

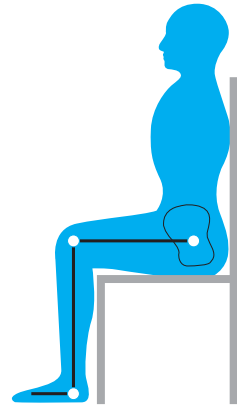
Are you sitting comfortably..?

Multiple
Sclerosis
Trust

MS



A self-help guide to
good posture in sitting



Who will find this booklet helpful?

This book has been written primarily for people with MS, but the information it contains may also be useful to the people who live with them and those who help care for them, including health professionals.

Simple changes in posture can have a beneficial impact on anyone who spends most of their day sitting down. The aim of this book is to provide some basic information on making sure that your posture is as good as possible.

The advice in this book, however, is general and may not help everyone. Changing your position in the way we suggest is only advisable if you are able to lay flat and straight on a bed. If you cannot do this, talk to a therapist or wheelchair specialist who will be able to advise you on how to maintain a good posture.

This book is not intended to replace a thorough assessment by a health professional and we strongly recommend you talk to a therapist or wheelchair specialist if there are specific concerns about your posture when sitting, your wheelchair or wheelchair cushion.

We recommend that any changes made as a result of the ideas in this book are done gradually. You should also stop and consult a therapist if any of the suggested positions make your symptoms worse.

We believe that it is vital that people with MS are given the knowledge about ways to keep themselves as healthy as possible. We hope that the information in this book will help you, your family and carers, to be more aware of the problems that poor posture can cause and give you some ideas of how to keep those to a minimum.



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Why is a good sitting position important?

For people who spend a large part of their day sitting in wheelchairs or easy chairs, remaining in one position for a long time can lead to a number of problems. These problems can happen so slowly that you hardly notice them but it is often difficult to undo some of the damage that poor posture can cause once it is done.

Poor posture in sitting can lead to:

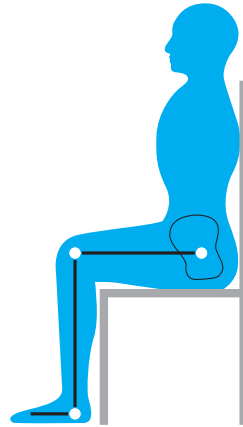
- **muscle shortening** - this can happen when muscles are held in one position for long periods; over time, loss of muscle length can become permanent and is then called a contracture
- **pressure ulcers (sores)** - weight or pressure concentrated in one area of the body can cause damage to the skin. This damage begins as a red area which can quickly lead to a pressure ulcer (sore)
- **pain** - caused by tension in the joints, muscles and ligaments
- **Increased spasticity or spasms** - excessive tightness in the muscles or sudden uncontrolled movements of the legs or body
- **increased ataxia** - shaking, uncoordinated movements which can be made worse if you are not feeling well balanced or supported
- **swallowing, talking and breathing difficulties** - if your chest is slumped and unable to expand
- **loss of balance** - you may find everyday tasks more difficult to do if you feel unsupported or unbalanced in your chair
- **problems keeping your head upright** – if your back is very curved in the chair it may be difficult to lift your head up fully

What is 'good' posture?

We usually think of 'good' posture as 'back straight, shoulders back and tummy in'. In many respects this posture is 'good', but posture is not necessarily about sitting or standing as straight as possible. Normally the body adopts many different postures in order to do different tasks.

Perhaps it is better to think of 'good' posture as a position in which you:

- feel safe and well balanced
- are able to do everyday tasks easily
- are doing the least amount of damage to your body



This posture is 'good' but bodies normally adopt many different postures every day. Moving into different positions during the day helps the body to remain flexible.

What is 'bad' posture?

Posture only becomes 'bad' when it causes harm to your body or stops you doing everyday things. This may be happening if you:

- hold one position for a long time
- feel unbalanced and have to use effort to stay upright

People change position regularly. If you look at the way other people sit, you will see many of them in apparently 'bad' postures. However, they will change their position regularly when it becomes uncomfortable and before any damage is done.

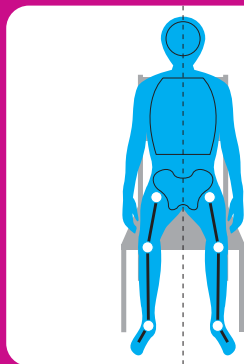
What is your posture like in sitting?

Look at yourself in a long mirror or get someone to take a photo of you in your usual sitting position - from the side as well as from the front.

When looking from the front, draw an imaginary line straight through the middle of the chair.

- Does your body look the same on each side of the line? Are you leaning on one arm to stop yourself falling to one side? If one side of your body is weaker, you may find that you are leaning.
- Are your knees knocking together and falling to one side?
- Is one shoulder higher than the other? If so you may be sitting with a curve in your spine.

If the two sides of your body look very different the advice in this book may help you avoid developing problems in the future.



If you draw a line through your middle do you look the same on both sides?

When you look at your position from the side:

- Are you slumped forwards in the chair?
- Are your knees hanging down lower than your hips?

Some people have sat in a certain way for many years and are very comfortable, have no problems and can do everything they want to from that position. This isn't necessarily wrong, but even so, you may still benefit from changing your posture or position at some point during the day.

How bad posture causes damage?



Although the person in the picture above looks fairly comfortable, sitting in this position for a long time may cause the following problems:

- The person is leaning to the left and is therefore taking more weight through their left buttock. This could quickly lead to skin damage on that side and even a pressure sore.
- The spine is curved and the rib cage is squashed down on the right side as the person tries to stay upright. This could lead to back pain or breathing problems.
- The knees are pressed together and have fallen to the left. Over time this may cause the muscles between the legs to become tight making the legs difficult to separate.
- Increased discomfort or tension in the body could make spasms or spasticity worse.
- The person is leaning on their left elbow in order to stop themselves falling to the left. This could lead to a pressure area developing on their elbow and also prevents them from using their left arm for everyday activities.

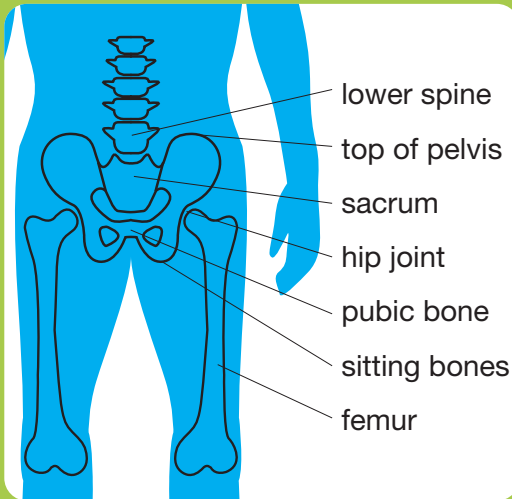
Taking care of your skin

If you have reduced sensation or feeling in your bottom and legs, you have an increased chance of developing pressure ulcers. You may be unaware that your position is causing damage to your skin, muscles or joints. It is very important that you look carefully at your sitting position, making sure that your weight is distributed evenly through both sides, and that you try and change position regularly.

It is important to check your skin on a daily basis, especially the areas prone to more pressure. Report any changes in skin colour or texture to your GP, nurse or therapist immediately.

If you are sitting in a good position and developing red areas, it is very important that you contact your therapist or wheelchair clinic as you may need a different type of wheelchair cushion.

Understanding the role of the pelvis in achieving a stable posture.



The pelvis is the big, bowl-like structure that sits in the middle of the body. The top of the pelvis can be felt just below the waist.

The back of the pelvis joins onto a triangular bone (called the sacrum) that sits at the base of the spine. The spine and the pelvis join at the sacrum and therefore the position of the pelvis will change the position of the spine.

At the front, the pelvic bones join to form the pubic bone. The leg bones (femurs) join on to the pelvis at the hip joints and you sit on two bony prominences that are part of the pelvis (you can feel them if you slide your hand under your buttock when you are sitting).

Because the pelvis supports the spine, provides the 'sitting bones' and is joined to the thigh bones, it is like a keystone. This means that if the pelvis is in a good position, the rest of the body tends to follow.

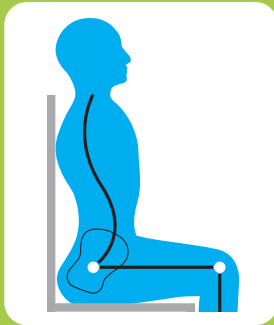
Movements of the pelvis

The pelvis can move in three different ways:

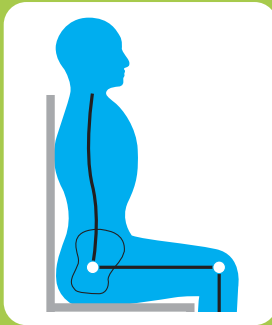
1. Tilting
2. Rotation
3. Elevation

As each movement is explained, notice how the position of the body changes when the pelvis is moved.

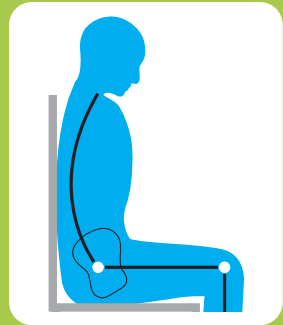
1. Tilting



The pelvis can tilt forwards making the small of your back more hollow



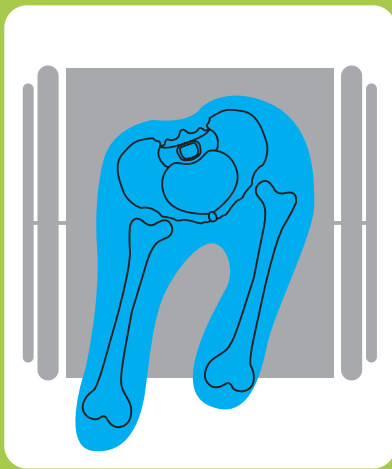
The pelvis can be in a neutral position when you are sitting up straight



The pelvis can tilt backwards causing the spine to adopt a C-shape

2. Rotation

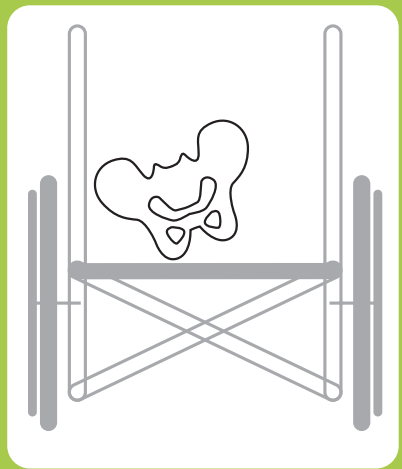
The pelvis can rotate so that one hip is further forwards than the other.



The pelvis of someone sitting in a wheelchair with the pelvis rotated so that the right hip is further forwards than the left hip. This would make the right knee further forward than the left knee.

3. Elevation

One side of the pelvis can lift up so it is higher than the other. In this position weight is usually resting more on one of the sitting bones.



Spine curves sideways to compensate. Left side of the pelvis is higher than the right. Extra weight on the right sitting bone.

Problems with posture in sitting are often caused because the pelvis has fallen out of the neutral position. Having the pelvis in the wrong position can then lead to problems in the legs and also the spine which in turn will affect the position of the head.

People with MS commonly sit with their pelvis tilted backwards and with their spine in a C-shape. This may cause back pain or neck pain as often the curve in the neck has to be increased so that the person can look forwards.

Use **P.E.A.K.** as a quick reminder of how to check your position each day:

P - pelvis in a neutral position

E - equal weight on both buttocks

A - 90° angles at hips, knees and ankles

K - knees facing forwards

The following pages will go through the steps you need to follow to improve your sitting posture.

Step 1

PELVIS - get the pelvis into a neutral position

This is probably the most important rule because the position of the pelvis affects every other part of your body.

Try and get your bottom as far back in the chair as you can comfortably.

Some people find having their bottom too far back makes them feel uncomfortable and sitting up too straight can make them feel unbalanced. If that applies to you, talk to your therapist or wheelchair

specialist as you may need a chair that gives you more support.

To find out if your pelvis is in the correct position, put your thumbs on the top bony ledges just below your waist.

They should be:

- directly under your shoulders
- at the same height as each other
- in line with the backrest of the chair

Using a hoist

Being hoisted into a chair can make getting into a good position difficult but it is worth spending a few minutes getting this right. Talk to your carers and ask them to take a few extra minutes to position you in the way we have suggested in this book. It is especially important for your carers to check the position of your pelvis. Sitting in a better position will allow you to do more for yourself and make your body easier to move. Someone who is left in a comfortable position may have fewer spasms so they don't need repositioning quite so often. A few minutes extra at the start of the day can make a great deal of difference.

Step 2

EQUAL WEIGHT - get the weight equal on both sides

Sitting with the weight more on one side can lead to a curved spine and increased risk of pressure areas, pain or spasms. Make sure the weight is the same on both buttocks.



X Bad posture

Too much weight on the right buttock. Person falling to the right and using right arm to



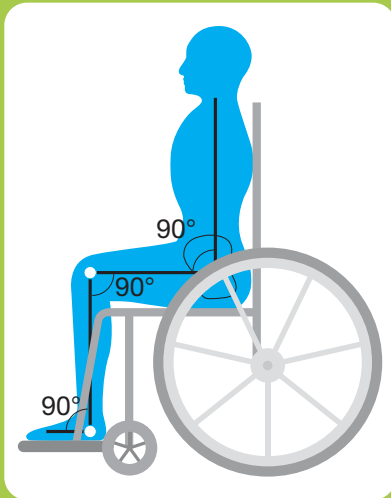
✓ Good posture

Weight is now evenly distributed on both sides. The arms are now free.

Step 3

ANGLES 90° at hips, knees and ankles

Keeping the hips, knees and ankles at 90° if possible helps to distribute the weight properly along the thighs and may help prevent pressure damage developing. It will also help to keep the pelvis in a neutral position and may stop the bottom sliding forwards in the chair.



✓ Good posture

If your legs will not stay comfortably in this position talk to your wheelchair specialist who may be able to alter your footplates.

Look at your posture from the side in a mirror:

- your knees should be level with your hips
- your feet should be well supported on the footplates

Step 4

KNEES facing forwards and in line with each other

Knees often have a tendency to knock together in the sitting position and sometimes fall to one side.

Sitting with the knee caps facing forwards and with the legs slightly apart can help to keep the muscles between the thighs stretched. It also helps to make sure that the weight goes through the sitting bones and not the base of the spine, an area which can be prone to developing pressure damage.



X Bad posture

Knees pressing together can cause tightness in the the muscles between the legs or hip pain. It can also make you feel unbalanced in the chair.



✓ Good posture

A rolled-up towel or small cushion can be used to keep knees slightly apart. A small, folded towel between the chair side and leg can stop the knee falling out to the side or pressing on the arm-rest.

Some other useful tips:

Changing position through the day

Positioning is not a once a day job. It is something that needs checking regularly to either put your joints into a new position or to reposition your limbs or trunk if they have moved out of the correct position.

People adopt a variety of positions to do everyday things and changing your position may help you to do other tasks more easily. A normal shoulder joint moves thousands of times in one day. However, if you are sitting for much of the day, this is possibly not the case and stiffness and sometimes pain can become a problem.

If you can move your arms, every hour try taking them up in the air, out to the side and circling them to help to keep them flexible. If you cannot move your arms, ask someone to put them in different positions at different times during the day. For instance, lying your arms out to the side on pillows with the elbows straight will give them a good stretch and help to keep them flexible. If your fingers tend to curl up, place them out straight for a while on a cushion.

The same thing applies if you can move your upper body; leaning forwards, backwards, side to side and twisting to look over each shoulder a few times every day may help to keep your upper body as strong and flexible as possible and relieve pressure on your bottom and stress in your spine.

You could achieve this by putting a pillow on a table in front of you and stretching your upper body and arms over this. This will give your back and shoulder joints a stretch and could be a comfortable position in which to rest.

It is important that you lean forwards by bending from the hips and not the spine. If you find your feet fall backwards in this position, supporting them on a couple of books may help.



Try a change of position. A rolled-up towel under the armpit can help to keep the shoulder from getting stiff if you cannot move your arm. If possible, move the arms into different positions during the day.

Some other useful tips:

Positions for eating

Many people who sit in wheelchairs can swallow normally but find eating difficult because they cannot sit forward over their food in the normal way. As a result, they often drop food down their front or find that their arms tire quickly. If this applies to you, try placing a pillow or cushion behind you or in front of you to lean against when eating to bring you into a more normal eating position over your food.

If you have weakness of the muscles around the mouth, seek advice from a speech and language therapist concerning the best sitting position for safe swallowing.



✓ Good posture for eating

Footplates

Many people find the footplates of their wheelchair get in the way. However, legs are heavy and feet should be supported as dangling legs and feet can easily catch and be damaged. The weight of hanging legs can also cause your bottom to slide forwards off the chair and can set up shearing forces in the skin that can quickly lead to deep pressure damage or cause spasms, pain or discomfort.

If your feet fall forwards or sideways off the footplates, it is usually a sign that you are not seated correctly. Following the advice in this book may help with this.



X Bad posture



✓ Good posture

Some other useful tips:

If your feet tend to fall backwards off the footplates, it is usually because your hamstrings are too tight. Hamstrings are muscles at the back of the thigh that help to bend the knee. If this happens, your footplates may need to be set further back than normal. Seek advice from a therapist or wheelchair specialist. Do not strap your feet to the ordinary footplates as in this position the tight hamstring muscles will pull your bottom forwards off the chair.

Using the commode or toilet

Going to the toilet often needs concentration, which can be difficult if you feel unsafe or unbalanced.

When using the commode or toilet try:

- having your feet supported or lifted up slightly higher than normal on a low foot stool
- putting a cushion in your back so you are leaning forwards slightly
- having a small table in front of you to lean on

Problems with your head falling forwards

If you can get your bottom to the back of a chair, a small, rolled-up hand towel could help to support your lower back and help you sit up straighter. Place the towel just below your waist. Be careful not to place it too high or too low as this could push you too far forwards in the chair which could be unsafe.

If this does not work, talk to your wheelchair specialist about more support for your head or you may need a tilt-in-space wheelchair.



X Bad posture

Curved back leading to rounded shoulders and difficulty holding head up to look forwards.



✓ Good posture

Small towel in lower back brings shoulders back and head in a more upright position.

In summary:

When adjusting your position remember **P.E.A.K.:**

- 1. PELVIS** – this is the 'keystone' to a good posture. If your pelvis is in a neutral position it will be easier to position your spine and legs correctly
- 2. EQUAL** – try and get the weight going equally through both buttocks, this will help to stop you falling to one side
- 3. ANGLES** – keep the hips, knees and ankles at 90° if possible and support feet on footplates
- 4. KNEES** – keep the knee caps facing forwards and slightly apart

Contact your therapist or wheelchair specialist if you have any concerns or questions.

Some of the problems that occur when people with MS sit for long periods can be avoided with simple changes to the way they sit and move. Although it is always better to start early, simple changes in posture can have a beneficial impact on anyone who spends most of their day sitting down. Making sure that your posture is as good as possible and changing your position regularly will also help to ensure that you are doing all that you can to look after yourself.

Maintaining a good position 24 hours a day

In this book we have talked about the importance of maintaining a good position when sitting. It is just as important to think about your posture when you are lying down, especially if you cannot move around in bed easily. Damage to your skin, joints and muscles is just as likely to occur when you are lying still in one position. In many respects the rules of good posture in bed are the same as those we have talked about for sitting. If the body is twisted, damage is more likely to occur. Think about the way you sleep or rest. If a line was drawn down the middle of your body would you look the same on both sides? If the answer is 'no' you may be creating stresses in your body that will eventually cause damage.

Equipment does exist to help you with positioning. This can be expensive, however, so always try using pillows or towels first for a few days. If you find these helpful, your therapist may also be able to supply you with some positioning equipment. You may find that some of your symptoms such as spasms or pain improve if you try different positions. A list of suppliers of positioning equipment can be found on the MS Trust website www.mstrust.org.uk/posture

The drawings on the following pages demonstrate some sleeping or resting positions, which you may find useful.



Positioning beanbags, or pillows between the knees and under the calves may help to keep legs in a good position when lying down.



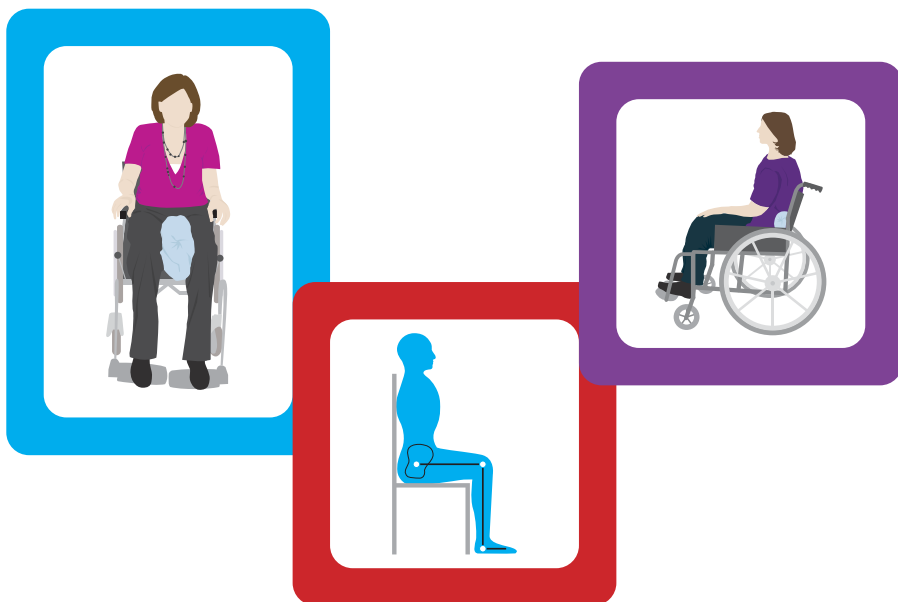
Using a T-roll - another way for keeping the legs in a good position when lying on your back.



Keeping the legs apart when lying on your side helps to keep the pelvis straight and may stop the muscles in the groin becoming too tight.

If you have specific concerns about your posture when sitting, your wheelchair or wheelchair cushions, we strongly recommend you talk to a therapist or wheelchair specialist.

The simple changes shown in this book can help anyone who spends most or their day sitting down to achieve as good a posture as possible and to keep themselves as healthy as possible.



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