Physical Activity and Fatigue During Radiation Therapy: A Pilot Study Using Actigraph Monitors

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**Key Points . . .**

- Fatigue is a common and distressing symptom associated with radiation therapy, but the relationship of perceptions of fatigue to physical activity has not been reported.
- Physical activity during a course of radiation therapy may be measured objectively using an activity monitor.
- Physical activity increased during treatment and perceptions of fatigue decreased.
- Further study is needed regarding the impact of exercise and increased physical activity during a course of radiation therapy on perceptions of fatigue.

Fatigue is one of the most distressing and prevalent symptoms experienced by patients with cancer (Ferrell, Grant, & Dean, 1996; Winningham et al., 1994), particularly those undergoing radiation therapy (Irvine, Vincent, Graydon, Bubela, & Thompson, 1994; Mock et al., 1997). An estimated 40%–90% of patients receiving radiation therapy experience fatigue during the course of their treatment (Fieler, 1997; King, Nail, Kreamer, Strohl, & Johnson, 1985). Although many patients are able to perform activities of daily living and travel daily for their radiation therapy, prospective studies consistently have shown that fatigue increases as the course of therapy progresses (Greenberg, Sawicka, Eisenthal, & Ross, 1992; Irvine et al.; Kobushi-Schoot, Hanewald, Van Dam, & Bruning, 1985; Lovely, Miskowski, & Dodd, 1999). Fatigue is a significant predictor of changes in functional activities among patients receiving radiation therapy (Irvine et al.).

Fatigue is a subjective experience, and, although it often is described in terms of the reduction in capacity or desire to perform expected levels of activity, it is difficult to quantify. Fatigue has been described as a multidimensional phenomenon with behavioral and physical dimensions, among others (Piper et al., 1998). Physical activity can be measured, but researchers do not know how activity patterns change during cancer treatment or if a relationship exists with perceptions of fatigue. Limited numbers of studies have evaluated the relationship of physical activity and fatigue during cancer treatment and most have shown an inverse relationship between physical activity and fatigue. Berger (1998) consistently found that fatigue was inversely related to activity among 72 women with breast cancer receiving adjuvant chemotherapy, but only 17 women wore a wrist actigraph (activity monitor) for the entire three cycles. Berger and Farr (1999) noted that higher levels of fatigue were seen in patients who