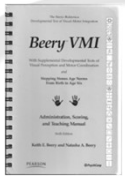


Principles, Interpretation and Action for the Beery VMI: Sixth Edition

Louise Green

1

Beery VMI Sixth Edition

- The Beery VMI is the one of the few assessment tools on the market to assess for effective visual-motor integration
- Widely considered to be the best researched and most valid tests of its kind, Beery was standardised 6 times between 1964 and 2010
- Beery's results have remained quite stable over time and place which suggests it is assessing rather basic neuropsychological abilities

(Beery Manual p1)

2

Beery VMI Sixth Edition

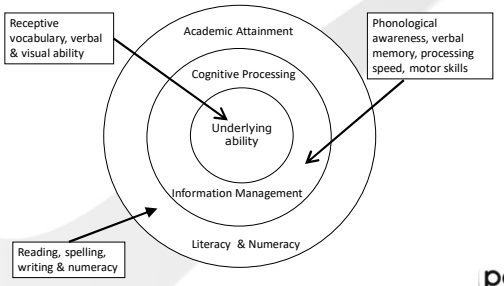
- A valid, economical visual-motor screening battery for preschool to adult ages
- Published 2010 (1967)
- Test Range 2 – 99 years and 11 months
- Testing Style Individual/Group
- Testing Time 15 - 20 minutes*

3

Slide 2

JC7 Sixth [consistency]
John Coulson, 13/06/2022

Diagnostic Assessment



4

Information Management

- Information management is how the brain processes information
- There are educational theories and evidence to support a sensory-motor basis for development of intelligence and achievement
- Higher levels of thinking and behaviour require integration among sensory inputs and motor action (Beery Manual p4)

5

Beery VMI

- Normed on 1,021 adults (2005 – 2006)
- Over 13,000 children since 1967 to 2010
- Across:
  - Gender/age
  - Ethnicity/area
  - Education of parents
- Result remained stable suggesting test assesses basic neuropsychological abilities

6

Beery VMI

- Cost (Ann Arbor June 2022) £208.80 inc VAT
- Test Papers x 25 (Full) £157.20 inc VAT
- Visual Perception x 25 £ 28.80 inc VAT
- Motor Coordination x 25 £ 28.80 inc VAT
- Cost of forms per individual £ 8.59 inc VAT

7

Reliability

- Internal consistency ranges for 2-17 from 0.71 to 0.89 Table 5 (page 105)
- Internal consistency ranges for adults from 0.83 to 0.94 Table 6 (page 106)
- Standard Errors of Measurement
  - 68% provided in Table 7 (Page 106)
  - To find confidence limits at 95% - just double the SEM

8

Beery VMI Design

- Assesses integration of visual and motor abilities
- Identifies significant difficulties with integrating or coordinating visual-perceptual and motor (finger and hand movements) abilities
- Virtually culture free

9

Beery VMI

- Many children learn to compensate for visual-motor weaknesses
- But automatic transfer does not usually occur just by tracing circles and rewriting digits (Beery Manual p5)
- Research also has indicated personalities are significantly affected by nonverbal learning disabilities (Beery Manual p9)

10

Beery VMI Design

- Group or individual
- Three sections
- Follow the prescribed order if doing all three sections
- Follow standardised instructions
- Not necessary to do all three tests though

11

Beery VMI Design

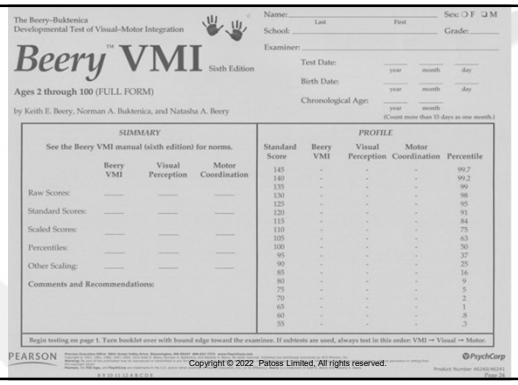
- Beery VMI Full Form – untimed
  - First test (green booklet)
  - For younger children can use short form – goes up to shape 21
  - For the rest start at shape 7 and work through book – goes up to shape 30
  - If individual assessment you may stop testing after three incorrect consecutive items but you also can finish test if the individual is enjoying the task
  - Time 10 – 15 minutes (some adults faster!)

12

Beery VMI Design

- Beery VMI Full Form
  - Developmental sequence of geometric forms to be imitated or copied with No 2 pencil, soft primary pencil or black ballpoint pen
  - Designed to assess extent of integration between visual and motor ability

13


The Beery–Buktenica Developmental Test of Visual-Motor Integration

Beery™ VMI Sixth Edition

Ages 2 through 100 (FULL FORM)

by Keith E. Beery, Norman A. Buktenica, and Natasha A. Beery

Name: Last First Sex: ☐ F ☐ M

School: Grade:

Examiner:

Test Date: year month day

Birth Date: year month day

Chronological Age: year month

(Count more than 15 days as one month.)

SUMMARY

See the Beery VMI manual (sixth edition) for norms.

	Beery VMI	Visual Perception	Motor Coordination
Raw Scores:			
Standard Scores:			
Scaled Scores:			
Percentiles:			
Other Scaling:			

Comments and Recommendations:

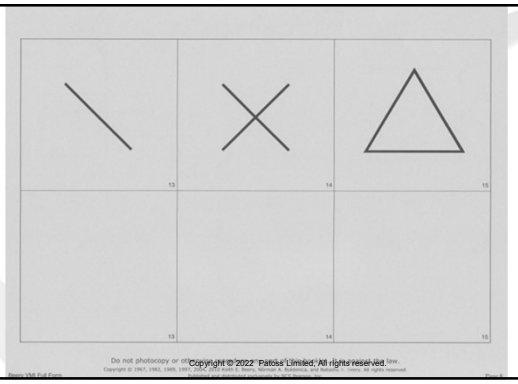
PROFILE

Standard Score	Beery VMI	Visual Perception	Motor Coordination	Percentile
145	-	-	-	99.7
140	-	-	-	99.2
135	-	-	-	99
130	-	-	-	98
125	-	-	-	95
120	-	-	-	91
115	-	-	-	84
110	-	-	-	75
105	-	-	-	63
100	-	-	-	50
95	-	-	-	37
90	-	-	-	25
85	-	-	-	16
80	-	-	-	9
75	-	-	-	5
70	-	-	-	2
65	-	-	-	1
60	-	-	-	.8
55	-	-	-	.3

Begin testing on page 1. Turn booklet over with bound edge toward the examinee. If subtests are used, always test in this order: VMI → Visual → Motor.

PEARSON PsychCorp

14



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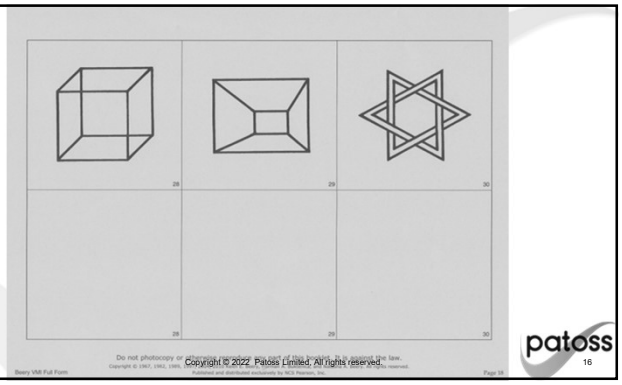

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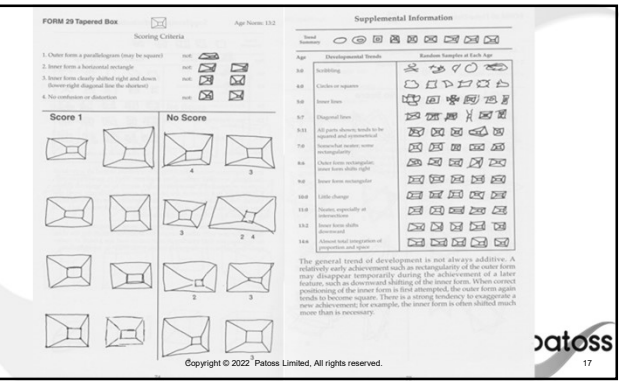


17

Beery VMI Design

- Beery VMI Full Form
  - Poor score:
    - Adequate visual-perception and/or motor coordination but not learned to integrate
    - Visual abilities are deficient
    - Motor abilities are deficient
    - All three!

18

Beery VMI Design

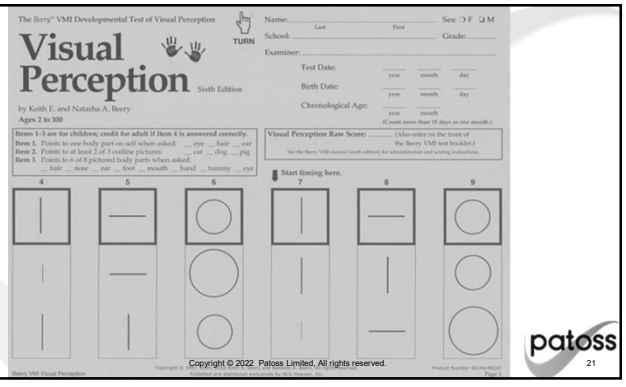
- Two supplementary tests – both timed
  - Visual Perception
  - Motor Coordination
- Use the same stimulus
- Can give one or both

19

Beery VMI Design

- Visual Perception
  - 3 minute task to identify exact match to each given geometric form
  - As test progresses they get smaller and closer together so more demanding in visual acuity and visual perception
  - Smaller size does not matter if student has good near point visual acuity
  - Student marks each answer on sheet

20


The Beery™ VMI Developmental Test of Visual Perception

Visual Perception Sixth Edition

by Keith E. and Natasha A. Beery

Ages 2 to 100

TURN

Name: Last First Sex: ○ F ❑ M

School: Grade:

Examiner:

Test Date: year month day

Birth Date: year month day

Chronological Age: year month

(Count more than 15 days as one month.)

Items 1–3 are for children; credit for adult if Item 4 is answered correctly.

Item 1. Points to one body part on self when asked: ___ eye ___ hair ___ ear

Item 2. Points to at least 2 of 3 outline pictures: ___ cat ___ dog, ___ pig

Item 3. Points to 6 of 8 pictured body parts when asked:

___ hair ___ nose ___ ear ___ foot ___ mouth ___ hand ___ tummy ___ eye

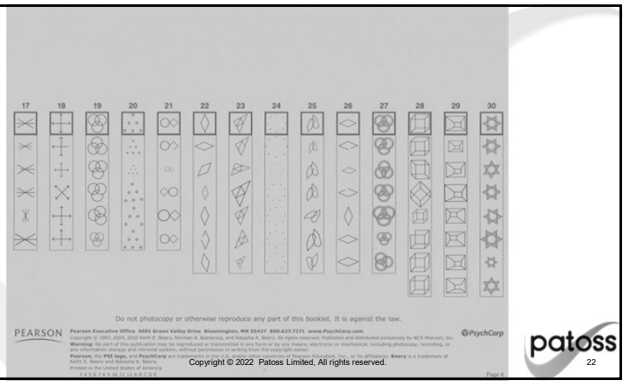
Visual Perception Raw Score: _____ (Also enter on the front of the Beery VMI test booklet.)

See the Beery VMI manual (sixth edition) for administration and scoring instructions.

Start timing here.

4 5 6 7 8 9

21



22

Beery VMI Design

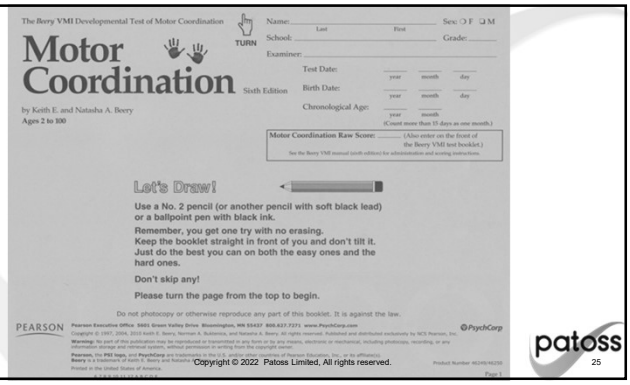
- Visual Perception
  - Poor scores indicate poor visual acuity
  - Refer to vision specialist such as a behavioural optometrist if any doubt about student's vision

23

Beery VMI Design

- Motor Coordination
  - 5 minute task to simply trace stimulus forms without going outside the double lined path
  - Visual perception cannot be discounted entirely but greatly reduced by providing starting dots and paths as strong visual guides

24



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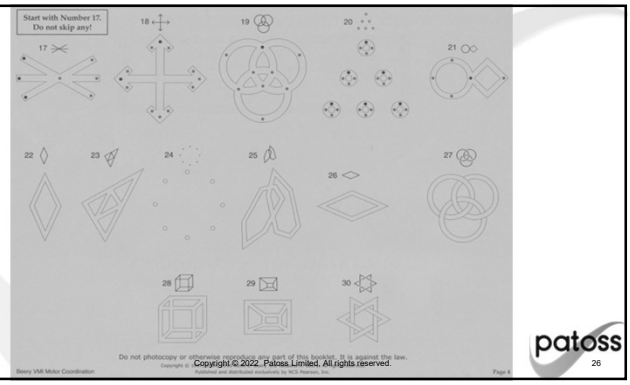


26

Beery VMI Design

- Motor Coordination
  - Poor scores indicate poor motor skills
  - Refer to occupational therapist if appropriate
  - Use of word processor if appropriate

27

Beery VMI

- Commonest pattern for dyspraxic students
  - Poor visual-motor integration
  - Excellent to good visual perception
  - Poor motor coordination

28

Beery VMI

- Commonest pattern for students with visual difficulties
  - Poor visual-motor integration
  - Poor visual perception
  - Motor coordination – poor or can do well but take a long time or even run out of time

29

Beery VMI

- So why use Beery?
- Fairly quick test – easy to administer
- Gives reliable measure of visual-motor integration
- Supplementary tests can tease out if due to visual or motor difficulties or both
- Can use this information to address issues

30

Information Management

- An individual can have well-developed visual and motor skills but be unable to integrate the two
- Therefore poor visual-motor integration could adversely affect speed and accuracy of reading, writing, spelling and numeracy
- This could have a knock on effect on individual's assessment scores

31

Beery VMI Design

- Movement clumsiness, often referred to as Developmental Coordination Disorder (DCD) occurs in 5-15% of children
- The Beery VMI is one of the best instruments available for assessing DCD (Beery Manual p9)
- DCD has been associated with attention disorders as well as academic problems including handwriting, learning difficulties and reading difficulties

32

Beery VMI

- "Visual Perceptual and Handwriting Skills in Children with DCD" by Mellissa Prunty, Anna L. Barnett, Kate Wilmut and Mandy Plumb (2016)
- This article concluded that there were no significant correlations between the BVI or TVPS and any of the handwriting measures in the DCD group

33

Beery VMI

- BUT the study also concluded:-
- *"In this study we found that the DCD group performed significantly more poorly than the Typical Developing group on the VMI test and TVPS, which supports previous findings Parush, Yochman, Cohen, & Gershon, 1998; Tsai, Wilson, & Wu, 2008; Volman et al., 2006"*

34

Beery VMI

- *Prediction 1: Visual perceptual skills are poorer in children with DCD compared to TD children.*
- *VMI There was a significant effect of group on the VMI, as the DCD group were poorer on this measure (M = 84.19, SD = 10.69) with a significantly lower total standard score than the TD group (M = 98.37, SD = 13.98), t(43) = 3.85, p < 0.001, d = 1.16. Eleven children with DCD scored below a standard score of 85 compared to three in the TD group.*

35

Beery VMI

- This sentence is taken from the conclusion:
- *Although the DCD group scored more poorly than their TD peers on measures of visual perception and visual motor integration, neither of these measures related to their handwriting product or process.*

36

Rapid Automatic Naming (RAN)

- Definition taken from a presentation by Dr. Nancy Mather [Mather, N., Assessment of Dyslexia: Constructs and Challenges (2022) Keynote speaker at the Patoss Annual Conference April 2022]
- *RAN is the response time or rapid retrieval for a visual stimulus (digits, letters, colours or objects)*

Rapid Automatic Naming (RAN)

- *It measures:*
  - *The ability to sustain attention to process and name the symbols*
  - *The ability to name and discriminate among the symbols*
  - *The ability to retrieve verbal labels rapidly*
  - *The ability to articulate words rapidly*

Rapid Automatic Naming (RAN)

- *RAN letters then numbers are the strongest predictors of both reading and spelling*
- *RAN appears to be distinct from phonological awareness*
- *RAN is more highly related to speeded measures of reading than reading accuracy*

Rapid Automatic Naming (RAN)

- *If the individual had low Beery scores, it is possible that poor visual-motor skills could be adversely affecting the RAN speed*

40

Orthography

- Definition taken from a presentation by Dr. Nancy Mather – as before
- *Orthography: the marks of a writing system, including spelling patterns, punctuation and capitalisation. Dyslexia can be caused by problems in phonology or orthography or both*

41

Orthography

- *Orthographic processing is the brain's ability to recall letter orientation, spelling patterns and words with both accuracy and speed*
- *Orthographic knowledge is acquired information stored in memory regarding how spoken language is presented in written language*
- *Orthographic image is the recall of individual letters, word parts and words*

42

Orthography

- *Orthographic mapping is the process readers use to store written words for immediate, effortless retrieval. It is the means by which readers turn unfamiliar written words into familiar instantaneously accessible sight words.*
- *Orthographic processing is also a linguistic risk factor. Individuals with dyslexia can have a deficit in orthographic knowledge that is as large as that of phonological awareness and RAN.*

43

Orthography

- If the individual has poor scores for visual-motor integration and/or motor coordination it is likely to affect their orthography

44

Dysgraphia

- *Dysgraphia is a childhood disorder that results in impaired handwriting, impaired spelling, or both in a child of normal intelligence. It is not a mental health disorder, but rather a learning disability marked by difficulty expressing thoughts and ideas in writing. Dysgraphia is frustrating for the child and can cause great emotional difficulty and distress.* Psychology Today Website

45

Dysgraphia

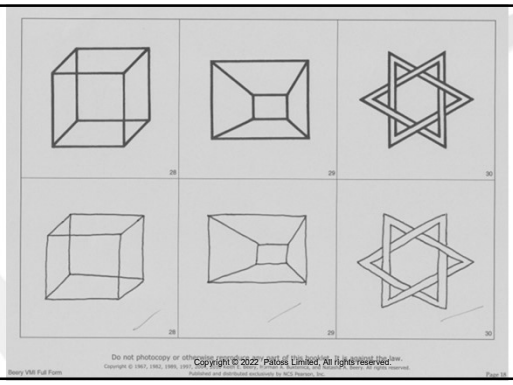
- *A child with dysgraphia may have trouble learning to spell written words and also have trouble writing at a normal speed, but will not necessarily have problems reading or speaking. Dysgraphia can occur on its own or with dyslexia, which is an impaired ability to read and comprehend written words, or with other selective language impairments that cause problems with learning written and oral language skills.* Psychology Today Website

Dysgraphia

- Poor scores for visual-motor integration and/or motor coordination could highlight difficulties with dysgraphia

Beery VMI

- Some examples of completed forms
  - Comments welcome



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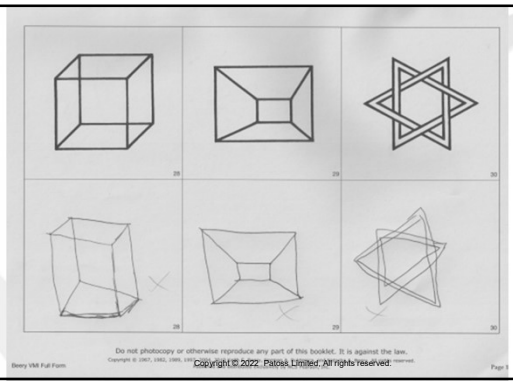

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Beery VMI - Interventions

- Poor Visual-Motor integration
- Check responses of visual questionnaire – this will often identify visual tracking difficulties
- Refer to visual expert such as a behavioural optometrist
- Stress to parents the importance of taking this step – and that it is more complex than the normal 'eye check'
- The movement of the eyes needs to be monitored

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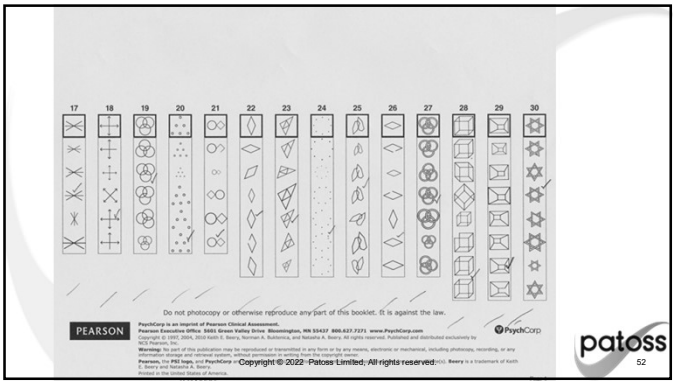

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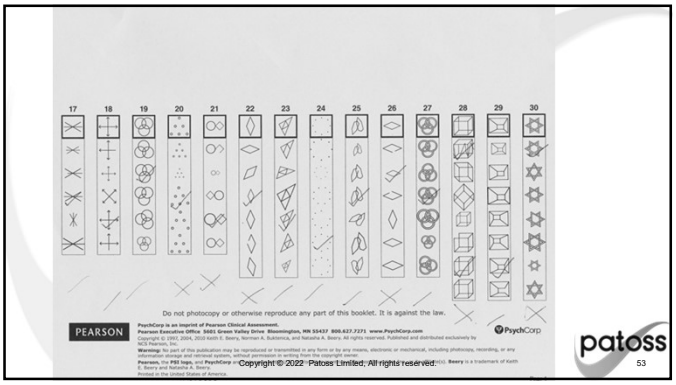

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Beery VMI - Interventions

- Poor Visual Perception
- Again check responses on visual questionnaire – this will often identify visual tracking difficulties
- Refer to visual expert such as a behavioural optometrist
- Stress to parents the importance of taking this step – and that it is more complex than the normal 'eye check'
- However, the acuity as well as the movement of the eyes needs to be monitored

patoss

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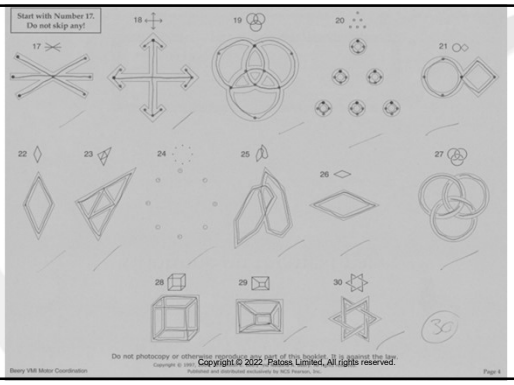

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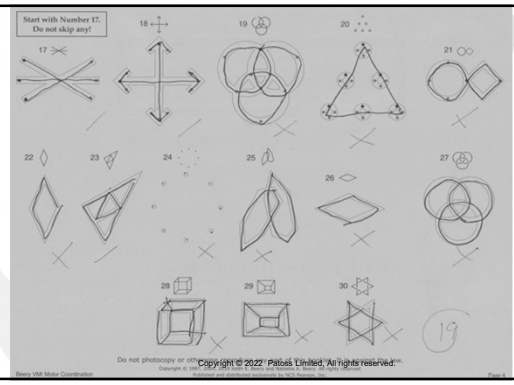

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56

Beery VMI - Interventions

- Poor Motor Coordination
- Refer to occupational therapist
- May need handwriting intervention scheme (not simply tracing – pen grip, posture, pressure and letter and number shapes need to be carefully taught)
- May need physical programme of intervention

57

57

Q & A