balls between each elbow and your upper body. Holding a training band in front of you, move your shoulder blades back and turn your arms outwards against the resistance of the training band in a controlled movement

Retracting the top of the shoulder ● ●

Category: strengthening

Entity: breast cancer, lung cancer



Stand up straight. Fix the training band to a point in front of you at shoulder height. With arms at a 90-degree angle in front of your body, hold the end of the training band. Pull the stretched arms backwards against the resistance of the band while pressing the shoulder blades together.

Shoulder flexion/abduction ● ● ●

Category: strengthening

Entity: breast cancer, lung cancer, bowel cancer

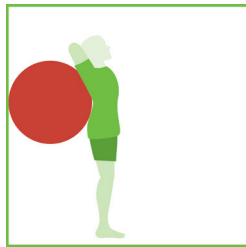
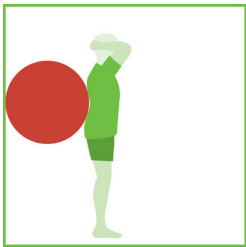


Stand up straight with your feet on one end of a training band while holding the other end with the opposite hand. Your palms should face the floor with your elbow extended. Lift and turn your hand upwards and diagonally across your body as if you want to move your forearm to your ear. Lower your hand slowly and return to the starting position.

Stretching exercise with hands behind the head ● ●

Category: stretching

Entity: breast cancer, lung cancer



Lean your upper back against a gym ball placed against a wall. Place your hands behind your head, move your elbows backwards and lie with your upper back across the ball. Maintain this position for a short time..



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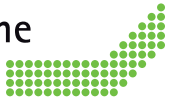
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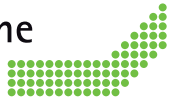
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