CHANGE OF APPROACH NEEDED IN FRACTURE PREVENTION

New research concludes that healthcare professionals need to focus more on falls prevention to avoid fractures in older people. Nerys Hairon reports

The NHS approach to fracture prevention should shift its focus from osteoporosis to preventing falls, new research finds (Järvinen et al, 2008). The analysis, published in the British Medical Journal, says falling is the strongest single risk factor for fracture.

The authors say falling is the main cause in over 90% of hip fractures, and drug therapy would not prevent more fractures because the drugs cannot be expected to work on fall-related risk factors. As a result, they argue that a change of approach is needed.

A report published last year outlined interventions to reduce the risk of falls in hospital (Patient Safety Observatory, 2007; Hairon, 2007). NICE has also published guidance on preventing falls in older people, to help healthcare professionals identify those at risk, refer them for assessment and deliver interventions to reduce their risk (NICE, 2004).

FRACTURE RISK
Järvinen et al (2008) argue that bone densitometry does not give reliable estimates of a person’s true bone mineral density (BMD). Dual energy X-ray absorptiometry (DEXA) scanning can underestimate or overestimate BMD by 20–50%. This means a patient with a BMD T-score of -1.5 may have a true value between -3.0 and 0, that is, ranging from clear osteoporosis to normal. Therefore the authors state that BMD is a poor predictor of fracture and add that over 80% of low-trauma fractures occur in people who do not have osteoporosis.

The cost of using drug therapy to prevent fractures in older people is also extremely high. For example, the researchers calculate that 577 postmenopausal women would have to be treated with bisphosphonates for one year to avert a single hip fracture, at a cost of about £120,000.

Among a high-risk population (women over 80), for whom drug prevention would theoretically be most effective, prevention of a single hip fracture still costs about £28,500. However, this level of expenditure would prevent only about 20% of hip fractures occurring in the total population. The analysis concludes that drug treatment is not a panacea.

PREVENTING FALLS
Järvinen et al (2008) say many studies show that among older people, falling, not osteoporosis, is the strongest risk factor for fracture. When a person falls, the type and severity of the fall (including fall height, energy and direction) largely determine whether a fracture occurs.

They argue that preventing falls is a logical approach to fracture prevention. Evidence from systematic reviews and meta-analyses shows that at least 15% of falls in older people can be prevented, with individual trials reporting decreases of up to 50%.

Scientific evidence is most consistent for strength and balance training, followed by reduction in the number and doses of psychotropic drugs, prescription of vitamin D and calcium supplements and, in high-risk groups, assessment and modification of home hazards. In addition, some research supports more specific approaches such as expedited cataract surgery and cardiac pacing where indicated, and use of gait-stabilising, antislip devices for walking outdoors in slippery conditions. The authors stress that prevention requires healthcare professionals to identify relevant risk factors and organise appropriate interventions.

Simple screening identifies groups at risk of falling with reasonable accuracy. In addition, healthcare professionals should refer people identified as at high risk of falling for professional environmental
assessment, for example, to occupational therapy. The authors recommend that people who have difficulty in performing a simple sit-to-stand test or who take over 13 seconds to complete a simple timed ‘up-and-go’ test should be referred to a geriatrician or falls clinic for comprehensive evaluation. They add that the physiological profile assessment instrument is a useful, inexpensive tool for evaluating risk of falling (Lord et al, 2003).

Falls prevention in hospital
The National Patient Safety Agency’s report suggested that a range of interventions, when used together, could result in an 18% reduction in the number of falls in hospital (Patient Safety Observatory, 2007; Hairon, 2007). This third report from the PSO outlines the incidence and cost of these falls and how nurses can help with falls prevention.

The literature review carried out for the NPSA report found reasonable evidence that using multifaceted interventions was an effective way to reduce the number of falls by 18%. However, it did not find enough evidence to say whether the numbers of injuries were also reduced.

The multifaceted interventions are:
- Identifying and treating cardiovascular illness;
- Detecting and treating/managing incontinence or urgency;
- Detecting and treating osteoporosis;
- Identifying and treating eyesight problems and providing the right glasses;
- Providing safer footwear;
- Offering physiotherapy, exercise and access to walking aids.

The report stresses that the literature review found little evidence to suggest that, on their own, either a review of medication or exercise can reduce falls, although they may be effective as part of multifaceted interventions. For more details on this report, see www.npsa.nhs.uk.

NICE guidance
NICE (2004) guidance on assessing and preventing falls in older people outlines a number of key priorities requiring implementation. These priorities include case/risk identification, multifactorial falls risk assessment and multifactorial interventions.

Under case/risk identification, NICE recommends that whenever they have contact with a healthcare professional older people should be asked routinely whether they have fallen in the past year and, if so, about the frequency, context and characteristics of their falls.

Older people who report having experienced a fall or who are considered to be at risk of falling should be observed for balance and gait deficits and considered for their ability to benefit from interventions to improve strength and balance.

The guidance says that older people presenting for medical attention due to a fall, reporting recurrent falls in the past year, or showing abnormalities of gait and/or balance should be offered a multifactorial falls risk assessment. This should be carried out by healthcare staff with appropriate skills, normally in a specialist falls service. The multifactorial assessment may include identification of falls history, cardiovascular examination and medication review, along with assessment of the following:
- Gait, balance and mobility, and muscle weakness;
- Osteoporosis risk;
- Perceived functional ability and fear relating to falling;
- Visual impairment;
- Cognitive impairment and neurological examination;
- Urinary incontinence;
- Home hazards.

NICE advises that all older people with recurrent falls or assessed as being at increased risk of falling should be considered for an individualised multifactorial intervention. In successful multifactorial intervention programmes the following specific components are common (against a background of the general diagnosis and management of causes and recognised risk factors):
- Strength and balance training;
- Home hazard assessment and intervention;
- Vision assessment and referral;
- Medication review with modification/withdrawal.

To see this guidance in full, visit www.nice.org.uk.

CONCLUSION
Järvinen et al (2008) conclude that it is time to change the focus in fracture prevention from osteoporosis to falls. They argue that falling is an under-recognised risk factor for fracture – it is preventable and prevention provides added health benefits beyond avoiding fracture.

MAIN POINTS FROM RESEARCH
- Falling, not osteoporosis, is the strongest single risk factor for fractures in older people.
- Bone mineral density is a poor predictor of an individual’s fracture risk.
- Drug treatment is expensive and will not prevent most fractures in older people.
- Randomised controlled trials show that falls in older people can be reduced by up to 50%.
- Healthcare professionals should shift the focus in fracture prevention by systematically assessing falls risk in older people and providing interventions in order to reduce risk.