

LECKEY BeMe

Case Story - Imteyaz



Imteyaz's Case Story



Introduction

Imteyaz is a lively and spirited 10-year-old girl who lives at home with her mum, dad and siblings.

In recent years Imteyaz has been unable to tolerate any form of sitting. If she is in a seat for more than ten minutes she becomes very unsettled and distressed. While Imteyaz loves to stand, her inability to tolerate sitting means that she spends most of her day side-lying whether at home or in school. This limits Imteyaz's ability to engage in classroom activities, like circle time, music and sensory group sessions. She finds it upsetting to not be at eye level to engage with her peers and is frustrated that she cannot recognise the origin of sounds and stimuli.

Imteyaz has a diagnosis of mixed quadriplegic cerebral palsy (spastic and dystonic). Her dystonia can cause a corkscrew-like movement where she will twist her spine and extend herself up and to the right. In previous seating systems, these movements would leave her poorly positioned and uncomfortable. She is PEG fed but has a history of difficulty keeping food down, which is likely compounded by her inability to stand or sit upright for sustained periods.

Goal setting

Imteyaz's family and her therapist, Ellie, identified one clear goal - to improve her sitting tolerance so that she could engage in classroom and home activities and not spend most of her day side-lying. In addition, a secondary goal was set to prevent further postural deterioration, particularly at her spine.

Assessment

Imteyaz's postural presentation and needs were determined by a plinth assessment in supine and sitting.

In supine, she presents with a pelvic obliquity (right side higher) and a pelvic rotation (left side forward). Both of which are partially correctable. Imteyaz's legs are also windswept to the right-hand side - her right leg is fixed in external rotation and abduction, and her left in internal rotation and adduction. Imteyaz has no limitations hip or knee flexion bilaterally.

1 Ellie manipulating Imteyaz's pelvis. Notice how the thumbs are not level due to the obliquity.



Pelvic rotation and windsweeping:

When Imteyaz's head and shoulders face forward, the spinal twist causes the pelvis to be rotated forward on the left-hand-side and legs are windswept to the right-hand side.

Moving Imteyaz's legs into midline causes the pelvis to rotate forward on the right, and the head and trunk rotated even further forward into a very non-functional position.

A set-up is required which allows some degree of wind-sweeping to ensure the head and trunk face forward.

2 A side lying position helps understand Imteyaz's spine.

Notice the S-shaped concavity in her back. Normally, as gravity is pressing down on the body, the spine would level out. This demonstrates how Imteyaz's scoliosis is partially fixed.

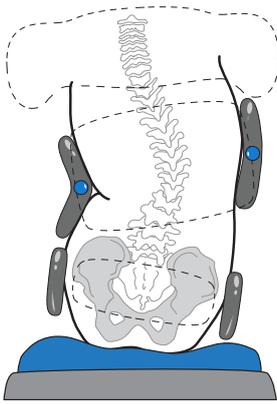


In a **seated** position on the plinth, Ellie was able to determine the effect that gravity has on Imteyaz's posture and how it affects her trunk and head control. This position is also ideal to help determine magnitude and direction of support required to reduce Imteyaz's partially correctable scoliosis.

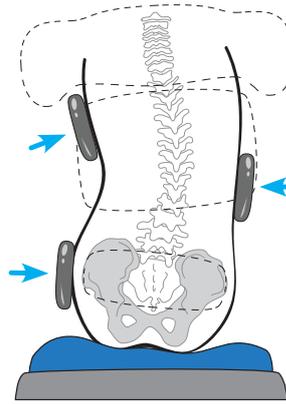
3 Notice how tall and upright Imteyaz becomes when 3-point loading principles are used to support the pelvis and spine: Head control, visual tracking and upper limb position are all improved.



Pelvic obliquity and scoliosis:



Imteyaz's pelvic obliquity and scoliosis without support. Her pelvis is higher on the right-hand side and the scoliosis is concave on the right-hand side at lumbar level.



3-point loading along her spine, partially straightens the scoliosis, helping to level the pelvis and open out the thoracic cavity.

Set up

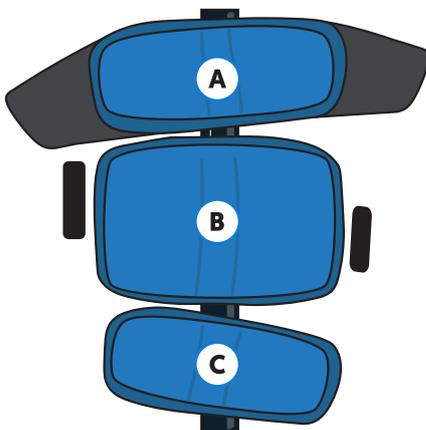
To accommodate Imteyaz's windswept posture, fixed pelvic rotation and obliquity, a split seat base and complex backrest were selected. The complex backrest allows depth and rotational adjustment at the sacral segment to accommodate her fixed rotation. In addition, both the thoracic and shoulder sections can be angled, and depth adjusted to ensure maximum contact and support with her spine.

Setting up the complex backrest:

Top down view



Front on view



- A Shoulder:** Minor rotation was used to accommodate the remaining spinal twist and scoliosis. Depth adjustment enabled maximum contact with her shoulders. The wings were protracted slightly to help maintain Imteyaz's arms in midline and control her dystonic movements.
- B Thoracic:** 3-point loading principles (right lateral higher than left) were used to reduce the scoliosis. Hinged lateral pads increased the support area and improved control of dystonic movements.
- C Sacral:** The sacral pad was rotated to accommodate the minor fixed pelvic obliquity. The unique sacral-to-thoracic transitional part supported her natural lumbar lordosis and encouraged an upright posture.

Split seat: the leg supports were windswept to the right which enabled Imteyaz's head and trunk to face forward. The femoral gables controlled the tight left leg and ensured there was adequate space for hygiene purposes or routines. Individual footplates helped control foot position with sandals that could accommodate AFOs.

Review

Following a period of use both at school and at home Imteyaz's progress with BeMe was reviewed.

At school: Imteyaz has significantly benefited from the BeMe. She can now tolerate sitting for over an hour before being repositioned in her standing frame and she now spends very little of the school day side-lying. As a result, Imteyaz can engage in classroom activities, such as circle and music time. Being at eye level with her peers and staff, has enabled her to gain a better understanding of her environment and she shows little distress. This is the first time in a long time that Imteyaz has been able to engage in classwork.

At home: mum, dad and Imteyaz's older sister are delighted with her new seat. Her sister commented that "I like this chair because it lets my sister sit with her legs to the side and that's the way she likes to sit". Imteyaz no longer spends her days at home on the sofa and can sit at the table with her family for dinner.

Imteyaz's therapist, Ellie, is very pleased how Imteyaz has responded to the BeMe, particularly, as for the first time in a long time she can tolerate a seated upright posture. Imteyaz digestion appears to have improved and she can engage in functional activities at home and in school. Ellie has commented how beneficial the seat has been to control Imteyaz's dystonic movements, noting that the combination of supports helps return her to an optimal position.





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