



EASyS
TWIST

The perception seat
for dynamic seating



Thomashilfen

TWIST ^{EASyS} elements



Wing suspension



Spring element



Spring movement limiter



FGF-track (flexible fibre glass track)



Back column



Seating system TWIST^{EASyS}



Wing suspension

Flexible wing suspensions adapt to the body contour and absorb the slightest moving impulses of the body to emit them after as sensory stimulus. Each wing suspension can be moved or taken out to ensure an individual adjustment.

Spring element

The moveable spring elements offer diverse movement to the child but always gently guide it back into the starting position. The single spring elements can be adjusted by 2 cm / 0.79" in depth and can also be tilted. This enables an individual setting for the iliac crest straightening or lumbar support.



Spring movement limiter

The red spring movement limiters are located inside the spring element. They enable the restriction of FGF-track travel. Less movement also means less stimulation, which can be important for children that are very sensitive to sensory stimulation. They can be fitted into each spring element as to requirement of the individual child.

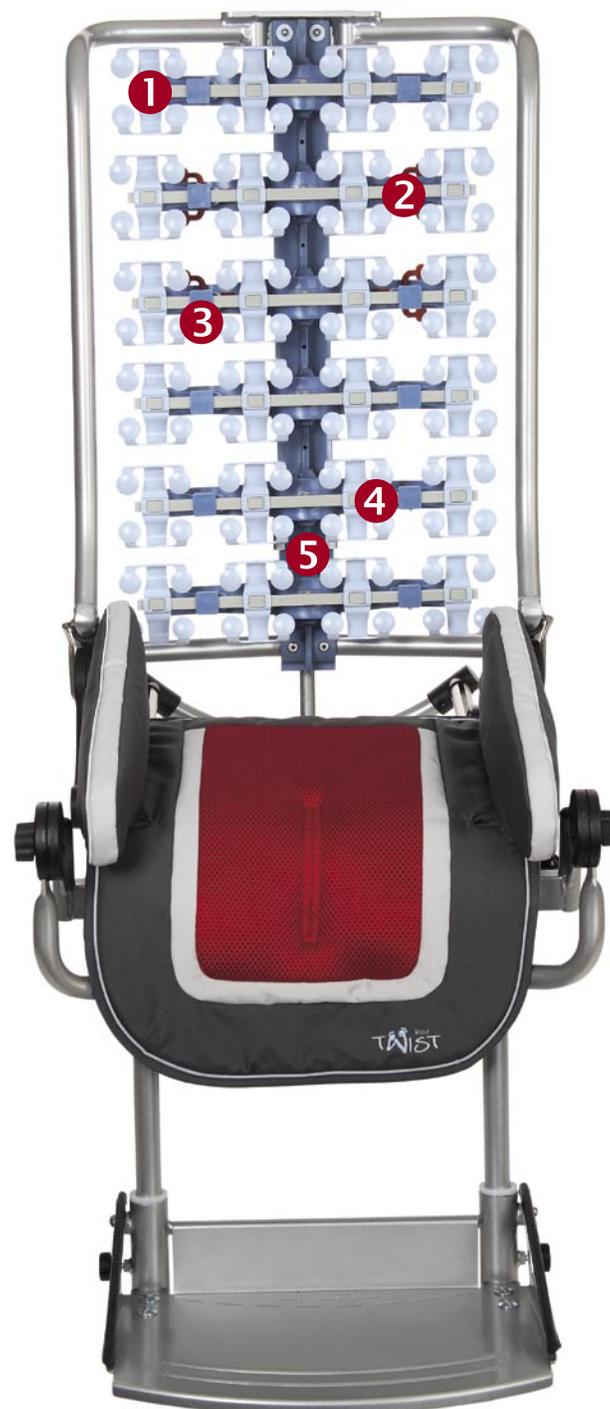
FGF-track (Flexible fibre glass track)

The tracks are manufactured in a material free from fatigue in an innovative glass fibre technology process. Next to a long service life they also offer an optimum of sitting comfort, which has a direct impact on the cognition process of the child.



Back column

The back column carries the spring elements and is responsible for the stability of the system.





TWIST EASyS

... is a perceptual concept for dynamic seating, which is based on the active principle of Micro-Stimulation®. It is designed to assist and support the child's development of spatial awareness.

The flexible spring elements and wing suspensions of the seat, activate and **support the individual movement** of the child and therefore help improve their cognitive and emotional development.



Work principles MiS Micro-Stimulation[®] when sitting down



Movement is a basis need for every child such is love, care and tribute.

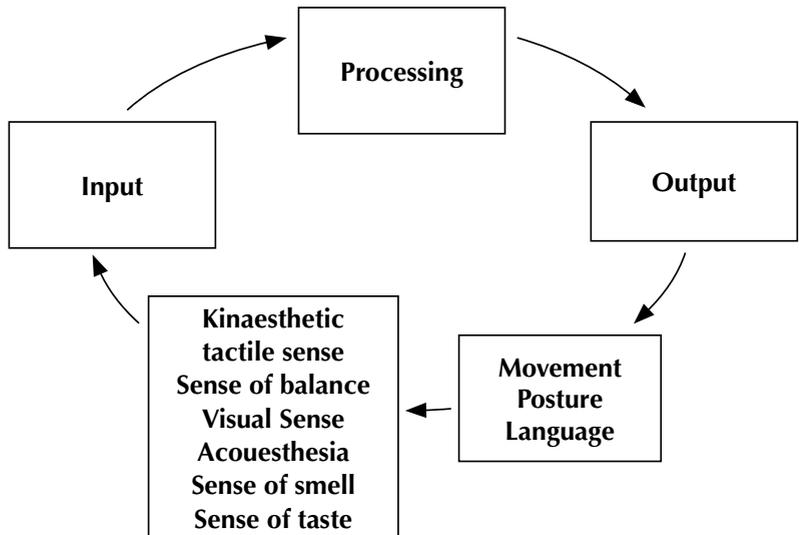
Work principle of impulse processing

Dr. h.c. Berta Bobath and Dr. Karel Bobath already discovered that movement, posture and other activities of the body are dependent on external stimulation. A sensory impulse of any kind is assimilated by the human body as a kind of input.

After reception this impulse is converted and processed to exit, so called output. This output expresses itself in a particular movement, a posture or even a noise or specific words.

People are dependent on impulses from their environment to interact with it!

Without cognition, there is no movement – and without movement, there is no directed, arbitrarily communication or interaction with the environment and other people:



Sketch – Work principle of the impulse processing

Work principles MiS Micro-Stimulation[®] when sitting down



The basic principle of the TWIST^{EASyS} perception seat is to give the children a sensory impulse with help of the MiS wing suspensions.

The system absorbs the slightest movements of the body and emits them elsewhere through an impulse.

This is how on the one hand an impulse-reaction-chain is started and on the other hand movement is possible without loss of stability.



Seating system TWIST^{EASyS}



TWIST^{EASyS} spring element



We all know about the concurrent relaxing and activating effect of sensory stimulation.



Work principles MiS Micro-Stimulation[®] when sitting down



„Vita motu constat“

„Life consists in movement.“

(Aristoteles)

TWIST^{EASys} activates the children again and again to carry out little micro movements.

These movements are tolerated by the seat unit without taking away the safety of a supporting seat unit.

The human organism possesses a sophisticated protection system, which prevents him from overloading single muscles or muscle groups partially.

We recognise this e.g. when changing from one leg to the other to spread our weight when standing up without being aware of it.

With children this „urge of movement“ is even more distinctive. They need the constant change of muscular tension and relaxation in order to develop body, mind and soul harmonically.



Children with disabilities are just as much dependent on their experience with movements as healthy children. Quite often the only difference is that they need a little more support to sit up straight!



Argentina

Age: 3 years

Diagnosis: cerebral moving malfunction with significant torso hypotony and heavy amplyopia

In the seat bucket:

- Without butterfly / chest harness Argentina moves her upper part of the body forward and displays a big arched kyphosis of the spine.
- The lateral trunk supports restrict her moving abilities and ensure a symmetric seating position. Because of the belt thickness the moving facilities with the arms are limited.
- To straighten up Argentina is constantly dependent on the inflexible butterfly / chest harness belt.
- When fastened with a butterfly / chest harness there is hardly any head control. The head tilts to the front or to the side.

In the TWIST ^{EASys} seat unit:

- Argentina is looking for contact to the back area which encourages her to straighten up self-employed. Through the active straightening in the torso her head control is more stable and the field of vision increases.
- The impulse generators on the sides of the torso are point-shaped and small which does not restrict the arms in their moving facilities. When moving the arms, the impulse generators adapt to this movement but also calmly guide her back into the symmetrical starting position.
- When she becomes tired, the flexible butterfly / chest harness belt helps her to sit. The moving facilities are not completely limited when belted up.
- Argentina seems more content and comfortable.

Before



After



EXPERTS VIEW:

„When Argentina is motivated and active, she can at times contribute towards keeping the stability of the body. It is good to have a device that supports her in active as well as in recovery periods and which is flexible to adapt to the specific movements of the body“.



TWIST^{EASyS} Impulse generators



RECOMMENDATION:

The more support the child needs the higher the impulse generators should be adjusted to the torso. However, there have to be at least 2 fingers space under the armpits to prevent pressure on important vasculars and nerves.

MiS Micro-Stimulation® for sitting wants to help children with special needs to stabilise without losing all moving facilities.

TWIST^{EASyS} Impulse generators



The round TWIST^{EASyS} impulse generators are sitting closely on the sides of the child's torso. The support joins two glass fibre profiles together and makes the system a little bit stiffer to offer more support in areas of need.

The height of the impulse generators can be adjusted in 1.5 cm / 0.59" steps to the anatomy of the child.

The child can easily move out of the symmetry with the impulse generator but will always be gently guided back into the starting position. The wing suspensions of the impulse generators supply additional sensory stimulation for a better body recognition.

Advantages of the TWIST^{EASyS} impulse generators

- Allow freedom of movement and at the same time provide stability
- Generate sensory stimulation at the child's torso
- Adjustable in height and width for the individual user
- Ensure that the muscle activity of the child is not totally taken away
- Due to the airy design there are no distracting rough edges
- Can be removed or clipped on as to requirement



Inflexible belts should be applied only in rigid seating systems. To support the MiS Micro-Stimulation® all positioning components should be as flexible as possible.

Flexible TWIST^{EASyS} belts



With a flexible, micro-stimulating back system it makes sense to combine it also with a flexible belt system.

In the pelvis area however firm support is essential as especially children with spastic moving

patterns have to be positioned in this area with considerable resistance.

The upper part of the body however can easily move in the TWIST^{EASyS} perception seat with MiS wing suspensions and especially this characteristic should be implemented in a belt system for the upper part of the body. We recommend an butterfly / chest harness belt made from neoprene. This helps the children to straighten up but still allows freedom of movement.

Advantages of the flexible TWIST^{EASyS} belts:

- Adapt well to the child's body shape
- In general they are more breathable
- Haptic feeling is better
- React to the slightest movements of the child



RECOMMENDATION:

Especially with fine motoric activities the torso support can be very important for a child in order to become active with the arms and hands. Dynamic belts offer this stability without taking the flexibility of the system away.



Recommendations for positioning in a TWIST^{EASyS} perception seat:

The TWIST^{EASyS} perception seat is characterised by a flexible back system and a firm seating area. The open design of the back system makes it possible to monitor and examine the posture of the child during positioning. This is a precondition to adjust the system to each child individually.

General requirements:

- 1 The child needs a firm foot and seat basis as a stable underlay in order to straighten up.
- 2 In the area of the torso movement has to be possible. This means that the child's feet have to stand up firmly on the footplate. They are the basis of stability.
- 3 A stable underlay is necessary to create a type of bracing for all moving parts of the body.
- 4 Based on that the pelvis has to be positioned on the seating area. An upright pelvis position is crucial for an easy straightening of the spine.

RECOMMENDATION:

A basic principle in the health care for children should be: „Children receive as much sitting support as necessary but as little as possible!“

This means the provision should be carried out according to the „Bottom-Up-Idea“, rather than the „Top-Down“!



(1 to 3)



(4)

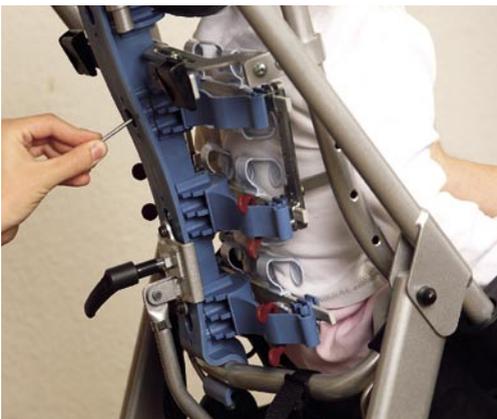


What is special about the TWIST^{EASyS} perception seat:

- ① The spring elements affect the positioning in the pelvis as well as in the whole back area without resulting in a complete stiffness.
- ② The bottom spring element can be used to support an iliac crest straightening. The upper elements can constitutively be adjusted to the shape of the spine, and by that they support the lumbar spine area. Slightest movements from this individual position for the child are possible but it will always be gently guided back in the starting position.



(1)



(2)

RECOMMENDATION:

With help of the open design of the back system the posture of the child can be thoroughly monitored and examined during setting.

The cover with interlaced distance yarns as well as the design of the back unit ensure very good breathability.



Adjustment TWIST^{EASyS}

First step



Second step



Third step



Fourth step



IMPORTANT:

It is essential that the testing is carried out by trained personnel (therapists, doctors, e.g.) who know the child and are able to assess it.

First step

First the footrest, seat depth and seat width have to be adjusted. In this way a good starting position can be achieved from which further individual settings can be carried out.

Second step

A suitable hip angle has to be set. Afterwards, the back height can be adjusted. It is possible that for this setting a complete spring element (FGF-track) has to be removed.

In order to do this, please remove the element completely with help of the big screw positioned in the middle of the back part.

The headrest can now be set ergonomically to the correct height.

Third step

The single elements can now be adjusted according to the individual needs of the child. To do this, it is best to work from bottom to top. The bottom spring element can if required set in depth to support the iliac crest of the child.

(Attention: In this case it is advisable to work with a Tuber-adaptor in order to position and hold the ischium hunch!)

Furthermore please check whether an adaptor or support is necessary in the lumbar area. It is important to examine whether the spine of the child is flexible at all in this area. Otherwise, a lumbar support can be counterproductive.

Fourth step

If accessories are required, these parts can now be attached.

E.g. the TWIST^{EASyS} impulse generators: To start with, the supports are positioned roughly between two profiles. The finer height adjustment is carried out after, by punching the carriers to which the impulse generators are being attached. When the adjustment is completed the cover can be put over the back part.



Every person and especially children have a basic need of cognition, movement and communication.

TWIST EASyS

... is a perceptual concept for dynamic seating, which is based on the active principle of Micro-Stimulation®.



TWIST EASyS
with J chassis



TWIST EASyS
with Q chassis



TWIST EASyS
with Z underframe



We would like to thank the Parent-Child-Group of the Heinrich-Piepmeyer-Haus in Münster



Parent-Child-Group

The Heinrich-Piepmeyer-Haus offers parents with their disabled children or children in danger of disability about 12 courses a year for a duration of 3 weeks each. The courses are laid out for six children and one parent (father or mother) as in-patient diagnostic therapeutical Rehab scheme.

The therapy concepts are based and developed on a holistic diagnostic in order to support the children in their individual development. Parents will be shown options to relief the strain with the daily life routine.

Mobile resources and appliances for all areas of the daily life can be intensely tested.

The liaison with the treating therapists and pedagogues in the hometown of the children is important. Work fields of the rehabilitation are physiotherapy, occupational therapy, logopedics, therapeutic pedagogy and social pedagogy as well as additional offers for parents.

At the beginning of the course, the diagnostic is carried out and discussed with the parents in order to decide how the child has to be attended to therapeutically during the course.

The therapies are orientated at the state of development of the child and at the needs of the family.

The ambulant supervising specialists of therapy and pedagogy in the hometown are contacted by telephone during the course for a professional exchange. Prof. Dr. em. Dietrich Palm is responsible for the medical supervision.

He deals with neurological and general queries regarding children.

All children are also examined by Dr. Ulrich Hafkemeyer, Orthopedist and Physiotherapist.

In emergencies and for conciliar examinations the institutes of the nearby university hospitals can be consulted.



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und Verhalten“

Dorothea Beigl, 2003



Member of the International
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Rehabilitation of Children and Youths



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