

Falls Awareness

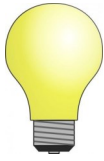
go for six keel over
topple over collapse
fall over
pitch forward dive
head over heels
stagger tumble
plummet trip stumble
come a cropper
take a spill
drop

“An event which results in a
person coming to rest
inadvertently on the ground or

World Health Organisation

With thanks to Newcastle University for allowing us to use the information and images

Risk Factors in Falling



Poor vision or poor
lighting



Weak or stiff legs and
feet



Medication



Ill fitting shoes and
slippers



Poor balance



Loose rugs



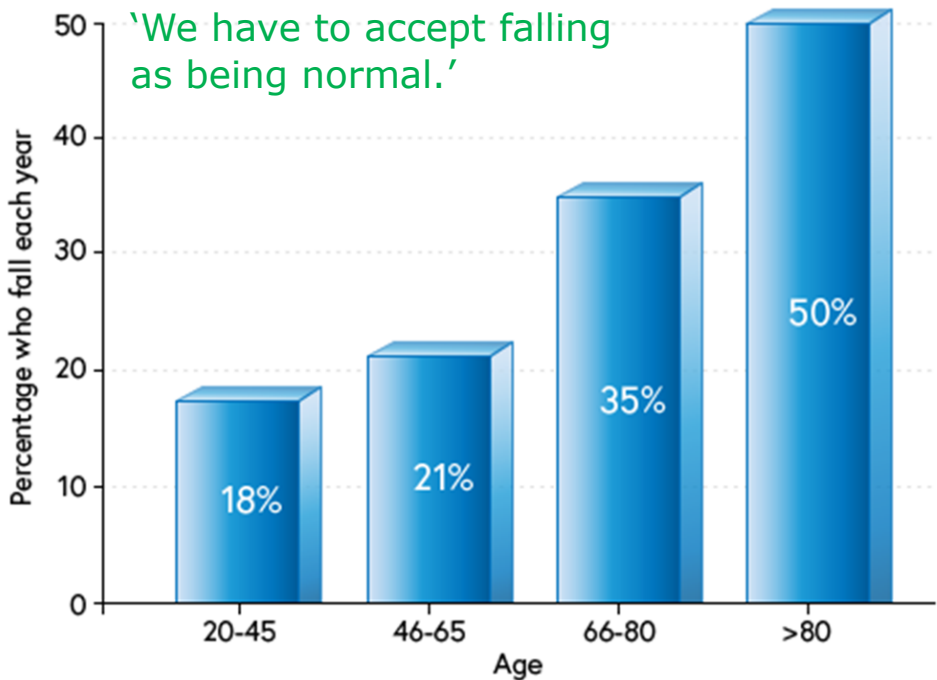
Continence



Loose cables

In our case weakened muscles that
cause instability

Everyone Falls!



Regardless of who you are, or how old you are, everyone has a fall at some point. As we get older falls become more prominent and the risk of injury is higher. In the graph above we can see the percentage of people that fall and how fall increase according to age.

- Young children learn to walk by trial and error, falling is part of that process.
- Children fall because of unsafe activities or accidents.
- Young adults fall because of accidents and lapses of judgement, usually through activities that they might not undertake later in life.
- Adults fall for many reason including accidents but with Pompe the risks due to muscle control, balance and reflexes becomes greater.

Reporting Falls

For those with muscle conditions reporting falls would be a full time job, but it is important, especially if you have banged your head or think you have damaged something.

Many people don't report falls because:

- They do not want to be seen as clumsy, incapable, old or frail
- Some people think it is normal to fall as we grow older and that nothing can be done
- Some people may be embarrassed by the circumstances, such as rushing to the bathroom
- Some people worry that others will try and take control to save them hurting themselves but in doing so will reduce their mobility and freedom

Keeping a Falls Diary

What to record in the falls diary:

- Record the frequency of falls.
- Each time a fall occurs record it into the diary as soon as possible. This helps to get over the problem of forgetting falls, but also helps doctors and therapists to explore the causes behind falls.
- Sometimes the frequency and timing of falls can provide vital clues.



The next page is a page for you to print or use as a proforma for recording any falls

Falls Diary Page ()Date/Time

How/Where and Why I Fell





Lighting

Lighting plays an important part in avoiding falls, especially in hallways and stairs.

Since 2012 the brightness of a bulb has been measured with lumens (luminance) and has replaced the term Watts.





General lighting should be optimised to avoid eye strain.

There have been many changes in the types of bulbs available here are the main types available and a conversion chart to calculate which are the brightest and how they relate to the older watts measurement

Brightness in Lumens Type of Bulb	220+	400+	700+	900+	1300+
Standard (CLS) 	25W	40W	60W	75W	100W
Halogen 	18W	25W	42W	53W	70W
CFL 	6W	9W	12W	15W	20W
LED 	4W	6W	10W	13W	18W

A 60 year old may require 3 times the light of a 20 year old

Types of Bulbs

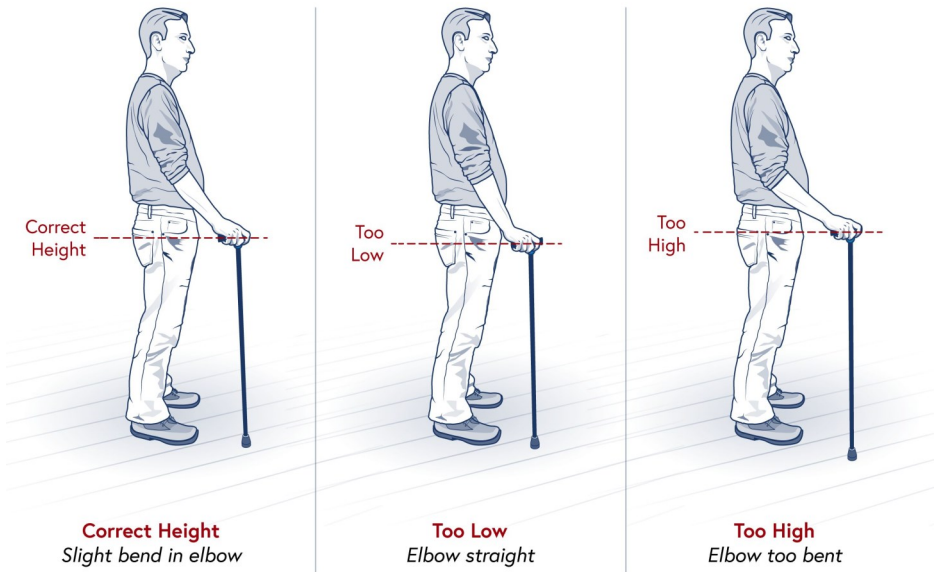
Type of Bulb	Properties
<p>Tungsten - Standard - GLS</p> 	<ul style="list-style-type: none">• No longer available on in the UK (But many older shops still sell them)• Uses Watts as a measure of brightness
<p>Halogen</p> 	<ul style="list-style-type: none">• Cheapest on the market• Shortest lifespan• Similar light to older bulbs• No start up delay and gets very hot• Significantly less energy saving
<p>Compact Fluorescent Lamp</p> 	<ul style="list-style-type: none">• CFLs are most common on the market• Good light and energy saving but many dislike type of light given• Not suitable for cold areas
<p>LED</p> 	<ul style="list-style-type: none">• Most expensive at present• They use least amount of energy• No start up delay• Lights in a range of colours• Very long life

A task light (such as hobby lights or side lights) within 60 cms (2ft) will provide 25 times the light of a ceiling light 3 meters (10ft) away.

Walking Sticks

Many of us with Pompe use a walking stick, crutch or walking frame. Whether it's just for stability when we are out and about or an integral part of our mobility.

Finding the best piece of equipment for you is important. Below is a guide to help in adjusting a walking stick to avoid back strain, aches and pains, and slips and trips.



Ill fitting sticks seen in falls clinic all too often.

- A walking stick that is too long can place too much pressure through the wrist causing strain and injury.
- A stick that is too short can cause the centre of gravity to lean forwards, reducing balance.

A walking stick really should be measured up by a professional

Medication

Medication use can be a risk factor for falls.

Being on four or more medications increases the risk of falls, no matter what the medication. Anyone who has fallen or is at risk of falling should have their medication reviewed with a professional. This review would typically involve:

- Describing the benefits of the medication
- Discussing the potential harm or side effects
- Identifying which medications in particular may be contributing more than others

Some types of medication which can increase the risk of falls by themselves are:

- Medication to treat confusion or psychosis
- Anti-depressant medication
- Medications used for stress, insomnia or muscle spasm
- Other medication to help sleep
- Medications to treat high blood pressure
- Medications to treat fluid retention



Remember these medications also have their benefits and should not be stopped without weighing up the pros and cons with your doctor.

Feet

Put your best foot forward



An important aspect of falls prevention is keeping the feet healthy.

We require the nerve signals from our feet to maintain our balance.

Health professionals suggest that to keep our feet healthy we should:



Keep our feet clean, dry and moisturised



Change our socks every day



- Gently remove hard skin with a foot file/pumice stone, or seek help to do this



Protect our feet from damage, such as blisters



Cut nails to the correct length, or seek help to do this



Wear comfortable shoes



Seek advice for foot pain, it is not a normal or acceptable part of ageing

- Keep active to prevent muscle and joint stiffness

Foot problems such as corns, calluses, or weak ankles can be painful

Foot Care

Regular foot care will help keep your feet healthy and prevent foot problems that increase the risk of falling. Here are some simple footcare tips that will help keep your feet healthy. If you have trouble reaching your feet, or if your eyesight isn't as good as it used to be, ask a friend or relative to help you.



- Inspect your feet regularly to identify any problems at an early stage and stop them getting worse.



- Look out for verruca's, corns, in-growing toenails, toenails that are thickened or discoloured, or cracked heels. If you notice any signs of soreness or redness tell your GP, practice nurse or district nurse.



- Wash your feet daily to help prevent any infections. Don't soak your feet because this will destroy the natural oils in your skin and increase the risk of damage. Dry them gently, taking care to dry between your toes.



- Apply moisturising cream to help keep your skin healthy, but don't put it between your toes as this can make the skin too moist and increase the risk of athlete's foot.



- Make sure you cut your toenails regularly. Cut them straight across and not too short. If you find reaching down difficult, try asking a family member for help, or find out if your local health service has a toenail cutting service or know of any in your area. (There may be a charge for this service.)



- Footcare services - Regular foot checks are important to identify

Shoes

Shoes that fit well protect and support your feet and may improve your balance and stability.

- Keep your shoes in good condition – check for uneven heel wear or worn soles. If you can, get your feet measured when buying new shoes as your foot shape can change with age.
- Shoes should be comfortable when you try them on.
- If your shoes don't fit well they can make even mild foot problems worse.
- Don't buy them if they're too tight thinking you can break them in.
- It's a good idea to shop for shoes in the afternoon if your feet swell during the day.
- You don't have to buy specially-made or expensive footwear.
- Indoor footwear
Walking indoors in bare feet, socks or tights can increase your risk of falling.
- Avoid wearing soft, floppy, loose-fitting or open-backed slippers such as mules (slip-ons) because these can cause you to trip.
- Look for slippers that have velcro fastening and a cushioned sole, with a high collar at the back that fits snugly around your ankle, helping you to improve stability.
- Well- fitting shoes provide better support than well- fitting slippers. If you are unsteady on your feet or have already had a

What makes a shoe safe or unsafe?

Following the guidelines below anyone should be able to find the right shoes for them and their safety at an affordable price.



Safe



1. Make sure the shoe has a firm heel collar to support your ankle, and that it fits snugly round your heel.
2. Look for a low, broad heel. This provides good ground contact which is best for keeping you stable.
3. Check that the soles are flexible, lightweight, slip-resistant, and made from rubber.
4. Choose shoes which are firmly secured with adjustable fastenings

Sketchers now do a slip on with a reinforced back that doesn't bend.



Unsafe



1. Slip-on shoes such as sling-backs or moccasins can slip off easily and trip you up.
2. Don't buy shoes with slippery soles, such as leather soles, because they can cause you to fall, especially in wet weather.
3. Try not to choose shoes with a heel higher than one inch, or with a narrow heel. High heels or narrow heels make your feet unstable

Fear of Falling

Fear of falling is more complicated than it sounds. It is a person's belief in their own ability to perform a task safely, without losing balance or falling. However, it is even more than just having the confidence to do something.

A fear of falling involves real anxiety and can result in physical sensations associated with fear, such as nausea and palpitations

Often, fear of falling appears after a fall. But it can also affect people who have not had any falls, usually those with dizziness, difficulty walking, depression or balance problems.

Fear of falling is important as it can lead to avoidance of activities which in turn causes a person to move less and therefore become less fit - losing strength, mobility and balance, putting the individual at further risk of falls.

This sets off a vicious cycle of falling and fear.

It can affect people in different ways. Some people may avoid leaving the house altogether, out of a fear of falling outdoors. Whereas some people may only experience their fear in very specific situations. For example, someone who fell while taking

their rubbish out on a windy day, may only experience their fear of falling when taking the rubbish out, or on days when it is windy.



Eyes

6 Top Tips for healthy Eyes

Maintaining healthy eyes is as important as maintaining a healthy body. Optometrists suggest that the following is good practice in maintaining healthy eyes:

1. Eat the Right Foods

Eating foods rich in nutrients like lutein, omega-3 fatty acids, zinc, and vitamins C and E will definitely promote healthy eyes. Moreover, these nutrients will keep away age-related health problems like macular degeneration and cataracts. Food items recommended for eye health include leafy greens, eggs, citrus and berries, almonds, and carrots.

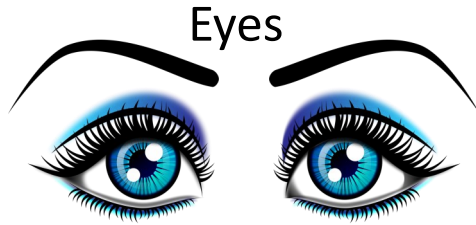
2. Stop Smoking

Smoking may not be a side effect known to many, but it does affect one's eye health. Just think about the harmful chemicals you introduced to your body from smoking. By quitting, you can reduce the risk of getting cataracts, macular and even diabetic retinopathy.



3. Wear Sunglasses with UV protection

Did you know that UVA and UVB (ultraviolet) rays can cause serious damage to your eyes? Think of it as invisible heat rays your eyes will absorb, especially during summer days. Continuous exposure will lead



4. Wear Protective Eyewear

Notice how athletes in high-risk sports or employees in hazardous workplaces or jobs wear protective eyewear? It's not because of fashion. High-risk sports like ice and field hockey, racket sports, lacrosse, and baseball expose athletes to the risk of getting eye injuries, especially when there's contact involved. People who deal with tools, chemicals, and metal and glass bits might encounter work accidents that could harm the eyes too.



5. Don't Sleep In Contacts

It can be quite tempting to sleep in with them, more so during those nights where you can't be bothered with freshening up. However, leaving your contacts in, especially with your eyes closed, can cause eye infections. More so, eye infections from improper contact lens use may cause blindness.

6. Take Breaks from Electronics

Adapt the 20/20/20 rule to avoid digital eye strain. To protect your eyes from Computer Eye Syndrome, take a break from your computer, laptop, and even mobile phone every 20 minutes. Rest your eyes by looking at something 20 feet away for 20 seconds. Looking at

Maintaining Healthy Bones

Maintaining a healthy lifestyle is essential in maintaining healthy bones. Having healthy bones won't stop a bone breaking if you fall awkwardly but it will help in reducing the time it takes to heal and may avoid complications caused by slow healing.

Top tips for healthy bones are:

- Stop smoking
- Limit alcohol
- Limit caffeine intake
- Use salt sparingly
- Keep active to stimulate the body to keep bones strong
- Eat foods rich in calcium (dairy, oily fish, spinach, nuts, seeds, tofu, dried fruit, flour and even water!)
- Sunshine is really important - 15 minutes of sunshine, three times a week will help build up stores of vitamin D, which is important for bone health. Unfortunately the weather can sometimes work against us on this one!
- Maintain a healthy weight (being too thin can reduce the strength of bones)
- Take calcium and vitamin D supplements when recommended by your doctor.

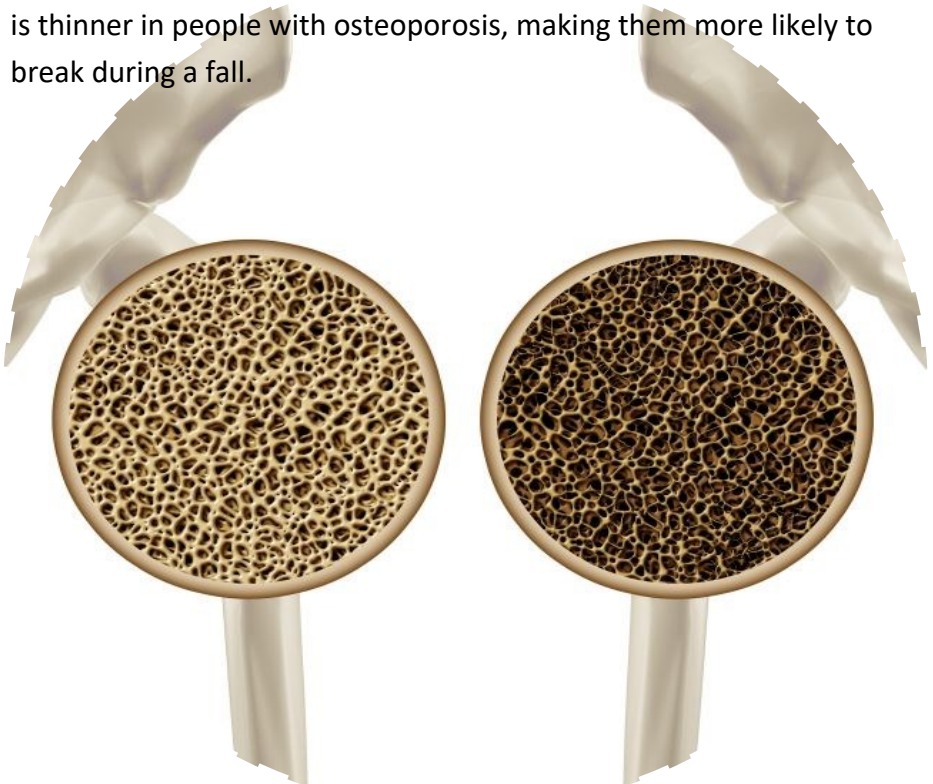


Osteoporosis

There are several different medications available to increase the strength of bones and prevent fractures. These are usually reserved for:

- People who have broken a bone during a fall from a standing height
- People at high risk of breaking a bone from a fall
- People who have thin bones (osteoporosis) on a bone scan

This image shows a normal bone structure on the left and an osteoporotic bone on the right. We can see how the structure of the bone is thinner in people with osteoporosis, making them more likely to break during a fall.

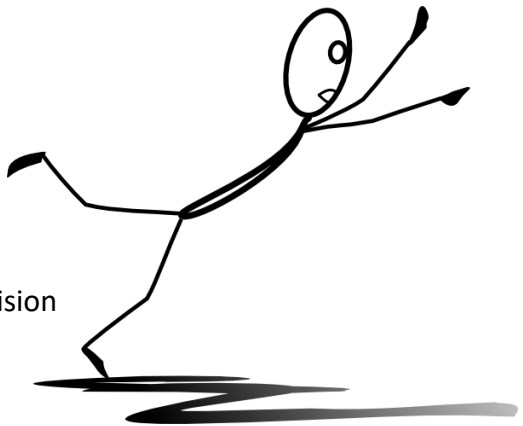


Low Blood Pressure

Low blood pressure causes many people to fall and can affect any age group.

When we stand upright from either a sitting or lying position, or when we stand still for a prolonged length of time, gravity pulls blood down into our legs. If our body does not respond quickly enough, the blood will drain away from our brain and this results in:

- dizziness,
- fainting and
- Falling
- It can also cause
- blurred or tunnel vision
- Fatigue
- Nausea
- loss of concentration
- headaches.



People usually look very pale when they have low blood pressure.

As we get older our body reacts more slowly to a drop in blood pressure, which is one of the reasons why falls and fainting become more common as we get older.

Some of the common causes of low blood pressure are:

Carotid Sinus Syndrome

the test for this involves rubbing on the neck. This was to see if the

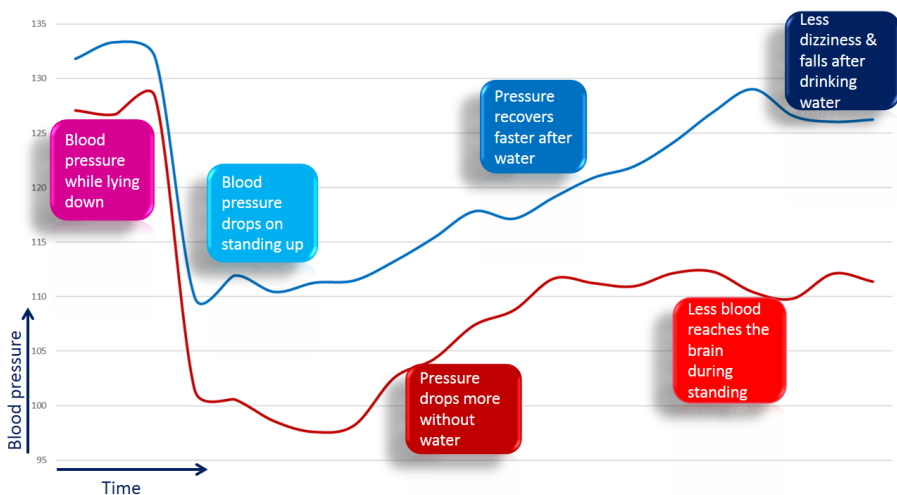
Low Blood Pressure when Rising Too Quickly

Postural hypotension

This is when the blood pressure drops when we stand up from sitting or lying down. It usually causes dizziness, fainting or falls not long after standing up.

The graph below compares the blood pressure in 25 people who stood up quickly after lying down.

The red line is their usual blood pressure.



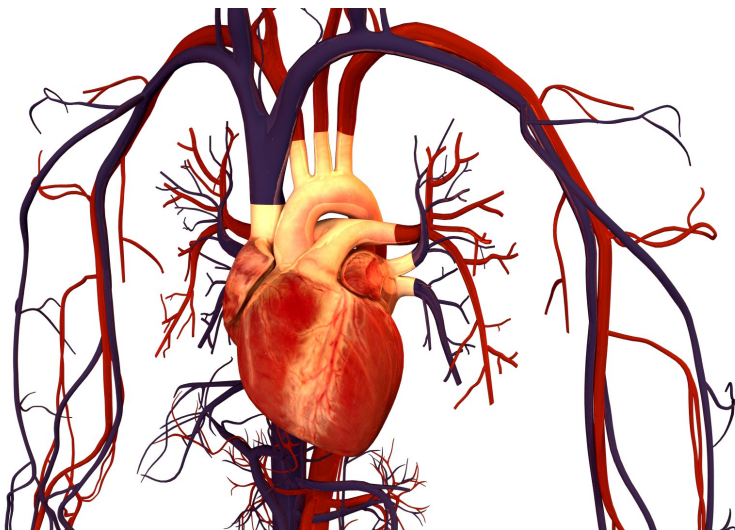
The blue line is their blood pressure after having a large glass of water (1 pint).

As you can see from the graph the increase in blood pressure after drinking water is significant.

To reduce the possibility of falling after rising it is recommended that,

6 possible ways of reducing the risk fainting

- 1) Review your medication with your doctor.
- 2) Drink plenty of water to keep the blood pressure stable.
- 3) Try wearing compression stockings. These are very tight and are only available through prescription in the UK. They prevent blood from collecting in the legs, but they are quite difficult to put on and take off.
- 4) Physical manoeuvres. By squeezing your knees together, or tensing your arm and leg muscles you can temporarily put the blood pressure up. This helps get the blood flowing back from the legs to the brain.
- 5) Avoiding situations which may lower our blood pressure, such as prolonged standing in the heat.
- 6) Sit on the edge of the bed for a while before getting up after lying down



The Heart

Within the heart we have our own natural pacemaker, from which an electrical signal is generated.

This signal then passes down through a network of wires in the heart to cause a smooth and organised heartbeat.

Sometimes our pacemaker becomes inefficient and our heart rate can become too slow. Or, the pacemaker may be working but the wires do not let the signal through, causing the heart to miss a beat.

When the heart slows down too much it can result in dizziness, fainting or falls.

Warning signs that the heart may be causing falls are Light-headedness.

- If it only occurs while standing up, it suggests it is low blood pressure, but if it occurs while sitting or lying down it could be a slow heart rate.
- Suddenly falling down for no reason. A sudden slowing of the heart may cause people to just drop down with no apparent loss of consciousness or fainting.
- Injuring the face when falling. This usually means that the hands were not put out to protect the head during a fall. In this situation we should consider the heart.
- Fluttering or pain in the chest before the fall.

Treatment

Avoid situations which may cause a problem. This might be avoiding the heat or prolonged standing.

Undertake a medication review with a doctor as some medications

Rising from a fall



If you are on the floor getting up is essential but this is easier said than done. Having muscle weakness means that weakened leg and arm muscles mean that rising unaided or without aids is often very difficult.

Below is how a physiotherapist recommends you get up unaided after fall.

- Roll onto your side.
- Then onto all fours.

(Once on all fours, it means that you can be mobile)

- Look for the nearest chair or stable surface to use to pull yourself up.
- Crawl on your hands and knees to get there.
- If you have one leg which is stronger than the other, aim to manoeuvre that so that it's closest to the chair.
- Bend the knee and place the foot flat on the floor.
- Place your hands securely on the surface, using your arms for leverage.

Safety first after a fall

Once you are up after a fall take a few minutes to stop, rest and check that you are feeling OK.

Always remember that it is not always safe to stand up following a fall. If you have any of the following it may mean that it is not safe and you could be injured, In these cases call for help, or wait until you are feeling better.

- Suspected broken bone
- Suspected stroke
- Feeling faint or light-headed
- acute back pain
- pain in the hip
- ongoing dizziness
- new confusion

Approximately 25% of older people who fall will break a bone, suffer a head injury or need to be admitted to hospital because of their injuries.

But broken bones and bruises are not the only injuries that result from falling it can affect the social life for many people with some reticent to leave the house without support just incase they fall.



Technology that may help

Technology may play a role in preventing or treating falls in the future. Here are some examples of technologies which are beginning to be evaluated in the field of falls.

Accelerometry (Activity monitoring)

An accelerometer is a device which can detect the speed and direction of movement. They are an electronic version of the semi-circular canals in our middle ear. They are commonly found in smart phones. They can provide information on whether someone is running, walking, sitting, standing or lying down. As it can detect the speed and direction of movement, if it were placed on an individual it could potentially detect a fall. Another potential area that it could be used for in the future is to assess someone's gait and balance and mapping where falls are occurring so that hazards can be identified.

Pressure sensors

These are usually to be found in hospitals or care homes. The sensor can be placed in the bed or on a chair. When pressure is applied to the sensor (during sitting or lying) it remains silent, but when there is no pressure the alarm is activated. So far, these have not proven to be useful in falls prevention. They rely on people being around to hear the sensor so that they can assist the person who is trying to get up and make sure they do it safely.

For the near future

- Sensors which may alert people to edge of a pavement.
- Automatic lights, that gently light the way to the bathroom during the night.
- Pressure sensitive steps that activate LED stair lights.

If you can't get up after a fall

If you can't get up after a fall:

- Try to get someone's attention by shouting or banging something such as a walking stick.
- If you have a pendant alarm, use it to alert your community service .
- Try to reach the telephone if you can and call for help.

If there is no one around and you have to wait it's important that you are safe and comfortable, as you can be.

- Try to reach something soft which you can use to support your head and neck
- Try to shuffle or roll to a nearby rug or carpeted area which will provide softer support

If you are going to be on the floor for longer than several minutes it is essential that:

- You find a way of keeping warm. Try to reach extra clothing, throws, table cloths or rugs.
- Try to vary which part of your body is resting on the floor, this will help prevent pressure sores.
- Also try to move away from any wet areas caused by any leaking from your bladder as this will also protect your skin.



Calling for Help - Personal Alarms

Pendant and Wrist Alarms

A pendant alarm enables the wearer to communicate via an intercom with an operator who works for a health or social care organisation.

The operator will be able to talk to you and if they don't get a response or you are injured will " " " " " " person or the emergency services.



Key Safe

Once the emergency services are called they will need to gain access to your home it is worth considering how they can do this if the door is locked.



Many health and social care organisations can organise to have a key safe fitted to the frame of the front door.

When the operator calls the emergency services on your behalf they are given the keycode to your door safe which they will use it to open your door.

Exercises

Strength and balance exercises are the most effective type of exercise at preventing falls.

Researchers have repeatedly shown this and have also shown that group exercises are effective at reducing falls in people who are at high risk of falls, but also those who are at a low risk of falls. These exercises are invaluable in falls prevention.

Tai chi

Tai Chi is frequently recommended as an activity which can prevent falls. This is true for some people but not for all. Researchers have found that Tai Chi can reduce falls, but this benefit is restricted to those who are at a lower risk of falling.



Strength training

Although it would make sense that having stronger muscles would prevent falls, performing exercise which only improves muscle strength does not reduce falls. This is probably because it does not improve other important factors such as balance and stamina.

Walking

Walking is a great way to keep our nerves, inner ear, bones, cardiovascular system and general health in good shape.

Exercise is one of the most effective ways of preventing falls. But the exercise needs to be designed specifically for falls prevention and usually includes strength and balance training, whether in a class or at home.

Summary

Prevention is better than cure

There is no shortcut to reducing falls.

- There is no single medication that will stop a fall but it may treat the condition that causes a fall.
- Keeping in good general health is important.
- Some parts of the body are more attributable to falls:
- The eyes, perception of distance and the surroundings
- Feet, as nerve signals help in maintaining balance
- Shoes, well fitting shoes give stability
- Legs, healthy legs give strength and stability

Avoiding falls by:

- Having good lighting especially in hallways, on stairs and in areas that may be cluttered
- Removing trip hazards such as loose cable, ill fitting rugs and floor clutter

If you fall, and we all do at sometime:

- Tell someone
- Keep a diary of falls
- Know how to get up, practice makes perfect
- Have a contingency plan to contact someone if you can't get up

Always be prepared and be aware