

Questions and Answers with Professor Stephen Lord

Any update on evidence of using hip protectors for multiple fallers

The latest Cochrane Collaboration findings are below. I'm unaware of subsequent good quality trials.

Santesso N, Carrasco-Labra A, Brignardello-Petersen R. Hip protectors for preventing hip fractures in older people. Cochrane Database of Systematic Reviews 2014, Issue 3. Art. No.: CD001255. DOI: 10.1002/14651858.CD001255.pub5.

Summary

Hip protectors for preventing hip fractures in older people What are hip protectors? Older people living in nursing care facilities or older adults living at home are at high risk of falling and a hip fracture may occur after a fall. Hip protectors are plastic shields (hard) or foam pads (soft), usually fitted in pockets in specially designed underwear. They are worn to cushion a sideways fall on the hip. Do they prevent hip fractures? We conducted a review of the effect of hip protectors to prevent hip fractures. We searched for all relevant studies up to December 2012. We found 19 studies with about 17,000 people who were around 80 years old.

Overall, there was moderate quality evidence from these studies for the following results.

In older people living in nursing care facilities, providing a hip protector - probably decreases the chance of a hip fracture slightly - may increase the small chance of a pelvic fracture slightly - probably has little or no effect on other fractures or falls

In older people living at home, providing a hip protector - probably has little or no effect on hip fractures

When wearing the hip protectors very few people had side effects, such as skin irritation. However, people often did not wear the hip protectors when they were provided. Better understanding is needed of the personal and design factors that may influence acceptance and adherence.

Authors' conclusions

Hip protectors probably reduce the risk of hip fractures if made available to older people in nursing care or residential care settings, without increasing the frequency of falls. However, hip protectors may slightly increase the small risk of pelvic fractures. Poor acceptance and adherence by older people offered hip protectors is a barrier to their use. Better understanding is needed of the personal and design factors that may influence acceptance and adherence.

What measures of social isolation and pain would you suggest would be most appropriate in a clinical setting when assessing older adults for fall risk and frailty?

The following 5 questions have good face validity: going out less frequently compared with last year (yes), sometimes visiting friends (no), feeling helpful toward friends or family (no), living alone (yes) and talking with someone every day (no).

Answering “yes” two or more of these question was considered to indicate social frailty (or social isolation) in the paper below.

Makizako H, Shimada H, Tsutsumimoto K, et al. Social Frailty in Community-Dwelling Older Adults as a Risk Factor for Disability. *Journal of the American Medical Directors Association* 2015; 16: 1003.e7-11.

Has there been any evidence to conclude the effectiveness or potential harm of "non-slip socks" in a hospital or nursing home environment?

I don't know of any studies that have demonstrated the effectiveness or potential harm of "non-slip socks" in hospitals or nursing homes.

Is there any data around the effect of the “complaint flooring” on ground reaction forces?

Laing AC et al. Low stiffness floors can attenuate fall-related femoral impact forces by up to 50% without substantially impairing balance in older women. *Accident, Analysis and Prevention* 2009;41:642-50.

Abstract

Low stiffness floors such as carpet appear to decrease [hip fracture](#) risk by providing a modest degree of force attenuation during falls without impairing balance. It is unknown whether other compliant floors can more effectively reduce [impact loads](#) without coincident increases in fall risk.

We used a hip impact simulator to assess [femoral neck](#) force for four energy-absorbing floors (SmartCell, SofTile, Firm Foam, Soft Foam) compared to a rigid floor. We also assessed the influence of these floors on balance/mobility in 15 elderly women.

We observed differences in the mean attenuation in peak femoral neck force provided by the SmartCell (24.5%), SofTile (47.2%), Firm Foam (76.6%), and Soft Foam (52.4%) floors. As impact velocity increased from 2 to 4 m/s, force attenuation increased for SmartCell (from 17.3% to 33.7%) and SofTile (from 44.9% to 51.2%), but decreased for the Firm Foam (from 87.0% to 64.5%) and Soft Foam (from 66.1% to 37.9%) conditions. Regarding balance, there were no significant differences between the rigid, SmartCell, and SofTile floors in proportion of successful trials, Get Up and Go

time, balance confidence or utility ratings. SoftTile, Firm Foam, and Soft Foam caused significant increases (when compared to the rigid floor) in postural sway in the anterior-posterior and medial-lateral directions during standing. However, SmartCell increased sway only in the anterior-posterior direction.

This study demonstrates that two commercially available compliant floors can attenuate femoral impact force by up to 50% while having only limited influence on balance in older women, and supports development of clinical trials to test their effectiveness in high-risk settings.