

Cambridge University Press & Assessment  
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3rd Edition  
Edited by Stephen R. Lord , Catherine Sherrington , Vasi Naganathan  
Frontmatter  
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**Falls in Older People**

# Falls in Older People

Risk Factors, Strategies for Prevention  
and Implications for Practice

Third Edition

Edited by

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## Preface

In the preface to the second edition of our book published in 2005, we remarked on the large amount of work on risk factors for falls in older people and fall prevention strategies published in the preceding 25 years. Since then, a further 15,000 articles and reviews have been published on this topic in the international literature (see Figure 0.1) and there have been many substantial gains in the evidence base that have increased our understanding of fall risk factors, prevention strategies, and how to translate this research into practice. The aim of this third edition of our book is to review and incorporate this new material to provide researchers, students, and health care workers with a means for gaining access to current thinking and best clinical practice. Listed below are some highlights of progress and encouraging findings.

- Studies aimed at understanding balance have used paradigms such as tripping, slipping, and stepping to more accurately reflect situations in which people fall.
- A large body of neuropsychological research has shown that balance activities that were generally considered to be reflex or automatic require attention, and that impaired executive functioning is an important risk factor for falls.
- New wearable sensor technologies have allowed mobility and fall risk to be remotely assessed, paving the way for unobtrusive at-home monitoring.
- Several cognitive-motor interventions comprising exergames have been evaluated in randomized controlled trials, where they have been shown to improve balance. These may be an enjoyable way to facilitate adherence.
- Cognitive behaviour therapy in association with exercise can substantially reduce fear of falling.
- Systematic reviews have synthesized the findings of randomized controlled trials that have examined the effects of a range of exercise interventions in preventing falls in community dwellers. From this large body of evidence, it is now possible to conclude that effective exercise programs must comprise challenging, weight-bearing balance exercises.

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- It is less clear how to prevent falls in residential care, but a recent well-designed randomized controlled trial has shown that an exercise intervention can prevent falls in nursing home residents.
- Several fall prevention interventions have now also been demonstrated to be cost-effective, again particularly exercise interventions in community dwellers. Two areas of investigation have been less encouraging and will require further research and consideration.
- Intervention studies aimed at preventing falls in frail older people including those with dementia and stroke, have generally not been successful, despite well planned and executed studies.
- A further large trial of risk-factor-based assessment and intervention in the hospitals setting has failed to prevent falls. The most promising interventions to date have involved communication with patients and carers so future research could focus on this area.

The growing literature is evidenced by the change in the title to include implications for practice and the increase in chapters, from 18 to 31, with the new chapters addressing exciting new research and implementation areas developed over the last decade. This edition also differs from the previous two in that the editors have enlisted the assistance of multiple authors who are expert in the book chapter fields.

As suggested by the title, the book has three major themes: fall risk factors, fall prevention strategies, and implications for practice. Part 1 includes an initial chapter on the epidemiology of falls and fall-related injuries in older people. Chapters 2 to 12 present critical appraisals of fall risk factors addressed under the headings of postural stability, gait, sensory and neuromuscular, biomechanics, feet and footwear, brain function, cognition, depression and fear of falling, medical, medication, and environmental risk factors. Chapter 13 reviews research from the emerging field of fall detection with new technologies and Chapter 14 presents findings in fall risk screening and assessment. The final chapter weighs the importance of the risk factors described in the above chapters as weak, moderate, or strong, using a simple evidence-based metric.

Part 2 commences with an overview of fall prevention strategies that address the multitude of fall risk factors. Chapters 16 to 23 summarize the published findings on 'single' strategies for addressing fall risk: exercise, step training, exergames, cognitive behaviour therapy, medical management, vision correction, use of safe footwear, aids and appliances, and environmental modifications. Chapter 24 addresses strategies for minimizing fall injury, Chapter 25 summarizes the evidence for multi-factorial interventions to prevent falls, and the final two



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chapters (Chapters 26 and 27) discuss suggested strategies for preventing falls in hospitals and residential aged care.

Part 3 synthesizes the information on successful fall prevention strategies in a format that can be used to facilitate the translation of research findings into clinical practice. It contains chapters on behaviour change, research translation, health economics of fall prevention strategies, and optimal interventions for specific sub-groups of older people. The final chapter reviews the research and clinical practice issues that still need to be addressed in this field.

In each chapter we have attempted to be analytical in nature. Thus, we have not simply presented lists of the many and varied factors that have been suggested as possible (but unproven) risk factors for falls and the suggested (but untested) fall prevention strategies. Instead, we have attempted to evaluate the evidence for each factor implicated with falls to determine whether they constitute important areas for consideration and intervention. For example, we present arguments that challenge some traditional approaches to the management of older persons at risk of falls. We question the utility of fall risk assessment based solely on diagnoses of disease processes and the value of standard clinical tests of vision, sensation, strength, and balance. We also discuss the role of particular medications in predisposing older people to falls and why factors such as alcohol use, vestibular disorders, and postural hypotension have not often been shown to be

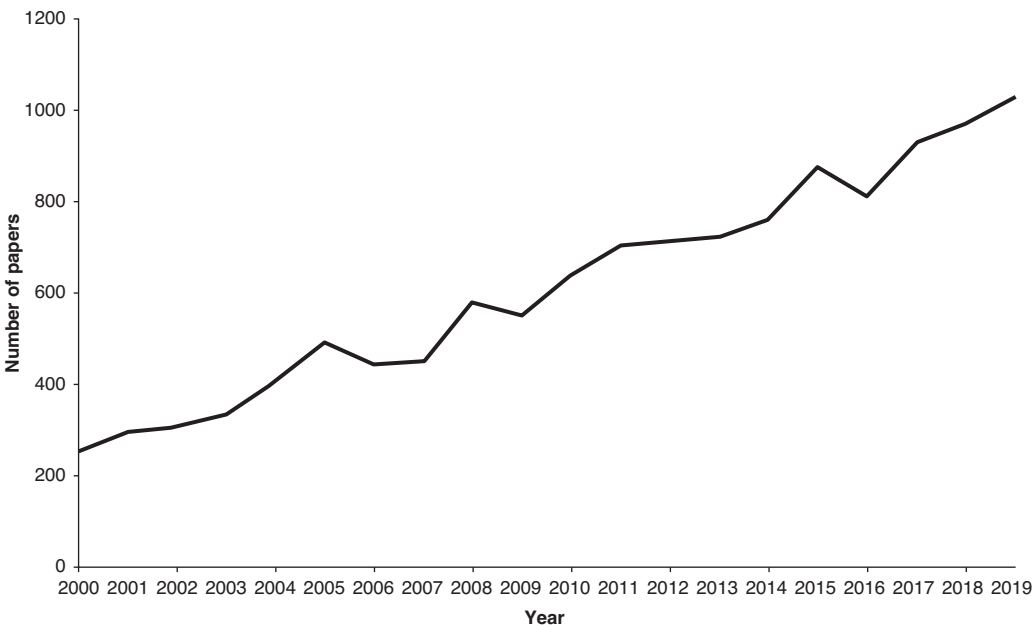


Figure 0.1 Research publications pertaining to falls in people between 2000 and 2019 (source: PubMed).

significant risk factors for falls in well-planned epidemiological studies. With regard to interventions, we examine the effectiveness of suggested strategies for preventing falls and attempt to unravel why many fall prevention interventions have not been effective.

We hope our book will be of interest to medical practitioners, nurses, physiotherapists, occupational therapists, podiatrists, research workers in the fields of gerontology and geriatrics, health service managers, medical and allied health care undergraduate and postgraduate students, scientists, and health care workers in the disciplines of public health, injury, and occupational health. We feel that this book is of relevance to those working in community, hospital, and residential aged care settings.

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