Crossing Midline: What did you say?

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Therapeutic use of everyday life activities (occupations) with individuals or groups for the purpose of enhancing or enabling participation in roles, habits, and routines in home, school, workplace, community, and other settings. (AOTA, 2014b)

Therapeutically assist in accomplishing the tasks and activities, which are important to YOU to do in your everyday life from sleep to waking hours.
Occupational therapy helps children develop and master skills for independence. Occupational therapy can help with abilities such as opening and closing things, picking up and releasing toys of various sizes and shapes, stacking and building, manipulating knobs and buttons, experimenting with crayons etc. Therapists also help children learn to feed and dress themselves and teach them skills for playing and interacting with other children.

(National Down Syndrome Society, 2016)
What is crossing midline?

The ability to move your:
- Hand/arm
- Foot/leg
- Eye (gaze)

to the space of its partner.

What is the development of crossing midline? Overview

A. As babies, we begin moving laterally.
B. From there, we learn to move to our midline.
C. The next step, is to cross the midline.

What is the development of crossing midline? Some detail

A. Birth to 3 months
   - Unilateral Movement
   - Typically 1 arm or 1 leg
   - Beginning to reach and kick

(Case-Smith and O’Brien, 2000)
What is the development of crossing midline?

3 to 10 months
Symmetrical movement (bilateral)

7 to 11 months
Reciprocal movement (bilateral)

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17 to 18 months
Asymmetrical movement (bilateral)

(Case-Smith and O’Brien, 2010)

2 to 3 years old
Simultaneous asymmetrical manipulation (bilateral)

18 to 24 months
Simultaneous symmetrical manipulation (bilateral)

2 to 3 years old
Simultaneous asymmetrical manipulation (bilateral)

(Case-Smith and O’Brien, 2010)

3 to 4 years old
Learned to cross midline

4 to 9 years old
Improves crossing midline

5 to 6 years old
Visually crosses midline

(Clagenfeld and Kalsenberg, 2005)

3 to 6 years old
Hand Dominance
Brain development (Cermak, Quintero & Cohen, 1980)

Contributes to the development of body scheme, spatial orientation, bilateral integration, laterality, and directionality (Cermak, Quintero & Cohen, 1980)

What is the importance of crossing midline?
Clinical & Evidence-based information

- Brain development
  (Cermak, Quintero & Cohen, 1980)

- Contributes to the development of body scheme, spatial orientation, bilateral integration, laterality, and directionality
  (Cermak, Quintero & Cohen, 1980)
What is the importance of crossing midline? Clinical & Evidence-based Information

- Expands a child's motor capabilities
  (Cermak and Ayers, 1984)
- Development of a preferred hand
  (Abesod and Cermak, 1988)

What is the importance of crossing midline? Therapeutic View

- Brain Connections
- Hand preference
- Sensorimotor
  - Development
  - Control/coordination
  - Balance
  (Cermak, Quintero & Cohen, 1980)
  (Cermak and Ayers, 1984)
  (Abesod and Cermak, 1988)

What is the importance of crossing midline? Therapeutic View

- Oral Motor
  - Feeding/Swallowing
  - Communication
- Occupational Performance
  - Activities of Daily Living
  - Education/Academics
- Independence
  (Cermak, Quintero & Cohen, 1980)
  (Cermak and Ayers, 1984)
  (Abesod and Cermak, 1988)
What is the importance of crossing midline? Everyday impact

- Self-Care
  - Dressing and undressing
  - Tying shoes
- Education/Academics
  - Writing
  - Reading
- Play

Let’s cross midline!

- Switching writing and/or coloring utensils in the midline.
- Keeping paper positioned to the hand dominant side when writing.
- Rotating hips, trunk, and head when reaching across.
- Moves entire body to the target side of reach.
- Poor writing skills

Poor writing skills (Kids Sense Child Development, 2013)
**What are Signs of Crossing Midline Difficulties? A little more**
- Difficulty reading
- Kicks ball with different feet
- Difficulty coordinating gross and fine motor activities
- Has difficulty tracking an object from one side of the body to the other.
- “W” sitting

(Kids Sense Child Development, 2013)

**Let's NOT cross midline!**

**What Contributes to Crossing Midline Difficulties?**
- Low muscle tone - poor trunk/core strength
- Non-integrated primitive reflexes
- No indication of a preferred hand
- Difficulty with bilateral coordination
- Overall, developmental delay

(Kids Sense Child Development, 2013)
How to Promote Crossing Midline: Hand Preference

- Offer utensils in the midline.
- Help your child use the free hand to stabilize.
- If s/he wants to switch hands, encourage her/him to keep using the hand s/he chose.

How to Promote Crossing Midline: Skills

- Bilateral coordination
- Daily life tasks
- Core stability (and trunk rotation)

(Kids Sense Child Development, 2013)

How to Promote Crossing Midline: Some activities

- Crafts: Threading beads, cutting, folding paper.
- Blocks and Percussion
- Games: Playing Twister, Simon Says, marching, baseball, kickball
- Streamers: Making streamer or ribbon circles and patterns in front of their midline (use two hands together or one in each hand).
- Stickers: Placing stickers on one arm and encouraging your child to remove them with the opposite hand.

(Kids Sense Child Development, 2013)
**How to Promote Crossing Midline: More activities**
- Dancing: Macarena, line dancing
- Reaching across the body: Puzzle pieces, toys
- Saying/Doing the Pledge of Allegiance
- Exercise: Touching toes with opposite hand, twisting
- Cooking: Stirring, washing dishes
- Cleaning: Wiping tables, windows, chalkboards

**How to Promote Crossing Midline: A few more**
- Sensory play: Rice and beans, shaving cream
- Ball work: Sitting at the table, exercise

**How to Promote Crossing Midline: Your turn**
- What are your ideas to help establish a hand preference?
- What are your ideas to help work on crossing midline?
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**Let's cross midline AGAIN!**

**Resources to consider**


(National Association for Down Syndrome, 2016)

**Questions, thoughts...**
References


Thank you
for your time and attention.

For more help please contact

Motion Hope Center

providing private therapy, group therapy, pre-school and school-aged classes, consultations, nutrition services, and community outreach in Missouri and Kansas

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