Effects of Nia Exercise in Women Receiving Radiation Therapy for Breast Cancer

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Radiation therapy is one of the principle modalities used to treat breast cancer, both as an adjunct treatment for breast-conserving surgery for early-stage disease and for treatment of diseased lymph nodes, tumor excision sites with remaining disease, and metastatic disease. The primary side effects experienced by women undergoing radiation therapy are fatigue and skin changes (Dhruva et al., 2010; Lee, Kilbreath, Refshauge, Herbert, & Beith, 2008; Lee, Kilbreath, Refshauge, Pendlebury, et al., 2008; Merriman et al., 2010; Schmidt et al., 2012; Sjövall, Strömbeck, Löfgren, Bendahl, & Gunnars, 2010; Thomas-Maclean et al., 2008).

As many as 80% of patients receiving radiation therapy for cancer experience fatigue (Hofman, Ryan, Figueroa-Moseley, Jean-Pierre, & Morrow, 2007; Mustian et al., 2009; Schmidt et al., 2012; Sjövall et al., 2010; So et al., 2009). One study (N = 218) found that 84% of women with breast cancer receiving radiation therapy reported fatigue (Hofman et al., 2005). Patients describe cancer-related fatigue as different from typical fatigue, with more rapid onset, higher intensity, more energy draining, longer lasting, and greater unpredictability. In addition, cancer-related fatigue can cause physical, social, spiritual, psychological, and cognitive distress (Holley, 2000). Specific changes in sleep and mood disturbances have been reported (Garrett et al., 2011; Goldstein et al., 2012).

Skin changes from radiation therapy include erythema and desquamation, which can cause the skin to feel tight, stiff, and even painful. Those sensations, coupled with any scar tissue from surgical intervention or as a result of radiation, can cause women to limit their arm and shoulder movements, which can lead to protective posturing, restricted shoulder mobility, muscle disuse, and pain. In a systematic review of 32 studies evaluating upper-limb problems following surgery and radiation for early breast cancer, as many as 68% of women reported shoulder and arm pain, up to 67% reported restricted shoulder movement, and up to 28% reported arm weakness in the five years following treatment (Lee, Kilbreath, Refshauge, Herbert, et al., 2008). Lymphedema following surgery or radiation therapy can complicate...