

Falls and Osteoporosis

- ◇ Recognising the risk factors
- ◇ When and how to refer on

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What is a fall?

Unexpectedly arriving at a lower level than intended, with or without consciousness.

- **Includes falling out of bed or a chair, slipping in the bath.**
- **Excludes tripping and correcting self, banging into a wall, being pushed or knocked over.**

Consequences of falling!



FFF

- **F**ear of
- **F**urther
- **F**alling

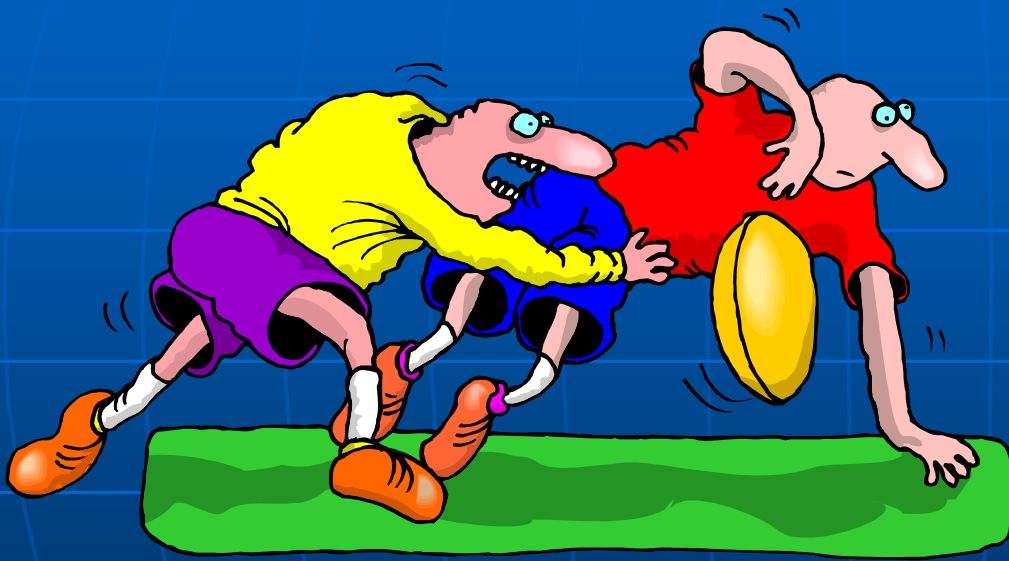
Consequences of falling!



PPP

- **P**remature
- **P**atient
- **P**arking

Consequences of falling!



GGG

syndrome

■ **G**rabbing

■ **G**reat

■ **G**randdad

What are the consequences of falling for the individual?

- ◆ **Death:** Every 5 hours an older person dies as a result of a fall in the UK
- ◆ **Injury** - minor bruising to multiple fractures
- ◆ **Loss of mobility leads to:-**
 - Social isolation
 - Further medical complications
 - Increase in dependency and disability
- ◆ **Psychological problems:-**
 - Fear of falling and Loss of confidence
 - Anxiety and Depression
- ◆ **Hypothermia and tissue damage**

Falls Prevention

Identifying the risk factors

Can be summarised as:

D.A.M.E

DRUGS

AGEING

MEDICAL CONDITIONS

ENVIRONMENTAL

Prevention: Risk Factors

Drugs:

- Side effects eg drowsiness, diuresis, confusion, dehydration, blurred vision
- Interaction
- Poly-pharmacy (more than 4 medications)
- Compliance eg too little, too much, too often, timing

Several groups:

- Sedatives
- Anti-psychotics
- Anti-depressants
- Diuretics
- Anti-hypertensives
- Anti-parkinsonian meds
- Cardiac eg. beta-blockers
- Anti-emetics
- Alcohol

*Check with the
Medicines and falls guidance*

Prevention: Risk Factors

Ageing:

Reduced function:

- **Strength, balance, flexibility and gait and endurance.**
- **Difficulties in doing daily activities independently**

Impaired sensation:

- **Vision**
- **Hearing, Tinnitus, Vestibular problems**
- **Touch and Taste**

Cognitive impairment

Housing: type, living alone

Prevention: Risk Factors

Medical Conditions:

- * **Neurological: CVE/TIA (stroke), Parkinson's disease, epilepsy, dementia, MS**
- * **Cardiac Arrhythmias, myocardial Infarction (heart attack), chronic heart failure, postural hypotension**
- * **Arthritis**
- * **Osteoporosis**
- * **Bowel and bladder problems**
- * **Infection (chest/UTI etc)**
- * **Diabetes, hypothyroidism**

Prevention: Risk Factors

Environmental Hazards:

- ⌘ **Lighting, stairs**
- ⌘ **Loose carpets, rugs, slippery floors**
- ⌘ **Ill-fitting footwear**
- ⌘ **Lack of safety equipment or adaptations in the home.**
- ⌘ **Inaccessible lights or windows**
- ⌘ **Pets, clutter**

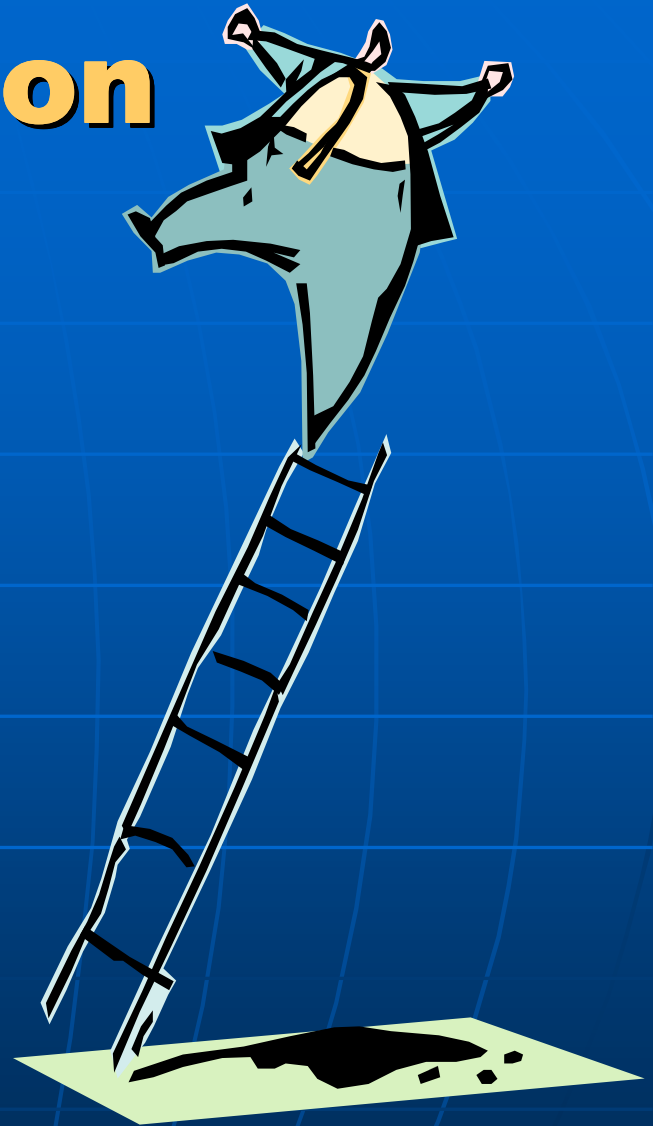
Fracture Prevention

Osteoporosis

Reduce
Numbers
of
Fractures

Falls

Force





This patient lost 16 inches in height over thirty years, due to vertebral fractures

Hip Protectors

- Stretchy pants incorporating protection over the hip bone.
- Used to redistribute/absorb the impact of a fall on the hip.
- Some evidence supports the use in care home settings.
- Individual assessment of patient important.
- Compliance often poor.



Fracture Risk Assessment Black et al (2001)

Age:

< 65 = 0 65-69 = 1

70-74 = 2 75-79 = 3

80-84 = 4 >85 = 5

Previous Fragility Fracture = 1

Maternal Hip Fracture = 1

Weight <57kg = 1

Unable to get out of chair
without using arms = 2

Current Smoker = 1

Scoring System

0 - 3 =
Low risk

4 - 6 =
Moderate risk

7 and above =
High risk

Case Study - Fred

Fred, a smart and dapper man aged 82, lives with his wife in a small flat first floor flat in a sheltered housing scheme. They have 2 children and 4 grandchildren all of whom live some distance away.

He has been depressed on and off ever since he left the army when the war ended. He is considerably deaf in his left ear and complains of tinnitus in the same ear – sometimes this is more disturbing than other times. He has previously had at least one TIA, when he fell in the lounge, but managed to get himself into the chair and waited until it resolved.

He suffers with psoriasis – he has a small patch on the medial aspect of his right leg.

He has glaucoma in his left eye and wears bi-focal spectacles, and although he walks quite independently indoors, he tends to use a stairlift and an electric buggy to go any distance as he has long-standing cardio-vascular disease.

He has a history of falls [about 6 in the last year], some quite spectacular such as a dive down the stairs where he got tangled in the stairlift at the bottom.

His memory has also got worse over the last year or two and he is now awaiting a place at the memory clinic. He is quite consistently disorientated in time and relies on his wife to prompt him and keep him on the straight and narrow. On one or two occasions recently, he has become quite aggressive with his wife.

Fred has just finished a course of anti-biotics for a UTI. He is taking 9 regular medications in all including Promazine, Dosulepia and Furosemide. He finds the effects of the Furosemide difficult to cope with as he and his wife like to get out everyday, but their choice is limited to familiar places where they can keep the toilet within easy reach.

Fred: Risk Factors

Drugs

>4 [9]

Anti-psychotics

Anti-depressants

Diuretics

Ageing

Deafness

GGG

Reduced mobility and lack of exercise

Medical Conditions

Tinnitus

Cardio-vascular disease

Psoriasis

Depression

Environment and

Social Situation

Small home environment

Limited social life

Wife sole carer

Fred – what can we do?

- Medication review
- Get his hearing and eyes checked
- Offer support to wife to broaden his and her social opportunities
- Benefits check
- Discuss ways to encourage him to maintain his activity levels
- Consider hydration – does he drink enough?
- Consider possibility of postural hypotension or syncope
- Check safety equipment like rails are in place around toilet and that seat heights are adjusted for ease of rising.

Case Study - Agnes

Agnes is 77 and has had arthritis since her 20's and her husband has recently died. It is 5 years since she has had an eye examination. Her glasses are loose and keep falling from her face when she bends to feed the cats [5]. She spends a lot of time in the chair and complains of feeling 'funny' when she stands up. She is finding it increasingly difficult to prepare her meals, and says she falls on average once a week. She fractured her wrist 2 years ago when she toppled over when getting a book from under the bed that her husband had dropped.

Her house is untidy and full of clutter. Over the last year she has taken to having a glass of sherry in the afternoon and recently a 'little tot of whisky to help me sleep' before bed to dull the pain in her joints. She takes regular painkillers and medication for her arthritis but complains they are the cause of her constipation.

The last fall resulted in a spell in hospital as she 'went off her legs' and has been admitted to the care home to recuperate.

Agnes - risk factors

Drugs

Analgesia
Poly-pharmacy
Night sedation
Alcohol

Ageing

Age
Female
Eyesight – overdue test/loose glasses
Hearing
Dehydration, poor diet?
Constipation
Sedentary – little exercise
?Fear of falling – Regular falls
Loss of mobility

Medical Condition

Arthritis
Long term chronic condition
Pain and possible deformity
Hypotension?
Depression? bereaved

Environment

Pets
Clutter
?Benefits knowledge and advice
Doesn't go out – reduced social life and exercise and sunlight
Lack of support to maintain independence

Agnes - what can we do?

- **Osteoporosis?**
- **Medication Appropriate?**
- **Alcohol - depression, constipation**
- **Increase exercise and functional activity to improve bone health, bowel function, depression, social interaction, ADL's**
- **Check fluid/dietary intake -Constipation**
- **Improve mobility- balance and strength**
- **Bereavement support**

NICE guidelines and the Falls Pathway

- Case identification
- Multi-factorial Assessment
- Multi-factorial Intervention including:
 - Medication adjustment
 - Home safety checks
 - Targeted and Specific Exercise programmes designed to deliver a balance of strength, postural stability and balance training
- Education and Information for patients
- Professional Education

Falls Risk Screening Tool

		YES	NO
1	Is there a history of any falls in the previous year? [Include this fall]		
	<i>Number of falls in previous 12 months =</i>		
2	Is the person on four or more medications per day?		
	<i>Number of medications =</i>		
3	Does the person have a diagnosis of Stroke or Parkinson's Disease?		
4	Does the person report any problems with their balance?		
5	Is the person <u>unable</u> to rise from a chair without using their arms?		

Screening Tool

What do we do now?



Falls Register

Devon Doctors

01392 822344

Why register a fall?

01392 822344

- **Standardised system for recording falls in community settings.**
- **Informs the GP responsible for the individual's health needs that a person has fallen.**
- **Should initiate further assessment.**
- **Enables falls leads to receive reports from the database on recurrent fallers or where a high incidence of falls is occurring.**
- **Enables falls teams to target education, and assessment where it is needed most.**

NICE guidelines / ND Pathway

Multi-factorial Assessment

Remember DAME

Drugs

Ageing

Medical Conditions

Environment

Falls Pathway



Interventions: Exercise

Active for Life

Why will this help if you are a faller?

Improve

- balance
- bone strength
- confidence
- social interaction
- general health and wellbeing



Exercise:

Inactivity - related disease

- One week's bed rest reduces:
 - strength by up to 20%
 - spine bone mineral content by 1%
- Those who are less active and weaker will enter nursing homes earlier than those who maintain their fitness
- Nursing home residents spend 80%-90% of their time seated or lying down - leading to inactivity-related disability

Exercise: *Functional Capacity*

Even healthy older people
lose functional capacity

- ☹ Muscle strength 'lost' at 1%-2% per year
- ☹ Muscle power 'lost' at 3%-4% per year
- ☹ Aerobic capacity 'lost' at 1% per year
- ☹ Bone density 'lost' at 1% in men and 2-3% in women after the menopause
- ☹ Flexibility and balance
- ☹ Proprioception and kinaesthetic awareness
- ☹ Coordination and reaction
- ☹ Thermoregulation

**Sedentary behaviour increases loss of
performance**

Exercise: *Improving risk factors Duration vs Outcomes*

- Gait [8 weeks]
- Balance [Static: 8 weeks + Dynamic 8 weeks]
- Muscle strength [8-12 weeks]
- Muscle Power [12 weeks]
- Endurance [26 weeks]
- Postural hypotension [24 weeks]
- Bone strength [12 months for femur and lumbar spine]

Skelton and McLaughlin, 1996

Contact Information

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Current guidelines & useful websites

- NSF for Older People, Standard Six Falls
- NSF Coronary Heart Disease Chapter Eight – Arrhythmias and Sudden Cardiac Death
www.doh.gov.uk
- Nice guidelines for Falls
www.nice.org.uk
- National Osteoporosis Society
www.nos.org.uk
- National Clinical Audit for Falls and Bone Health
www.rcplondon.ac.uk/college/ceeu/fbhop/
- Help the Aged
www.helptheaged.org.uk
- Later life Training
www.laterlifetraining.co.uk