

# Accidental Fall Rates in Community-Dwelling Adults Compared to Cancer Survivors During and Post-Treatment: A Systematic Review With Meta-Analysis

Marie-Louise Bird, PhD, Michael J. Cheney, EESAM, AEP, and Andrew D. Williams, PhD, AEP

Bird is a lecturer, Cheney is an exercise physiologist, and Williams is a senior lecturer, all in the School of Health Sciences at the University of Tasmania in Launceston, Australia.

No financial relationships to disclose.

Bird, Cheney, and Williams all contributed to the conceptualization and design, data collection, statistical support, analysis, and manuscript preparation.

Bird can be reached at [birdm@utas.edu.au](mailto:birdm@utas.edu.au), with copy to editor at [ONFEditor@ons.org](mailto:ONFEditor@ons.org).

Submitted May 2015. Accepted for publication July 30, 2015.

Key words: oncology; adverse events; morbidity; quality of life; screening

ONF, 43(2), E64–E72.

doi: 10.1188/16.ONF.E64-E72

**Purpose/Objectives:** To identify whether rates of accidental falls are greater for cancer survivors living in the community during or post-treatment than people with no history of cancer.

**Data Sources:** In a systematic literature review that was conducted in December 2013, MEDLINE®, EMBASE, PubMed, and Web of Science were searched for cancer or oncology and accidental falls in prospective and retrospective cohort and case-controlled studies. Studies were included if they were conducted in a community-dwelling adult population and excluded if they were conducted in acute hospitals and hospice.

**Data Synthesis:** Of 484 articles initially identified, 10 were included in the review. Of these, three included a control or comparator group and had comparable outcome measures to include in a meta-analysis. The risk ratio for falls for the group with cancer was 1.11.

**Conclusions:** Accidental fall rates in community-dwelling adults with a cancer diagnosis are greater than rates of falls in adults without cancer; this elevated rate remains after acute care is finished. Patients undergoing active treatment have greater rates of falls. Pain, fatigue, and deconditioning may affect fall rates in the longer term.

**Implications for Nursing:** Nurses have the capacity to reduce risk of falls in community-dwelling cancer survivors during or post-treatment through provision of information, advocacy, and support around pain and fatigue management and promotion of physical activity.

People living with or after cancer have to deal with the physical, psychosocial, and economic consequences associated with the disease and its treatments (Spoelstra, Given, von Eye, & Given, 2010). Increased life expectancy also brings with it the potential for increased doses of treatment, magnifying side effects and adverse outcomes of such treatments. One potential sequela of cancer is an increased risk of accidental falls, compounding the age-related decline in physical capacity that negatively affects the ability to maintain balance. This may be a direct pathophysiologic consequence of the disease or a side effect of its treatment.

Some cancers directly involve bone, muscle, and nerves (either peripheral nerves or the central nervous system), all of which play an important part in the maintenance of balance and prevention of falls. Physical activity restrictions of survivors are well documented, initiating deconditioning processes that subsequently may increase fall rates (Deimling, Sterns, Bowman, & Kahana, 2007). Fatigue and pain are common in survivors and also may reduce the amount of physical activity that people with cancer undertake, compounding the deconditioning effect.

Physiologically, treatments for cancer can exacerbate fatigue, pain, loss of aerobic endurance, and limitations in neuromuscular function, resulting in a major impact on everyday life (Gilliam & St. Clair, 2011; Schmitz et al., 2010)