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Moving to Wellness: A Pilot Study Examining a Nurse-Driven Exercise Program in Acutely Ill Patients With Cancer

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Preventing patients with cancer from falling is a particularly important strategy for avoiding serious patient harm. Patients with cancer often fall as a result of overestimating their abilities as they adapt to the onset of fatigue and diminished functional status or muscle strength. That deconditioning can develop quickly with immobilization or prolonged recumbency. The effect of regularly supervised exercise programs led by nurses on maintaining muscle strength, thus preventing falls and reducing pressure ulcers, was examined in this feasibility study. Patients' muscle strength was assessed through the development and use of the Moving to Wellness Assessment Tool before implementing the Moving to Wellness Exercise Program. Of the 16 study participants, 81% maintained or improved their muscle strength compared to their original score. This pilot study was a unique opportunity to engage patients in a nurse-driven program to support minimal deconditioning of patients with cancer during acute illness.

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Fatigue and diminished functional status are well-known common symptoms among patients with cancer. Fatigue is linked to adverse outcomes such as pressure ulcers and increased risk of patient falls (Holley, 2002; O'Connell, Baker, Gaskin, & Hawkins, 2007). One study found muscle weakness was a clinically significant side effect of chemotherapy in adult patients older than 65 years and was attributed to patient falls (Extermann, 2006). In addition, in patients with cancer, falls often occur when patients overestimate their abilities as they adapt to the onset of fatigue and diminished functional status. Patients do not anticipate that bedrest coupled with chemotherapy and other medications results in weakness, which places them at higher risk for a fall. That deconditioning reportedly has many causes, including the disease itself, side effects of treatment, and comorbid conditions (Crannell & Stone, 2008; Mustian et al., 2009).

Deconditioning, a multisystem dysfunction observed with immobilization or prolonged recumbency, is different from and

is not always associated with fatigue (Crannell & Stone, 2008). A 10% decrease of muscle strength can occur after each week of bedrest (Mustian et al., 2009). Prolonged bed rest causing loss of muscle mass, plasma volume, and reduced cardiac output resulting in decreased work capacity are consistent findings across studies over time (Greenleaf & Kozlowski, 1982; Levine, Zuckerman, & Pawelczyk, 1997). Deconditioning produces reductions in aerobic capacity, muscle strength, and mass, and has been linked to increases in length of stay, falls, and costs, as well as decreases in patient satisfaction (Crannell & Stone, 2008; Mustian et al., 2009).

Exercise is the method of choice in preventing and treating deconditioning (Crannell & Stone, 2008). Exercise programs reported in the literature are structured and usually led by a physical therapist or exercise physiologist (Galvão & Newton, 2005; Knols, Aaronson, Uebelhart, Fransen, & Aufdemkampe, 2005; Stevinson, Lawlor, & Fox, 2004; Young-McCaughan et al., 2003). Various exercise programs were reported, including aerobic workouts, cycling, resistance training, and walking.