

Supporting Children

What is the SATCo?

The SATCo ^{i,ii} is a validated outcome measure that identifies at which head/trunk segment Targeted Training should commence. The SATCo determines the topmost (most cephalo) segment at which control of the upright posture is poor or not demonstrated i.e. is currently being learned for each of static, active and reactive control.

SATCo testing starts with head control and works systematically downwards testing each segment in turn until the child clearly cannot maintain any control/upright posture. The SATCo may reveal that static, active and reactive control are being learnt simultaneously at the same segmental level or at different segmental levels.



How to do the SATCo

A minimum of two testers will be needed: one to support the trunk and the other to monitor the child's posture and hand/arm position and to give the nudges for the reactive component of the SATCo.

- 1. The child is placed in sitting on the Leckey Therapy bench, knees at 90 and feet supported.
- 2. If the child is under 18 months of age or has a strong extensor thrust, the feet are left free of support.
- 3. The child should wear only underwear or shorts. Shoes and AFOs can be worn.
- 4. The pelvic cradle with straps is positioned as shown to hold the pelvis in neutral.
- 5. The child's head/trunk is supported manually in an upright posture by the therapist.
- 6. It is recommended that the SATCo is videoed.

i Butler PB, Saavedra S, Sofranac M, Jarvis SE, Woollacott MH. Refinement, Reliability, and Validity of the Segmental Assessment of Trunk Control. Pediatric Physical Therapy. 2010; 22(3):246-257. Winner of the Toby Long Award for the best manuscript published in Paediatric Physical Therapy, 2010. ii Pin TW. Butler PB. Cheung H-M. Shum SI-F. Segmental Assessment of Trunk Control in infants from 4 to 9 months of age- a psychometric study. BMC Pediatrics, 2018; 18:182

How is manual support given?

The therapist's hands should encircle the trunk directly beneath the segment under test. This support should be horizontal with the aim of eliminating trunk movement below the tested segment. Do not move 'with the child' the aim is to hold the segment steady in space.



Firm manual support is given directly beneath the segment under test. When testing **head control**, the child's arms should be supported at shoulder height either manually or on a table. For all other segments and full trunk testing, the arms/hands should be completely free and not contacting the bench, any part of the body or the assessors.



This ensures that it is the segments above the manual support alone that are controlling the child's posture ^{III}. Testing full trunk control is carried out with the child sitting on the SATCo bench but with SATCo straps removed and no manual support.

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What segments are defined?



Scoring the SATCo

Control is graded as present or absent:

there is no 'in-between'. It is assessed under three conditions at each segment:

Static control - maintain a neutral vertical head/trunk posture for 5 seconds.

Active (anticipatory) control - hold neutral vertical posture while turning head to 450 and/or reaching to both left and to right

Reactive control - maintain or quickly return to neutral vertical posture when perturbed. A brisk nudge, sufficient to displace the child, is given at the top of the sternum, C7/T1 and laterally, both left and right (acromion). These locations are consistent whichever segment is under test.

Note: reactive control is not tested at the head segment.

Client Name:	Level of Manual Support	Functional Level	Static	Active	Reactive	Comments
Ref# :	Pelvic / thigh strap used except as indicated	Arms and hands in air except as indicated	Maintain vertical neutral position of head and trunk above manual support level			
Tester Name:	1			While turning	Maintain / quickly	
Date:	-		Minimum of 5 seconds	head with arms lifted	regain following brisk nudge	
57	Shoulder girdle testers hand position may vary from horizontal	Head control Arms may be supported throughout			NOT tested for head control	
	Axillae	Upper Thoracic Control				
	Inferior scapula	Mid Thoracic Control				
51	Over lower ribs	Lower Thoracic Control				
占十	Below ribs	Upper Lumbar Control				
	Pelvis	Lower Lumbar Control				
上十	No support given and pelvic/thigh straps removed	Full Trunk Control				
Fixed spinal deformity?	Yes	No 🗌	Comments:			
Limitation of cervical rotation	Left	Right	Comments:			

iii Butler PB, Major RE. The missing link? Therapy issues of open and closed chains. Physiotherapy. 2003: 89(8): 465-470.

Application for SATCo

SATCo testing process and identification of the targeted segment for Targeted Training

An example of the testing process on one child : Testing Static Control

(Process repeated at each segment for Active and Reactive control)



Bibliography

- 1. Butler PB, Saavedra S, Sofranac M, Jarvis SE, Woollacott MH. Refinement, Reliability, and Validity of the Segmental Assessment of Trunk Control. Pediatric Physical Therapy. 2010; 22(3):246-257. Winner of the Toby Long Award for the best manuscript published in Paediatric Physical Therapy, 2010.
- 2. Palisano RJ, Rosenbaum P, Walter S, et al. Development and reliability of a system to classify gross motor function in children with cerebral palsy. Dev Med Child Neurol. 1997; 39: 214–223. <u>https://canchild.ca/en/resources/44-gross-motor-function-measure-gmfm</u>
- Haley SM, Coster WJ, Ludlow LH, Haltiwanger JT, Andrellos PA. Pediatric Evaluation of Disability Inventory: Development, Standardization and Administration Manual. Boston, MA: Trustees of Boston University, 1992. Haley S, Coster W. PEDI-CAT: Development, Standardization and Administration Manual. Boston, MA: CRECare, LLC, 2010.
- 4. Pountney TE, Cheek L, Green E, Mulcahy C, Nelham R. Content and Criterion Validation of the Chailey Levels of Ability. Physiotherapy. 1999; 85[8]: 410-416.
- Rodby-Bousquet E, Persson-Bunke M, Czuba T. Psychometric evaluation of the Posture and Postural Ability Scale for children with cerebral palsy. Clinical Rehabil. 2016; 30(7): 1-8.
 Rodby-Bousquet E, Agustsson A, Jonsdottir G, Czuba T, Johansson AC and Hagglund G. Interrater reliability and construct validity of the Posture and Postural Ability Scale in adults with cerebral palsy in supine, prone, sitting and standing positions. Clin Rehabil 2014; 28: 82–90. (*Note: This paper gives the PPAS in full.*)



Leckey 19c Ballinderry Road Lisburn BT28 2SA Northern Ireland





leckey.com