

## Shape up - in 3D Ability Based Seating™

### Kyphosis – Affects the whole person

The body undergoes a continuous ageing process. Increased age affects not only the skin quality but also the internal organs, skeleton and musculature. The posture becomes more slouched, which makes us shorter. Wear and tear of the spine vertebrae and reduced elasticity of the discs mean that the curvature of the spine is affected. The thoracic back becomes stiffer and its curvature increases. Sometimes the curving of the spine becomes so severe that a kyphosis develops.



## Etac Prio 3D – A Swedish innovation

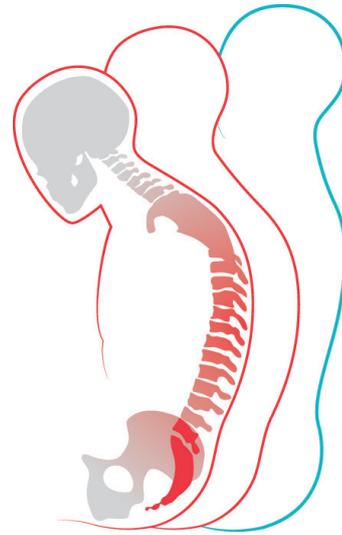
A kyphosis or other back asymmetry put great demands on a back and head support adjustability. Prio 3D back system has got the name from it's ability to adapt in all directions. The unique upholstery allows a curved back to sink in with perfect envelopment and support.

Since the distance from seat surface to shoulders becomes "shorter" in the case of a kyphotic back, the 3D back support is somewhat shorter than the standard back. The height adjustment of 45 – 60 cm provides a proper support from the pelvic area and up over the top of the kyphosis. The adaptability of the soft back cushions and the tension adjustable back straps make it possible. The large contact area improves the sitting tolerance and minimises the risk of pain. The 3D unique back innovation enables you – the professional – to create shape and support while the user is positioned in the wheelchair.



## Managing to be active

Sitting in a slouched position affects the ability to be active. The head drops forward which displaces the centre of gravity and the vision field. The curved shape of the thoracic back limits the mobility of the shoulder blades, which in turn affects mobility in the arms. A kyphosis accelerates these problems. A lot of energy goes into holding the head up, the sitting position becomes unstable and the degree of activity is limited. Breathing, digestion and bladder control are also affected by a slouched sitting position.

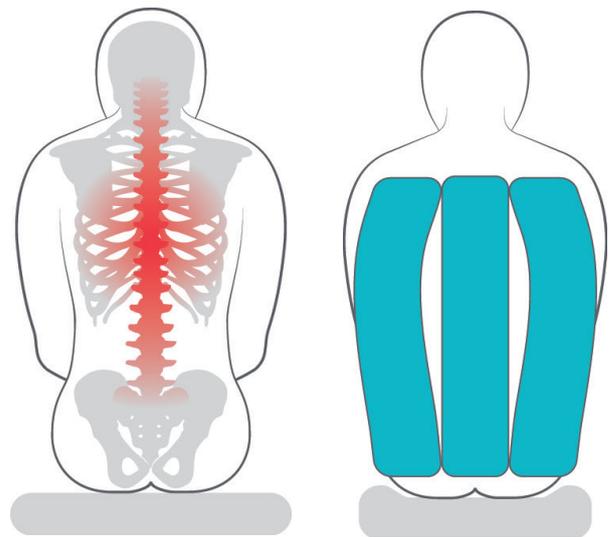


## Sitting in depth

In order to create shape vertically and horizontally, the back cushion has been divided into three sections. Between the cushions is a glide material which responds to and absorbs curvature and asymmetries.

The cushions relieve the sensitive vertebral processes. The mobility between the cushions enables the back support to shape itself for kyphosis and asymmetries. The mobility also reduces the risk of shearing and facilitates movement.

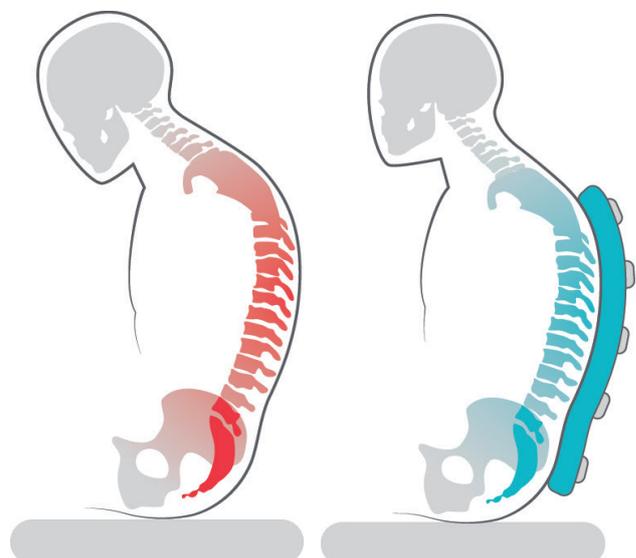
The tension adjustable back straps provide sufficient space to shape around the back. The pelvis is supported by the dynamic pelvic strap. In all, the 3D back system supports and envelopes itself around the user's back, which also has a positive effect on the head position. Furthermore, the 3D back can be shaped to support over the top of the kyphosis. Impact on other functions such as seat depth and leg supports is avoided.



## Finding the balance

The basis of all activity while sitting is balance and stability. This also applies in the case of kyphosis. By providing the kyphosis space posteriorly, the user gets the correct position on the seat.

We aim to balance the user so that the ears and eyes adopt a horizontal position. Kyphosis may require an extreme extension of the neck to achieve a good field of vision. This results in short, tense neck muscles. With the 3D back support slightly reclined and a multi-functional head support, the head and neck can be relieved. The result is an improved field of vision and reduced strain on the neck and back muscles.



## The goal is improved activity and mobility

The aim is to offer the user a relaxed position. The back support should give stability and posture. Sensitive parts of the spine should be relieved from pressure and be given gentle support. The innovative 3D back support enables us to enhance the user's capacity for activity and mobility, and to reduce the risk of pain and other negative consequences. To put it simply, to increase the user's sitting tolerance over time.

The 3D system is simple but ingenious. It is a patent-pending Swedish innovation which can make a big difference to the older user's opportunity for activity. It creates possibilities.



**In our next newsletter...** you can read about the influences from the arms and feet to obtain a stable position. We want Prio users to move their feet, to be able to use the arm supports to stabilize the posture and to reach the handrims.



Ability<sup>™</sup>  
Based  
Seating