The Movement Centre
moving
children
forward

Targeted Training: An Innovative Concept For Promoting Upright Control

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About us

- We are an independent charity
- Based at orthopaedic hospital in Oswestry, Shropshire
- Treating children from all over the UK.

Who we treat

We treat children who have difficulties with movement control:

- Majority have Cerebral Palsy but we also see children who have;
- Global Developmental Delay
- Down Syndrome
- Genetic conditions
- Some who have no diagnosis.

Referrals

- Physiotherapists
- Occupational Therapists
- Consultants
- GPs
- Families (self referral)
- Case managers
- Social workers.

Normal Developmental Sequence

The basis for many physiotherapy approaches

We gain control of our body gradually from the top down in a sequential manner:

- Head
- Trunk (upper, middle, lower)
- Pelvis
- Lower limbs.

What happens if it goes wrong e.g. brain injury…

…and the child is unable to make these gains?

Physiotherapy

The child is referred to see a paediatric physiotherapist within the NHS who will work to assist them to overcome the obstacles of poor movement control so that functional gains can be made.

Most of our referrals are generated because, despite this assistance, the child continues to have significant movement control difficulties.

Gaining head control

"Stabilizing the orientation of the head is a priority task for the nervous system, for the movement performance to be accurate."

Massion J, Aurenty R, Mouchnino L, Deat A (1991)

Head control

VISUAL
(Eye)

VESTIBULAR
(Labyrinth)

PROPRIOCEPTIVE
(Muscle, joint, skin)

CENTRAL NERVOUS SYSTEM
(Coordination, integration)

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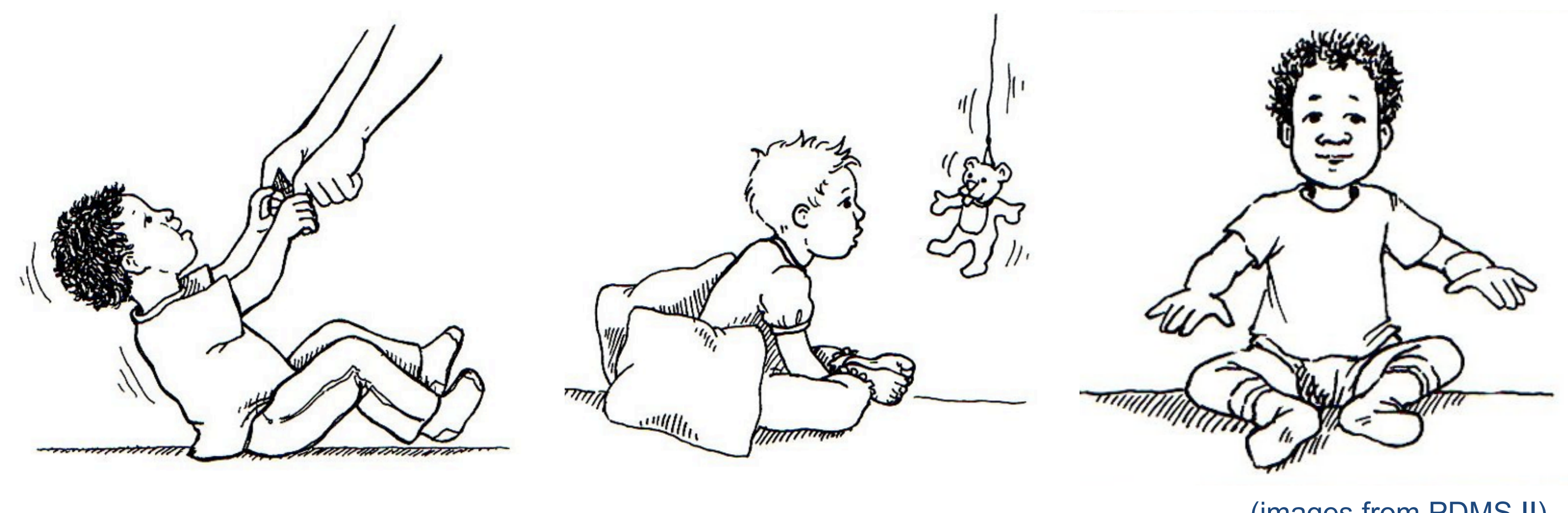
Assessing whether a child has control in their trunk can be a lot more complicated…

Trunk control



(images from PDMS II)

- Trunk control (children and adults) is typically assessed by the ability to get in and out of sit and ability to hold sitting position with or without propping on arms
- Global measures of trunk control DO NOT provide specific information to guide treatment.

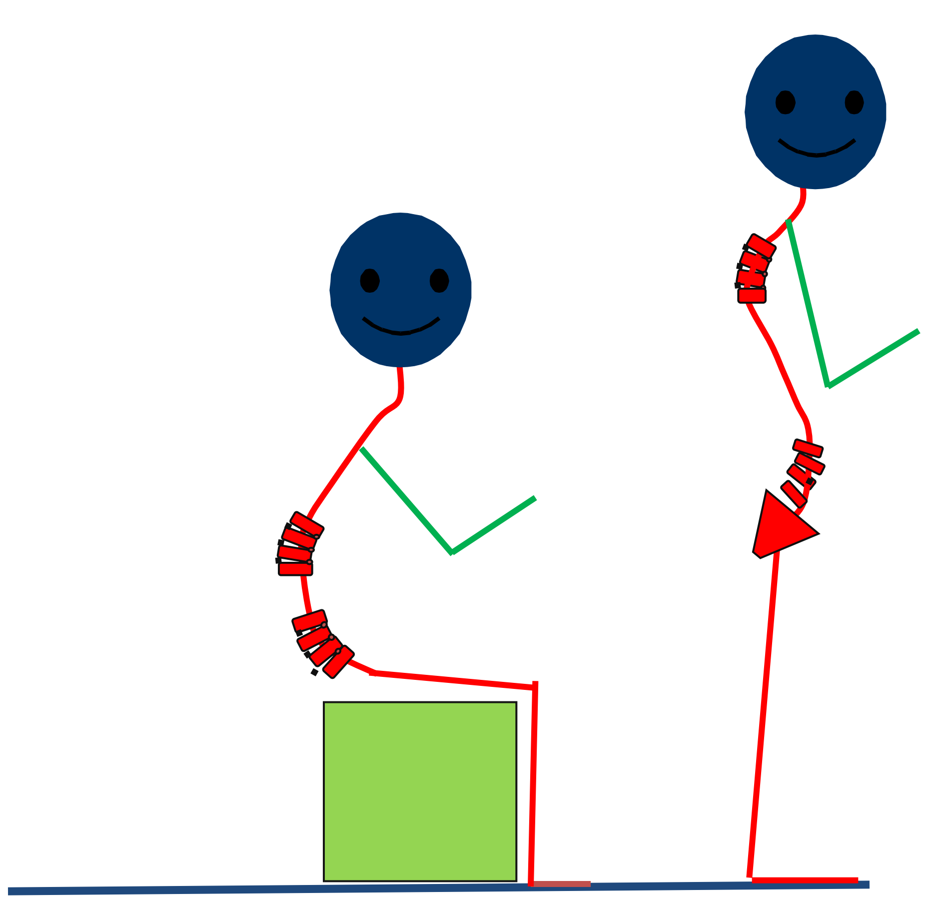
When it is difficult

If you don't have sufficient neuromuscular control to achieve and maintain useful postures up against gravity, you soon learn to cheat.

We make it easier for ourselves by

closing chains.

Collapse of the spine into full flexion or full extension



We use them all the time. It is easy to *move between them* when your body has full neuromuscular control.

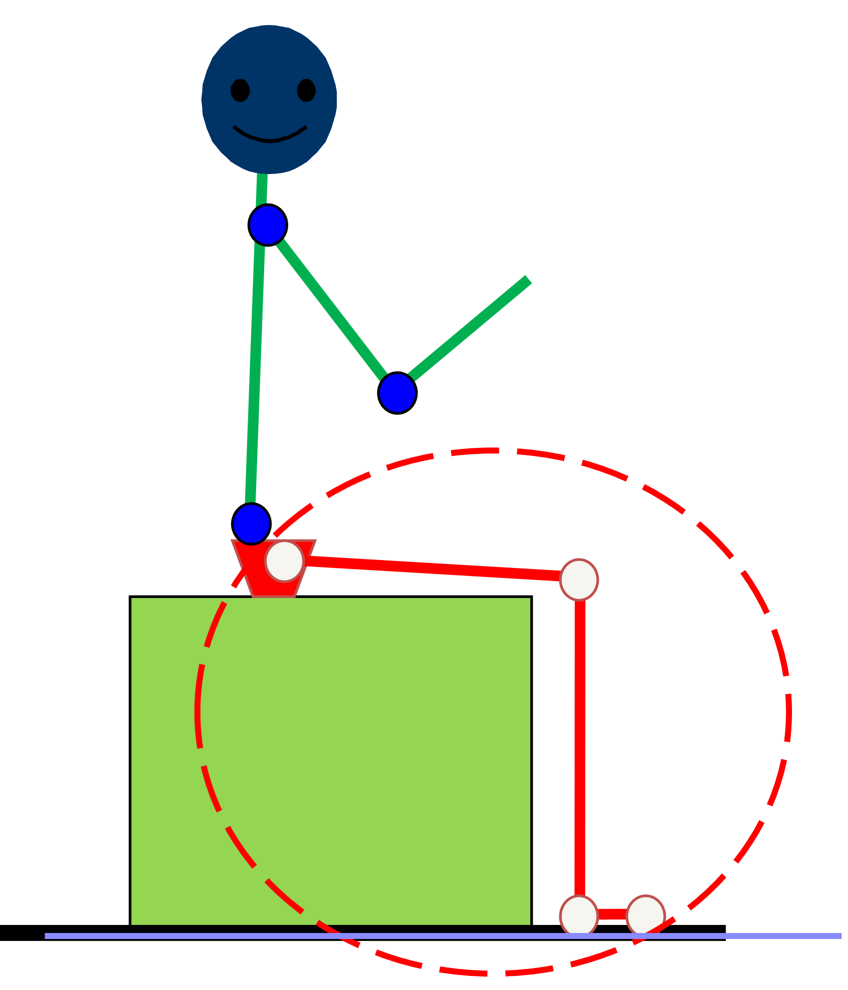
Open and closed chains

The less control your body has, the more you **DEPEND** on closed chains.

The demand for neuromuscular control is reduced.

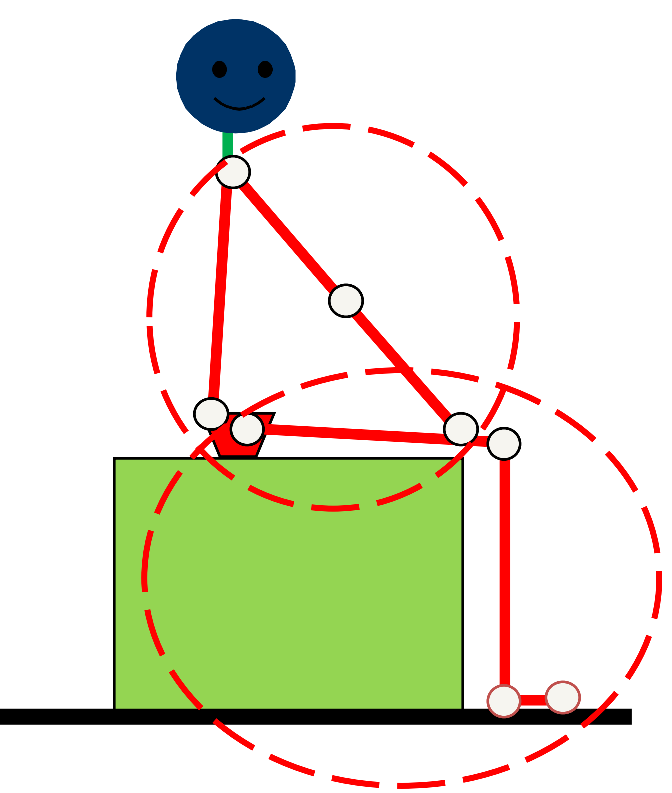
Neuromuscular control may be severely compromised and subtle use of closed chains will then still enable a posture to be held and function achieved.

Sitting Balance



- A combination of *Closed* and *Open Chains*
- The spine/trunk will be under full active neuromuscular control provided that joints are not at end of range.

Sitting Balance?



- A combination of Closed and Open Chains
- A further Closed Chain has been introduced
- Only the cervical spine is unquestionably under active control

Control can only be identified or improved if Open Chains are used

Closed chains good or bad?

Closed chains can be a valuable therapy option – if used at the therapist's discretion i.e. rehabilitation.

If they are being used as a compensatory mechanism for hidden control problems they must be identified and eliminated before progress can be made.

How do we reveal them?

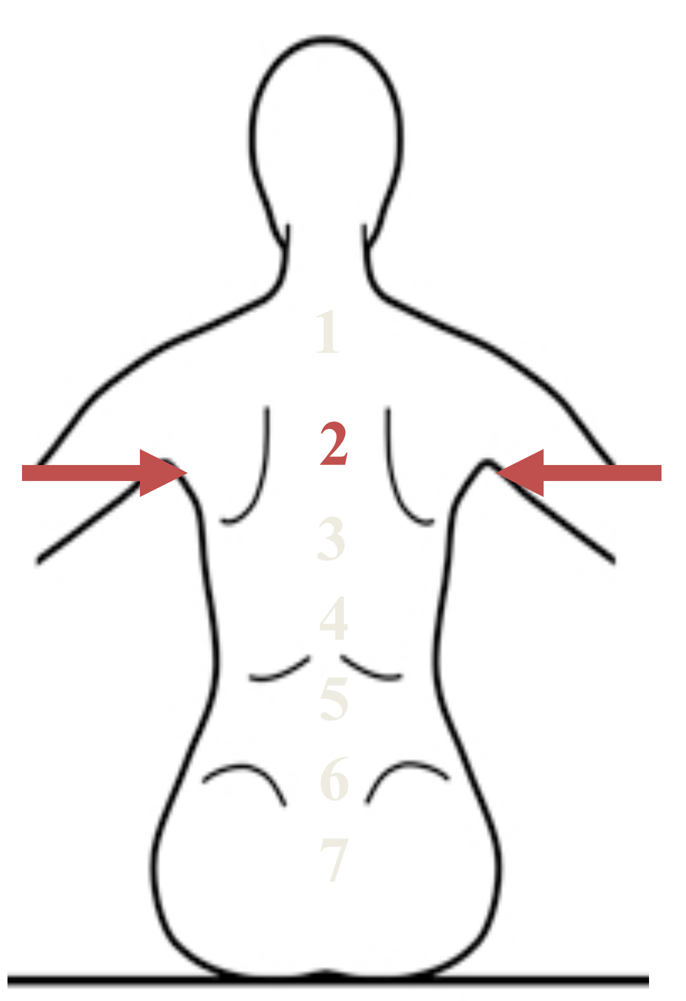
Introduction to *Segmental Assessment of Trunk Control* (SATCo)

A reliable, validated and internationally recognised assessment tool and outcome measure.

SATCo: Requires open chains

Provides regional differentiation of trunk control.

Three aspects of control



Static (steady state)

Align and maintain 5 seconds

Active

Hold alignment while turning head or reaching

Reactive

Maintain or quickly return to upright when perturbed

Introduction to Targeted Training therapy

Implementing Targeted Training

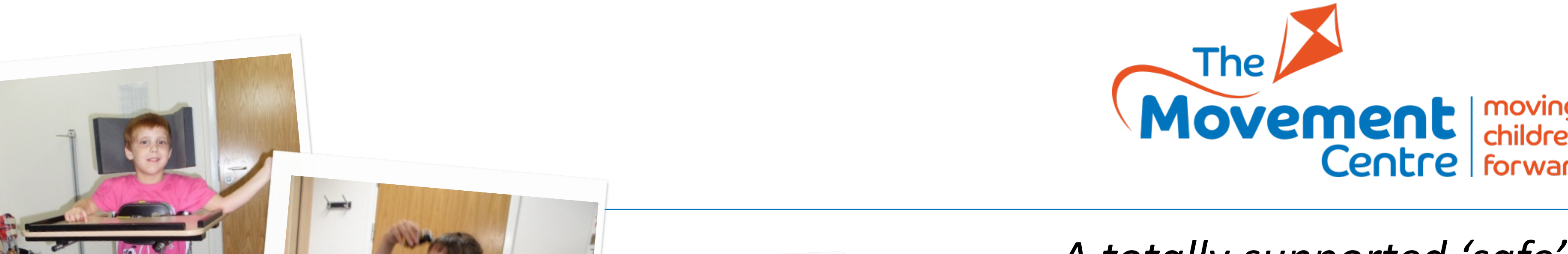
- Find the level where control is poor (SATCo)
- Provide equipment to hold all points distal to this in an upright, neutral alignment
- Design a programme of specific exercises
- Teach the family/carer
- Set goals, including child, family and physio
- Review every 8-10 weeks, reassess and progress as able
- Course of therapy is 9-12 months.

Targeted Training at home

- Carry out 1:1 exercise programme every day using the equipment provided
- For 30 mins (or two shorter sessions)
- Follow advice and recommendations
- Return to The Movement Centre every 8-10 weeks for review and reassessment.

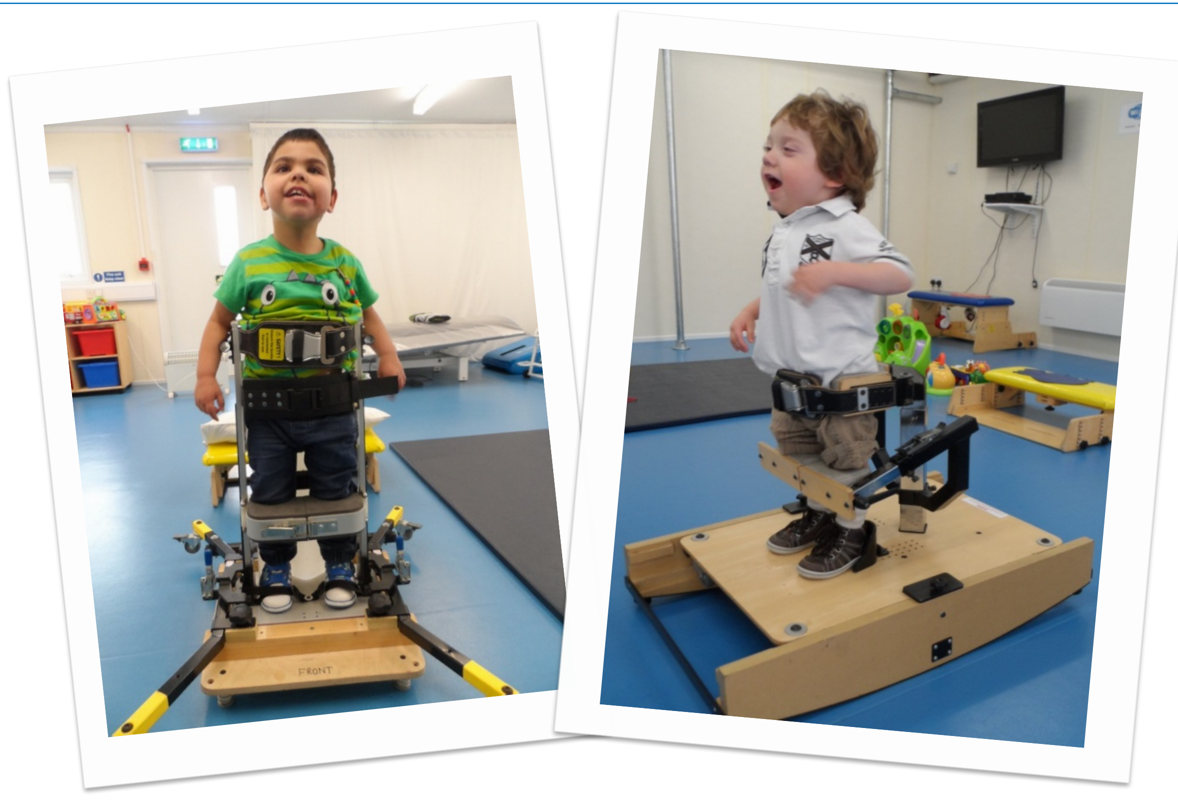
Working with other Professionals

- Communication with the child’s main physiotherapist begins at point of referral .
- Engineers who build and modify the frames
- Communication with Orthotist when specific recommendation for AFOs or tuning
- O.T., Consultant, classroom assistants, carers included as discussed with families



A totally supported 'safe' child may not learn….

A child will start Targeted Training with support at the appropriate level and progress downward as far as possible as control is gained.



Reactive control can be challenged
by adding a wobble board or rocking base.

Targeted Training replicates normal development of the upright posture.

Benefits

- Provides a daily input of therapy
- Does not require professional to deliver
- Easy to learn
- Empowers families
- Complements standard physiotherapy
- Investment for the future.

Collaborations

Ongoing collaboration with MMU and LJMU and Keele University regarding:

- Service development
- Using technology to enhance patient experience and service delivery
- Teaching on post graduate course

Why is Targeted Training not widely available?

The Challenges

- Assessments take 2-3 hours
- Funding is not simple
- Equipment is bespoke
- Some resistance from clinicians
- Training required to deliver Targeted Training
- Online presence and Social media use

The Team

Clinical: Physiotherapists and physiotherapy assistants.

Non Clinical: Marketing, fundraising and financial management.

But we both have to speak each other's language, and facilitate every aspect of our work.

Funding our work

The Movement Centre is a registered charity and, as such, we do not automatically receive any NHS funding but rely on voluntary income to continue our work. In order to do this:

- We apply to individual Trusts and Foundations
- We work with corporate partners
- We run, and assist others to run fundraising events
- Through raising awareness we receive individual donations.

Raising funds!

Funding the therapy

We aim that every child who could benefit from Targeted Training is able to access the therapy, therefore:

- We apply to CCGs through the IFR route for individual children, but the majority are refused
- Our fundraisers work with the families to establish a funding pathway
- We identify Trusts and Foundations that families can apply to and assist with the applications
- We help the families with fundraising events
- Families can apply to us for support from our own fundraising.

Online and Social Media

This plays a key role in all aspects of our work. It is vital for our marketing, our fundraising efforts, communications, and creates a community for our supporters and families.

Twitter and Facebook

This gives us a platform to engage directly and indirectly with many varied audiences. This creates a culture, which supports our service users from start to finish. Find us at:

- **Twitter: @TMCOswestry**
- **Facebook: /TMCOswestry**

Time Investment

To make this work it is vital to:

- Be proactive, constantly monitoring and updating, and producing content
- Engage with others
- Be reactive; responding to enquiries from new and current families, fundraisers, and other organisations.

This can be a full time job!

The Future

- Ongoing research
- Train more physios
- Equipment availability
- In-house orthotist
- Other locations in the UK
- Reach more children

Evidence and Research

Thank You!

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