



Aquatic Exercise for Breast Cancer

Making the case for water-based therapy for a common rehab diagnosis.

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By Andrea Salzman, MS, PT

Fast Facts:

- Breast cancer treatment can lead to weight gain, chronic pain, and a decrease in strength, cardiovascular fitness, shoulder function and QOL¹
- As many as 1/3-1/2 of women who undergo axillary node dissection develop arm lymphedema²
- As many as 52% of women continue to have significant pain 9 years after surgery³
- Obese women are 3x more likely to develop lymphedema 2 years post-surgery⁴

Women who undergo axillary dissection after a diagnosis of breast cancer are given contradictory advice regarding physical activity. These women are told to "remain active," but to avoid tasks that require use of their surgical arm, such as carrying heavy grocery bags.

To complicate matters, women who use their affected arm "normally" have a higher incidence of pain and a greater sensation of heaviness, but this does not translate to a greater incidence of lymphedema. This pain may be the reason so many women cease use of the arm, for fear that the pain and heaviness is a signal to "stop." Upper-limb dysfunction then becomes a common side effect and may include decreased shoulder range of motion, reduced strength, pain and lymphedema.

It doesn't have to be this way. Recent studies have showed that unrestricted physical activity and moderate resistance training of the affected arm does not increase the risk of lymphedema.⁶⁻¹⁴ And such activity reduces many of the comorbidities that come with learned immobility. In fact, some researchers argue that breast cancer survivors should not wait until post-treatment to begin to exercise. Even cancer survivors receiving the terrible combination of chemotherapy and radiotherapy following surgery appear to benefit greatly as a result of participating in an individualized exercise intervention.⁶

Therapists looking for a viable option for these patients should look no further than the water's edge. But in order to choose aquatic therapy, it is essential to justify the choice before taking the plunge.

Statements of Medical Necessity

The following language can be used in your documentation to support the medical necessity of aquatic therapy. If you decide on aquatic therapy as a treatment option during the initial evaluation, insert the master statement in the evaluation. After that, you should make the case for continuing to use aquatic therapy on an ongoing basis (daily or weekly). At that time, you may choose to use whichever specific justification statement is appropriate.

Assessment (master statement): PATIENT presents with loss of breast tissue, residual scar tissue of breast region, weakness of pectoral and other supportive musculature, decreased aerobic fitness, and a loss of ROM. She is at high risk for lymphedema, loss of functional strength and learned immobility. She is in pain, unwilling to move freely, and is expressing frustration with her rehab. She is fatigued from long bout of chemotherapy, radiation and surgical intervention.

I choose to perform PATIENT's physical therapy using an aquatic medium in order to capitalize on water's physical properties. These properties include, but are not limited to, buoyancy (used to increase ease of limb movement), viscosity (for graded progression of strength training and for sensory input), hydrostatic pressure (for edema reduction) and thermal shifts (for pain control). The pool is an ideal motivating environment as PATIENT can combat the tendency for lymphedema and reduced ROM of the upper extremity. Over five recent studies have demonstrated the benefits of aquatic therapy for this population (available upon request) and the Cochrane Collaboration report praises the effects of early, supervised activity for the affected limb.

Assessment (Specific Impairments)

Breast Cancer: Once cleared by physician for immersion (typically 4-8 weeks after mastectomy), PATIENT can participate in an aquatic program. By placing in the pool, it is possible to increase nutrient delivery to the tissue, provide early return to movement after mastectomy and thus decrease the propensity for lymphedema in upper extremity -- all without encouraging potentially catastrophic stressors on the surgical site.

Fatigue: PATIENT has been virtually homebound for the last 3 months due to her surgical mastectomy and a subsequent bout of chemo and radiation. Exercise in water produces less joint and neural loading than the identical exercise performed on land permitting the graded and reproducible application of weight. Thus, the pool can offer PATIENT a sustainable exercise environment well within her exercise tolerances.

Restrictions in ROM: PATIENT's limbs are easier to move against gravity during immersion. PATIENT can also be positioned properly in water in order to provide a low friction surface for movement, encouraging spontaneous active ROM with less effort than when restricted by gravity. Additionally, the water can provide the "ultimate treatment plinth" -- allowing a skilled therapist ease of positioning and access for stretching and joint mobilization.

Weakness: Water immersion provides a resistive medium that can be manipulated by a skilled therapist to either assist or resist movement. During early rehab, the immersed limb is automatically supported by buoyancy, which will assist PATIENT in moving her body against gravity. As rehab progresses, movements can be accelerated to create more drag. Such activities can be structured to create more effort than the identical movements on land. Additionally, water's viscosity provides a resistance to chest wall expansion (inhalation) and a facilitation of chest wall retraction (during exhalation) which can assist in providing a strength training mechanism for the expiratory muscles.

Pain: Postsurgical pain decreases PATIENT's willingness to move, a critical part of healing. During immersion, the properties of buoyancy, viscosity, hydrostatic pressure and thermal shifts couple to create an environment where activities are less painful than

their land-based counterparts. This new movement freedom helps interrupt the pain cycle.

Edema/Lymphedema: Hydrostatic pressure will affect PATIENT during vertical immersion by producing a reduction in edema present in interstitial spaces in the immersed extremities by providing graduated pressure at greater depths. Although this effect is most dramatic in the lower extremities, recent research has shown benefits of immersion plus exercise for upper extremity lymphedema as well.

Conclusion

Exercise can result in a significant and clinically meaningful improvement in shoulder ROM, pain, strength, edema and other factors in women who have undergone breast cancer surgery. And the key to success may just lie in early mobilization. For those patients in the post-operative period, the Cochrane review recommend that women begin exercise early, perhaps as early as day 1 to day 3 after surgery.⁶

The review did not find any evidence that upper-limb exercise, whether carried out following surgery, or during/following other cancer treatments, resulted in more patients developing arm lymphedema. In fact, they concluded that more structured exercise programs, such as physical therapy, delivered in the early weeks following surgery are beneficial to regain movement in, and use of the shoulder and arm for daily activities such as reaching overhead.⁶

Aquatic exercise should never be automatically "verboden" for the patient with breast cancer related surgeries. In fact, it may be the one option that keeps the twin demons of breast cancer surgery, lymphedema and pain, at bay.

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