


imps llc.
infant motor performance scales

INTRODUCTION TO THE TIMP—AN EVIDENCE-BASED FUNCTIONAL ACTIVITY ASSESSMENT



imps llc.
infant motor performance scales

STATEMENT OF INTERESTS

SK Campbell is Managing Partner of Infant Motor Performance Scales, LLC, the publisher of the Test of Infant Motor Performance



imps llc.
infant motor performance scales


OBJECTIVES

1. Describe 3 purposes of assessment for which the TIMP has been validated

imps llc.
infant motor performance scales

OBJECTIVES


2. Identify the age range for which the TIMP is used



imps llc.
infant motor performance scales

OBJECTIVES


3. Identify the theoretical constructs informing design of the TIMP




imps llc.
infant motor performance scales

OBJECTIVES


4. Identify the types of postural and movement behaviors tested with the TIMP





OBJECTIVES


5. After observing a videotaped assessment list several types of movement problems that are posed by the TIMP for infants to solve



PURPOSES OF THE TIMP:
RESEARCH SHOWS THAT THE TIMP CAN BE USED FOR


Diagnosis:
For use by physical and occupational therapists to identify infants with motor delay before 5 months corrected age (CA)

- Campbell, Levy et al 2006
- Campbell 2012




RESEARCH SHOWS THAT THE TIMP CAN BE USED FOR

Educating parents and planning intervention programs:
Both nursery- and community-based



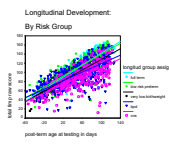
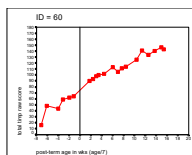
- Zawacki & Campbell 2007
- Goldstein & Campbell 2008
- Dusing et al 2008
- Campbell et al 2015



RESEARCH SHOWS THAT THE TIMP CAN BE USED FOR

Documenting change:
 In motor performance over time
 or resulting from intervention

- *Campbell & Hedeker 2001; Fucile & Gisel 2010; Girolami & Campbell 1994; Lee & Galloway 2012; Lekskulchai & Cole 2000; Ustad et al 2016*





Ages for
 which the
 TIMP is
 appropriate:

34 wks. post-
 menstrual age
 (PMA) through 4
 months post-term
 (corrected age,
 CA)



TIMP CONSTRUCTS

- Postural control
 - control of position in space for stability and orientation
 - stability is ability to maintain c of m within base of support
 - orientation is alignment of body segments
- Selective control
 - Head, fingers, ankles



VARIETY IN TASK CONTEXT

- Orientation in space
- Visual stimuli
- Auditory stimuli
- With assistance to rate-limiting factors



OBSERVED ITEMS
13 Items

- Selective control
- Midline alignment
- Quality of movement



ELICITED ITEMS
29 Items

- Postural control
 - anti-gravity
 - organized synergies
 - in functional context
 - elicited by natural handling
 - predictive--Grenier



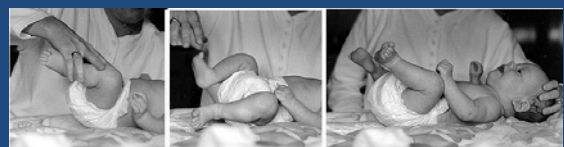
SUPINE HEAD ROTATION: SCORES

- **SCORING:** Initiate and score response with head to both the right and left sides (continuous visual tracking is not required).
- *Moving to Right/Left*
- R L
- 0 0 No response or unable to achieve state 4 during testing.
- 1 1 Head turns toward the right (left) less than 15 degrees.
- 2 2 Head turns toward the right (left) for 16 to 45 degrees.
- 3 3 Head turns toward the right (left) for 46 to 90 degrees.
- 4 4 Head turns toward the right (left) for 91 to 180 degrees.



ANTI-GRAVITY HIP FLEXION Procedure





↑
Release

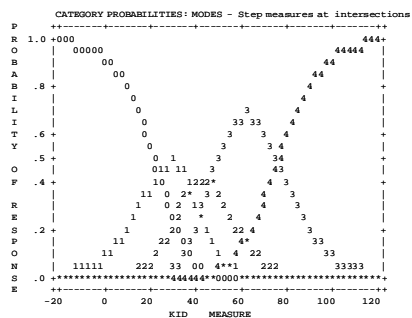
↑
Anti-gravity flexion

ANTIGRAVITY HIP FLEXION: SCORING

- **SCORING:**
- 0 Both thighs, knees and feet fall immediately to support surface.
- 1 Both feet fall to support surface, but thighs and knees remain off the surface.
- 2 One foot falls to the support surface, but knee remains off the support surface. The other foot and leg remain off the support surface.
- 3 Both feet and legs remain off the support surface for at least 5 seconds making kicking movements and occasionally touching the support surface. If both knees remain extended in the air, score 2.
- 4 Both feet return to support surface, followed by heel pounding by lifting and lowering one or both legs with knee extended OR bridging against the surface by pushing with heels and lifting bottom.



RASCH ITEM ANALYSIS Elicited Item-HIP/KNEE FLEX



ROLL FROM LEG Response



ROLL TO PRONE FROM LEG: SCORING

- **SCORING:**
- *To Right/Left*
- R L
- 0 0 Pelvis lifted passively off support surface.
- 1 1 Pelvis and trunk lift from support surface and head turns to side. Arm remains behind trunk.
- 2 2 Pelvis, trunk and arm lift from support surface, and head turns to side. Rolls part way but not onto side.
- 3 3 Pelvis, trunk and arm lift from support surface, head turns and rolls onto side.
- 4 4 Rolls through sidelying into prone without lateral head righting.
- 5 5 When traction is applied at the end of the maneuver, rolls to prone with lateral head righting.



ORIENTATION TO SOUND



TURN HEAD TO SOUND IN PRONE: SCORING

- **SCORING:** Score both sides based on direction toward which face should turn (side on which sound is made.)
- *To Right/Left*
- R L
- 0 0 No response.
- 1 1 Quieting and/or brightening with no movement OR movements of extremities or trunk with no attempt to lift or turn head.
- 2 2 Initiates head lift or turn but does not turn head completely to midline.
- 3 3 Lifts and turns head, but only to midline.
- 4 4 Lifts and turns head to opposite side.
- 5 5 Lifts head 45 to 90 degrees and attempts to localize sound with eyes but cannot turn head.
- 6 6 Lifts and turns head, maintaining head in upright to turn 45 degrees toward the source of sound.



Aids to Learning the TIMP

- ▶ See Research page at <http://thetimp.com> for a complete list of publications related to the TIMP
- ▶ TIMP manual summarizes research on reliability and validity of the test and provides norms for interpreting scores (Campbell 2012)
- ▶ Hints for clinical practice
 - Understanding NICU practice: Physical & Occupational Therapy in Pediatrics, volume 33 (1), 2013
 - Zawacki L, Campbell S. From observation to rehabilitation. In Cioni G, Mercuri E (eds), Neurological Assessment in the First Two Years of Life. London, MacKeith Press, 2007, pp. 230-245.
 - Self-instructional program on DVD is available from IMPS, LLC
 - E-learning course The TIMP in the Cloud or 2-day workshops offered by IMPS instructors



Zawacki and Campbell: From observation to rehabilitation chapter

- >> • Presents several cases illustrating how TIMP test results are used to develop home exercise programs for infants with delayed development

Activities to improve prone skills:
Fig 5i.



SELF-INSTRUCTIONAL PROGRAM

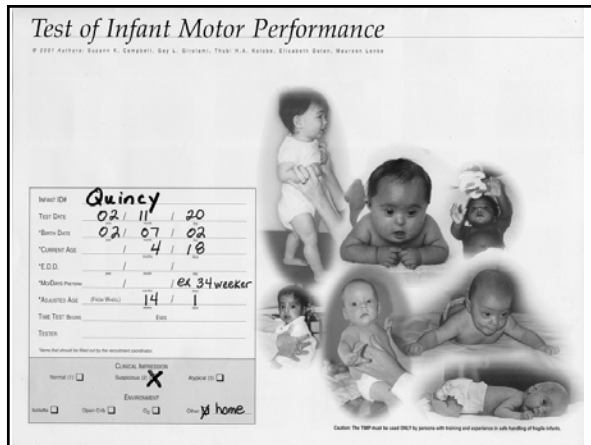
- Developed as part of a Master's thesis project to assess time and rater reliability in two training methods: workshop and videotape review vs. CD-ROM multi-media learning program (Liao & Campbell 2002)
- Found that about 11 hours of studying the content in the CD and testing infants was needed by participants to become reliable at scoring the test
- Excerpts from the 2nd edition DVD will be used in the next session to help you begin learning to score the test



ILLUSTRATED TEST FORM

- Shows photos of infants performing each level of each item's rating scale
- Enhances value for parent education
- Multi-cultural sensitivity
- Master's thesis project by Goldstein (Goldstein & Campbell 2008) showed that use of TIMP can enhance parent knowledge of premature infant motor development and aid retention of exercises prescribed as home program





Learning the Test as Packages of Content

- Package 1: 13 items
- Package 2: 5 items
- Package 3: 9 items
- Package 4: 4 items
- Package 5: 3 items
- Package 6: 5 items
- Package 7: 3 items (could combine these for learning with Package 5)
- Spontaneous activity
- Upright head control
- Supine head and trunk control
- Rolling
- Antigravity head and trunk control: PTS and lateral righting
- Prone head and trunk control
- Lateral head control and standing





imps llc.
infant motor performance scales

The TIMP in Action

Video illustrates TIMP performance with emphasis on the problems the infant is expected to solve in order to demonstrate their postural control needed for functional activities in daily life

The image shows a woman with dark hair, wearing a white long-sleeved shirt, leaning over a baby who is lying on their back on a light-colored rug. The woman is smiling and looking down at the baby, who is holding a small object in their hands. The background is slightly blurred, showing what appears to be a wooden chair or table.
