

## Shape Up! Ability Based Seating™

### Who are the Prio users – and how do we meet their needs?

Etac Prio has been developed with a main focus on the signs of ageing which affect us all. The majority of users are older people. The primary needs of the older user are increased and individually customised support, comfort and the possibility of switching between activity and rest. To put it simply, providing the best conditions for sitting without risk of injury over time. Even though Etac Prio has been developed for older users, it is very suitable for people of all ages who need alternating rest and activity.

- The user was previously able to walk, but is now generally weakened and frail.
- The natural ageing process affects the user's mobility and the curvature of the spine. This, in turn, affects the whole upper body's potential for activity.
- Need for individual settings for back and head support.
- Need for pressure variation – two hours' static sitting can cause damage to tissue – even shorter in the case of concentrated pressure <sup>1</sup>.
- Movement to and from the chair is often done by means of a hoist.

<sup>1</sup>) *Membrane-Stretch-Induced Cell Death in Deep Tissue Injury: Amit Gefen, et al, 2009.*



## Our abilities deteriorate over time.

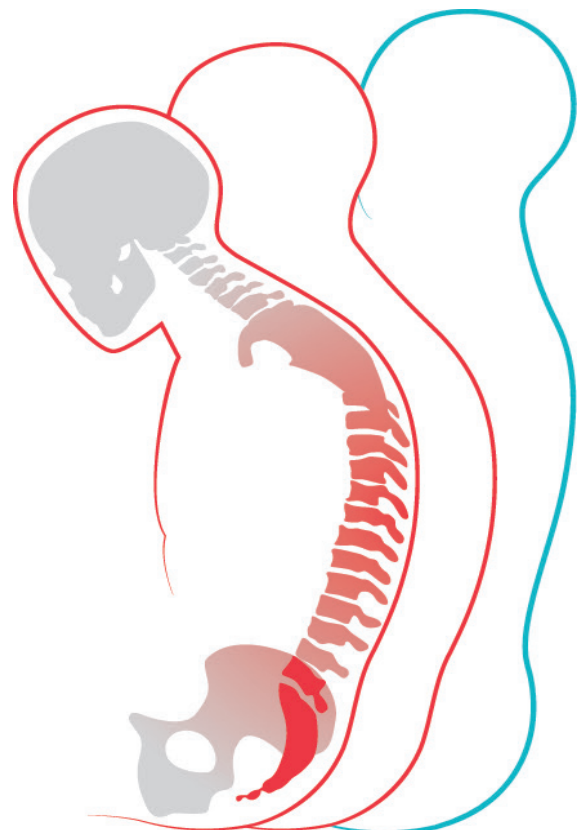
In other words, if they are not used they quickly deteriorate. For someone with reduced physical ability, a poorly supported sitting position can accelerate the worsening of a number of bodily functions. A sitting position which becomes increasingly slumped causes the pelvis to tip backwards, the back to become more kyphotic and the head to fall forwards or to the side. This affects the sitting balance and the distribution of pressure on the seat and back.



*83 year old woman with severe kyphosis.*

### Side effects of poorly supported kyphosis

- It becomes more difficult to use the arms.
- The position of the head has a negative influence on hand-eye coordination.
- Reduced mobility also leads to impaired blood circulation and the risk of pain and pressure sores.
- Negative influence on internal organs such as breathing, digestion and bladder control.
- The cognitive abilities can also be affected. It becomes more difficult to communicate, the person quickly becomes tired, falls asleep and becomes isolated.



*Prio 3D back support gives space and follows the shape of the users back. With the user tilted, this provides relief for the entire back, and the ears and eyes are now in a horizontal line.*

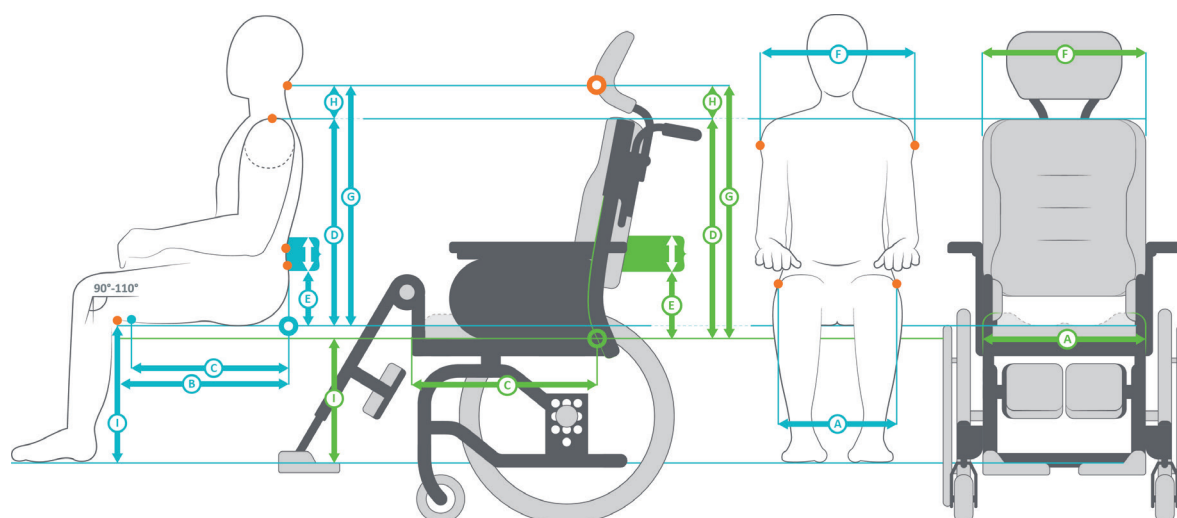


## Create quality time with the user

This is our thinking: When you order an Etac Prio, all you need to do is measure the user's hip and back width. The pelvic support, shape and stability are created once its delivered with the user sitting in their Prio. Your time with the user is valuable. We want it to be quality time.

## Anthropometric dimensions

Two people of exactly the same height may have different leg lengths, while the distance between buttocks and PSIS (i.e. the position of the pelvic support) differs only a little. By using anthropometric measurements, we cover and exceed normal body measurement variations. Anthropometrical measurement are collected data indicating normal human body variations between two points of firm tissue. Here we show measurements for normal, aged and slumped seating.



● Anthropometric measurements (HFP)   
 ● Calculated measurement   
 ● Based on the seat reference point (SRP)   
 ● Based on a hard seat (no cushion)   
 ● Head support's front point

Prio user	Normal sitting	Aged sitting	Slumped sitting	Prio product measurements		
A Width between the hips	n/a	n/a	n/a	40, 45, 50 and 55 cm (15.7, 7.7, 19.6 and 21.6")	Seat width	A
SRP – Back of calf (knee flexion 90°)	44–54 cm (17.3–21.2")	43–53 cm (16.9–20.8")	43–54 cm (16.9–21.2")	n/a		
C SRP - Back of calf (excl. 2-5 cm clearance)	39–49 cm	38–48 cm	38–49 cm	39–51 cm (15.3–20")	Seat depth	C
D SRP – Shoulders	52–66 cm (20.4–25.9")	49–63 cm (19.2–24.8")	47–60.5 cm (18.5–23.8")	55–70 cm* (std) (21.6–27.5") 45–60 cm* (3D back) (17.7–23.6")	Height of head support	D
E SRP – Upper/sacrum	15–22 cm (5.9–8.6")	14–21 cm (5.5–8.3")	12–19 cm (4.7–7.4")	Infinitely adjustable	Pelvic support, height adjustment	E
F Shoulder width	34–42 cm (13.4–16.5")	34–42 cm (13.4–16.5")	34–42 cm (13.4–16.5")	Not applicable (wheelchairs are selected by hip measurement)	Back width	F
G SRP – Back of head	65–78 cm (25.6–30.7")	62–75 cm (24.4–29.5")	60–73 cm (23.6–28.7")	61–91 cm (24–35.4")	Hard seat–HFP	G
H Average Shoulder - Back of head distance	11–15 cm (4.3–5.9")	11–15 cm (4.3–5.9")	11–15 cm (4.3–5.9")	6–21 cm (2.4–8.3")	Top of back support–HFP	H
I Sole - Hollow of the knee	40–52 cm (15.7–20.5")	38–50 cm (15–19.7")	38–50 cm (15–19.7")	38.5–55 cm (standard) 31–47.5 cm (shorter version)	Foot support hard seat base	I

**A:** The hip measurement is the basis for ordering a wheelchair. Anthropometric measurements are not applicable. The seat width can be further adjusted by using side pads or width extensions.

**C:** The shape and final seat depth are created with the back support adjustment, with the user in the chair.

**D, G, H:** In order to compare product measurements with the user reference, please note that the wheelchair measurements have been measured without seat cushion. A cushion will lift the user 2–6 cm (1–2").

**H:** The measurement refers to the head support Soft. The head support Traditional, has more adjustability.

*Antropometry is not a new science and references might appear dated. However the skeleton has not changed in the same way our average body sizes have. New data collecting techniques about our changing body sizes will become available, we follow that with great interest.*

## References

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**In our next newsletter...** you can read about the Etac Prio seat. We will be looking into breadth and depth. How can one and the same seat be suitable for users from 140 to >190 cm? You will also find out why we at Etac love plush...



**Ability<sup>™</sup>  
Based  
Seating**