

# Meet Catarina

## Matrx® MX2 Case Study

Catarina is a young Portuguese girl who is currently studying Medicine and who also has a very active social life!

In January 2016 she was diagnosed with Transverse Myelitis, which in Catarina's case presents itself similar to a spinal cord injury at level T6-T7 with sensation issues similar to an injury at level T4-T5.

Despite her not being an experienced wheelchair user, Catarina has already developed an appreciation for the importance of having a correctly fitting wheelchair and appropriate postural support.

### Before the MX2

Previously, Catarina was using a borrowed KÜSCHALL® chair with a molded visco foam cushion. This was a sufficient, but not a perfect fit for her.

Catarina is an extremely active young lady and is involved in many different activities. In her free time, she is a DJ, plays wheelchair handball, does rowing and enjoys going out at night with her friends. Despite her having bags of energy and being able to navigate through crowds with ease, concerns developed as she often felt back pain and fatigue at the end of a busy day.

In addition, issues with trunk balance sometimes made going outdoors challenging as she frequently experienced the sensation of falling forward; and another issue developed relating to transfers which meant that the seat cushion was constantly moving out of position, curling under her and causing difficulty with repositioning.

After a few months using the KÜSCHALL with the inadequate seating, Catarina managed to get a prescription for a combination of an active wheelchair, a positioning cushion and a rigid backrest.



### Catarina's Assessment

Catarina was assessed in three different KÜSCHALL wheelchairs – the KSL, the K-Advance and the K-Series – along with Matrx Libra cushion.

She immediately liked the ultra-lightweight and easy to propel KSL chair, however she felt that Matrx Libra cushion contours were too restrictive for her. The decision was made to trial a Matrx Vi cushion together with the new Matrx MX2 Carbon Back.

Two weeks after receiving the new products, Catarina came to Invacare®'s Portuguese Headquarters with the provider for a short follow-up. She was really happy and pleased with the complete solution saying that:

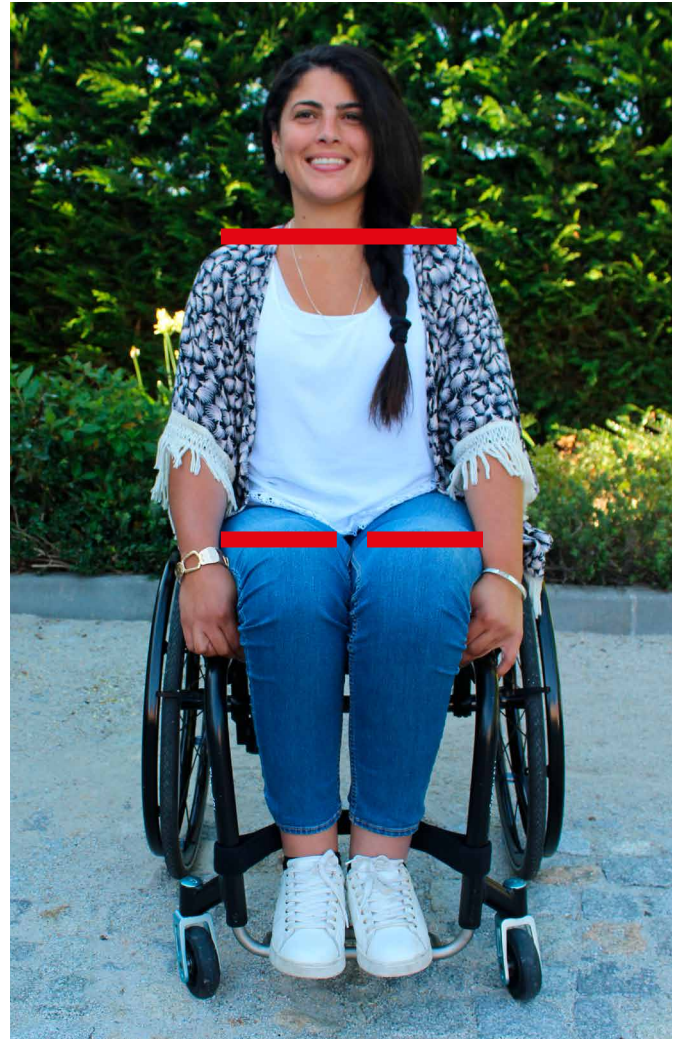
***“That sensation of falling forward has disappeared. Overall I feel a major difference; my back pain is gone, I can do much more! Furthermore, another benefit for me is that the chair is easy to fold and transport in the car.”***

Below you can see pictures of Catarina which show postural differences when using the previous set-up (left side) and the current mobility and positioning set-up (right side).

## FRONT VIEW



**Figure 1** - It was easy to notice the right thigh position above that of the left as well as a shoulder to hip approximation on the right side. Catarina's right foot rested with a slight external rotation - this showed that her cushion was not giving her pelvis the best support, nor was it assisting with proper lower limb alignment.



**Figure 2** - The MatrX Vi cushion brings a proper balance between both sides of the body, helping Catarina to achieve a proper alignment of both thighs and feet. Although it is still visible, we were able to reduce the shoulder obliquity by a significant degree.

## LATERAL VIEW



**Figure 3** - The lack of proper back support was evident. Although the sacrum region was supported by the tension adjustable backrest, there was a gap between the lower spine and the back support - due to a slight hiperlordosis at the lumbar region. This factor was contributing to the Catarina's feeling that there was a lack of forward balance, in addition to the cause of the lower back pain.



**Figure 4** - The Matrix MX2 Carbon backrest has an anatomic shape, providing a comfortable contour to Catarina's back. The hardware allows a 3D adjustment and properly accommodates the slight hiperlordosis. Because there is no gap between Catarina's back and the backrest, efficient postural support is achieved as well as requiring reduced effort from Catarina to keep her trunk upright.



### The Future

Catarina feels that she now has the set-up she needs to achieve her goals and maintain her active lifestyle. Her next priority is to finish her Medical Degree, followed by being able to wheelie in her new KSL and then win her first wheelchair handball game!

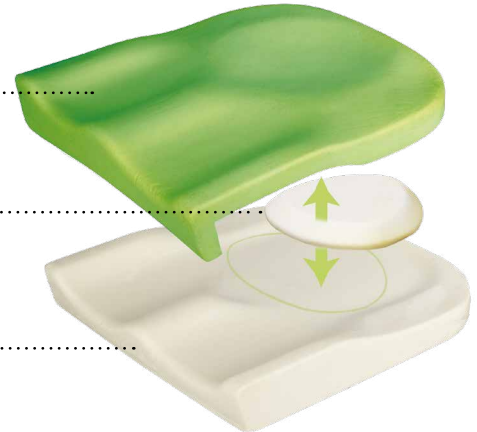
Everyone at Invacare wishes Catarina the very best of luck!

*We would like to say a special thank-you to Invacare Dealer TSimetria and Occupational Therapist João Aires for supporting this Case Study.*

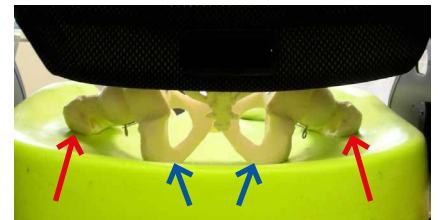
## Matrix Vi Cushion

The Matrix Vi cushion provides skin protection and positioning for individuals at high risk of skin breakdown through its unique three layered foam construction, whilst targeting vulnerable areas.

- Top layer - high resilient foam provides additional immersion and comfort.
- Visco-elastic insert - positioned in the pelvic well for targeted immersion of the sensitive bony prominences. The unique dome shape eliminates transitional edges between the foam layers.
- Contoured base - high resilient foam conforms and provides support.



The design of the cushion allows proper accommodation for the Ischial Tuberosities (blue arrows) - the lowest bony prominence of the pelvis - and a raised support for the lateral trochanteric shelf (orange arrows). This unique design adds stability, pressure redistribution and comfort.



## Matrix MX2 carbon Backrest



Designed for active users, the MX2, with a fresh look and attractive design, is an ultra-lightweight and stylish backrest, made from 100% carbon. It is an important add-on to any lightweight manual wheelchair, due to its clinical benefits. It properly supports a user's pelvis and lower trunk, adding comfort and generating stability for function (energy saving), whether to self-propel or engage in day to day activities.

The slot design of the shell in combination with the easy-fit hardware, allows 3D adjustments, ensuring a proper fit to the user.

## Küschall Super Light (The KSL)

The KSL, one of the lightest active wheelchairs in the market, has a minimal frame design and a starting weight of 4.3kg (without the rear wheels). With the addition of Matrix seat cushions and Matrix backrests - in addition to the existing broad range of positioning possibilities - you can further customise your Küschall wheelchair to ensure that it fits your own personal preferences.

