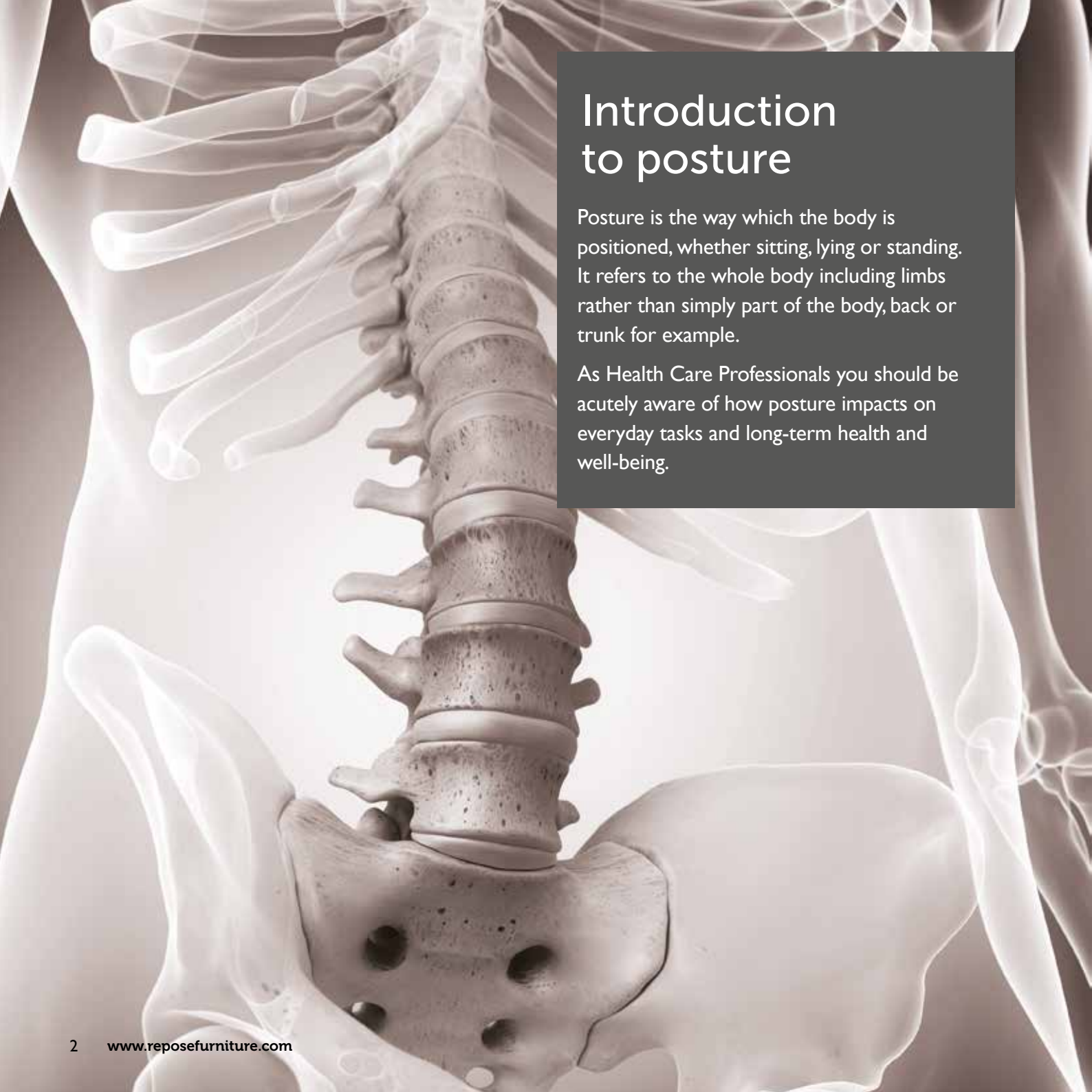
Repose

Specialist Seating Solutions
a prismhealthcare company

Posture Guide



Introduction to posture

Posture is the way which the body is positioned, whether sitting, lying or standing. It refers to the whole body including limbs rather than simply part of the body, back or trunk for example.

As Health Care Professionals you should be acutely aware of how posture impacts on everyday tasks and long-term health and well-being.

Within moving and handling training you are instructed on appropriate body positioning and the determination of the load and effort required.

When completing workstation assessments you consider the task, the environment and the person to determine how good posture can be maintained and risks reduced.

When assessing mobility you consider postural impacts on balance and gait, determining how risks of falls, for example, can be reduced by altering or correcting postural deficits.

However, posture in a seated position for a patient / client / service user who may have multiple comorbidities is often complex. Assessment therefore needs to be holistic, considering postural support in the context of comfort, pressure care, functional engagement and long-term well-being.

One of the main elements in any seating assessment is the review of our client's posture. We are often familiar with the 'do's and don'ts' when measuring for a chair but in my experience less educated about the evidence base or clinical reasoning surrounding these measurements.

This Repose Postural Guide looks to remedy this gap focusing on the issues that arise should the postural elements of a seating assessment be undervalued or misinformed as well as the benefits on holistic health and well-being when we get it right.

The guide provides a step by step analysis to support you, the clinician, in assessing and recommending seating appropriate to meet your client's often complex needs with advice covering postural support through to pressure care.

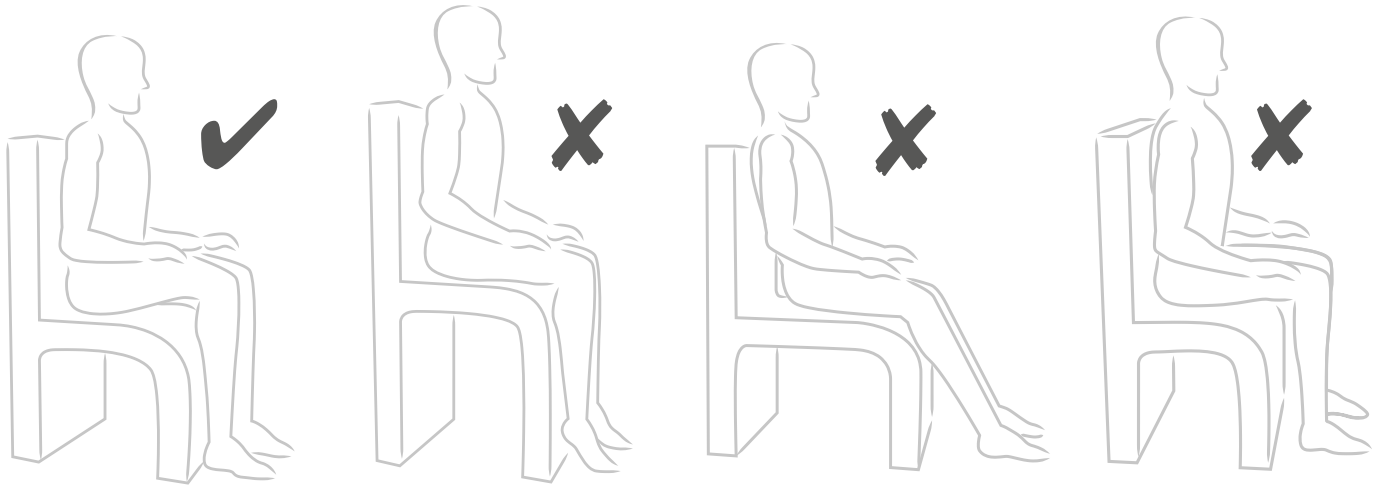
Written by clinicians, for clinicians, this guide alongside the included assessment template allows you to confidently engage in postural management and therefore support your client's health, well-being and engagement in meaningful activity.

Benefits of good seating

Without good seating your client's health can significantly decline. Supporting poor posture can impact on digestion, respiratory tract function, dietary intake, mobility, tissue viability and general well-being.

The benefits therefore if a seat is correctly assessed, prescribed and used are:

- Strain removed from joints and their supporting structures
- Digestive processes will be supported
- Dietary intake can be maximised
- Risks of pressure damage reduced
- Improved circulation
- Supported respiratory system by maximising diaphragmatic function
- Maximised potential of user to engage in meaningful activity
- Improved social integration
- Increased communication



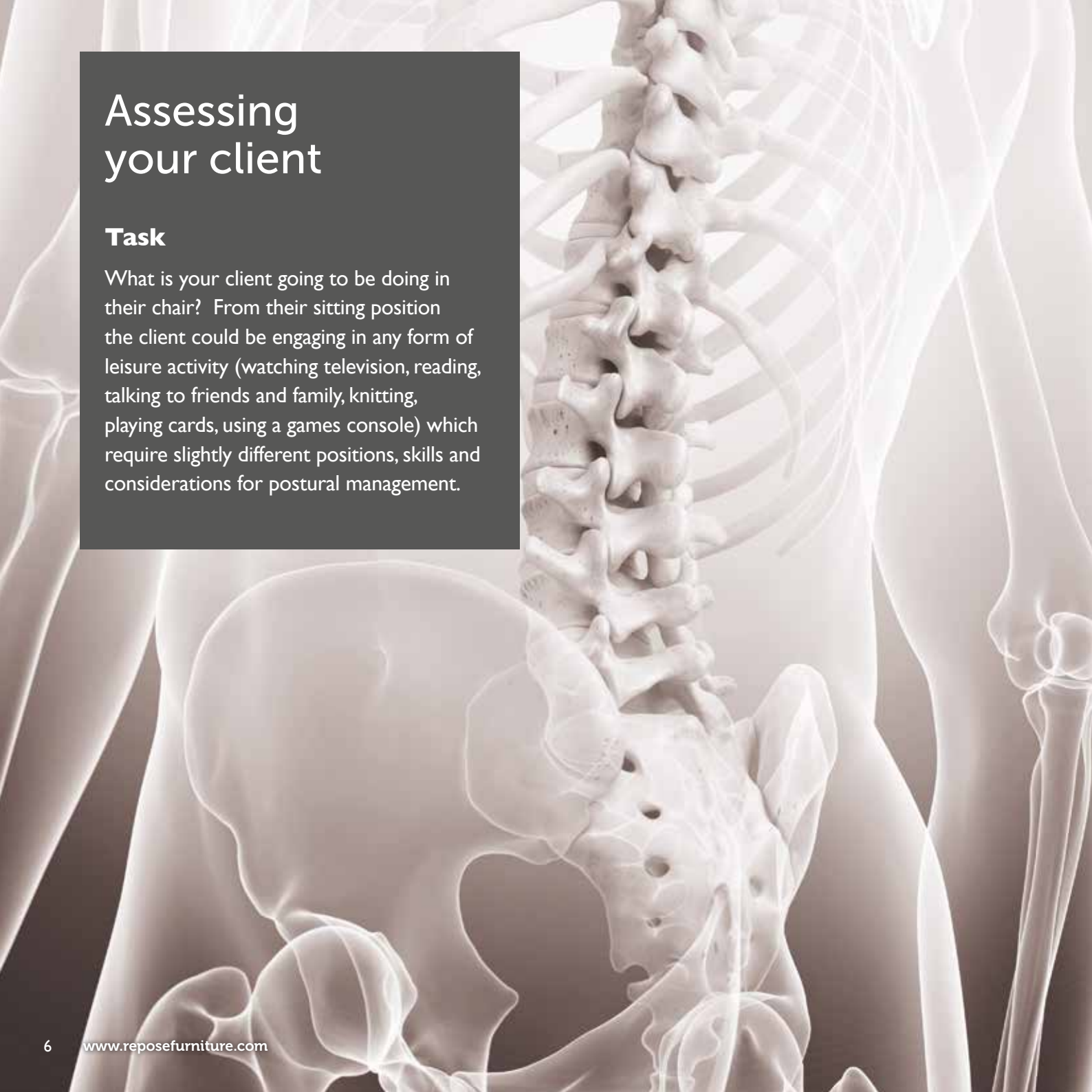
Good posture | Too high | Too low | Too wide

During the holistic assessment of appropriate seating it is critical to also consider the impact of provision on the carer or care team. Impacts of good seating can:

- Reduce carer strain
- Support safe moving and handling
- Promote normal roles and routine

> "Back pain accounts for 40% of sickness absence in the NHS and care sector with an overall cost of £10 billion for the UK economy"
>
> British Pain Society (March 2018)*

*Available at www.britishpainsociety.org/mediacentre/news/british-pain-society-press-release-chronic-pain-costs-the-uk-billions-but-research-funding-is-inadequate



Assessing your client

Task

What is your client going to be doing in their chair? From their sitting position the client could be engaging in any form of leisure activity (watching television, reading, talking to friends and family, knitting, playing cards, using a games console) which require slightly different positions, skills and considerations for postural management.

Environment

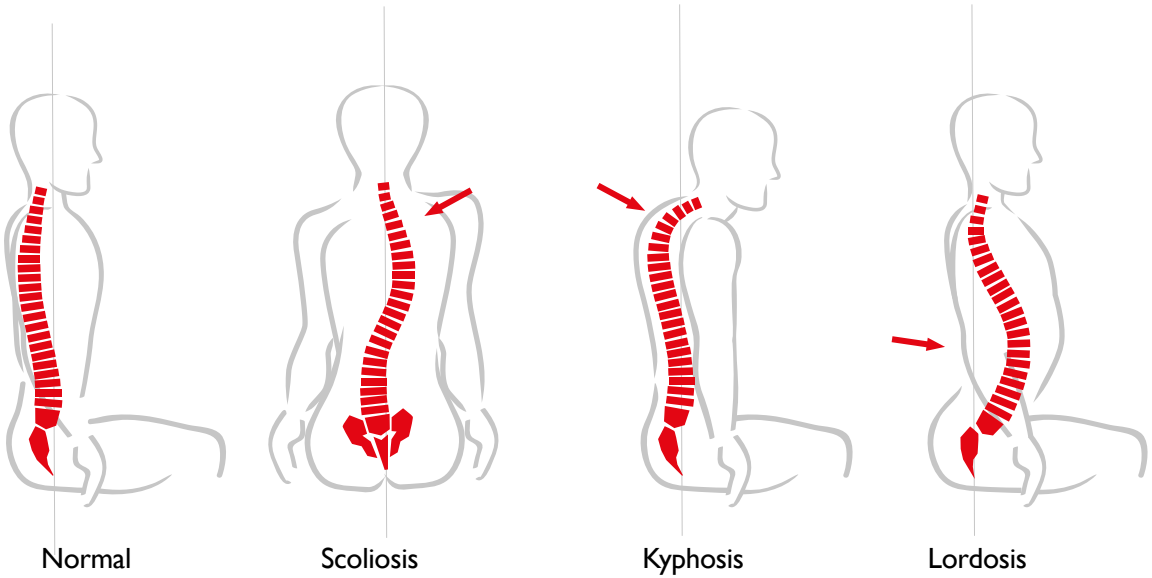
The environment itself can be disabling so it is critical to consider where the chair is going to be situated in the context of the task. Environmental considerations include:

- **Floor surface** – There are different considerations for carpeted and wooden flooring. Carpet increases resistance and therefore the chair is less likely to slide during client transfers, but may be more difficult for a carer to move it around, particularly if the client is in-situ. Movement of the chair should be easier on a wooden floor.
- **Door widths** – It is critical to understand the exact measurements of the chair if it is to be moved around the home.
- **Lighting** – The chair should be situated where lighting supports engagement in activity whether that be maximising task lighting or reducing glare.
- **Space** – The chair should be positioned so as to enable movement / mobility around the room and should not impede habitual walk ways. There should also be adequate space for the chair to recline or tilt as appropriate.
- **Social** – The chair should enable the user to engage in social activities that are meaningful to them, therefore reducing the risks of social isolation and promoting engagement.

Mobility levels

The client's ability to mobilise has an important impact on the recommendation. This is not simply about the ability to walk, but should also cover the client's ability to alter their position whilst seated.

- **Ambulant** – If the client is mobile it is critical that the chair supports a safe standing transfer so that their liberty is not deprived or independence restricted.
- **Non-ambulant** – The chair must support the client's positional changes and safe and comfortable transfers. For example, consider how sling application can be supported if the client is hoisted; consider whether the chair will impact on the use of the transfer aid as some mechanical and non-mechanical aids have difficulty getting into a safe transfer position with recliner chairs. Despite lacking the ability to mobilise can the client alter their position whilst seated? This will impact on the necessary pressure relieving requirements.
- **Social** – Will the chair enable the user to engage in social activities that are meaningful to them, therefore reducing risks of social isolation and promoting engagement?



Spinal deformities

A spinal deformity is any abnormality of the formation, alignment or shape of the vertebral column.

When considering the chairs ability to support posture it is important to remember that although there are universal examples of good general posture it is indeed different for everyone and should always be based on the ability of the individual's body to maintain the position of their frame.

It is therefore critical that when assessing seating for a client with spinal deformity you consider the impact on their normal posture and how the chair supports reduction of strain through joints, ligaments and tendons to maximise comfort.

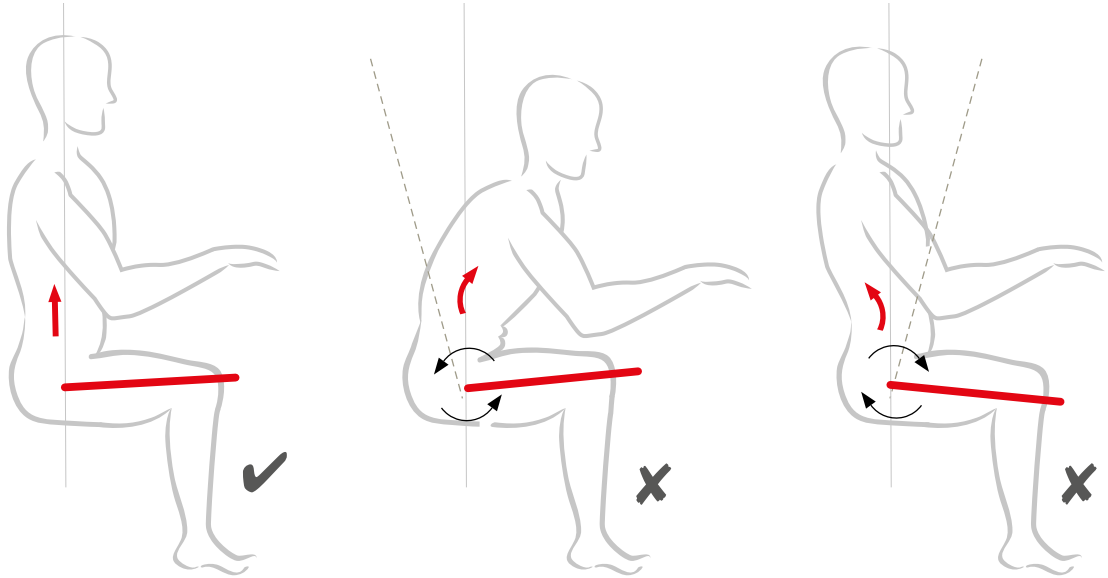
Due to the positional changes there will be a distinct impact on pressure areas as weight is likely to be distributed differently and the chair must compensate for this.

One of the most important first considerations is whether the spinal deformity is fixed or flexible / correctable. Determining this has a significant impact on seating provision because if it is correctable the chair and it's features could be used to facilitate good posture and minimise long-term deterioration of skin integrity and their functionality.

Pelvis

One of the critical elements to maintaining good sitting posture is supporting pelvic stability. The pelvic position is the building block on which the rest of the body is supported therefore if it's stable neutral position is not maintained everything relying on it will also be compromised.

Consider in the correct image the neutral position of the pelvis. It is neither in a position of full tilt, creating flexion, or hyperextension. This encourages the natural spinal position with the familiar lumbar, thoracic and cervical curves evident.



Neutral Spine Posture

In this position the pelvis is close to level and the lumbar spine has a slight inward (lordotic) curve.

The hip is in a neutral position.

Posterior Pelvic Tilt Posture

As the pelvis rotates backward the lumbar spine adopts a more flexed (kyphotic) position.

The hip is in a closed-chain extended position.

Anterior Spine Posture

As the pelvis rotates forward the lumbar spine adopts a more extended (hyper-lordotic) position.

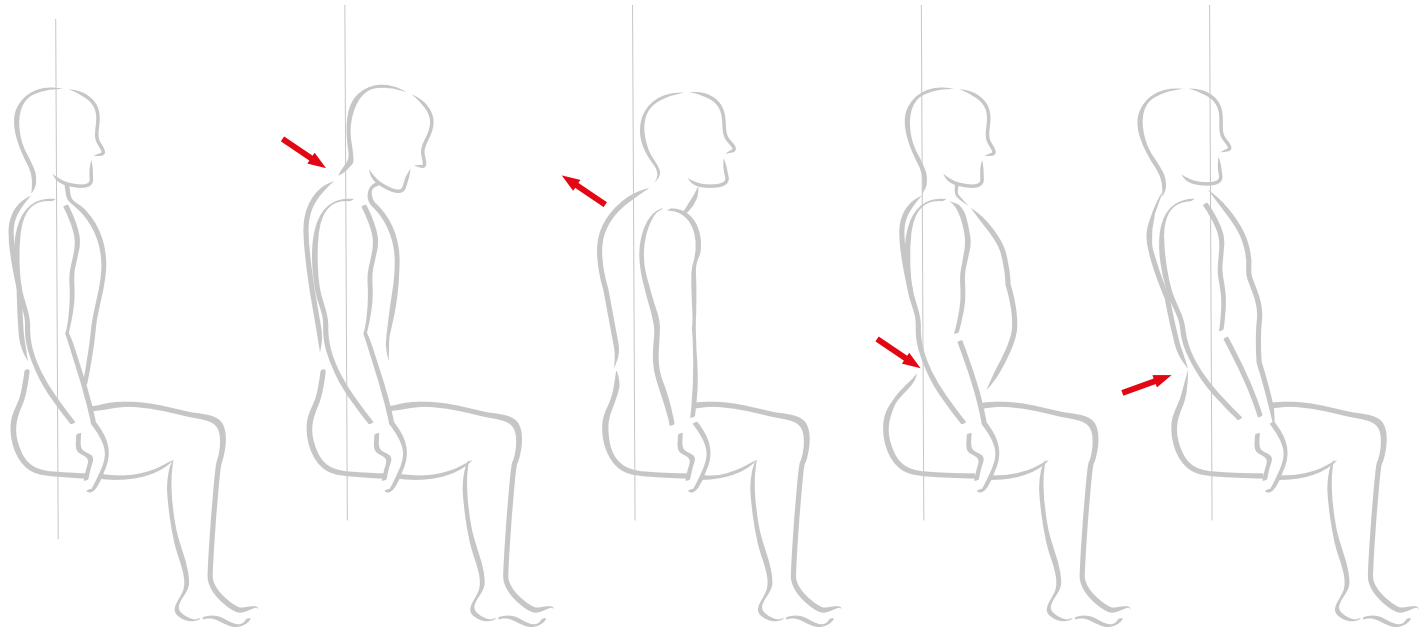
The hip is in a closed-chain flexed position.

Where the client is unable to maintain or initiate the correct pelvic position then postural management systems can be considered to provide this support.

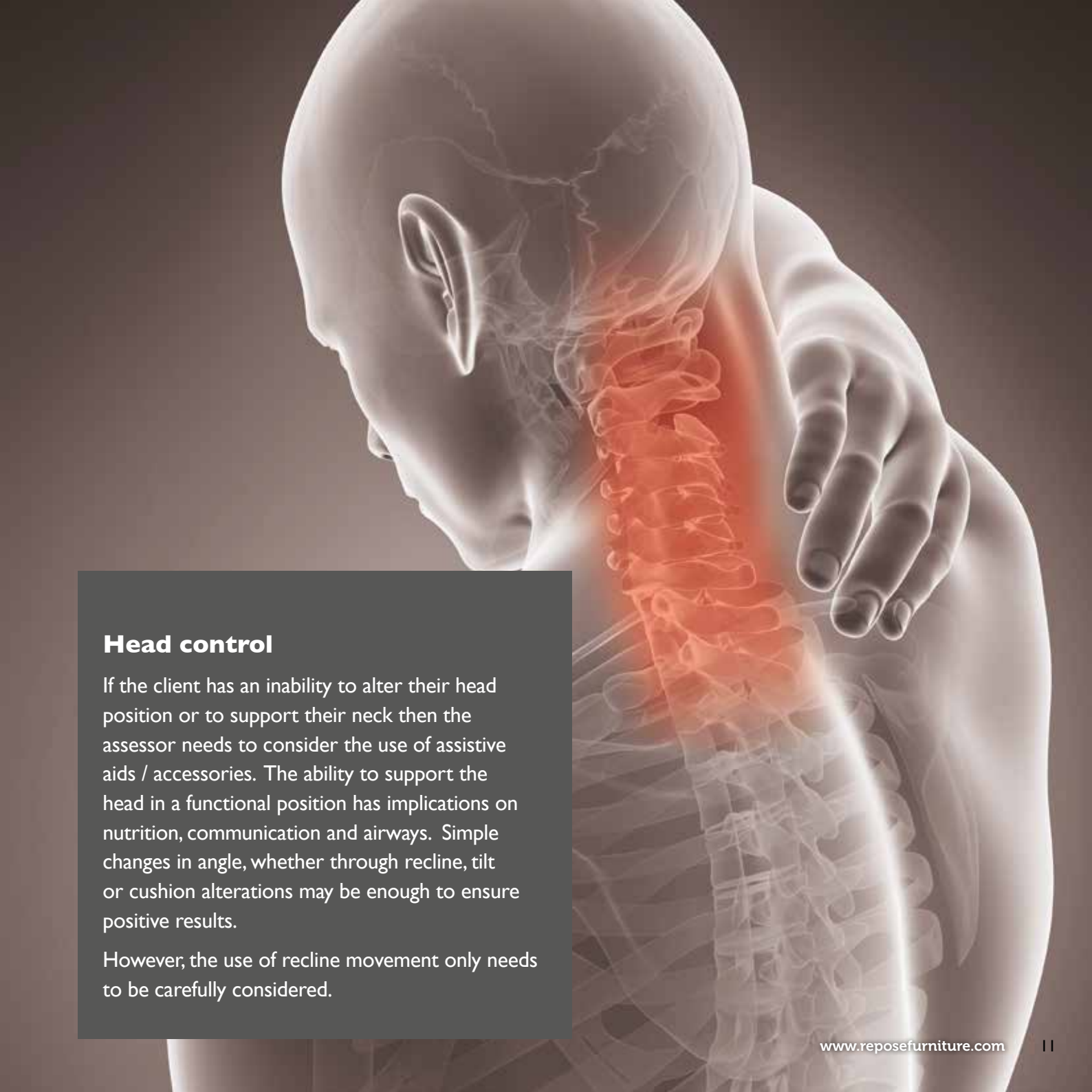
Trunk positioning

Once the pelvic position is supported correctly the assessor then also needs to consider the client's ability to maintain trunk control. This can be inhibited for a number of reasons including, but not exclusively, proprioceptive deficits which impact on the client's awareness of their midline, spinal deformity, muscular tone or exercise tolerance.

If the client is not able to maintain a trunk position that supports good posture then consider whether increased, in-built, lateral support is required or whether the client would benefit from the ability to proactively redistribute pressure and effort with mechanical support (e.g. tilt in space or high leg lift recline).



Good Posture | Forward Head | Thoracic Kyphosis | Anterior Pelvic Tilt | Sway Back



Head control

If the client has an inability to alter their head position or to support their neck then the assessor needs to consider the use of assistive aids / accessories. The ability to support the head in a functional position has implications on nutrition, communication and airways. Simple changes in angle, whether through recline, tilt or cushion alterations may be enough to ensure positive results.

However, the use of recline movement only needs to be carefully considered.

Why Tilt in Space?

There remains a long standing debate about reclining versus tilt-in-space and the provision of postural support as well as the other health and well-being benefits.

Both reclining and tilt systems can provide pressure relief, increase circulation, improve head, neck and trunk control, improve functional posture and positioning, support safe transfers by various means and minimise variations / fluctuations in the client's muscular control.

So why the debate?

As a reclining chair increases the angle of the backrest to seat it allows the body to move. This is a good thing. However, if the client is unable to apply pressure through the footplates to support repositioning of the bottom then repeated shear can cause significant skin damage over time. Without the ability to proactively adjust positioning it also means that the client can effectively slip down the seat, having an impact on posture when the backrest angle decreases. This also increases the risks of the client slipping fully out of the seat.

A tilt in space system allows the client to recline whilst maintaining all of the body's angles as it changes the orientation in space, allowing posture to be maintained and pressure to be redistributed.

Contractures

A contracture is a shortening and hardening of a muscle, tendon, ligament or other connective tissue which results in deformity and rigidity of joints.

As with spinal deformities the impact is likely to be alterations in pressure distribution and functional engagement. The chair must therefore support the client's abilities as well as ensuring long-term health and well-being.

When assessing a person with contractures for a chair you need to consider issues such as impact of tight hamstrings on the ability to leg lift and bicep tightness on armrest positioning, as examples.

Achieving good posture

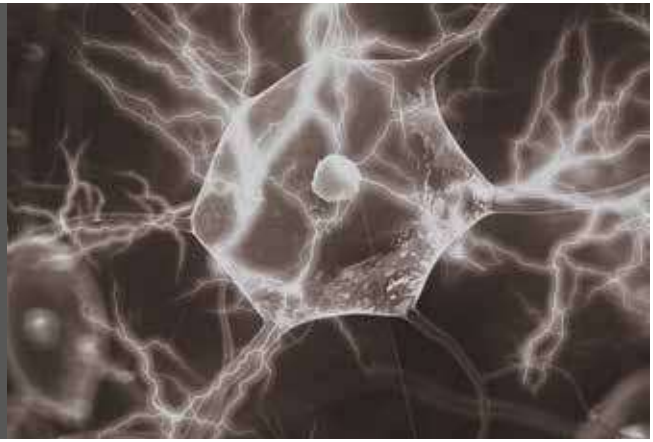
(Always ensure that all measurements are accurate)

Anterior pelvic tilt	Consider the use of tilt in space in conjunction with a reclined backrest to support a neutral pelvic position.
Posterior pelvic tilt	An angle and height adjusting footplate may be useful in allowing the client to apply appropriate and directed pressure through their feet (foot loading) to support a more neutral position. Seat depth is important in creating this neutral position. Tilt in space supports pressure redistribution and alleviates tension which will also help with pelvic positioning.
Pelvic rotation	Seat width is crucial to ensure that the client is supported sufficiently. Additional lateral postural supports may be required to help bring the pelvis into a more neutral position.
Wind-sweeping	Essentially this is the abduction / external rotation of one hip and adduction / internal rotation of the other. It is important to determine whether this is fixed or correctable. If fixed you need to ensure that the client is supported and skin integrity maintained. If correctable then the goal should be for the seat to support this correction. Both can be achieved using the angle of recline and leg rest angle adjustment in conjunction with cushions to support midline alignment.
Lordosis	Seat height and depth are critical to ensure appropriate foot loading, ensuring that anterior pelvic tilt is not created. Consider the use of a profile headrest with a waterfall back cushion for additional postural support and comfort.
Kyphosis	As with Lordosis the critical elements are accurate sizing, in particular depth and height, alongside use of a waterfall backrest.
Pelvic obliquity	This can often be caused by an unstable base so consider the seat cushion options. Ensure that the armrests are not too low or high so that the client can support themselves laterally which makes seat width critical. Consider a backrest such as - the comfort lateral back (page 18), but determine whether the obliquity is fixed or correctable as trying to correct the posture when fixed could cause unnecessary discomfort to the client.

Sensory processing

This refers to the client's ability to receive sensory stimuli and process them in a way which supports appropriate expression of said stimuli. For example, the client may not be able to tolerate the feeling of certain materials or sounds during movement of the chair.

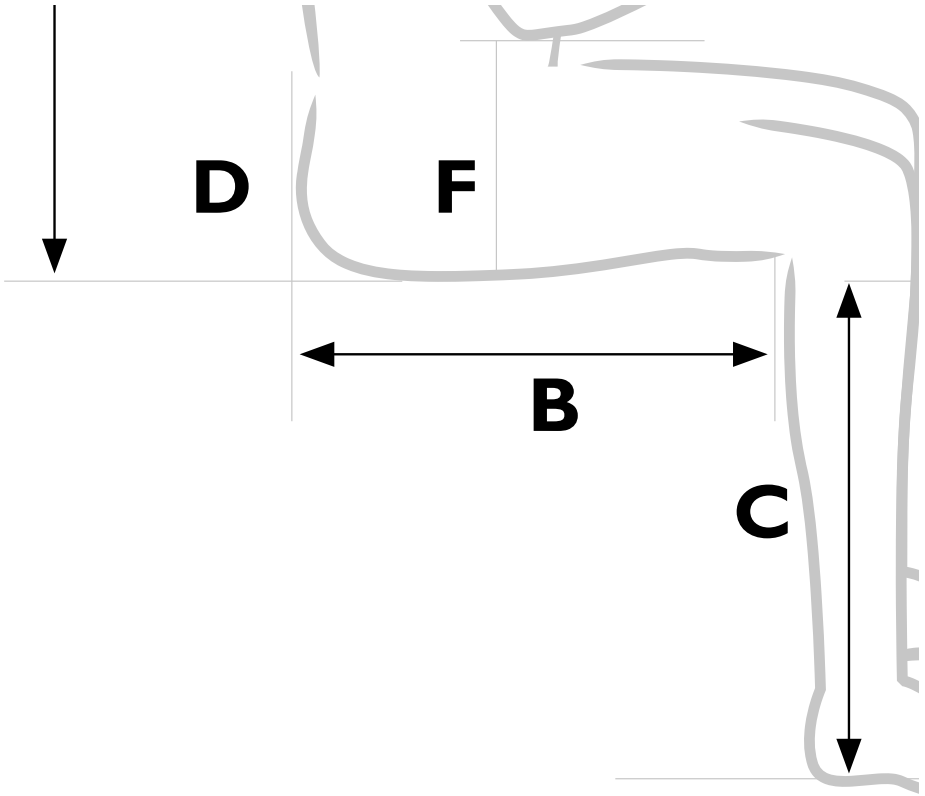
Consider material, control and motor options to minimise impact of negative sensory stimulation.



Required measurements

It is important that the measurements you take are consistent, accurate and clear to the seating provider. Be clear whether the measurements you are providing are that of the client or the chair you require, they are different.

Use inches or centimeters as is your preference, but again make that clear to the provider and if using a material measure make sure that the measurements are 'straight line' rather than being shaped around the client as this will give you a different result.



Check that the client is wearing their usual footwear during measurement. For example, if they normally wear slippers then assessing and measuring them whilst wearing heeled boots would make a big difference to the result and any recommendations.

Width (A)

Measure the width of the bottom in in a seated position so that you take into account any spread. An inch (2.5cm) should then be added to this measurement to indicate the appropriate seat width requirement. This is to ensure that the skin is not compromised by repeated friction during sitting or standing transfer.

Depth (B)

Ensure that the measurement is taken from the rear most point of the bottom to the Popliteal Fossa and that the client's bottom is as far back in the chair as possible. Typically the chair needs to be an inch less than this measurement to support good posture, but this depends on body shape. As a general rule there should be space here to place 2 fingers between the back of the knee and the chair.

Height (C)

Measure from the floor to the Popliteal Fossa. This measurement is critical as it supports the pelvic angle, as previously discussed. The thighs should be horizontal to the seat base and at no point should the knees be higher than the pelvis.

Lumbar support (D)

Firstly it is important to determine whether there is a spinal abnormality that is fixed or flexible.

If flexible or partly correctable you may be able to alter the posture using features of the chair's additional postural support systems. This will support better long-term posture and minimise deterioration in function and/or skin integrity.

In a normal spine a lumbar support would be measured from the seat crease behind the knee vertically to the mid-lumbar curve.

Backrest height (E)

This will depend on what the client's support requirements are. Be clear whether the measurement is for the back (base of spine to top of the shoulders) or includes the head height (base of spine to top of head). If using a waterfall back cushion to support posture for example, it is important that the provider knows what the measurements incorporate so that they can differentiate between back and head / neck support.

Armrest height (F & G)

(F) represents the armrest height from the seat base (cushion) to the forearm when in a 90 degree flexed position from the humerus.

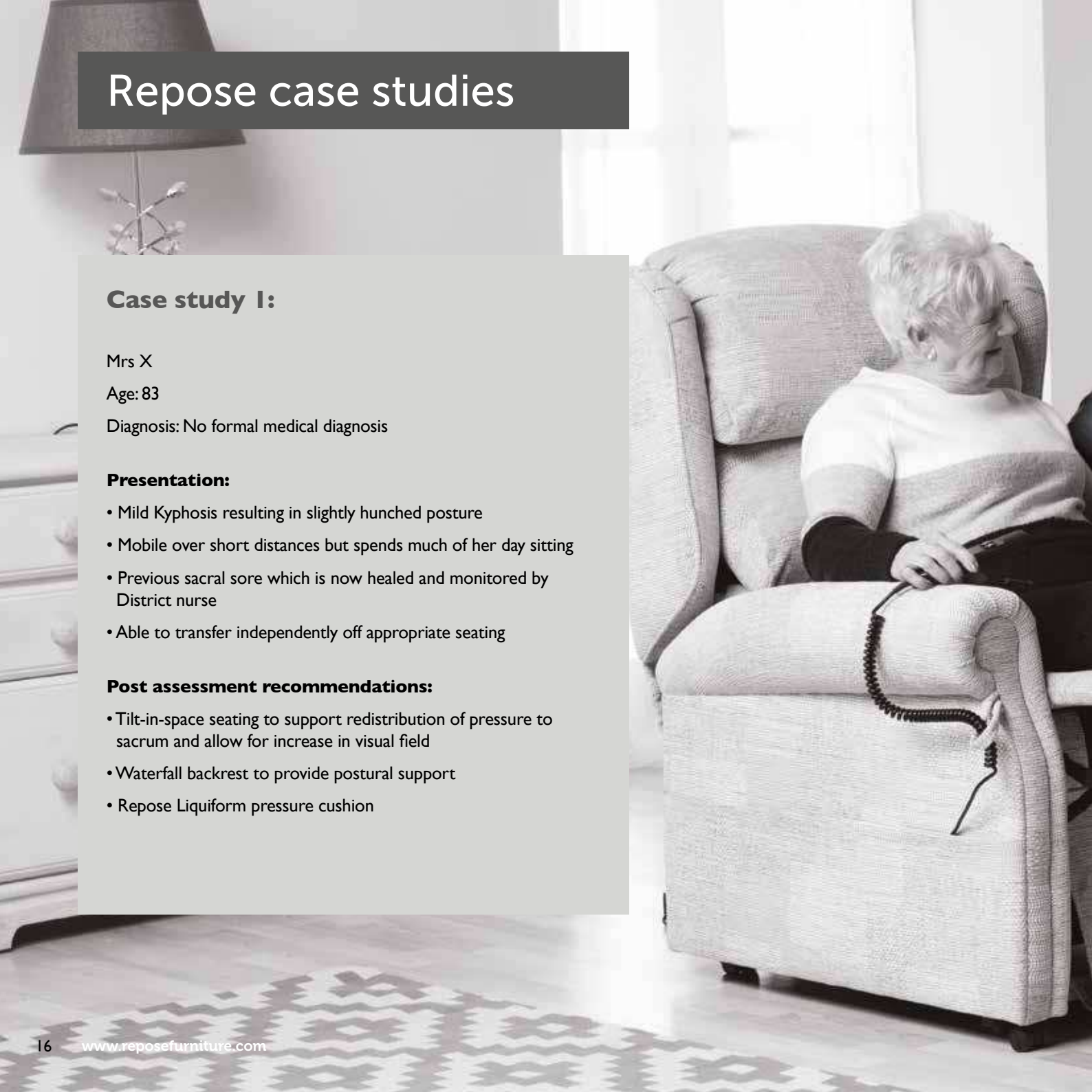
(G) represents the armrest height from the floor so that in conjunction with (F) the armrest height can be verified. In the absence of contractures or deformities (G) = (C) + (F).

Armrest height is critical in supporting independent transfers with appropriate leverage required to facilitate an equal push into a standing position.

Shoulder width

This measurement ensures that the chair is suitably supporting the upper body, particularly if the client requires lateral support. Too much width allows the client to lean, impacting negatively on posture. The client should be well supported without being constrained.

Repose case studies



Case study 1:

Mrs X

Age: 83

Diagnosis: No formal medical diagnosis

Presentation:

- Mild Kyphosis resulting in slightly hunched posture
- Mobile over short distances but spends much of her day sitting
- Previous sacral sore which is now healed and monitored by District nurse
- Able to transfer independently off appropriate seating

Post assessment recommendations:

- Tilt-in-space seating to support redistribution of pressure to sacrum and allow for increase in visual field
- Waterfall backrest to provide postural support
- Repose Liquiform pressure cushion

Case study 2:

Mr Y

Age: 58

Diagnosis: Left total anterior circulatory infarct (TACI)

Presentation:

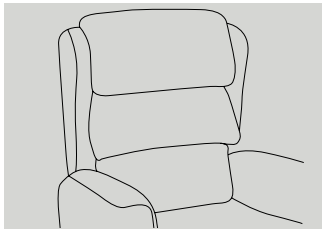
- Right sided inattention and neglect
- Leaning right due to lack of midline trunk position awareness
- PEG feeding, but able to swallow small amounts of thickened fluid
- Hoisted for all transfers
- Dependent for all care needs

Post assessment recommendations:

- Tilt-in-space seating
- Lateral back support to achieve midline trunk position which facilitates good posture and oral intake
- Angle and height adjusting footplate to encourage foot placement and force through left side to maintain postural positioning
- Repose Dynaform pressure relieving cushioning

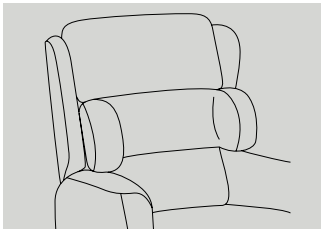
Posture Supporting Back Cushions

In the Repose range you can choose from eight different removable and interchangeable back options enabling the chair to be adapted to different users or to take account of changes in a user's condition over time.



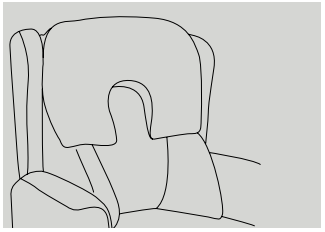
Waterfall back

Individual fibre filled waterfall cushions, each of which are fully adjustable to accommodate maximum postural support. The waterfall back can be useful for those with mild Kyphosis, Scoliosis and reduced muscle mass on their back.



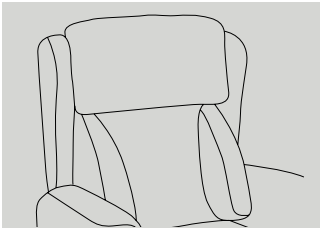
Waterfall lateral back

The central cushion in this soft fibre filled waterfall back comes with in-built lateral supports which can provide some trunk support for those who have limited trunk control or balance. Useful for those with early stages of neurological conditions such as MS or a Stroke survivor with limited residual impairments.



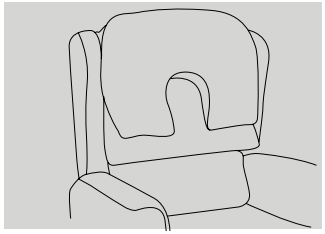
Large profile headrest with comfort lateral back

This back offers soft fibre filled cushions to provide head, shoulder and trunk support, which can be useful for older users who have lost some muscle control, supporting them in a good postural position with the head in a neutral position. This back can also be useful for early stages of neurological conditions to maintain good positioning without restricting activities.



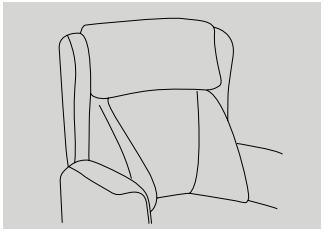
Support lateral back

A foam filled back providing firmer lateral support with a soft fibre filled headrest. The firm lateral support maintains midline trunk alignment which can be useful for those post Stroke or early to mid-stages of neurological conditions.



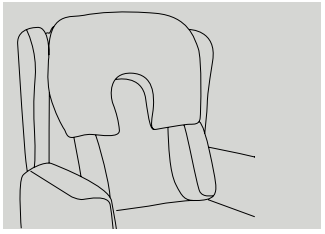
Large profile headrest with waterfall back

The profile headrest conforms to the head and shoulders which can be useful for individuals with limited neck control with the waterfall back providing soft adjustable lumbar support.



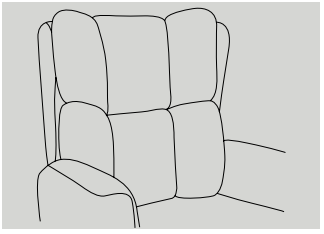
Comfort lateral back

Soft fibre filled back with lateral support, which can be useful for those who have limited trunk control or balance. It can be useful for those with early stages of neurological conditions such as MS or a Stroke survivor.



Large profile headrest with support lateral back

Firm foam lateral back cushion with soft fibre filled profile headrest can provide support for those who have limited trunk control or balance. The profile headrest can provide support to keep the head in good midline alignment which can be useful for those with early stages of neurological conditions such as MS or a Stroke survivor with limited residual impairments.



Double comfort lateral back

Deep filled contoured back cushions provide lateral postural support for improved comfort and positioning, making this chair useful for any individual with painful joints and where any movement is painful with conditions such as Rheumatoid Arthritis, Ehlers-Danlos syndrome or neurological conditions. This back could also benefit palliative care, supporting those with life-limiting conditions.

Recording outcomes

Assessment

It is important that the measurements you take are consistent, accurate and clear to the seating provider. Be clear whether the measurements you are providing are that of the client or the chair you require, they are different.

Use inches or centimeters as is your preference, but again make that clear to the provider and if using a material measure make sure that the measurements are 'straight line' rather than being shaped around the client as this will give you a different result.

Handover

The handover of the prescribed chair is critical to the assessment process and involves ensuring that all requested specifications will indeed meet the client's individual needs. It ensures that the correct chair has been delivered and that all aspects of the assessment and requisition process have been considered holistically.

We always recommend that on handover there is a comprehensive demonstration of the functionality. Handover should be clearly and accurately documented so that there is evidence all checks have been completed.

Postural passport

Consider taking a picture of the client in their chair at handover in an appropriate postural position. This picture can then be used alongside other documents such as moving and handling plans to provide carers with a visual prompt about how the person should be sat in the chair. This can also be very helpful for clients and staff during hospital admission to ensure the patient's needs are appropriately met.

Assessment and postural passport	
Mechanism type	
Seat width	
Seat height	
Arm rest height	
Back seat height	
Seat cushion	
Back cushion	
Additional comments	

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