



**SAFE AND SOUND**

**TIPS ON KEEPING MOBILE**

**AND PREVENTING FALLS**

A guide for older people who live independently including  
TEST to show your own risk of falling  
TIPS to improve stability and stay mobile

## **IMPRINT**

Herausgeber: Freie und Hansestadt Hamburg

Behörde für Arbeit, Gesundheit, Soziales, Familie und Integration  
Amt für Gesundheit | Abteilung Gesundheit  
Fachabteilung Gesundheitsdaten und Gesundheitsförderung  
Billstraße 80 | 20539 Hamburg

Redaktion: Waltraud Schömig-Kilger  
Tel. +49.40.428 37-3746

Stand: März 2021

Fotos: [www.colourbox.de](http://www.colourbox.de)

Download: Diese Broschüre steht für Sie zum Download bereit  
<http://www.hamburg.de/gesundheit-im-alter>

Medical knowledge is constantly increasing. All the information given here on the primary and secondary prevention of falls in elderly people is evidence-based and reflects the state of knowledge of geriatricians, gerontology researchers, sports scientists and therapists at the time of publication of the first German edition (2007) and its update (2013). Professional users should take any new information into account.

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Dear reader,

This booklet is called **Safe and Sound**.

To be relaxed about getting old it is important to be steady on your feet and to think ahead and prevent accidents before they happen. To paraphrase a well-known saying: "Everybody wants to get old but nobody wants to fall".

Walking unsteadily and falling affect so many older people (too many to meet them all) so we have written this booklet to make contact with you.

About every third person over the age of 65 has already had a fall, mostly not in particularly dangerous situations but during everyday activities like going shopping or getting up at night to go to the toilet.

Being unsteady on their feet makes people afraid and limits the things they do. They worry about the serious consequences of falls, like breaking bones or becoming increasingly dependent. In elderly people, falls are often a sign of illness or functional decline (frailty).

A fall in old age is therefore always seen first and foremost as a potential warning sign for health problems. Many of these problems can be avoided, treated or at least made better. We have written this booklet to give you some recommendations and TIPS on keeping mobile. At the same time we want to inform you about unsteadiness and falls in old age and how they arise, how they can be treated and how you can guard against them.

We would particularly like to address people who have not yet experienced problems with walking but who want to look ahead and take action to maintain their mobility.

- Take the first step. **Read on!** Take our TEST on page 10 to find out your personal risk of falling. Recognising the problem is the first step towards solving it.
- Then **try out** our suggestions. They include TIPS to prevent falls and also some ideas on improving mobility and wellbeing in old age.
- Please feel free to **copy the TEST and pass it on** to people close to you.

We would especially appreciate your feedback on this booklet. You can help us a lot by taking the time to write to us about your experiences with this booklet and sending your suggestions and criticisms to us at the address below.

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## How to use this booklet

### Step 1: TEST

First of all fill in your answers to the TEST on page 10 . It addresses 13 different aspects of your life as indicated by the symbols.

### Step 2: Work out your score

It makes no difference whether you have marked 1, 2 or more statements in a problem area as applying to you. One cross is enough to class this area as a risk. The more problem areas are revealed, the greater is your risk of falling. If up to four problem areas are revealed, your personal risk of falling is already doubled compared to people of the same age. All the areas are given the same importance. By looking at your score in terms of the total number of problem areas found it is possible to rate your risk of falling as one of four general categories ranging from very low to very high.

### Step 3: Mobility TIPS

Taking your TEST results as a starting point we would like to use the third, and largest, section of this booklet to give you suggestions and TIPS on how do deal positively with your personal risk.

Our aim is to reduce your personal risk of falling and also to help you extend your mobility and improve your wellbeing, day by day.

The mobility TIPS are organised according to the TEST problem areas they address.

They are labelled with the same symbols. All you need to do is turn to the appropriate symbol. This section offers suggestions on how to deal with any weak points that were identified in the TEST. You can make a start straight away by doing easy exercises .

### Important Information

The following recommendations can only refer to your answers to our TEST.

Neither the TEST nor the recommendations (mobility TIPS) can take the place of medical treatment or personal advice.

We aim to give you some ideas and to motivate you to seek out the people who can help you. Please read the rest of this booklet and consult the appropriate people in your area for help with following our recommendations.

**We hope you enjoy reading this booklet and taking the TEST.**

## TEST

First of all please fill in your answers to the TEST on page 8. On the next page we explain how to score your answers.

The TEST asks questions about 13 different areas that can affect your mobility. The problem areas are labelled with different symbols. Recommendations for each area are given under the corresponding symbols in the TIPS section of this booklet.

You are very welcome to copy this TEST so that other older people you may know can also find out their risk of falling and take positive action to stay mobile.

Please mark all the statements that apply to you. When one warning sign applies to you it reveals a risk area for falls in old age. You can look up the corresponding symbol and read the recommendations.

1

- Watching television at a distance of about 3 m is difficult, even with glasses.
- My eyesight has worsened in the last year.
- I have a visual impairment.
- I find it hard to understand whispering.
- My hearing has worsened in the last year.
- I have a hearing impairment.
- I wear one or two hearing aids.

2

- I always use four or more different medications.  
(This includes medicines that have been prescribed for you, such as medicines or tablets for your blood circulation, and also over-the-counter products like laxatives, pain killers, pain plasters and any herbal remedies that you use regularly at least 3 times per week.)
- I often take sleeping tablets or tranquillisers (e.g. herbal ones, such as Valerian)
- I am not sure whether I use or take my medications correctly.
- I am not sure whether all my medications go together.

3

- Mood swings are a problem for me.
- I have recently been excessively fearful or nervous.
- Nothing really cheers me up at the moment.
- I have depression / other psychological problems.

4

- I feel unsafe riding a bicycle nowadays.
- I have given up riding a bicycle in the past year.
- I gave up riding a bicycle a long time ago.
- I never learnt to ride a bicycle.

5

- I have tremor and disturbed coordination as in Parkinson's disease.
- A nerve injury has left me with a condition such as peripheral paralysis.
- A stroke has left me with a condition such as central paralysis.
- I have another neurological disease such as epilepsy or MS.



6

- I have a disease that affects my sense of balance.
- I have a disease affecting the balance organs of the inner ear, e.g. Ménière's disease.
- I have severe vertigo and feel as if I am revolving or swaying.
- I have a disease of the cerebellum.

7

- I think I am underweight.
- I have lost my appetite or eat an unbalanced diet.
- I have fragile bones (osteoporosis).

8

- I am sometimes afraid of stumbling, e.g. on uneven paths.
- I am afraid of falling on escalators or when the bus starts off.
- I am afraid of being jostled in large crowds.
- I am unsure when I cannot see my feet (going downstairs).

9

#### CHAIR RISE TEST: PLEASE TRY THIS OUT!

Cross your arms over your chest, sit on a chair and then stand up and sit down 5 times quickly (within 10 seconds) without leaning on anything.

- No, I can't do that / I refuse to try.
- No, I can only do this exercise if I lean on something or have pauses.

10

- I have a history of cardiovascular disease such as a weak heart or heart attack.
- I have high blood pressure (higher than 140/90 mm Hg).
- I have low blood pressure. I sometimes feel faint.
- I have narrowing of the blood vessels near the heart or in the legs.
- I often have cardiac symptoms such as shortness of breath, racing heart or irregular heartbeat.

11

- I walk increasingly slowly or take pauses more often.
- I use a walking aid (stick, rollator) or lean on something.
- I avoid walking outside my home as much as possible.

12

- I have fallen once already in the last 12 months.
- I have fallen or slipped several times in the last 12 months.
- I have fallen several times in the past few years.

13

- I had bruises or pain from the fall.
- I broke a bone when I fell (e.g. arm, leg, hip).
- I had to go to the doctor or into hospital because of the fall.

### WORK OUT YOUR SCORE

Enter your TEST results like described on the next page and find out your risk group.

## Work out your score

### Example

1	Visual or hearing impairments
2	Tablets and multiple medication
3	Erratic mood changes
X	4 Given up cycling
X	5 Tremor and neurological disorders
6	Affected equilibrium
7	Nutrition or bone stability
8	Fear of falling, uncertainty when walking
9	Chair Rise Test
X	10 Cardiovascular disease
11	Slowdown, adapting gait (fatigability)
12	Already fallen!
13	The fall caused injuries or complications

Mrs M. marked 3 of the 13 problem areas as applying to herself

4, 5, 10 

So she ticks each of these areas on the table.

### Result for Mrs M.

Number of ticks

3 

Risk Group

1-3 

- Mrs M. can now look on page 16. With the three areas ticked, her risk of falling is only slightly increased.
- Mrs M. then finds helpful TIPS in the advice section no. 4, 5, 10.
- Now you can follow Mrs M.'s example.  
Find out your own risk group by entering your answers from pages 6 and 7.

### Your results

1	Visual or hearing impairments
2	Tablets and multiple medication
3	Erratic mood changes
4	Given up cycling
5	Tremor and neurological disorders
6	Affected equilibrium
7	Nutrition or bone stability
8	Fear of falling, uncertainty when walking
9	Chair Rise Test
10	Cardiovascular disease
11	Slowdown, adapting gait (fatigability)
12	Already fallen!
13	The fall caused injuries or complications

Number of ticks 

Risk Group 



## Table to help you find out your risk of falling

Number of risk areas ticked	Corresponding risk group
0	<p><b>Walks safely, no special risk of falling</b></p> <p>You are steady on your feet when you walk, regardless of your age. Enjoy being mobile! If none of our statements applied to you, and you still ride a bicycle regularly, please read our special TIPS on keeping healthy under the bicycle symbol in the Advice section.</p>
1–3	<p><b>Low risk of falling</b></p> <p>Your risk of falling in the next year is low. Top priority for you is to keep steady on your feet and to build up your health reserves so that you can stay active.</p> <p>Read our TIPS to help you get mobile. Look up the TIPS under the symbols of the problem areas you ticked.</p>
4–7	<p><b>Slightly increased risk of falling</b></p> <p>Your risk of falling in the next year is slightly higher than in other people your age. Top priority for you is getting rid of dangers and staying mobile.</p> <p>Read our TIPS to help you stay mobile. Look up the TIPS under the symbols of the problem areas you ticked.</p>
8–11	<p><b>Significantly increased risk of falling</b></p> <p>Your risk of falling in the next year is significantly higher than in other people your age.</p> <p>Top priority for you is getting rid of dangers and staying mobile.</p> <p>Read our TIPS to help you stay mobile. Look up the TIPS under the symbols of the problem areas you ticked.</p>
12–13	<p><b>Strongly increased risk of falling, tendency to fall</b></p> <p>Your risk of falling in the next year is much higher than in other people your age. Top priority for you is to stay safe and regain mobility.</p> <p>Read our TIPS to help you get mobile. Look up the TIPS under the symbols of the problem areas you ticked.</p>

**You should now have a better idea of your own strengths and weaknesses.**

## What happens now?

Concentrate on one problem at a time. Build up your strength. That will help you to be less susceptible to falls.

If your risk of falling is low you can enjoy your mobility. If your risk of falling is slightly increased it means you are three to four times more likely to fall during the next year than other people your age. People who have a strongly increased risk of falling will tend to fall over repeatedly. This means they may injure themselves seriously, which at first is likely to limit their mobility and could later render them immobile.

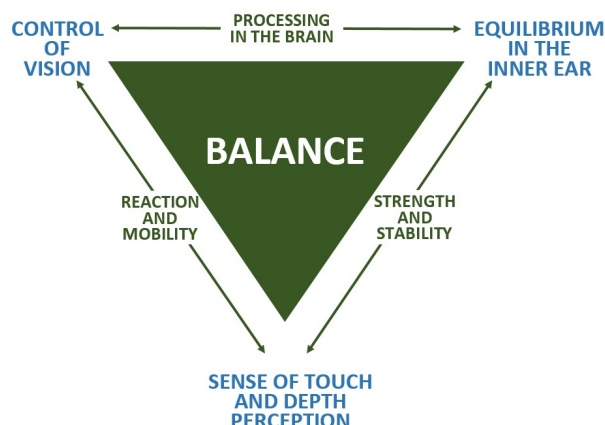
Something you should know: when elderly people fall there is rarely a single clear cause, such as a sudden fall in blood pressure as a result of heart disease. In 90 % of the falls of elderly people, many different problems have contributed, each intensifying the others, and ultimately caused the person to lose control of their own movements. That is why it's important to regain and increase your control over your own body by addressing as many problems as possible and by developing your own strength. To put it slightly differently, removing stumbling blocks in your own surroundings will not help if it is your own body that is causing you to stumble.

In the next section we have collected together some recommendations and suggestions to help you. These mobility TIPS are listed under their symbols. This means you can look up the suggestions that are relevant to your own mobility problem areas. Just look under the symbols that came up in your TEST result.

## Mobility TIPS

### Tips for cyclists and people who are fully mobile

Congratulations! You are not affected by any of the problems in our TEST. This means your risk of falling is very low, just like other adults. The fact that people enjoy cycling shows clearly that their bodies are well balanced – independent of age – as is the case in many healthy older people. To help things stay that way you should be sure to wear a certified cycling helmet. If you do have an accident, protecting your head is crucial. Keep your balance. As the diagram below shows, this is always a complicated business.



### What can you do?

Dare to try out new kinds of movement that challenge you and help you to have fun experiencing balance in entirely new ways. Activities that encourage balance are

- dancing (ballroom or folk dancing)
- exercise classes for older people (60+, 70+)
- Tai Chi Chuan (a Chinese movement form)
- exercises using equipment like a balance board
- balance classes
- courses on fall prevention run by sports clubs
- supervised inline skating. Did you enjoy ice skating when you were young? Why not try the same thing on wheels? Many cities offer inline skating courses that will give you a safe introduction to a new sport. Some courses are designed especially for elderly people.

How we get older, and how we deal with the ageing process, is a very individual business. Or as you might say: One man's meat is another man's poison. Curiosity, activity and mobility are important in enabling people to live as they want to and to achieve their own goals. To keep mobile it is worthwhile not only to avoid risks but also to build up your own health reserves. Maybe you're not sure what would do you good.

### What can you do?

Seek professional advice. Perhaps a group of elderly people already exists in your area in which a doctor and others offer advice on ways to adapt everyday movement, diet and social activities to fit in with individual preferences.

## 1 Visual or hearing impairments

You indicated that you have a visual or hearing disorder. Anyone whose vision is poor is more likely to stumble over obstacles. But did you know that spatial orientation, posture and compensatory redistribution of weight are also communicated to our brains visually? That means good vision is important for stability when walking. As well as seeing the people and obstacles in front of us we can also estimate how fast they are coming towards us. And we can see how high a step is and how far away a car is. This important information may be incorrect if your visual acuity is poor or if you have other visual problems. Eye diseases, which are common in elderly people, can impair orientation, walking stability and mobility.

### What can you do?

Go to an ophthalmologist once a year for a check-up. This will show up cataracts and glaucoma (high pressure in the eye) so that they can be treated at an early stage. The ophthalmologist is also the best person to detect eye damage resulting from other diseases (e.g. retinal damage due to high blood pressure or diabetes). Ask which vision aid is most suitable for you (glasses with simple or multifocal lenses, or contact lenses etc.). Don't make life harder for yourself by having incorrect vision aids, bad lighting or things to trip over in your home like cables or carpets. If your vision is already very limited, special help may be available to help you learn how to cope better.

### Also worth considering:

Hearing impairment creeps up on you. People may have hearing problems for a long time without realising. But to tell how far a car is from us and which way it is going, we need both ears. When a person has a hearing impairment, their brain has to concentrate so hard to decipher sounds that it does not have the capacity to control bodily coordination as well, and the person is more likely to stumble. Sometimes the part of the inner ear controlling balance is also affected. Read the TIPS on page 17 (Affected equilibrium) as well.

Hearing impairment makes it especially difficult to discuss things with other people and to enjoy music or theatre.

Helen Keller, who lost both vision and hearing as a child, wrote: "Not being able to see separates you from things but not being able to hear separates you from people."

### What can you do?

Have your hearing tested every 2 years by an ear, nose and throat specialist or ask your GP to try a simple whispering test on you.

Take early advice about hearing aids. If a hearing aid is fitted too late the brain has a hard task recognising noises that were once familiar. Hearing aids do not transmit the familiar sounds straight away. The user needs to wear them every day and get used to them.

A hearing aid specialist can help you here.



## 2 Tablets and multiple medication

Do you have to take medicines? They are helpful for a lot of illnesses but older people are often more susceptible to side effects such as disturbances of attention or balance. If someone takes four or more different medications at the same time, the risk of unwanted side effects increases dramatically. Nevertheless, you cannot just give up taking medicines. Cardiovascular drugs, in particular, have to be taken regularly. But you should avoid taking additional medicines for minor symptoms or just to be on the safe side.

Even vitamins and minerals should not be taken without consulting a doctor. The principle here: less is more.

### What can you do?

Ask a doctor's advice about all the medicines you use. That includes eye drops and ointments prescribed by the ophthalmologist, over-the-counter pain killers, laxatives and herbal remedies like St John's Wort or hawthorn extract. Make a list of your medicines before you see the doctor.

Medication charts and schedules are available online (e.g. <http://www.safetyandquality.gov.au/wp-content/uploads/2013/06/NIMC-GP-e-version.pdf>).

### Also worth considering:

If you always get your medicines from the same pharmacy you can ask them to make a list of your prescription medicines and check whether additional over-the-counter products will fit in with those you already take. The pharmacy staff will also be glad to advise you about using your medicines correctly. Make sure they write any special rules on the box each time as well. For extra help at home consider

- clear tablet organisers
- pill containers with an alarm clock
- a pill cutter

Many older people need no more than five or six hours' sleep. Be careful with sleeping pills and tranquillisers. The sleep they cause is different from natural sleep and the side effects usually outweigh the benefits. Alcohol as a sleeping aid also has its dangers. If used regularly it can lead to dependency and problems with concentration and walking.

### What can you do?

Make sure you get enough movement in the fresh air. Classical music or light reading is better than television before going to sleep. Only go to bed when you are really tired. Avoid risky self-treatment with melatonin or sleeping tablets. Ask your doctor to suggest other possible treatments.



### 3 Erratic mood changes

You have recently experienced disturbances such as fatigue or lack of drive. These changes can be signs of various kinds of burden or disorders of the nervous system, such as depression, which can be treated successfully. Feelings of this kind can also occur when you are in mourning or recovering from a serious illness or as a side effect when you take certain medicines.

Signs of psychological disorders include:

- a disturbed day – night rhythm
- serious listlessness/ lack of drive,
- not being able to really enjoy anything any more
- not being properly cheered up by anything
- lack of appetite
- disturbance of memory or orientation

Did you know that malfunctioning of the thyroid gland can be responsible for diffuse symptoms like listlessness, nervousness and muscle weakness? The thyroid gland controls energy management and many hormones in our bodies. Talking about these problems, and perhaps having a blood test, can be helpful.

#### What can you do?

Go to a doctor to find out what is causing your change of mood. A priest or pastor may also be able to help you overcome illness, loneliness and other problems of everyday life.

#### Also worth considering:

Take care with sleeping tablets. The sleep that they induce is fundamentally different from natural sleep and the side effects usually outweigh the benefits. Talk to your doctor about other treatment options. Have a look at page XX (N Tablets and multiple medication) as well.

Many older people worry about their mental abilities. Forms of dementia such as Alzheimer's disease can indeed lead to unsteady gait and sleep disturbance.

#### What can you do?

Your doctor can help you deal with worries of this sort, as can memory clinics and advice centres for older people and their families.

Keep in touch with your old friends and make new ones. If you are alone and your family is far away or has little time, or if you have just moved to a new area, you can quickly make contact with other older people at senior citizens' clubs or you can make use of your experience to help young families.

Look for new mental challenges all the time. That will keep your life moving.

## 4 Given up cycling

If you have felt increasingly unsafe on a bicycle lately, or never learnt to ride one in the first place, then you are the same as every second person over 60. You can forget how to ride a bicycle. It calls for both endurance and a good sense of balance. Traffic also needs your full attention. When you give up cycling you also give up an enjoyable way of getting about and an excellent way of training your sense of balance. If you stop cycling, or have never taken it up, you need a replacement. Every way of moving has its own particular effects and justification. However, exercises done sitting or lying down are not suitable for helping you to walk more safely. Try exercises done standing up in which you shift your weight from one foot to the other.

### What can you do?

If your bicycle has not been put away for too long you could try a cycling course for adults. They allow you to practice things like turning and braking under safe conditions. Then you'll be able to go on expeditions away from busy streets.

### Also worth considering:

Be aware: the best way of avoiding falls is to take appropriate exercise and train your balance, strength and coordination. If you stopped riding a bicycle a long time ago, or never learnt to ride one, you will probably find it easier to take up another form of movement to replace cycling in your daily life. The exercises in the enclosed leaflet are a good start. Some special types of movement are particularly good for training your balance and are also easy for beginners and for people starting again after a long break.

### What can you do?

The Chinese movement form Tai Chi is especially good for attention, balance and coordination as it involves continuously shifting your weight.

- Ask at your local sports club, gym or senior citizens' centre about
- exercise classes for older people (60+, 70+)
- dancing for older people
- balance training
- courses on preventing falls

Perhaps you are not sure whether these activities will suit you or whether there are medical reasons to avoid them.





## 5 Tremor or neurological disorders

Diseases of the nervous system can cause tremor – shaky hands. Even more commonly, they can also cause a lack of control of movements, poor coordination or movements that are inaccurate or slow. Such symptoms should be examined by your GP or neurologist. Many of these problems drastically increase the risk of tripping over small obstacles. Most nervous system diseases can now be treated.

### What can you do?

Tell your doctor about your movement problems. If you already know you have an illness affecting the nervous system and are on treatment, please be sure to take the tablets as prescribed by the doctor.

Have a look at our TIPS in N (**Tablets and multiple medication**). The senses of touch and vision are important for directing your movements so please look at our remarks in NO (**Visual and hearing impairments**) as well.

An independent living shop or occupational therapist can advise you about everyday living aids that could be helpful for you. Many small but useful items are available, like extenders for knives and forks or ergonomic handles and buttoning aids. Even if it takes a bit longer, each everyday task you can accomplish on your own will do you good.

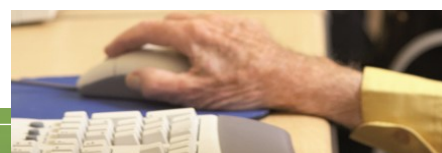
### Also worth considering:

You yourself, and movement, can do a great deal to make your medical treatment a success. It is important to choose the right kind of physical activity, such as daily exercises recommended by a physiotherapist, the Feldenkrais method, the Bobath concept or music therapy. Exercise groups may also be available in your area for people with particular illnesses such as stroke or Parkinson's disease.

### What can you do?

Try and find a self-help group. This will give you ideas and support for dealing with everyday tasks. The patients themselves often know a lot about their disease, how to treat it and what aids are available. Many self-help groups hold regular social meetings and may also organise sports and movement activities.

Combine work with pleasure. Divide your day up. Make time for conscious relaxation, daily exercises for your whole body and small exercises to improve the fine tuning of your eyes, nerves and muscles. Crafts and handwork can help here as can games calling for finger dexterity like Solitaire (placing pegs in holes), Catch the Mouse, Pick-up sticks (Spillikins) or Mystery bag (identifying objects by touch). The modern versions, of course, are computer games and courses. These may be offered by senior citizens' clubs or as evening classes.



## 6 Affected equilibrium

Serious balance problems can increase your risk of falling but may cause different symptoms and result from different illnesses. Some nervous system disorders are associated with severe vertigo (sensations of rotating or swaying). Sometimes hearing ability is affected as well (see NO Visual or hearing impairments). Often people just say "I feel dizzy" and mean they have a generally unsteady feeling, their blood pressure is variable or they feel unwell. Symptoms like these can be a sign of a disturbance of the cardiovascular system.

### What can you do?

Consult your doctor so that an illness can be excluded or treated at an early stage. People who have cardiovascular problems can join special cardio-sport groups in which the group leader is supervised by a doctor. Before you do this your fitness should be tested on a stationary bicycle (ergometer).

You will already know if you suffer from a congenital illness causing dizziness such as a functional disturbance of the cerebellum. Illnesses of this sort cannot be cured but can be made less disturbing by adaptation and exercise. If you have new symptoms of dizziness, finding out what is causing them is not straightforward and can take a long time.

### Also worth considering:

Ways to lessen the problem are linked with medical explanation. Feldenkrais exercises are carried out lying down. This does not make you steadier on your feet but can help with body awareness and turning over. See I Fear of falling, uncertainty when walking for more about movement forms such as Tai Chi which train balance in particular.

In old age a feeling of unsteadiness or slight non-directional dizziness is often associated with insufficient use of the sense of balance. If we move too little or do not make enough different movements, the information about posture reaching the brain is processed too slowly. Sea sickness on short journeys by ship or after long periods spent in bed is an example of the opposite effect, as the sense of balance is suddenly overtaxed.

### What can you do?

Sometimes the doctor can help with simple manoeuvres to change position. You can also do an exercise in bed. Every day, before you get up, sit up and lie down again repeatedly (about five times, from lying on your side if possible). This helps your sense of balance to adapt better to changes of position. Be careful when you get up after lying or sitting for a long time. Take a few minutes on the edge of the bed and stand for a while with the bed or chair behind you before you take a few steps. This applies especially when you get up at night to go to the toilet. Daily living aids can only help once something has been done to improve your steadiness. Doctors or therapists will help you to choose daily living aids and use them correctly.



## 7 Nutrition and bone stability

What does your diet have to do with falls in old age? To stay mobile and steady on your feet you need to eat well. Even in old age you still need many different nutrients to keep up your muscles, bones and immunity to diseases. Anyone who only eats small amounts or has diabetes or osteoporosis needs to pay particular attention to eating a varied diet and getting enough movement to keep their metabolism active.

Have you lost 6 kg or more over the past 12 months or have you lost your appetite? These are warning signs. Most people use less energy in old age but still need more of certain nutrients. Unintended weight loss can mean either that your body does not take up enough energy or that it uses too much because an undetected illness like chronic inflammation is consuming energy.

### What can you do?

Tell your doctor about these symptoms. In older people, internal illnesses often cause weight loss without fever or pain. Illnesses like diabetes and inflammation of the mucous membrane of the stomach are now easily treated. Without treatment they can lead to lack of appetite, loss of strength and other damage. If you have no strength you cannot move around, carry shopping or catch yourself if you fall. Talk to your doctor about ways to build up your muscles again with osteoporosis exercises, training on workout machines or during rehabilitation. Luckily, muscle training is possible throughout your life.

### Also worth considering:

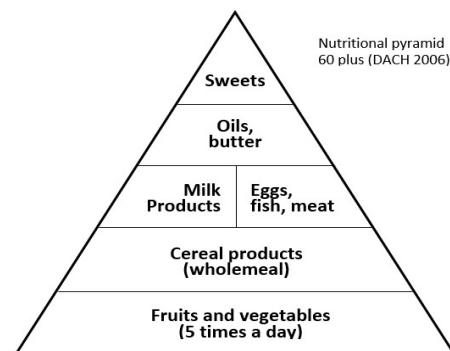
By the way, vitamin pills are high-dose medicines and should be taken only after talking to a doctor. They cannot replace a balanced diet.

### What can you do?

Make sure you eat a balanced diet of fresh ingredients. Every day you should eat one portion of:

- fruit and vegetables (5 times per day, 1 portion = 1 handful)
- fish, meat, eggs, beans or soya products (once per day)
- whole milk or skimmed milk products (2-3 times per day)
- wholemeal grain products (bread, pasta, rice) or potatoes (1-3 times per day)
- high quality fats such as olive oil or rapeseed oil (2-3 desert spoonfuls per day).

Caution: Feelings of thirst occur too late in old age. Please drink about 1.6 litres of fluid during the course of the day. This can be in the form of tap-water or bottled water, herb or fruit teas or fruit juices mixed with water. An adequate fluid supply is important for your blood flow, your body's metabolism, the health of your kidneys and for your concentration.



## 8 Fear of falling, uncertainty when walking

You have reported that you are afraid of falling or unsteady in critical situations calling for body control and balance. Can you stand for about 10 seconds with one foot directly behind the other (toe to heel)?

### What can you do?

First of all you should consult your doctor to rule out psychological illnesses such as anxiety as these need special treatment.

If a particular illness is responsible, such as a neurological illness, these symptoms can be a sign of accelerated degradation of the body's reserves. Do not accept these signs as your fate. We now know that the physical deterioration process in old age can vary greatly and can be slowed down by targeted activities.

Independent living aids cannot replace exercise or a doctor's treatment but they can give you more security, e.g. a walking aid for going shopping. Doctors, occupational therapists and independent living shops can advise you.

Effective, health-oriented training should include exercises to improve attention, coordination and balance as well as strength and mobility. The goal is to maintain your mobility and flexibility, prevent dangerous falls and for you to have fun in the process.

### Also worth considering:

Find out about courses for elderly people at your local sports club or gym. Courses are often available on fall prevention, gymnastics 60+ or 70+ and balance training.

Exercises done sitting down are less suitable as they do not improve balance. On the other hand, a lot of the games you know from your childhood are good for balance and coordination. Hopscotch, ball games and diabolo juggling are all good examples. Perhaps you can get children in your area to join in.

### What can you do?

Scientific studies have shown that Tai Chi (a Chinese movement exercise involving slowly and smoothly shifting your weight) is especially good for preventing falls. The advantage: this type of training is also good for very old people with little endurance.

Your town's traffic police may offer mobility help such as advice and practice in relation to traffic and using public transport.



## 9 Chair Rise Test

You were not able to stand up from a chair and sit down again rapidly five times in succession without using your arms. This is a sign that your muscles are becoming weaker which can lead to pain, falls and ultimately to being bedridden. Balance needs strength and coordination as well. Pain and worn-out joints may also make movements more difficult for you.

### What can you do?

Talk to your doctor. Find out whether other medical problems or illnesses such as an unexplained disturbance of walking are also involved. This may call for detailed medical diagnostic procedures and rehabilitation, available in some day or residential clinics for elderly people.

Targeted training can build up muscles again well into old age. Muscle training improves posture, relieves pain and prevents falls. Having stronger muscles also makes everyday tasks like shopping easier. Muscles often get shorter if they are rarely used which limits their flexibility. Gentle stretching exercises before muscle training are helpful.

You can learn simple exercises to increase your strength at an exercise course or from a physiotherapist and then do them every day at home. Some helpful exercises can be done with an elastic exercise band (available with instructions from independent living shops and sports shops).

### Also worth considering:

There are many different training techniques to slow down loss of muscle in old age. You can do

- strength training in or out of water (exercises in water are good for people with joint problems)
- strength training for older people using modern gym equipment
- gymnastic exercises with elastic exercise bands or rods (e.g. Flexi-Bar®).
- special exercises for people with osteoporosis or artificial joints.

Muscle uses more energy than fat tissue so power training also stimulates metabolism and circulation.

### What can you do?

Make sure you eat a balanced diet with enough protein and minerals in the form of natural foods to build up muscle and bone. Turn to page 18 for more information about diet.



## 10 Cardiovascular disease

You have cardiovascular disease. Such illnesses primarily affect circulation, endurance and physical capability but they can be linked with a risk of falling because of lack of movement or drug side effects. Have you ever fallen because you fainted? Then you should tell your doctor about it so that he or she can find out whether you tend to have circulatory problems (syncope) causing sudden short losses of consciousness. You should have your blood pressure checked. It may also need stabilising with drugs. You may need regular checks of body weight, general health, blood pressure and blood count.

### What can you do?

Ask your doctor to help and explain the treatment to you. Be sure to take any medicines exactly as they were prescribed for you. The effectiveness of blood-thinners (anticoagulants) such as warfarin needs to be checked regularly and the results should always be entered on your medication chart. This can stop them from causing other serious illnesses such as heart attacks, strokes, bleeding in the brain or kidney damage, risks that apply especially to people with diabetes. You should always talk to your doctor before taking other medicines, whether recommended by another doctor or sold over-the-counter, to avoid unwanted side effects and interactions. Have a look at N (Tablets and multiple medication) as well.

**Caution:** If you suddenly experience breathing problems, chest pain or tightness, increasing swelling of the legs or unexplained weight gain, please see a doctor as soon as possible.

### Also worth considering:

Keep moving! Bodily movement is now an important part of the treatment of cardiovascular disease, whether you have a weak heart or blood pressure that is too high or too low.

### What can you do?

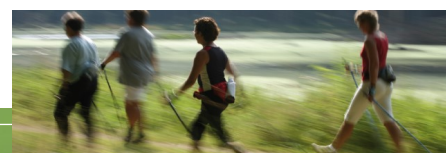
Your heart moves every day. Do the same! People with heart problems can exercise in organised cardio sport groups under the supervision of doctors.

**Important:** A specialist should first assess your exercise capacity by carrying out special tests.

- Controlled exercise to build up endurance:
- swimming
- Nordic walking or
- cardiovascular training programme.

Ask your local sports club.

Make sure you drink enough water, diluted fruit juice or tea (as recommended by the doctor, about 1.6 litres per day) so that your blood can flow freely. Ask a doctor or dietician whether a special diet could also help you. Turn to page 18 for more information about diet.





## 11 Slowdown, adapting gait [Fatigability]

It is no tragedy if you have slowed down a bit recently. But walking more slowly and a decrease in the amount you can do may be signs that the physical deterioration process has accelerated and this can mean an increased risk of falling.

### What can you do?

Consult your doctor. First of all, find out whether you have concealed illnesses or inflammation that could be responsible. If you have, they may need treatment to prevent serious consequences. Your wellbeing and independence have priority.

There is often no single cause of increasing fragility in old age. Usually there are many small problems that make each other worse. If this applies to you it may be useful to discuss with the doctor whether residential rehabilitation could be helpful for you.

Geriatric clinics or specialist departments can help to diagnose and treat problems of this kind touching on many different aspects of life. They will be able to clarify the physical, illness related and external causes of your increasing difficulty with everyday life and provide treatment for them. The main aim here is rehabilitation so that you can manage everyday tasks again and regain your independence.

### Also worth considering:

Don't just accept this new situation. We now know that the extent and speed of physical deterioration in old age are in no way a matter of fate, nor is this process the same in every case. It is subject to many different influences. Precautionary measures can make it possible to slow down physical degradation and compensate for personal weaknesses. In particular, symptoms such as pain and movement limitation can be improved.

### What can you do?

Take professional advice. There may be a programme in your area in which small groups of elderly people receive advice from a geriatrician and experts on movement, nutrition and social care. Such groups discuss how elderly people can best manage their lives according to their own preferences.

Use these to give you new energy, new challenges and social contact.





## 12 Already fallen

If you have already had a fall – even without physical injuries – you should definitely tell your GP. That way you can work together to investigate the causes and take precautionary measures for the future. Some causes can be identified just by talking about the fall or having a physical examination. Your GP will know whether more detailed examination or treatment is necessary. Without taking advice, many elderly patients fall again. Read the emergency notes for dealing with falls on the inside back cover of this booklet.

### What can you do?

The answers to the following questions are important for your consultation with the doctor.

1. **Where** did you fall? Inside, outside, on the stairs?
2. **When** did you fall? During the day or at night, in the dark?
3. Were you **fully conscious**? If not, who might have seen you fall and could describe what happened?
4. **How** did you fall? Onto one hand, onto your side, or did you fall over backwards?
5. **What caused** you to fall or **what obstacle** did you fall over?
6. What happened **afterwards**? (Were you able to stand up again on your own?)
7. What **consequences** did your fall have? (Bruises, fear, even a stay in hospital?)
8. Have there been other **changes** that worry you or your family, such as problems with memory or orientation?

### Points to discuss with the doctor:

1. Are changes necessary for your safety? (They can reduce the risk of injury but cannot prevent more falls.)  
It may be worth considering a personal alarm (the alarm is worn around your neck or as a bracelet and can be used to call a rescue service in an emergency) or hip protector underwear (protective clothing to cushion a fall).
2. Can you take care of yourself at present? (Can you manage shopping etc.?)
3. What examinations and tests could be used to help explain the fall?
4. What measures can reduce your risk of falling in the long term?

### What can you do?

Don't lose heart, you're not alone!

- Please make sure you drink enough (see our TIPS in "Nutrition and bone stability").
- Please be sure to wear strong shoes appropriate to the season.
- At night wear non-slip socks. Make sure you have enough light at night or use a commode chair placed next to your bed.
- If you need walking aids, always use them (in the house as well). Ask someone to show you how to use them correctly.
- Do specific exercises to improve your balance.  
The enclosed leaflet suggests some easy ones.



## 13 The fall caused injuries or complications

You indicated that you have already fallen at least once. You were also unlucky enough to be injured. This should be taken seriously but is not a reason to panic. Don't hesitate to get professional help to prevent more falls and injuries.

### What can you do?

Please talk to your GP about the safety precautions you can take. Use the TIPS on the previous two pages to help you.

### Also worth considering:

1. Can you manage your everyday tasks in the long term or do you need help at home e.g.
  - someone to come shopping with you,
  - meals on wheels or
  - a mobile care service to help you shower or bath?
2. Does your home meet your needs?

Are there a lot of stairs to climb or does the bath lack hand-rails? You can get advice on barrier-free living and adapting your home, e.g. with hand-rails, and how to use all kinds of walking aids correctly.

Your local council may also have an advisor on daily living aids and special living arrangements for elderly people.

### What will happen in the long term?

There is often no single reason for repeated falls in old age. Instead many small health problems or sources of danger may combine and make each other worse. In a case like this it may also be useful to discuss options for residential rehabilitation with your doctor.

A geriatric clinic or specialist department can help to diagnose and treat problems of this kind touching on many different aspects of life. They will be able to clarify the physical, illness-related and external causes of your increasing difficulty with everyday life and provide treatment for them. The main aim here is rehabilitation so that you can manage everyday tasks again and regain your independence.

If the main causes of your fall are known, and have already been cleared away, you may find physiotherapy or balance-improving exercise groups useful to make you more stable and more mobile again. There are suggestions for suitable interventions in "Fear of falling, uncertainty when walking."

### And finally...

Don't stay on your own in this situation. Meet up with other people your age and contact an advisory service for older people and their family.



## For Health Care Professionals

### Background information and helpful notes on handling geriatric fall syndrome.

Do you work with elderly people as a doctor, carer or social worker or in a supervised voluntary capacity?

We are an interdisciplinary team at a centre for geriatrics and gerontology. We have written this booklet for three simple reasons that are probably all too familiar to you:

1. Falls in older people are important, both because of their frequency and because of their consequences.
2. Older people are important because they make up a growing proportion of the population and because they bring something special to our society.
3. Older people are all different and the reasons for their falls are just as varied as the people themselves.

We need to take action to prevent falls in old age and to improve the mobility and quality of life of older people. And we need to start doing this long before people are actually injured or become dependent on care.

Unfortunately, many obstacles are placed in our way. Organisational problems, lack of time and lack of knowledge are just a few. Demographic change is happening now. The very old population is growing rapidly. Practical considerations therefore limit the opportunities for personal examinations and consultations. Older people can take the TEST in this booklet by themselves to find out about their own mobility and their risk of falling. The booklet also gives effective health TIPS. Frail older people need special professional support. This booklet addresses them directly and suggests whom they should consult next.

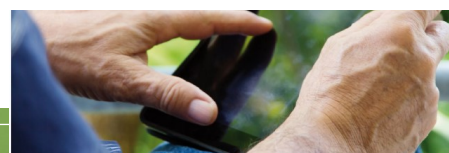
Our advice is based on a long-term study of ageing and on the practical experiences of those involved in the provision of community-based services. Our aim is to achieve a healthy, active ageing process in which older people have the knowledge and skills to be in control.

For more information see LUCAS (Longitudinal Urban Cohort Ageing Study) at [www.geriatrie-forschung.de](http://www.geriatrie-forschung.de).

If you work with elderly people please take the time to find out about promoting mobility and preventing falls. Support our work by handing out these booklets to as many older people as possible.

Doctors and medical professionals will find useful suggestions in the guidelines of the national and European geriatrics associations (e.g. [www.bgs.org.uk](http://www.bgs.org.uk) and [www.eugms.org](http://www.eugms.org)).

GPs can also find out about special training programmes on caring for geriatric patients. The latest textbooks on the subject, such as Brocklehurst's Textbook of Geriatric Medicine and Gerontology, include some valuable ideas and web sources, such as <http://www.frail-fragile.ca>, are also helpful.



Risk factors and illnesses from just about every medical area need to be taken into account when investigating the reasons for unsteady gait and falls. The risk factors also include interactions resulting from multimorbidity and multiple medication in older people. Special attention, complete diagnosis and geriatric treatment or rehabilitation may be indicated in high-risk patients. Are they less able or unable to care for themselves? Anyone who already has a fear of falling or unstable gait is at high risk of losing other abilities, using up their reserves and developing frailty syndrome if two or more of the following factors also apply:

- malnutrition (particularly protein deficiency) or underweight
- exhaustion or low resilience
- physical inactivity
- lack of strength, at worst sarcopenia

Interdisciplinary diagnosis and coordinated treatment can often lead to full recovery, or at least to functional stabilisation and postponement of long-term care.

**Remember: ageing with dignity is our shared responsibility.**

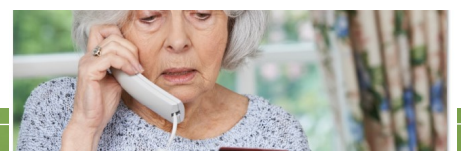


## Emergency

### What to do if you fall

If you fall it is important to:

1. Keep calm! To start with, stay lying down quietly.
2. Then carefully try to move your head, arms and legs.
3. If there are other people near you, call out to attract their attention.
4. Try to stand up slowly by rolling onto your side, bending your legs up and then lifting your body and stretching out your legs.
5. Someone should call a doctor if there is a possibility of
  - head injury / concussion
  - broken bones
  - disturbance of heart rhythm (fall with loss of consciousness) or heart attack (pain in chest)
  - stroke: warning signs are sudden narrowing of visual field, disturbance of vision or speech accompanied by a feeling of weakness or numbness in one half of the body or one corner of the mouth hanging down
  - or if you take strong blood thinning medications (anticoagulants) such as warfarin.
6. Even if you do not have any serious injuries and were able to stand up again without help, please make an appointment to see your GP very soon to find out what caused the fall.





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Social Affairs