

HYDROTILT® XL

Supporting Health Care Professionals with their seating prescription and meeting equipment criteria

Clinical Justification & Case Studies

CareFlex

The HydroTiltXL

Supporting Health Care Professionals with their seating prescription and meeting equipment criteria.

The HydroTiltXL is a robust and supportive chair that offers comfort with optimum posture and pressure management for individuals with increased body weight and size. It includes all the tried and trusted features of the much-loved HydroTilt but with an impressive maximum user weight of 35stone.

Introduction

The HydroTiltXL is an ideal solution for individual prescriptions; its adjustability and choice of accessories make it configurable for a wide range of seating needs in domestic, health and social care settings. It is particularly suited for those who present with obesity, lymphoedema and osteoarthritis, or those recovering from stroke. The HydroTiltXL provides high levels of comfort and the robust construction quality associated with CareFlex.

Clinical Need

When an individual's ability to achieve good sitting posture is affected, either through illness, injury, disease or disability, it can have a significant impact on their health and wellbeing. Specialist seating aims to allow individuals, who might otherwise have difficulty, to achieve their optimum sitting posture to sit out comfortably, interact with their environment, participate in activities of daily living and enhance physiological function.

Top tip: Check out the CareFlex website for detailed information on specific postural challenges and how specialist seating can help.

The HydroTiltXL has been designed and engineered for individuals who present with mild to moderate postural needs and are at risk of pressure injury.

Mild postural needs include circumstances where:

- Sitting is the primary posture throughout the day.
- Assistance may be needed for the user to rise to standing and/or to change position.
- The primary goals include comfort, independence and energy management.

Moderate postural needs include situations where:

- Support is needed to manage the user's posture and pressure care needs whilst maintaining comfort, independence and interaction.
- Posture may be more challenging and additional support may be needed to correct or accommodate body segments.
- The primary goals include comfort and stability, enhanced functional movement, postural support, and pressure redistribution.

The HydroTiltXL meets the following chair requirements:

- Robust and adaptable, comfortably supporting the user's posture by achieving individualised seat dimensions.
- Offers security and stability to optimise function for activities of daily living and interaction with the environment.
- Integrated pressure management to reduce the risk of pressure ulcers as a result of immobility, prolonged and/or abnormal postures.
- Simple and safe to operate encouraging regular repositioning either independently or with support.

Seating Objectives

The HydroTiltXL effectively balances four key objectives for specialist seating provision:

1. Comfort
2. Function
3. Postural management
4. Pressure care

Clinical Justification

The HydroTiltXL achieves this by enabling the user to meet the basics of good sitting posture:[1]

- The body is conformed to the supporting surface symmetrically.
- Body weight is distributed equally over the maximum surface area.
- A balanced and stabilised body that can adjust to change.
- Body segments are supported and aligned as much as is possible.
- Upper limbs are free from their load bearing role for function.

Comfort

Comfort is key for quality of life, and for this reason it is the top priority at CareFlex. Comfort may seem an easily achievable goal but everyone has their own ideas on what being comfortable actually means. To some it could mean feeling safe, to others it could mean feeling energised, to those using other specialist equipment it could mean the opportunity for some freedom, and to those who experience pain it could mean finally being able to relax.



The challenges experienced by individuals with postural needs can make it difficult for them to sit comfortably. Individuals with complex disabilities can present with abnormal muscle tone and involuntary movements, which are associated with painful spasms and instability. Comfort is equally important for individuals who experience a more sedentary lifestyle, as spending prolonged periods in a seated position can result in stiffness and chronic pain.
Specialist seating that promotes comfort and feelings of safety can not only enhance an individual's daily life but also increase tolerance of a desired seated position and compliance with equipment. If an individual isn't comfortable then they may not use the chair regardless of the clinical benefits.[2] Consistency of use is crucial for achieving outcomes and thus reducing the risk of secondary complications.

Top tip: Comfort is subjective. In order to achieve comfort, the client must be involved throughout the assessment and prescription process. The client is at the centre and we need to ensure that their views are respected, along with all those involved in their care.

Function

Specialist seating is not only important for protecting the body segments and reducing the risk of secondary complications but also encouraging normal functional movement and the promotion of independence. Independence is crucial for an individual's wellbeing and is an important factor in living a fulfilling life.
Freedom of movement is achieved through effective stabilisation of the pelvis and trunk[3] as the upper limbs are removed from their load bearing role. A stable posture has been shown to help an individual engage more fully in social activities at home, school or work, and as part of the community.[4]

The HydroTiltXL

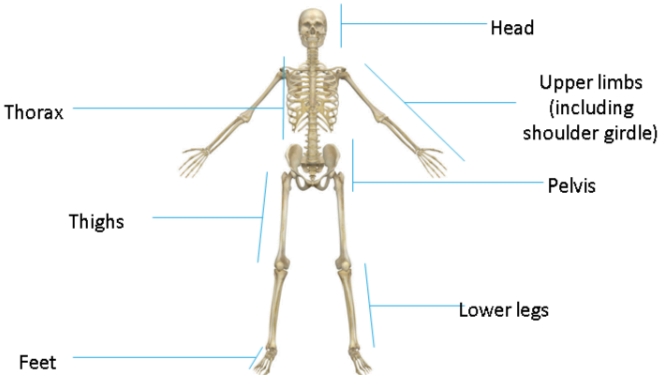
Energy management is a critical part of promoting both comfort and function. Fatigue can affect all aspects of an individual's life and can significantly restrict their ability to engage in daily living, as well as having a negative impact psychologically and socially.[5] An unsupported posture can cause fatigue by making inefficient use of the body structure. Gravitational forces can also make sitting effortful for those who present with muscle weakness and abnormal muscle tone. Fatigue, if unmanaged, can be associated with significant postural challenges, including kyphoscoliosis, posterior pelvic tilt and contractures.

Early implementation of fatigue management strategies into daily life is critical, and could reduce the impact and the probability of fatigue becoming chronic.[6] The appropriate use of specialist seating can encourage energy conservation, making it easier for individuals to live a meaningful life. Specialist seating systems allow users to be more involved in activities of daily living, including interaction and engagement, due to the opportunity to rest and recuperate resulting in more energy throughout the day.

Postural Management

Postural management is the use of any technique to minimise postural abnormality[7] and is evidently linked to an individual's ability to achieve their seating objectives. Lack of postural care and prolonged abnormal sitting postures can cause tension on the body and increase the risk of significant secondary complications, such as exacerbated pain and postural deterioration.[8] Proper positioning has demonstrated that it can decrease fatigue whilst helping to alleviate chronic discomfort and maximise function.[9] As the body structure is supported, and the segments work together efficiently, the user will experience improved comfort, stability, functional movement, and energy conservation.

Top tip: Effective postural management targets all body segments;[1] pelvis, thorax, upper limbs, head, thighs, lower legs, and feet.



A major goal in postural management is to promote good health and enhance autonomic nervous system function.[10] A person's inability to sit upright can result in increased dependence and decline in overall health over time, primarily reflecting altered physiological function.[11] Trunk asymmetry and poor head position can impair respiration, cardiac efficiency, swallow function, and digestion. Consequently, increasing the risk of aspiration, infection, and any related hospital admission.

An appropriate seating system can provide the optimum position for respiratory and circulatory function.[8] An upright sitting position can also facilitate a normal swallowing pattern[12] and improve components of eating and drinking behaviour by maintaining good head alignment.[13]

Top tip: The pelvis is the foundation for a good sitting posture as it dictates what happens to the body segments above and below. Positioned at the person's core, it acts as a support system for the entire body. The pelvis should be stabilised in all planes of movement. The aim is to correct the pelvis if it can be corrected; however, any fixed pelvic challenges must be accommodated.

Clinical Justification

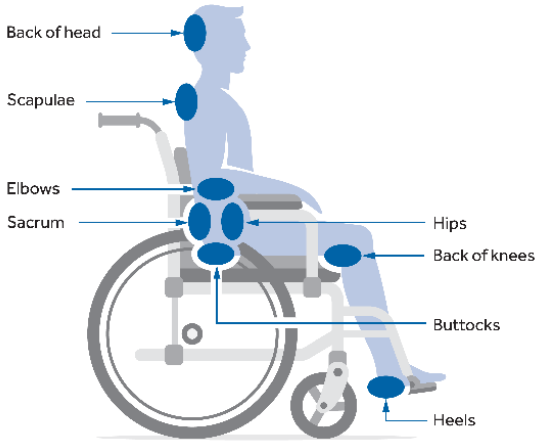
Reducing costs is also a long-term benefit of appropriate postural management.[14] It can reduce costs associated with hospital admission, pressure injuries and infection. It reduces the need for invasive and expensive interventions too.

Pressure Care

Posture and pressure are inextricably linked; body posture and positioning have a direct influence on the pressure going through specific body sites.[15] Even in the gold standard sitting position, body weight is distributed as follows:[16]

- Through buttocks and thighs: 75%
- Through the feet: 19%
- Through the arms of the chair: 2%
- Through the back: 4%

The body can only withstand high interface pressures for a short period of time, and when loading of tissues is unequal, and/or pressure isn't regularly relieved, pressure ulcers can occur.[17] There are also a number of contributing or confounding factors, including pressure, shear forces, friction and moisture, associated with pressure ulcers.



Everyone is potentially at risk of developing a pressure injury.[18] The impact of a pressure injury is profound, with individuals being affected physically, psychologically, socially, emotionally, spiritually, and financially.[19]
Top tip: Professional guidance from a Tissue Viability Nurse or District Nurse may be indicated.

A key intervention of pressure care is pressure redistribution; regular repositioning is critical for those deemed at risk of developing a pressure injury as it is believed to be one of the most effective methods for preventing skin damage.[15] The opportunity to sit out can offer a much-needed change of position to encourage blood flow and redistribute pressure. Specialist seating systems aim to reduce the risk of pressure injuries by distributing the user's body weight evenly throughout the chair over the maximum surface area with posture supported as aligned and symmetrical as possible.

Top tip: Tilt-in-Space* can aid repositioning with the aim of redistributing pressure regularly as part of the client's 24-hour posture and pressure management plan.

Appropriate management or, better still, prevention of pressure injuries can not only improve an individual's outcomes and quality of life, but it can also reduce the costs to health and social care services benefitting the wider community.

Specialist Seating Provision

Once an assessment is completed, Health Care Professionals will need to justify their specialist seating prescription. Clinical justification is important as it aids in decision-making, prioritising and securing funding for equipment. It is the opportunity for Health Care Professionals to advocate for the best client outcomes.

To clearly demonstrate an individual's need for specialist seating, and to comprehensively convey the clinical justification, a funding request should:

- Be holistic and, where possible, have a multi-disciplinary approach.
- Identify the seating needs, considering the aims and objectives of the client, their support network and the environment.
- Present the clinical findings and prove how the chair can meet the seating needs, but also state the risks of not prescribing the chair.

The HydroTiltXL

- Back up any claims with evidence, including research, guidelines and legislation.
- Outline past and current interventions to demonstrate that less costly interventions have been considered.
- Demonstrate clearly the cost effectiveness of prescribing the chair and the cost implications of not prescribing the chair.

HydroTiltXL Seating Solutions

The HydroTiltXL offers comprehensive seating solutions, due to a range of functions and accessories, which will enable individual users with increased body weight and size to achieve their seating objectives:

Reliability

- Since 1995 CareFlex has been collaborating with Health Care Professionals to develop innovative and effective specialist seating; CareFlex understand the importance of balancing comfort, function, postural support and pressure care.
- CareFlex have confidence and pride in their specialist seating and the positive impact they know it can have on people's lives. They have therefore submitted their products for independent testing and evaluation over the years, including pressure mapping and published clinical research. For further information, a copy of the summaries can be obtained from the CareFlex website: https://www.careflex.co.uk/info-centre/clinical-evaluations/

Robustness & Durability

- The HydroTiltXL provides high levels of comfort and the robust construction quality associated with CareFlex.
- The maximum user weight and safe working load is 220kg.
- Four braked heavy-duty castors with sealed bearing hubs offer enhanced durability and smoother manoeuvrability. With the brakes applied, the user can also confidently transfer from the chair without fear of the chair moving.
- Assurance arms allow the covers to wrap around the front of the chair sides to prevent picking of the arm seams, especially beneficial for users with wellbeing and behavioural considerations.
- For peace of mind the HydroTIlt XL comes with a 5-year warranty on the frame and 1-year on all other parts and labour.



Adjustability

- Every chair must be set-up to fit its user; if it is not then it can cause more harm than good.
- As with all specialist seating, the correct seat depth is essential to encourage pelvic stability and to ensure the maximum surface area is in contact with the chair to reduce interface pressures. For individuals with increased body weight and size, extra support is needed for the gluteal shelf; without support, the gluteal shelf can push the person anteriorly increasing the risk of falling out of the chair and undesirable postural changes such as posterior pelvic tilt.
- The HydroTiltXL's adjustable seat depth encourages pelvic stability at the back of chair whilst maximising the performance of the WaterCell Technology.
- Correct seat width can reduce the tendency for the user to lean or shuffle the pelvis. These undesirable movements can result in pelvic obliquity or pelvic

rotation and the posture becoming increasingly unstable with unequal loading on tissues. Left unmanaged, this leaning posture could lead to the development of a scoliosis.
- To achieve the required seat width for lateral stability, the arm cushions are interchangeable allowing the width to be adjusted.
- There is also the need to be mindful of the potential for weight fluctuation; therefore, an adjustable chair that can adapt to changing need is essential.
- Loose covers are available for multi-user flexibility.

Infection Prevention & Control (IPC)

- Specialist seating systems within health and social care environments can be a cause of cross-contamination and therefore IPC must be considered during the assessment and prescription processes.
- To help in hospital settings or multi-user environments, where attention to IPC is critical, specialist covers are available for the HydroTiltXL; Velcro is replaced in all exposed areas with plastic profile fittings, and exposed seams are minimised.
- The HydroTiltXL's modular design allows for simplified and easier cleaning of the individual chair sections and frame.
- The HydroTiltXL also features vapour permeable fabric as standard to all contact areas.
- A chair protector is available that fits over the seat, arms and lower back, which prevents contamination and stops debris getting trapped in the moving parts of the chair.

WaterCell Technology

- CareFlex WaterCell Technology provides a reliable and dynamic pressure care solution for people at medium to high risk of pressure injury.
- WaterCell Technology enables the individual to achieve a stable and functional posture without compromising on pressure care and comfort.
- The water cells work by allowing the seat cushion to contour naturally and effectively around the user's body.
- The layer of visco-elastic memory foam moulds to the shape of the buttocks and thighs, distributing weight over a larger surface area and minimising pressure build-up under bony areas.
- Vapour permeable upholstery also works synergistically with the WaterCell Technology to provide continuous pressure redistribution.



Powered Tilt-in-Space*

- Powered tilt-in-space improves pelvic stability and positioning by encouraging the pelvis to remain at the back of the chair without affecting the user's hip and knee angles.
- Tilt-in-Space can be a key function in order to achieve energy conservation by allowing periods of rest, without affecting the critical angles for sitting.
- Tilt-in-Space can also be used to reposition an individual against the forces of gravity in different degrees of tilt to redistribute pressure and ultimately reduce the risk of pressure injury.
- Upgrading to motorised AutoTilt will allow tilt-in-space to be adjusted automatically over a short or long cycle allowing for regular repositioning and pressure distribution whilst promoting independence within the user's residence.

The HydroTiltXL

Pelvic Support

- A padded pelvic belt* is an intervention that is available for anterior pelvic stabilisation and can be used as a safety belt when portering clients.
- A seat wedge is also available that creates an acute hip angle to support the pelvis with stability at the back of the seat.

Trunk & Spine Support

- The flat back and headrest option delivers pressure management and long-term comfort by offering simple conforming support to the lower back whilst the user is both sitting upright and in a tilted position.
- The waterfall back option consists of a lumbar, thoracic and head section that encourages trunk alignment with an emphasis on promoting comfort.
- The lateral support waterfall back option offers additional trunk and spine support to aid positioning.
- Wadding can be configured to accommodate kyphotic or lordotic postures to reduce the pressure at the apex of the curve and fully support the spine. It can also be reconfigured to allow extra space to comfortably accommodate the gluteal shelf.
- A back rest wedge can also be utilised to adjust the user's hip angle, where indicated.

Independently Elevating Leg Rest

- The independently elevating leg rest will provide lower limb positioning whilst promoting alignment and stability. It can also help to improve circulation and reduce swelling.
- Reflexions Foam® is incorporated in the leg rest to provide pressure care for the lower limbs. It reacts to body heat and uniquely moulds around the contours of the user so that body weight is spread more evenly across the whole surface area.
- The channel leg rest option can help centralise lower limb positioning, where indicated.
- The angle of leg rest elevation tolerated by an individual is dependent on their hamstrings muscles and knee joint range of movement; inappropriate elevation of the lower limbs can cause pain, a posterior pelvic tilt, and sliding down the chair increasing shear and friction forces.

Negative Angle Leg Rest

- Larger calves or oedematous lower legs can position the lower limbs too far forward restricting knee flexion and resulting in inadequate foot support. A negative angle leg rest can help accommodate this whilst maintaining optimum knee flexion position; weight can then be evenly distributed through the feet.
- The negative angle at the leg rest can also accommodate limited knee range of movement allowing a more comfortable seating position for those with contractures or tight hamstrings muscles.
- A negative angle leg rest can facilitate safe standing by allowing optimum foot placement.



Angle Adjustable Flip-Up Footplate

- Insufficient foot support can negatively impact on postural stability and pressure risk; individuals naturally seek support through the feet to obtain the proprioceptive feedback required.
- The flip-up angle adjustable footplate accommodates fixed angles of plantar flexion at the ankle, and provides a more restful ankle position whilst supporting the foot.

- The footplate can be easily lifted up to vertical to move it out of the way for improved safety and foot placement during standing transfers.
- A detachable footplate pad and soft pillow are also available that can provide greater comfort, or may be indicated for shorter leg lengths.

Soft Shallow Headrest

- A comfortable rectangular pillow that can support the head if an individual presents with weakness or fatigue.

Soft Profiled Headrest

- A contoured pillow that comfortably supports the shoulders, neck and head to encourage head alignment for interaction and optimum physiological function for users with reduced head control.

Hand Grips

- Wooden hand grips are solid enough to support the user as they rise to standing.
- Soft hand grips are an alternative option and consist of an upholstered foam pad fitted in the same position.

Support Network Considerations

- It is imperative that the client's support network and the environment in which the chair will be used are considered to ensure compliance with the system and consistency of use.
- Seating individuals with increased body weight and size can increase the risk of injury to carers, support staff and clinicians.
- The HydroTiltXL has powered functions and heavy-duty castors to make chair use and manoeuvrability smoother and safer for the user and their support network.
- The HydroTiltXL is lifting hoist and standing hoist compatible to both promote safe moving & handling for non-ambulant users and facilitate transfers for those who remain ambulant or semi-ambulant; thus, reducing carer load and dependency.
- Tilt-in-Space can also assist with positioning during moving & handling by utilising gravity to position the pelvis at the back of the chair.

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Donna's Story

Donna is a 32-year-old female who has always been outgoing and confident. She is family-orientated and loves spending time making memories with her daughter. She has worked hard to develop her career in technology as a Web Designer. Consequently, this has meant many years of living a sedentary lifestyle with long hours spent sitting and limited opportunity to remain physically active.

Donna is now considered obese with a BMI over 30 and an increased waist circumference. Donna experiences musculoskeletal pain as a result of osteoarthritis from increased stress on her joints. She also feels low in mood at times as she is finding it extremely difficult to interact and have fun with her daughter.

Donna is now more motivated than ever to take control of her health and wellbeing. She has sought support from her GP on weight loss and is following advice on healthy eating. She has also been referred to an exercise on prescription service. However, she is finding it challenging to remain mobile as her current seating does not facilitate an easy sit to stand and so remaining physically active is effortful and is affecting her motivation.

Donna works from home but is finding it difficult to concentrate on the task at hand due to her joint pain and the fact that she is tiring quickly. She is also experiencing redness and soreness on her buttocks.

In her original seating, Donna presented with the following postural challenges:

- Fatigue
- General weakness
- Pelvic instability
- Pain

It was essential for Donna to have a comprehensive assessment with the aim of identifying appropriate specialist seating as her posture and pressure management needs were not being met. The correct chair would manage her postural challenges whilst allowing her to engage in much needed lifestyle changes.

Following her assessment, and with input from her team of health and care professionals, it was evident that Donna's needs would be best met with our HydroTiltXL. The HydroTiltXL includes all the tried and trusted features of our much-loved HydroTilt but has an increased 35

stone maximum user weight. It is a robust supportive chair that offers comfort with optimum posture and pressure management for individuals with increased body weight and size:

- The reconfigured waterfall back allows extra space to comfortably accommodate Donna's gluteal shelf improving her pelvic stability.
- Comfort throughout the chair and the ability to relax helped Donna to better manage her arthritic pain.
- The negative angle leg rest allows a more stable placement to assist Donna with standing, motivating her to continue being mobile and thus physically active.
- Wooden hand grips further support Donna during standing, promoting a sense of safety and empowerment.
- Powered tilt-in-space promotes energy management and encourages pressure redistribution away from Donna's buttocks.
- Integrated pressure management encourages maximum support with the aim of resolving Donna's pressure injuries.



At CareFlex, we strongly believe in our ethos: we strive to balance posture and pressure management with the individual's own goals, whilst promoting comfort, independence and a meaningful life.



Enabling individuals to live the life they wish to live, and empowering them to make long-lasting positives changes to their wellbeing, is a true privilege. It reinforces our stance that specialist seating systems are more than just chairs, they are prescriptive medical devices critical to good physical and mental health.

Get in touch to arrange a free no-obligation assessment if you think you, your client, or your loved one need support from CareFlex specialist seating, like Donna, to meet specific postural management and pressure care needs.

DISCLAIMERS

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*Tilt-in-Space and Back Angle Recline should always be prescribed responsibly, ensuring that they are safe and appropriate for the user following a comprehensive assessment of posture and risk, with advice sought from the multi-disciplinary team where indicated. In some cases, these functions will be contra-indicated, and they could also increase shear and friction forces.

*All belts and harnesses must also be prescribed, implemented and monitored responsibly following a comprehensive risk assessment. Please see the Device safety information alert for further information: www.gov.uk/drug-device-alerts/all-posture-or-safety-belts-fitted-to-supportive-seating-wheelchairs-hoists-and-bathroom-equipment-risk-of-serious-injury-or-death

The information given in this book represents current advice at the time of publication. It is intended as general information and guidance and is not a substitute for professional medical advice which should be sought for specific, individual cases. It is the responsibility of the treating clinician, relying on independent knowledge and skills, to determine the best intervention and method of application for the client.

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