Oncology Rehabilitation and Therapy

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Our Mission

We extend the compassionate ministry of Jesus by improving the health and well-being of our communities, and bring good help to those in need, especially people who are poor, dying and underserved.

Our Values

Human Dignity
Compassion
Integrity
Stewardship
Service

Oncology Rehab Team

Physical Therapists

Occupational Therapists/Lymphedema Specialists

Speech Therapists/Pelvic Health Specialists

We are part of a larger Oncology Department

Cancer Stats

Women have a 1 in 8 chance of developing breast cancer sometime in their life

There are more than 4 million breast cancer survivors in the United States.

Oversight of Oncology Programs

Commission on Cancer (COC), American College of Surgeons (ACS), and National Accreditation Program for Breast Centers (NAPBC) require physicians to place a referral to rehab as part of the comprehensive care plan and to ensure patients have access to care

Oncology Rehab

Takes place before, during and after cancer treatments

Ortho Versus Oncology Rehab Patients

Orthopedic rehab for a Total Knee Replacement

Versus

Oncology rehab for Breast Cancer

Our goals for oncology rehab:

1 visit pre-treatment

Weekly during treatments

3 weeks post surgery

Purpose Of Rehab

Mitigate side effects of treatment

Sometimes long after the original diagnosis has been treated, the side effects of surgery, radiation and chemotherapy can leave the body with substantial sensory, motor, and functional deficits

Impairments Caused by Cancer Treatment

Common impairments therapy addresses

and

Lesser-known impairments that therapy can assist with:

Chemotherapy: 3 types

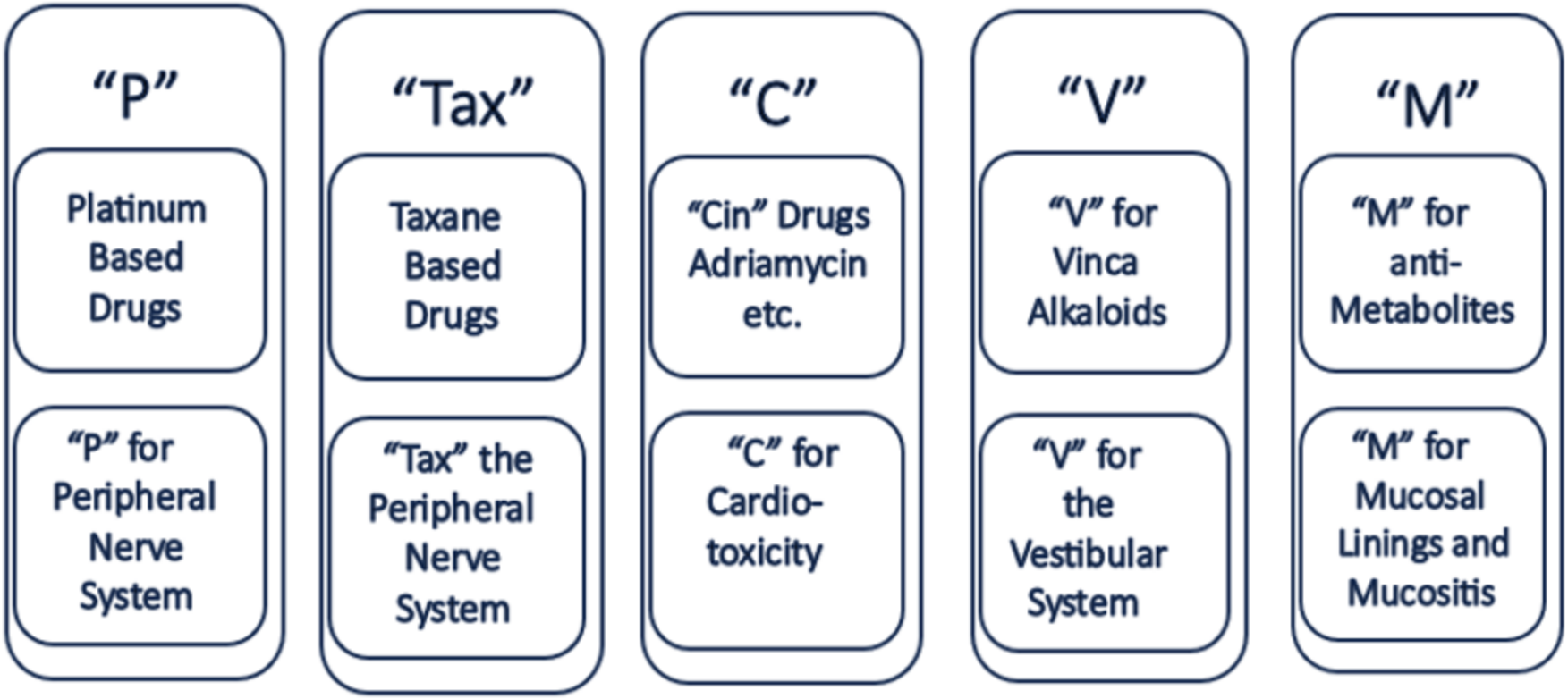
Systemic

Targeted

Immunotherapy

And what it means for therapy

Patient Profiling – Clinical Management Pathways Determined by Chemotoxic Drugs



Cardiotoxicity

What is cardiotoxicity and how therapy can help

Pulmonary Toxicity

What is pulmonary toxicity and how therapy can help

Muscular Toxicity

What is muscular toxicity and how therapy can help

Neurotoxicity

What is neurotoxicity and how therapy can help

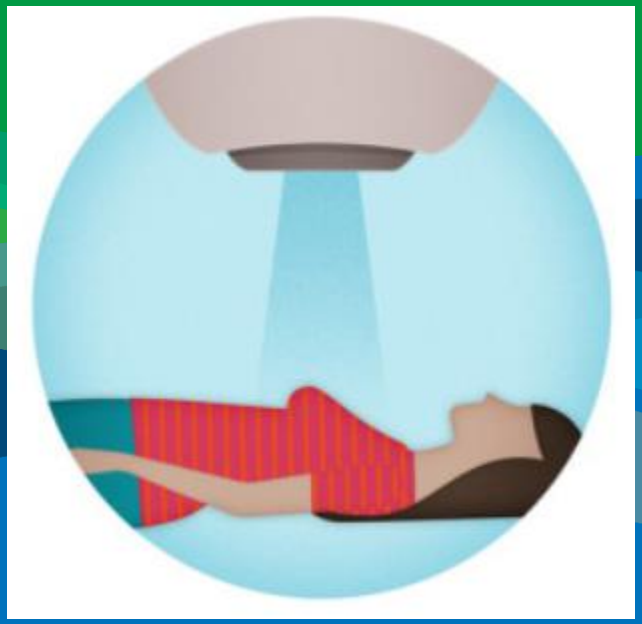
Gastrointestinal Toxicity

What is gastrointestinal toxicity and how therapy can help

Myelosuppression

What is myelosuppression and how therapy can help

Radiation Therapy



Goals of radiation therapy

And

Types of radiation (Neoadjuvant versus Adjuvant versus Palliative)

Side Effects of Radiation to the Breast Area that Physical Therapy Can Address

Areas impacted:

Tissue

Muscle

Bone

Phases of Skin Changes due to Radiation

Acute (1-4 months) - peeling of skin and healing of superficial tissue

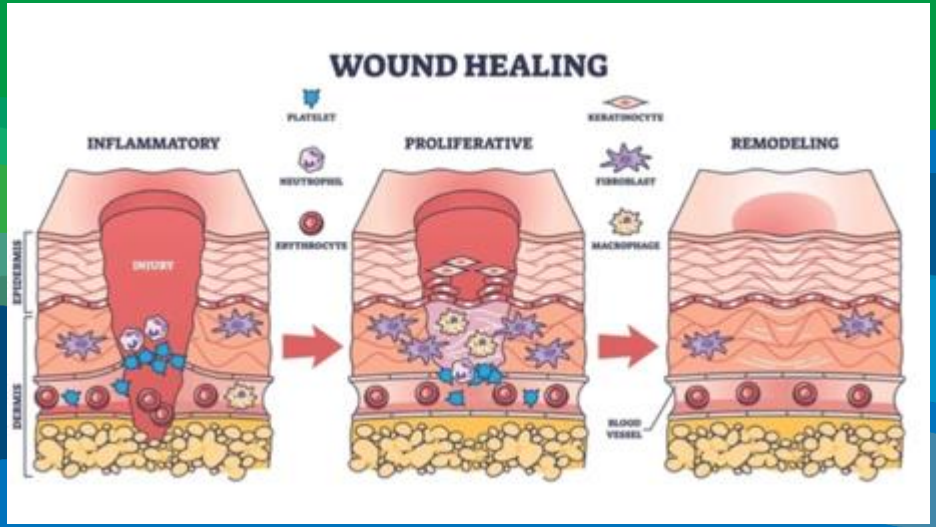
Sub Acute (4-12 months) - microcellular changes;

Fibrosis of vasculature and lymphatics, adhesion to collagen

Chronic (1-8+ yrs) - progressive immobility and adhesion of tissue

(Cooper et al,. Int. J. Radiation Oncol. Bio Phys 1995)

Post Surgical Phases of Soft Tissue Healing



Inflammation	2+ weeks after surgery
Proliferation	2 weeks to 2 months
	THIS IS WHERE THERAPY SHINES!
Remodeling	2 months to several months after
	Unresolved edema can harden
	Unresolved scar can mature to fibrotic tissue

Bone Metastasis and Impacts on Therapy Interventions

Goals of Exercise

If >50% of the cortex involved – NO WEIGHT BEARING

If < 50% of the cortex involved = PARTIAL WEIGHT BEARING

Considerations for Exercise in Physical Therapy

DVT/PE

Oxygen saturation below 90%

Unstable bones or bone mets

Platelets below 20,000 mm3

Anemia/hemoglobin < 8 D/DL

Blood pressure changes

Benefits of Therapy Before, During, and After Cancer Treatments

Address pre-treatment deficits

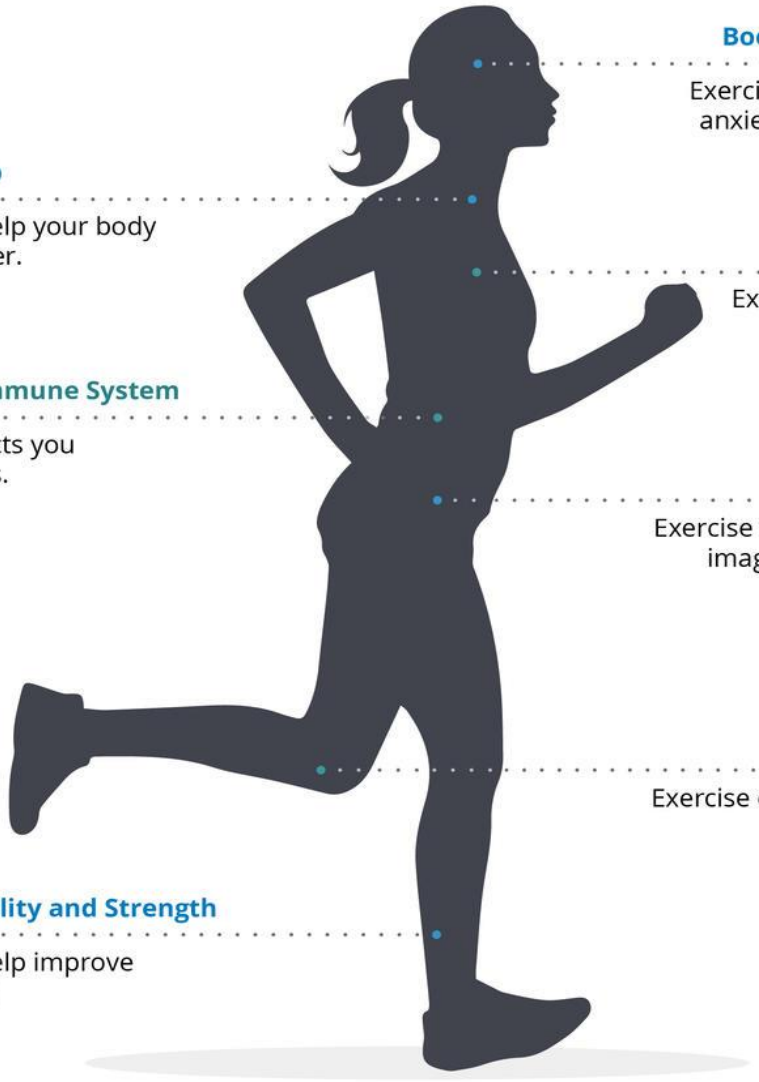
Prevent loss of function during treatments

Maximize post-treatment function

NATIONAL CANCER INSTITUTE

BENEFITS OF EXERCISE

Exercise to reduce any cancer-related symptoms and improve how you feel.



Boost Mental Health

Exercise can help reduce anxiety and depression.

Improve Sleep

Exercise can help your body rest and recover.

Reduce Fatigue

Exercise can increase your energy.

Strengthen Immune System

Exercise protects you from infections.

Lose Weight

Exercise can help with body image and self-esteem.

Decrease Pain

Exercise can help relax your primary muscles.

Increase Mobility and Strength

Exercise can help improve your functions.

cancer.gov/nci-connect

What the Research is Saying

Physical Activity Before, During, and After Chemotherapy for High-Risk Breast Cancer: Relationships With Survival

Cannioto RA, Hutson A, Dighe S, McCann W, McCann SE, Zirpoli GR, Barlow W, Kelly KM, DeNysschen CA, Hershman DL, Unger JM, Moore HCF, Stewart JA, Isaacs C, Hobday TJ, Salim M, Hortobagyi GN, Gralow JR, Albain KS, Budd GT, Ambrosone CB. Physical Activity Before, During, and After Chemotherapy for High-Risk Breast Cancer: Relationships With Survival. J Natl Cancer Inst. 2021 Jan 4;113(1):54-63. doi: 10.1093/jnci/djaa046. PMID: 32239145; PMCID: PMC7781460.

What the Research is Saying

Supervised, structured and individualized exercise in metastatic breast cancer: a randomized controlled trial

Hiensch AE, Depenbusch J, Schmidt ME, Monninkhof EM, Pelaez M, Clauss D, Gunasekara N, Zimmer P, Belloso J, Trevaskis M, Rundqvist H, Wiskemann J, Müller J, Sweegers MG, Fremd C, Altena R, Gorecki M, Bijlsma R, van Leeuwen-Snoeks L, Ten Bokkel Huinink D, Sonke G, Lahuerta A, Mann GB, Francis PA, Richardson G, Malter W, van der Wall E, Aaronson NK, Senkus E, Urruticoechea A, Zopf EM, Bloch W, Stuiver MM, Wengstrom Y, Steindorf K, May AM. Supervised, structured and individualized exercise in metastatic breast cancer: a randomized controlled trial. Nat Med. 2024 Oct;30(10):2957-2966. doi: 10.1038/s41591-024-03143-y. Epub 2024 Jul 25. PMID: 39054374; PMCID: PMC11485212.

What the Research is Saying

The Effect of Exercise on Life Quality and Depression Levels of Breast Cancer Patients

Aydin M, Kose E, Odabas I, Meric Bingul B, Demirci D, Aydin Z. The Effect of Exercise on Life Quality and Depression Levels of Breast Cancer Patients. Asian Pac J Cancer Prev. 2021 Mar 1;22(3):725-732. doi: 10.31557/APJCP.2021.22.3.725. PMID: 33773535; PMCID: PMC8286684.

Exercise Recommendations Base on Research

The American Cancer Society, American College of Sports Medicine, and also the American Heart Associate all recommend the same amount of physical activity

Recommendations for Therapy from Research Performed at University of Northern Colorado Cancer Rehabilitation Institute

PHASE 1 – 2-3x a week, May be a minimum of 3 months

Light aerobic exercise 1-3 RPE

PHASE 2 = 3x a week, 3 months, 4-6 RPE

PHASE 3 = 3+ x a week, 3 months and beyond, 10 RPE

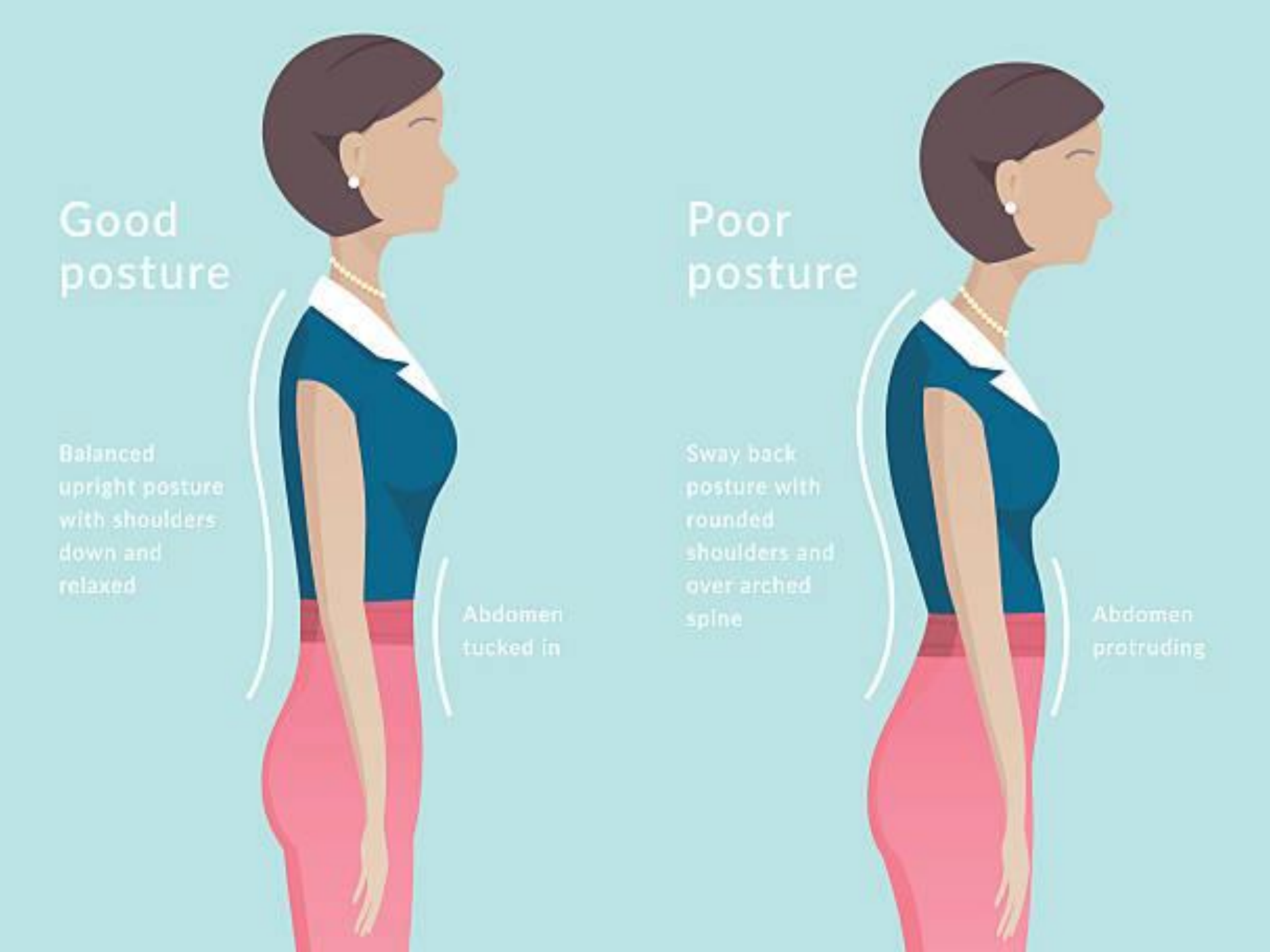
There are specific heart rate ranges that are individualized based on starting status and cancer treatments.

RPE – Rate of Perceived Exertion

1 = RESTING	no exertion
2 = MINIMAL ACTIVITY	barest exertion
3 = LIGHT ACTIVITY	comfortable, slight difficulty breathing
4 = LIGHT ACTIVITY	breaking a sweat, comfortable speaking
5 = MODERATE ACTIVITY	speaking is easy, light sweating
6 = MODERATE ACTIVITY	moderate sweating, able to speak
7 = HARD ACTIVITY	heavy sweating, difficulty speaking
8 = HARD ACTIVITY	difficulty breathing, unable to speak
9 = VERY HARD ACTIVITY	difficulty breathing, getting to maximum
10 = MAXIMAL EXERTION	can hardly push any further

Let’s Talk Posture

POSTURE IS SO IMPORTANT DURING THE RECOVERY FROM SURGERY AND RADIATION!


Good posture
Balanced upright posture with shoulders down and relaxed
Abdomen tucked in
Poor posture
Sway back posture with rounded shoulders and over arched spine
Abdomen protruding

Diaphragmatic Breathing

Sit upright

One hand on upper belly, other hand on chest

Take a deep breath in, over 5-10 seconds

Feel your stomach expand against your hand

Breathe out, over 5-10 seconds

Seated Scapular Retraction

Sit upright

Gently squeeze your shoulder blades together

Hold 5 seconds

Relax, then repeat

Maintain good posture throughout

Importance of Manual Therapy

Hands on manual techniques are proven to be effective at mobilizing tissue, increasing shoulder range of motion, improving profusion and decreasing restrictions tied to the lymphatic system.

Treatment includes soft tissue mobilization, muscle energy trigger point myofascial release, joint mobilizations, and manual lymph drainage

(per PORI protocol)

Lymph, The Lymphatic System, Lymphedema

The lymphatic system maintains fluid levels in the body, absorbs fats from the digestive track, protects the body against foreign invaders, and transports and moves waste products and abnormal cells from lymph.

When the lymphatic system is unable to drain the lymph from the tissues, this leads to swelling.

Lymphedema is accumulation of protein rich fluid called lymph.

Typically affects limbs, but can also affect breast, genitals, and head/neck.

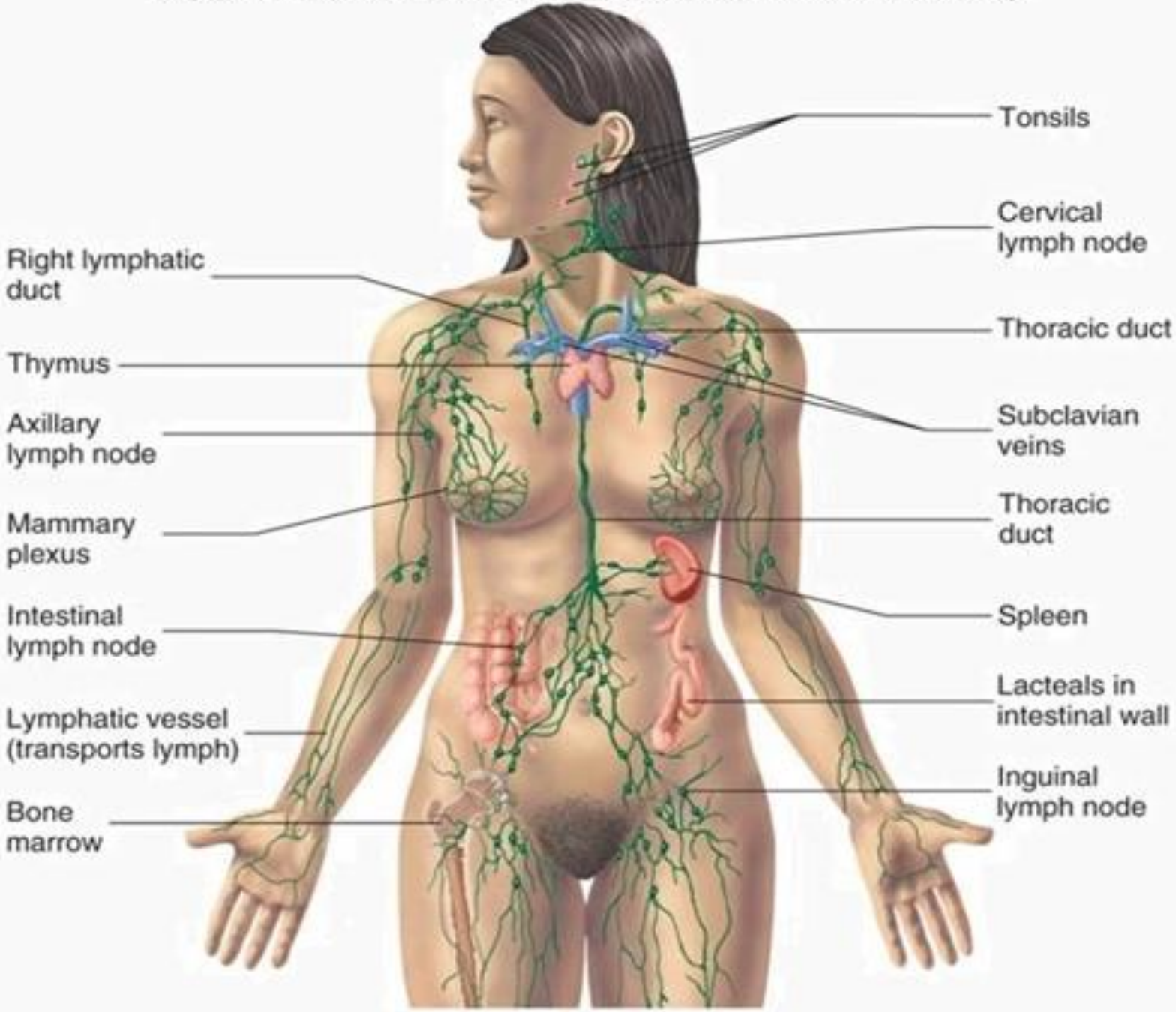
Lymphedema is a chronic condition with no cure, but it can be managed

"YOUR BODY HAS HUNDREDS OF LYMPH NODES, including here, under your arms! These little nodes work to remove toxins and other junk from the protein-rich lymph fluid before returning it to the circulatory system."

When is the Best Time for Referrals for Lymphedema

Stages:

0 1 2 3



Research on Exercise and Treatment of Lymphedema

Table 3 Selected articles and significant outcomes

Types of exercise	Positive outcomes	Negative outcomes	Neutral outcomes
Aerobic ($n = 1$)	• Decreased swelling/reduction of symptoms ($n = 1$) • Decreased pain ($n = 0$) • Increased mental health/quality of life ($n = 0$) • Increased muscular strength/ROM ($n = 1$) • Lean body mass/decreased body mass index ($n = 0$)	• Increased pain ($n = 0$) • Exacerbation of lymphedema symptoms ($n = 0$) • Developed lymphedema ($n = 0$) • Increased symptoms of depression ($n = 0$)	Did not increase the risk for or exacerbate symptoms for lymphedema ($n = 0$)
Resistance ($n = 7$)	• Decreased swelling/reduction of symptoms ($n = 3$) • Decreased pain ($n = 0$) • Increased mental health/quality of life ($n = 2$) • Increased muscular strength/ROM ($n = 1$) • Lean body mass/decreased body mass index ($n = 1$)	• Increased pain ($n = 0$) • Exacerbation of lymphedema symptoms ($n = 0$) • Developed lymphedema ($n = 0$) • Increased symptoms of depression ($n = 0$)	Did not increase the risk for or exacerbate symptoms for lymphedema ($n = 3$)
Resistance/ aerobic/ stretching ($n = 2$)	• Decreased swelling/reduction of symptoms ($n = 0$) • Decreased pain ($n = 0$) • Increased mental health/quality of life ($n = 0$) • Increased muscular strength/ROM ($n = 2$) • Lean body mass/decreased body mass index ($n = 0$)	• Increased pain ($n = 0$) • Exacerbation of lymphedema symptoms ($n = 0$) • Developed lymphedema ($n = 0$) • Increased symptoms of depression ($n = 0$)	Did not increase the risk for or exacerbate symptoms for lymphedema ($n = 2$)
Resistance/ aerobic ($n = 5$)	• Decreased swelling/reduction of symptoms ($n = 2$) • Decreased pain ($n = 1$) • Increased mental health ($n = 1$) • Increased muscular strength/ROM ($n = 2$) • Lean body mass/decreased body mass index ($n = 2$)	• Increased pain ($n = 0$) • Exacerbation of lymphedema symptoms ($n = 0$) • Developed lymphedema ($n = 0$) • Increased symptoms of depression ($n = 0$)	Did not increase the risk for or exacerbate symptoms for lymphedema ($n = 2$)
Resistance/ stretching/ ROM ($n = 6$)	• Decreased swelling/reduction of symptoms ($n = 1$) • Decreased pain ($n = 1$) • Increased mental health/quality of life ($n = 2$) • Increased muscular strength/ROM ($n = 3$) • Lean body mass/decreased body mass index ($n = 0$)	• Increased pain ($n = 0$) • Exacerbation of lymphedema symptoms ($n = 0$) • Developed lymphedema ($n = 0$) • Increased symptoms of depression ($n = 0$)	Did not increase the risk for or exacerbate symptoms for lymphedema ($n = 5$)
Other (yoga, qigong, deep breathing) ($n = 5$)	• Decreased swelling/reduction of symptoms ($n = 2$) • Decreased pain ($n = 1$) • Increased mental health/quality of life ($n = 2$) • Increased muscular strength/ROM ($n = 2$) • Lean body mass/decreased body mass index ($n = 0$)	• Increased pain ($n = 0$) • Exacerbation of lymphedema symptoms ($n = 0$) • Developed lymphedema ($n = 0$) • Increased symptoms of depression ($n = 0$)	Did not increase the risk for or exacerbate symptoms for lymphedema ($n = 1$)

Abbreviation: ROM, range of motion.

Research on Exercise and Treatment of Lymphedema

“For patients with breast cancer, functional exercise plays a vital role in rehabilitation after surgery. Early progressive functional exercise is necessary to improve blood and lymphatic circulation in the effective limb, reduce subcutaneous effusion, prevent lymphedema, and restore upper limb function”

MERCY LOCATIONS FOR ONCOLOGY REHAB

PHYSICAL THERAPY

Mercy Health - Perrysburg	419-251-8788
Mercy Health - Sunforest Court	419-251-1121
Mercy Health – St Charles	419-696-7203
Mercy Health – St Vincent	419-251-4261

LYMPHEDEMA/ OT

Mercy Health - Sunforest Court	419-251-4261
Mercy Health – St Luke's	419-893-5957

PELVIC HEALTH

Mercy Health – Perrysburg	419-251-8788
Mercy Health - Sunforest Court	419-251-1121
Mercy Health – St Luke's	419-893-5957

References

Reduction of breast lymphoedema secondary to breast cancer: a randomised controlled exercise trial

Kilbreath SL, Ward LC, Davis GM, Degnim AC, Hackett DA, Skinner TL, Black D. Reduction of breast lymphoedema secondary to breast cancer: a randomised controlled exercise trial. Breast Cancer Res Treat. 2020 Nov;184(2):459-467. doi: 10.1007/s10549-020-05863-4. Epub 2020 Aug 18. PMID: 32812177.

Breast cancer-related lymphoedema and resistance exercise: An evidence-based review of guidelines, consensus statements and systematic reviews

Wang L, Shi YX, Wang TT, Chen KX, Shang SM. Breast cancer-related lymphoedema and resistance exercise: An evidence-based review of guidelines, consensus statements and systematic reviews. J Clin Nurs. 2023 May;32(9-10):2208-2227. doi: 10.1111/jocn.16437. Epub 2022 Jul 27. PMID: 35894167.

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Effects of a physical therapy program combined with manual lymphatic drainage on shoulder function, quality of life, lymphedema incidence, and pain in breast cancer patients with axillary web syndrome following axillary dissection

Cho Y, Do J, Jung S, Kwon O, Jeon JY. Effects of a physical therapy program combined with manual lymphatic drainage on shoulder function, quality of life, lymphedema incidence, and pain in breast cancer patients with axillary web syndrome following axillary dissection. Support Care Cancer. 2016 May;24(5):2047-2057. doi: 10.1007/s00520-015-3005-1. Epub 2015 Nov 5. PMID: 26542271.

Effect of Exercise on Breast Cancer-Related Lymphedema: What the Lymphatic Surgeon Needs to Know

Panchik D, Masco S, Zinnikas P, Hillriegel B, Lauder T, Suttmann E, Chinchilli V, McBeth M, Hermann W. Effect of Exercise on Breast Cancer-Related Lymphedema: What the Lymphatic Surgeon Needs to Know. J Reconstr Microsurg. 2019 Jan;35(1):37-45. doi: 10.1055/s-0038-1660832. Epub 2018 Jun 23. PMID: 29935493.

References

Supervised, structured and individualized exercise in metastatic breast cancer: a randomized controlled trial

Hiensch AE, Depenbusch J, Schmidt ME, Monninkhof EM, Pelaez M, Clauss D, Gunasekara N, Zimmer P, Belloso J, Trevaskis M, Rundqvist H, Wiskemann J, Müller J, Sweegers MG, Fremd C, Altena R, Gorecki M, Bijlsma R, van Leeuwen-Snoeks L, Ten Bokkel Huinink D, Sonke G, Lahuerta A, Mann GB, Francis PA, Richardson G, Malter W, van der Wall E, Aaronson NK, Senkus E, Urruticoechea A, Zopf EM, Bloch W, Stuiver MM, Wengstrom Y, Steindorf K, May AM. Supervised, structured and individualized exercise in metastatic breast cancer: a randomized controlled trial. Nat Med. 2024 Oct;30(10):2957-2966. doi: 10.1038/s41591-024-03143-y. Epub 2024 Jul 25. PMID: 39054374; PMCID: PMC11485212.

Comparison of the effects of different functional exercise sequences on lymphedema in breast cancer: protocol for an exploratory randomised controlled cross-over trial

Qiu L, Wu J, Huang Y, Ye M, Song L, Huang H, Jin Y. Comparison of the effects of different functional exercise sequences on lymphedema in breast cancer: protocol for an exploratory randomised controlled cross-over trial. BMJ Open. 2024 Mar 14;14(3):e076127. doi: 10.1136/bmjopen-2023-076127. PMID: 38485488; PMCID: PMC10941162.

Thank you!

Questions?