

LECKEY



# Squiggles TT

## Clinical Workbook

Supporting Children

# What is Targeted Training?

Targeted Training [TT] <sup>2,3,4,5,6,7</sup> is an evidence-based therapy to help children with neurodisability gain upright postural control and improve their functional abilities. It works on the same principle as how a typically developing (TD) infant learns to be upright<sup>1</sup>, developing motor control sequentially from the head downwards. TT mimics this process, using equipment to support the child directly beneath the segment where control is impaired and then targeting head or trunk control at that segment with intensive play-based activities – we call this 'Targeted Play'.

For more information on Gaining Upright Control, please visit the clinical page at [www.leckey.com](http://www.leckey.com)

## What do I need?

Previous research considered the trunk as a single segment but this oversimplification does not help guide therapy. Penny Butler developed the SATCo [Segmental Assessment of Trunk Control] as a measurement tool for head and trunk control <sup>1</sup>[see Leckey SATCo brochure] and this is where the Targeted Training journey begins.

Targeted Training is carried out with the child in the upright posture. Squiggles TT is used to support the child directly beneath the segment where control is impaired. The support provided by the Squiggles TT is lowered as the child gains control sequentially from the top down.

“This process simplifies motor learning by targeting just one trunk segment at a time”

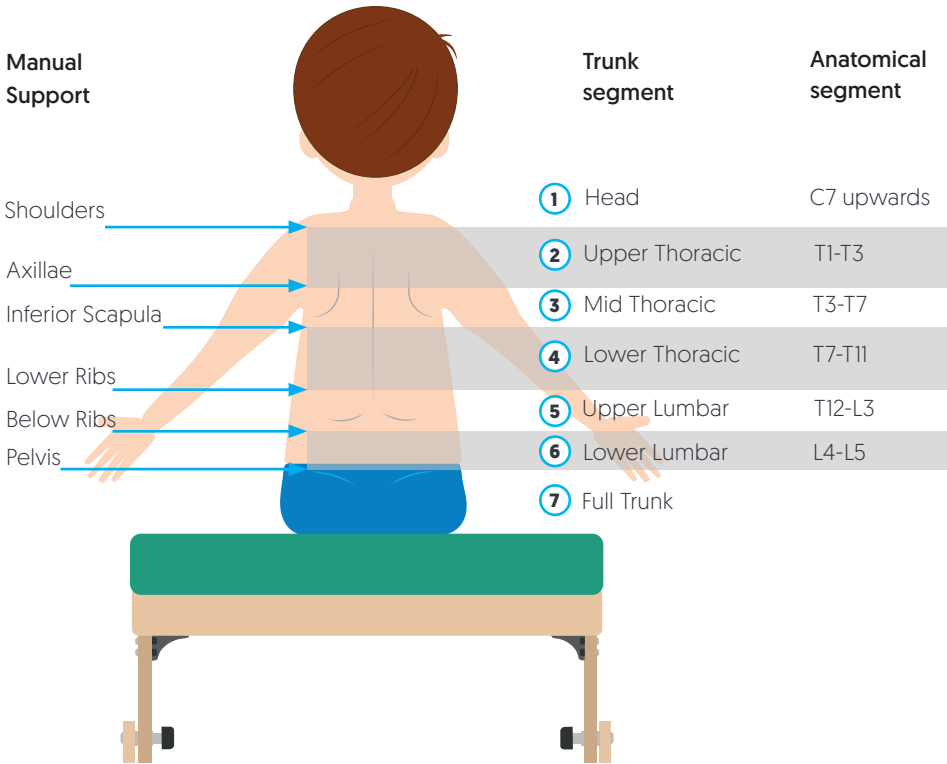
Penny Butler, Physiotherapy Consultant



TT can bring life-changing improvements for the child <sup>6,7</sup> but requires commitment both from the family/care team for the near daily targeted play sessions required to improve motor control, and from the therapist for regular SATCo reviews to assess the level of control and adjust the support as necessary.



# Why is TT beneficial?



Targeted Training utilises the upright posture to train static, active and reactive control, so that the child has all the necessary elements for full upright control.

Targeted Training simplifies motor learning by targeting just one trunk segment at a time, thus providing the 'control building blocks' for function to emerge. For example, targeted play activities may include 'stacking cups or popping bubbles' to work towards the functional goal of 'sitting without hand support'. This mirrors typical development where children learn postural control through play.

The Squiggles TT acts as 'therapist's hands' giving secure and precise support enabling a focus on self-directed movement through play. The support is such that the head is always stable – either by equipment support or the child's own appropriate muscle activity. Head stability ensures correct use of sensory input [vision and balance] <sup>8,9</sup>.



# Neutral vertical posture: the basis of Targeted Training therapy

Targeted Training centres on the neutral vertical posture. It is important to distinguish the neutral vertical posture from simply being 'upright' which is much less specific.

The neutral vertical posture means that the joints of the head and trunk are close as possible to neutral i.e. not flexed, extended, laterally flexed or rotated, so all muscle groups can respond. This also means that joints are under ACTIVE control and not resting on bony end stops or taut ligaments to gain pseudo-control.

Neutral Vertical Posture is the ideal basis for learning movement control as it enables efficient movement in all directions using all muscle group. It is seen as the moment when the child actively lifts their head and the free part of their body to neutral and engages in play/interaction.

“ It is this true control learning that enables transfer to functional abilities ”

Penny Butler, Physiotherapy Consultant



For more information on Neutral Vertical Posture, please visit the clinical page at [www.leckey.com](http://www.leckey.com)





# Squiggles TT:

features for use in Targeted Training therapy



**Tray**  
The head support & padded tray facilitate Targeted Training at the head and upper thoracic level.



**Horizontal Transfer**  
Allows more complex children to be transferred into Squiggles TT to work on developing head & trunk control.



**Supportive Wraps**  
with unique ratchet system which lock off to ensure repeatability.

**Dynamic Base**  
Enables children to develop reactive trunk control in a fun and interactive way.

# The Targeted Training therapy programme

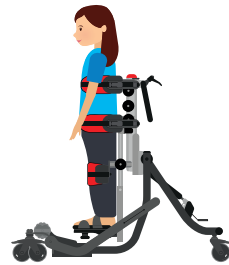
Targeted Training is explained in detail in the Squiggles TT Therapy Guide. It can either be an addition to a child's routine therapy programme, or a stand-alone therapy for a defined period e.g. 9-12 months. In either situation, review by the therapist every 6-8 weeks, including SATCo, will reveal any necessary adjustments to the Squiggles TT, such as moving the trunk support caudally by one trunk segment as control is gained.

The targeted segment will have been identified from the SATCo including whether work is first needed on static, on active or on reactive control at the targeted segment.

## Static Control

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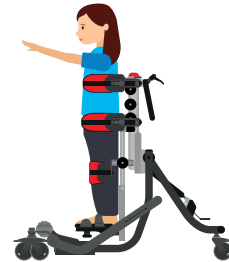
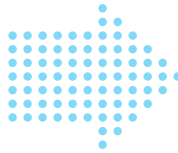
The child maintains a steady neutral vertical posture for 5 seconds.



## Active Control

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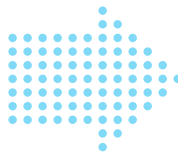
The child holds the neutral vertical posture while turning the head or reaching to both sides.



## Reactive Control

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The child holds or quickly regains the neutral vertical posture when balance is challenged.



**Segment control** means that the child should be able to maintain a neutral vertical posture at that segment and at all free segments above, to control active movement in all planes that the segment moves (including rotation about a vertical axis) and to quickly regain the neutral vertical posture after an external disturbance (a perturbation).

Static, active and reactive control can all be achieved through 'Targeted Play'. Therapists complete the SATCo, set up the Squiggles TT and advise parents on use, parents carry out 'Targeted Play' activity programme daily with the child.

# How long and how often should the Squiggles TT be used?

- 1 Around 30 minutes each day of Targeted Play is needed to start gaining the benefits of Targeted Training. Children may need to build up to 30 minutes with sessions as short as 5-10 minutes at first. If they tire and can no longer maintain a truly upright (neutral vertical) posture the Targeted Play session should stop.
- 2 The 30 minute session can be split into two shorter sessions if preferable. If a child remains happy and engaged, Targeted Play sessions can be built up to 45 minutes.
- 3 The Squiggles TT can be used for regular postural management 'standing time' as well, though it is important to remember this does not replace Targeted Play sessions in terms of developing postural control.
- 4 The child should be taken out of the Squiggles TT after one hour and allowed to move and wriggle as this stander holds children more firmly than regular standers, it can still be used later in the day if so wished.
- 5 Targeted Training should take place between 5-6 days a week. If sessions do not reach a minimum of 4 days a week the child is unlikely to get the benefits of Targeted Training.

## Functional and Postural Assessment

Targeted Training works on control, assessed by the SATCo<sup>1</sup> at each review session. Upright control of the head and trunk is directly linked to function [GMFM]<sup>10,11,12,13,14,15,16,17</sup> and upright postural control carries over to other skills, such as lying and rolling<sup>4</sup>. It is recommended that the Gross Motor Function Measure [66 or 88]<sup>8</sup> is used at six-monthly intervals to see the effect of Targeted Training on function. Additional use of the Pediatric Evaluation of Disability Inventory<sup>8</sup> will indicate whether functional change is being integrated into everyday life. The Posture and Postural Ability Scale<sup>9</sup> can provide additional insight into a child's posture during function and give a record of postural alignment.

For full list of references please visit the Squiggles TT page at [www.leckey.com](http://www.leckey.com)



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