

## How to Purchase the Right Armchair for your Needs

### Introduction

For people who are elderly or disabled, the provision of a suitable armchair can make a tremendous difference to their lives. People are often faced with the need to purchase a new armchair to meet their changing needs, but where do they go and how do they make the right selection?

It has long been known that sitting for prolonged periods of time may have a detrimental effect on a person's health for a number of reasons:

- if you are immobile then you may find it difficult to get out of the chair
- if you have poor blood circulation your legs may become swollen
- an unsupportive chair could lead to development of poor posture
- if you are very immobile you could develop pressure damage (also known as bed sores or pressure sores)

This article will describe some of the issues associated with sitting for long periods of time, both in terms of the impact on posture and on the skin. It will then provide practical advice on the different types of armchairs on the market and where to purchase them.

### Sitting posture

Sitting posture varies from one person to another, but it is dependent on our ability to maintain balance, our muscle strength and tone and an awareness of our body in space. Because our muscles fatigue easily, no single posture can be maintained for long periods of time, hence we all tend to slump in the chair after a while. Unfortunately, in the seated position, the position of our pelvis determines the position of the rest of our body. If the design of the sitting surface is poor, or if the chair is worn out, then it will encourage the pelvis to adopt an asymmetrical position. This in turn loads areas of the body which cannot withstand this, such as our sacrum, buttocks, spine and heels. Therefore poor posture is directly related to the development of pressure damage.

### How do we sit normally?

In normal sitting, the pelvis is positioned slightly forwards and the body weight is taken evenly through both buttocks and thighs. Our hips and knees are flexed to 90° and our feet should be positioned flat on the floor. The spine retains its normal 'S' shape and the head is positioned directly over the pelvis.



Changes to the position of the pelvis in a sitting position will affect the position of the spine, as the head always positions itself over the pelvis.

### What affects our ability to sit?

A number of factors will affect our ability to sit in an appropriate sitting posture. These include:

*How much time the person is expected to sit for* (even a healthy young person cannot sit in an upright position for more than 10 minutes!)

*The condition of the chair's seat surface* (if the seat is too hard it can cause pressure damage or if it is too worn it will be unsupportive)

*The size of the chair* (if the chair is too large or too small, the person will be forced to adopt a poor sitting posture)

*The person's physical and functional condition* (people who are unwell, frail or who have a long term disability will find it more difficult to maintain an upright posture)

*Gravity* (gravity is always trying to make us slide out of the chair and this sliding causes damage to the skin)

### What does sitting do to our skin and underlying tissues?

It's simple! When we sit, there is little or no blood flow to our buttocks and other supporting areas as only a small surface area of our body is expected to support a high proportion of our body weight. The weight of our upper body forces our buttocks against the chair seat, effectively squeezing the skin and tissues on the buttocks. This cuts off blood flow, starving the tissues of oxygen and nutrients. If this happens over an extended period of time, then the tissues will die, causing pressure damage.

### Should we sit for long periods of time if we are immobile or unwell?

If we are ill or immobile, it is preferable to limit the amount of time that we sit, due to restricted blood flow, as discussed above. In an ideal world it is advisable to alternate periods of time between sitting and lying on the bed. The rationale for this is that when we lie down, an increased amount of the body surface area is supported, which tends to allow the blood flow to continue (especially if the person has a special pressure relieving mattress). This allows the skin and underlying tissues in our buttocks to recover, thus keeping it healthy. However, it is not always practical or preferable to spend periods of time on the bed.



### Where should I buy my chair?

Make sure that you obtain advice in the first instance, from the right kind of shop – a mobility specialist. All too frequently we see people who have purchased chairs from a high street store, a television advert or off the internet. Invariably they will have received no assessment of their immediate and long term seating needs and will have spent several thousand pounds on purchasing a chair which may be too big and which has no pressure relieving properties in the seat cushion. As their needs change, their chair consequently becomes uncomfortable. This can be avoided by going to a mobility specialist. Most towns have mobility shops which specialise in equipment for people with restricted mobility, due to age or infirmity. These shops have experienced staff who will be able to advise on the right sort of chair, which will incorporate a pressure relieving cushion and which is the correct size for you. These chairs often cost less than those in a high street store!

### Do I need an assessment?

It is essential that you have an assessment in order to identify and prioritise your specific needs. If this doesn't happen then it is possible to end up spending money on the wrong products, only to have to spend again. Your requirements will take into account aspects such as sizing, required postural support, position, functional assistance and the pressure redistribution offered. A good assessment leads to a good outcome!

### How important is size?

As discussed previously, it is essential that your armchair is the right size for you! If not then your posture and therefore your function will be affected.

Seat height – you must be able to reach the floor with your feet as they support 19% of your weight and foot support is essential to sitting stability.

Seat depth – The seat must be the length of your thighs minus one inch. Incorrect seat depth will cause you to slump in the chair, increasing weight on your sacrum.

Seat width – the seat should only be an inch or so wider than your hips. This will give you good support and allow you to rest your arms on the armrests accordingly.

Backrest height – if you sit for long periods of time, the backrest must be nice and high so that it supports the whole of your back, head and neck.



## Is the cushion important?

Absolutely! The cushion will affect the ultimate comfort of the chair. Remember that if you buy your chair from the right type of supplier then you should be offered a choice of cushion to have within the chair. The design of a cushion is equally as important as its pressure-reducing qualities, as design can potentially enhance (or inhibit) your sitting posture. The cushion should provide stability and support in addition to providing comfort. If you purchase a chair from a reputable supplier, they should assess your needs and advise on the most appropriate cushion for you.

Cushions can be constructed from foam, fluid, air or any combination of these. Choice is based on how much at risk you are from pressure damage (don't forget to think of your long term needs!

Combustion Modified Foam - The most basic type of material used is foam, which meets the needs of users who are at low risk of developing pressure damage. Some foam cushions can be transformed by cutting the upper portion of the cushion into 'cubes' which respond to the shape and movement of the body. This allows the cushion to contour and maximize the surface area of support

Viscoelastic or 'memory' foam provides much more enhanced pressure relief as it moulds to the shape of the body, thereby promoting conformity, increasing comfort and reducing pressure and is suitable for people who are medium to high risk of developing pressure damage.

Foam and fluid - some cushions combine a foam base with a fluid topper. The base provides support and stability whilst the fluid topper provides pressure relief. These cushions are suitable for high to very high risk users.

Air Cushions - a number of cushions utilize air to provide pressure reduction. Some are composed of neoprene rubber cells and can be filled with air via a valve, whilst others contain air-filled pyramids. Pressure reduction and positioning is achieved as the body is immersed into these cushions and supported by the air surrounding the sacs.

Dynamic cushions – These are normally prescribed by healthcare professionals, for people at extreme risk of pressure damage or who have existing pressure damage. This type of cushion contains air cells which receive air via a pump; the cells then alternatively inflate and deflate during a set cycle period. Pressure is relieved in the areas of the skin over the deflated cell for a set period of time, whilst the inflated cells support the remaining body surface area.

## Types of Armchairs on the Market

It is best to consider types of armchairs according to need:

### *Conventional High Seat Armchairs*

These armchairs generally consist of a sturdy frame, often made from beechwood. They are designed to support a person in an upright posture and enable him or her to get in and out of the chair independently and more easily than a conventional three piece suite.

The backrest should be at a 10 – 12° angle and suitably high and supportive. Side wings are often preferential as people tend to doze for periods of time and this prevents their head from falling off the side of the backrest. The armrests should be largely padded, but not near to the front, as this allows the user to grasp the front of the wooden armrest frame well when transferring. Some armchairs have the option of filled in sides and in our experience this is preferable, as it stops drafts and keeps the person warmer. This may sound somewhat 'over the top', but many people who sit for long periods become cold, as the muscles are not used to generate heat; filled in sides can reduce this.

If you purchase from a mobility specialist then any chair like this should also be available with an integral pressure reducing cushion, depending on your requirements. Ideally the cushion should be separate to the chair base rather than upholstered as one unit, as this allows for the cushion to be replaced if necessary or for an alternative one to be used if required.

### *Recliner and Riser/Recliner Chairs*

These chairs are very useful for people who become uncomfortable sitting in one position for long periods of time and who are unable to independently reposition themselves within the chair. Recliner chairs allow the person, at the touch of a button, to alter their position within the chair from upright to recline (or at any point between the two), whilst at the same time elevating their legs. All of the recliner chairs made for the disability market should provide an option for integral pressure relief and if they do not should be avoided. It is important to point out that recliner chairs do tend to place people onto their sacrum and this can increase risk of pressure damage, hence the need for a pressure relieving cushion in many instances. Some of the newer recliner chairs tilt back slightly to maintain a more appropriate sitting posture.

Riser recliner chairs offer the user the opportunity to maintain independent transfers, if still safe to do so. Many people find it difficult to get out of a chair, but once upright are able to maintain some form of mobility. These chairs assist the person to stand in a slow and balanced manner and are particularly useful for people with neurological conditions. However it is essential to ensure that once



upright, you can maintain your balance and stand safely. Recliner and riser / recliner chairs are available with one, two or three motors. One motor could operate the rising and reclining aspect in one, but more motors mean that leg rest etc can be operated independently, which many people prefer. However, a word of caution, the more motors, the more complicated the handset!

#### *Tilt in Space Armchairs*

This type of chair tends to be for someone with specialist seating needs, for example, people with long term neurological conditions. A tilt in space armchair offers the ability to tilt the whole body back in the chair, whilst maintaining an optimum seated position and redistributing pressure. This type of armchair is designed for use by a person who has poor sitting stability, extreme difficulty in maintaining an upright position within the chair and postural changes. All of these types of chair known to us automatically combine pressure redistributing cushions, as the user of this type of chair will normally be at high risk of developing pressure damage, due to their posture and immobility. Tilt in space chairs also offer the opportunity to support sitting posture via the use of accessories such as trunk supports and headrests.

Tilt in space armchairs can be invaluable in circumstances where the user has marked postural changes such as a kyphosis (hunchback). Often, people with this type of spinal change find it extremely difficult to eat, as lifting their head up tends to hyperextend the cervical spine and constrict the oesophagus. By tilting the person first within the chair, the head can be helped to adopt a position that allows the oesophagus to remain unobstructed. It also allows them to maintain a better line of vision so that they can for example see the television more easily. Some tilt in space chairs offer a powered version that allows those users who are able to change the position of the chair in order to increase comfort.

#### **Conclusion**

There are many types of armchairs and cushions on the market and selecting the most appropriate one for your needs is not easy. However, remember that there is not a single armchair that will fulfil every person's needs in terms of size, support, pressure reduction, or comfort. It is important to obtain advice from a supplier who understands the requirements of people with sitting difficulties, in order that you buy the right chair for your long term requirements.