

# Establishing an Inpatient Gym for Recipients of Stem Cell Transplantation: A Multidisciplinary Collaborative

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**Background:** Evidence suggests that exercise can have a profound impact on physiologic and quality-of-life outcomes for patients undergoing hematopoietic stem cell transplantation (HSCT). Despite this, implementation of a gym on inpatient HSCT units may be limited because of space, infrastructure, and budget.

**Objectives:** This article presents the design, implementation, and evaluation of the gym and highlights its use for individual and group patient activities.

**Methods:** An interprofessional team at a National Cancer Institute–designated comprehensive cancer center collaborated to design and implement gym space on an inpatient HSCT unit servicing as many as 86 beds.

**Findings:** Informal feedback from patients, as well as metrics on use of the space, indicates that the gym is well received and frequently used. Limitations include the absence of a designated physical therapy technician to supervise individual activity, which may limit patient access when a staff member is unavailable. The cost associated with the implementation of such space may be offset by benefits to patients, including enhanced conditioning, quality of life, and time to discharge, as evidenced in the literature.

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**H**ematopoietic stem cell transplantation (HSCT) is a potentially curative treatment strategy used in a variety of hematologic malignancies. In this setting, high-dose chemotherapy is administered to partially or completely ablate patients' bone marrow, followed by hematopoietic stem cell infusion to reconstitute the immune system. About 20,000 HSCTs are performed annually in the United States, and that number increases each year (U.S. Department of Health and Human Services, 2015). Intensive cancer therapies, such as HSCT, can require prolonged hospitalizations of 14–20 days or longer to manage chemotherapy toxicities and to deliver other supportive therapies until patients can be discharged safely.

During the initial transplantation period, patients often experience debilitating fatigue and diminished quality of life, are

at high risk for life-threatening infections, and are dependent on regular blood and platelet transfusions (Cohen et al., 2012; Hacker et al., 2011; Lyons et al., 2011). Research suggests that interventions aimed at reducing fatigue and increasing physical activity can positively affect patient outcomes and improve quality of life in this patient population (Brassil et al., 2014; Persoon et al., 2010; Wiskemann & Huber, 2008). A systematic review of the effects of exercise in patients treated with HSCT examined eight randomized, controlled studies comparing exercise to standard of care, and, in all eight studies, exercise was found to have favorable effects on cardiopulmonary fitness, lower extremity strength, and fatigue (Persoon et al., 2013). In another study examining patterns of fatigue in patients undergoing HSCT, Hacker et al. (2011) demonstrated significant increase in fatigue and decrease in physical activity during the