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#### Smooth and Easy

Pilates can be a beneficial component of an approach to cancer rehab.

By Suzanne Martin, PT, DPT, CPI

Back in 1955, first generation Pilates protégé Eve Gentry was diagnosed and treated for breast cancer. In her biography, Gentry remembers that when she showed Joseph Pilates, the method's creator, her lack of arm elevation following treatment, he simply said, "Don't worry, we fix."

Pilates was able to fully rehabilitate Gentry, and he later demonstrated her abilities to local New York physicians. They were astounded that a woman who had received a full radical mastectomy could possess such a high physical restoration of range and strength.

Physical therapists will hear more stories like Eve's in the next decade. Since I began teaching Pilates 21 years ago, and after experiencing my mother's battle with breast and colon cancer, I've witnessed how the Pilates Method can benefit an integrative approach to cancer rehab management. Recent research shows that exercise isn't just for long-term survivors seeking post-medical rehabilitative services. People undergoing operative and adjuvant treatments can also benefit from exercise and skilled intervention.

Today, some types of cancer are considered chronic conditions. The National Cancer Institute estimates that 10.8 million Americans are living with a history of cancer. In addition, one in seven people over the age of 50 may contract some type of cancer. And the American Cancer Society (ACS) anticipates 1.5 million new cases of cancer will be diagnosed in 2008. As a result, rehabilitative services, such as Pilates, can address the side effects of cancer treatment from surgery, radiation and chemotherapy, and hormone, biological and targeted therapies.

#### EXPEDITING HEALING

Pilates delivers postural re-education and muscle-balancing exercises and effects. I've personally experienced these benefits when I used the discipline to control and manage my scoliosis. As a result, my practice focuses on treating scoliosis, which can be a functional side effect of unilateral surgical procedures.

Pilates can also help alleviate pain from operative procedures, restore joint mobility and tissue integrity, and help regain lost strength. Most importantly, goals should involve returning to activities of daily living that make life meaningful.

Postoperative treatment can begin within 2 weeks. Cosmetic reconstruction procedures can be dovetailed with oncological surgical procedures. Early manual therapeutic assistance can enhance optimal cosmetic outcomes and ensure that patients meet range-of-motion goals. However, patients can still make gains years after surgery. I recently worked with a client with loss of limb range, tissue puckering and biomechanical pain from adhesions due to a latissimus muscle flap years after her operation.

One reconstruction procedure for breast replacement is the transverse rectus abdominis muscle/deep inferior epigastric perforator (TRAM/DIEP) flap procedure, which resects abdominal fat, a unilateral portion of the rectus abdominus muscle and its tributary of the lateral thoracic artery. These tissues are transferred into the missing breast tissue area to create a supple breast replacement. Normally, this procedure requires delaying direct abdominal exercises for 8 to 10 weeks, since the lesion is comparable to a "tummy tuck," where a horizontal incision is made from the right to left iliac regions.

By using therapeutic dissociation of the involved body area—a basic principle of Pilates—you can begin postoperative treatment, posture re-education and balancing sooner. The versatility of Pilates devices enables you to expedite flexibility, strength and core stability training without using trunk flexion or stressing healing areas.

Progression is a key element in postoperative restoration work, which may be complicated or delayed by interacting medical interventions. In a recent case, a 32-year-old breast cancer survivor suffered a severe ankle sprain and contusions on her contralateral gluteus maximus when she was run off the road while bicycling. With Pilates' range of exercises and progression stages, she modified her workout to accommodate the acute injury, TRAM/DIEP flap weaknesses and chemotherapy chest port.

In general, directly strengthening an affected limb should be limited to light resistance within a comfortable range of motion. In traditional strength training, patients should only initially attempt 2 sets of 8 to 10 repetitions.

Instead, Pilates focuses on low repetitions, executed with focused care. The emphasis on "less is more" takes the worry out of over-progression.

#### CONTROLLING SIDE EFFECTS

Patients who undergo surgery or radiation run a lifetime risk of developing lymphedema. Lymphedema occurs when superficial lymphatic vessels are disrupted or deeper lymph nodes in areas such as the axillae, femoral triangles and deep abdomen are dissected. It's generally associated with an affected arm due to breast cancer treatment. Risk factors include increased overheating during endurance aerobic activities, hot weather or using a hot tub.

Cording, in which fascial adhesions build up within retained lymphatic vessels, may also occur. Ideally, you should initiate physical therapy pre-operatively to assess parameters such as upper extremity range, strength and lymphatic fluid level. Pre-operative observation and inspection can provide a comparative guide for detecting post-procedure tissue changes.

Lymphedema prevention and detection education can be assimilated into Pilates sessions. I teach clients detection signs, such as observing enlarged skin between the fingers when holding the handgrips or foot bar of the Reformer. Pilates also fosters prevention strategies, since pacing can be tailored to minimize edema by accentuating a stepped progression. In addition, emphasis on structured diaphragmatic breathing promotes the return of lymphatic fluid to the heart.

Systemic effects such as fatigue and weakness are common complaints with cancer patients undergoing chemotherapy. Low-impact exercises can spare cardiac muscle damage that may occur with

primary chemotherapies and prevent deconditioning that often

results from prolonged fatigue. The assistive nature of Pilates devices is suited for people who are limited by fragility, fatigue and endurance issues.

Contraindications that may stop a patient from general exercise can be safe in a Pilates environment. For example, a low white blood cell count ( $0.5 \times 10^9$ ) indicates a risk of infection, and patients may have to avoid swimming pools or crowds. Low red blood cell values (0.8g/dl) indicate risk for hypoxia and a patient should minimize ambulatory/endurance activities. And a low platelet count ( $50 \times 10^9$ ) signifies a high risk for bruising, which limits contact or high-impact sports. Pilates can be the answer for these patients.

The mind-body connection also plays a role in selecting therapeutic and rehabilitative activities to accompany cancer treatment. Psychological health becomes an important ally when grappling with the fear of a cancer diagnosis.

Rehab in a Pilates environment meets American College of Sports Medicine guidelines for optimizing psychological health in cancer patients. The guidelines state that the activity should be enjoyable, provide meaning and purpose, build confidence, facilitate a sense of control, develop challenging new skills, incorporate quality social interactions, and engage the mind and spirit. In addition, close supervision during Pilates sessions offers patients reassurance to continue mobility with detailed guidance and support.

Bringing Pilates to cancer patients and survivors has come full circle for me. With current research backing exercise participation related to cancer, Eve and my mother can rest assured knowing others are benefiting from their experiences.

#### Resources

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*Suzanne Martin, PT, DPT, CPI, is in private practice in Alameda, Calif., and is the lead physical therapist for the Smuin Ballet in San Francisco. She's also educational director for Pilates Therapeutics®. She can be reached at [www.pilatestherapeutics.com](http://www.pilatestherapeutics.com)*



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