

National Institute for Health and Clinical Excellence

Hip Fracture
Stakeholder Comments

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Stakeholder Organisation:	The College of Optometrists and the Optical Confederation
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Name of commentator:	Dr Susan Blakeney
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Order number <i>(For internal use only)</i>	Document	Page Number	Line Number	Comments
	Indicate if you are referring to the Full version or the Appendices	Number only (do not write the word 'page/pg') . Alternatively write 'general' if your comment relates to the whole document.	Number only (do not write the word 'line') . See example in cell below	<p>Please insert each new comment in a new row.</p> <p>Please do not paste other tables into this table, as your comments could get lost – type directly into this table.</p>

Example	Full	16	45	Our comments are as follows
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1	NICE and Full	General		<p>The introduction of the consultation document outlines that aspects that are covered by parallel guidance are not included in the draft hip fracture guidelines (page 8 of consultation document). Although there is a specific NICE Clinical Guideline on Falls (CG 21), there is unfortunately nothing in this document that relates to vision or the importance of regular sight testing. We are aware that a decision will be made this year about whether to review CG21 before November 2011. As vision has not been covered to date by parallel guidance, we would like to take this opportunity to make the case for the role of regular sight testing in falls prevention.</p> <p>There are, of course, a number of contributing factors that can substantially increase the risk of a fall (and hence a hip fracture), which would include problems with vision, among other things.</p> <p>We would strongly recommend that measures are included in the most relevant NICE guidelines (which may not be this one as it is focused on management of hip fracture post admission) that specifically alerts medical practitioners and older</p>
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				<p>people, their families and carers and the public to these contributory factors. We would particularly emphasise the benefits of regular sight testing for at risk groups. We have also found that many medical practitioners are also frequently unaware of the availability of domiciliary sight testing for housebound patients. We would also recommend that guidelines on falls prevention should also flag up the option of a domiciliary sight test for housebound patients (which overlap substantially with the at risk groups).</p> <p>Many papers have shown that visual impairment is a significant risk factor for hip fracture (Cummings et al 1995 (1), Grisso et al 1991 (2), DargentMolina et al 1996 (3)). In addition, Cox et al 2005 (4) found that there was significantly poor optometric and ophthalmic contact in patients who sustained hip fracture. Many of these patients had visual impairment and importantly, the great majority (66%) had visual impairment that was correctable as it was caused by uncorrected refractive error or untreated cataract.</p> <p>We would be willing to work with NICE to assist them with including the importance of assessing a person's vision and the availability of NHS eye care services in the guidance.</p>
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References and abstracts

(1) Risk factors for hip fracture in white women

Cummings SR, Nevitt MC, Browner WS, Stone K, Fox KM, Ensrud KE, Cauley JC, Black D and Vogt TM
 NEJM 1995 332(12) 767-773

Background. Many risk factors for hip fractures have been suggested but have not been evaluated in a comprehensive prospective study.

Methods. We assessed potential risk factors, including bone mass, in 9516 white women 65 years of age or older who had had no previous hip fracture. We then followed these women at 4-month intervals for an average of 4.1 years to determine the frequency of hip fracture. All reports of hip fractures were validated by review of x-ray films.

Results. During the follow-up period, 192 women had first hip fractures not due to motor vehicle accidents. In multivariable age-adjusted analyses, a maternal history of hip fracture doubled the risk of hip fracture (relative risk, 2.0; 95 percent confidence interval, 1.4 to 2.9), and the increase in risk remained significant after adjustment for bone density. Women who had gained weight since the age of 25 had a lower risk. The risk was higher among women who had previous fractures of any type after the age of 50, were tall at the age of 25, rated their own health as fair or poor, had previous hyperthyroidism, had been treated with long-acting benzodiazepines or anticonvulsant drugs, ingested greater amounts of caffeine, or spent four hours a day or less on their feet. Examination findings associated with an increased risk included the inability to rise from a chair without using one's arms, poor depth perception, poor contrast sensitivity, and tachycardia at rest. Low calcaneal bone density was also an independent risk factor. The incidence of hip fracture ranged from 1.1 (95 percent confidence interval, 0.5 to 1.6) per 1000 woman-years among women with no more than two risk factors and normal calcaneal bone density for their age to 27 (95 percent confidence interval, 20 to 34) per 1000 woman-years among those with five or more risk factors and bone density in the lowest third for their age.

Conclusions. Women with multiple risk factors and low bone density have an especially high risk of hip fracture. Maintaining body weight, walking for exercise, avoiding long-acting benzodiazepines, minimizing caffeine intake, and treating impaired visual function are among the steps that may decrease the risk.

(2) Risk factors for falls as a cause of hip fracture in women.

Grisso JA, Kelsey JL, Strom BL, Chiu GY, Maislin G, OBrien LA, Hoffman S, Kaplan F NEJM 1991 19 1326-1331

Background. Although even in the elderly most falls are not associated with fractures, over 90 percent of hip fractures are the result of a fall. Few studies have assessed whether the risk factors for falls are also important risk factors for hip fracture.

Methods. To examine the importance of risk factors for falls in the epidemiology of hip fracture, we performed a case-control study of 174 women (median age, 80 years) admitted with a first hip fracture to 1 of 30 hospitals in New York and Philadelphia. Controls, matched to the case patients according to age and hospital, were selected from general surgical and orthopedic surgical hospital services. Information was obtained by direct interview.

Results. As measured by the odds ratio, increased risks for hip fracture were associated with lower-limb dysfunction (odds ratio = 1.7; 95 percent confidence interval, 1.1 to 2.8), visual impairment (odds ratio = 5.1; 95 percent confidence interval, 1.9 to 13.9), previous stroke (odds ratio = 2.0; 95 percent confidence interval, 1.0 to 4.0), Parkinson's disease (odds ratio = 9.4; 95 percent confidence interval, 1.2 to 76.1), and use of long-acting barbiturates (odds ratio = 5.2; 95 percent confidence interval, 0.6 to 45.0). Of the controls, 44 (25 percent) had had a recent fall. The case patients were more likely than these controls to have fallen from a standing height or higher (odds ratio = 2.4; 95 percent confidence interval, 1.0 to 5.7). Of those with hip fracture the younger patients (< 75 years old) were more likely than the older ones (greater-than-or-equal-to 75 years old) to have fallen on a hard surface (odds ratio = 1.9; 95 percent confidence interval, 1.04 to 3.7).

Conclusions. A number of factors that have been identified as risk factors for falls are also associated with hip fracture, including lower-limb dysfunction, neurologic conditions, barbiturate use, and visual impairment. Given the prevalence of these problems among the elderly, who are at highest risk, programs to prevent hip fracture should include measures to prevent falls in addition to measures to slow bone loss.

(3) Fall-related factors and risk of hip fracture: The EPIDOS prospective study

DargentMolina P, Favier F, Grandjean H, Baudoin C, Schott AM, Hausherr E, Meunier PJ, Breart G Lancet 1996 348(9021) 145-149

Abstract: Background Most hip fractures result from falls. However, the role of fall-related factors has seldom been examined. Comparison of the predictive value of these factors with that of bone mineral density (BMD) has important implications for the prevention of hip fractures.

Methods We assessed femoral-neck BMD by dual-photon X-ray absorptiometry and potential fall-related risk factors, which included self-reported physical capacity, neuromuscular function, mobility, visual function, and use of medication in 7575 women, aged 75 years or older, with no history of hip fracture recruited at five centres in France. We followed up these women every 4 months to record incident hip fractures. During an average of 1.9 years of follow-up, 154 women suffered a first hip fracture.

Findings: In age-adjusted multivariate analyses, we found four independent fall-related predictors of hip fracture: slower gait speed (relative risk=1.4 for 1 SD decrease [95% CI 1.1-1.6]); difficulty in doing a tandem (heel-to-toe) walk (1.2 for 1 point on the difficulty score [1.0-1.5]); reduced visual acuity (20 for acuity less than or equal to 2/10 [1.1-3.7]); and small calf circumference (1.5 [1.0-2.2]). After adjustment for femoral-neck BMD, neuromuscular impairment-gait speed, tandem walk-and poor vision remained significantly associated with an increased risk of subsequent hip fracture. With high risk defined as the top quartile of risk, the rate of hip fracture among women classified as high risk based on both a high fall-risk status and low BMD was 29 per 1000 woman-years, compared with 11 per 1000 for women

classified as high risk by either a high fall-risk status or low BMD; for women classified as low risk based on both criteria the rate was five per 1000.

Interpretation We conclude that neuromuscular and visual impairments, as well as femoral-neck BMD, are significant and independent predictors of the risk of hip fracture in elderly mobile women, and that their combined assessment improves the prediction of hip fractures.

(4) Optometric and ophthalmic contact in elderly hip fracture patients with visual impairment.

Cox A, Blaikie A, Macewen CJ, Jones D, Thompson K, Holding D, Sharma T, Miller S, Dobson S, Sanders R. *Ophthalmic Physiol Opt.* 2005 Jul;25(4):357-62.

Aim: To describe previous contact with optometry and ophthalmic services in a group of elderly patients with and without visual impairment (VI) who had fallen and sustained a fractured neck of femur.

Method: A cross sectional study of 537 patients aged 65 and over who had undergone hip fracture surgery in four Scottish centres (Glasgow, Ayr, Dundee and Fife). All patients had an in-depth optometric history, ophthalmic history and examination.

Results: Three hundred and ninety-three (79%) patients reported optometric contact in the 3 years preceding surgery and 107 (21%) patients had not seen an optometrist for more than 3 years. In the latter group, 64 had VI, which was due to uncorrected refractive error in 17 (27%) and untreated cataract in 20 (31%). VI (best binocular visual acuity of 6/18 or less) was found in 239 (46%) patients. A past ophthalmic history was present in 257 (50%) patients. Only 39 (16%) patients with VI were under ophthalmic care at the time of the study.

Conclusions: There was significantly poor optometric and ophthalmic contact in patients who had VI and had fallen and sustained hip fracture. A proportion of the VI (66%) was due to uncorrected refractive error and untreated cataract. Public health providers should be made aware of the fact that current optometric and ophthalmic care pathways are not accessed by this group of elderly patients with VI and at risk of falling.

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