

Centre for Community Child Health

Assessment of Learning Difficulties - an Overview

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Malaysia population 30m, ~ 3.7m aged 7-12 years in primary school

- 5-10% with Learning Difficulties ie 185,000 to 370,000 children
- 5% with ADHD ie 185,000 children
- 3% with Intellectual Disability ie 112,200 children
- Others with ASD, physical disability, vision or hearing impaired
- Overall 12-17%, ~5% severe disability, 10-12% mild

Malaysia National Education Blueprint 2013 to 2025

- Universal access: preschool to upper secondary school
- Compulsory school commence at 6 yrs
- Students with physical and learning disabilities go to schools with facilities and equipment to create a conducive and supportive learning environment.

Malaysia Special Education Regulations 2013

- Pupils with special education needs eg visual, hearing, speech, physical disabilities, learning difficulties attend:
- Inclusive education program
- Special Education Integrated Program
- Special Education Schools

with Individual Education Plan

Definition of LD ?

Definitions of LD

- Gap between ability and achievement
- Difference between verbal/ performance scores on cognitive assessment
- Specific definition eg of dyslexia

Continuum of learning ability and disability ie dimensional not categorical view

What's in a name?

- Learning ***difficulties*** - outcome of constitutional and environmental factors, prevalence 15-20%
- Learning ***disabilities/disorder*** - neurological, prevalence 2-4%

Definition Learning Disabilities - LDAC 2002



- Refers to a number of disorders which may affect the acquisition, organisation, retention, understanding or use of verbal or nonverbal information in those with otherwise at least average abilities
- Result from impairments in processes related to perceiving, thinking, remembering or learning

Definition dyslexia – NICHD USA 2003

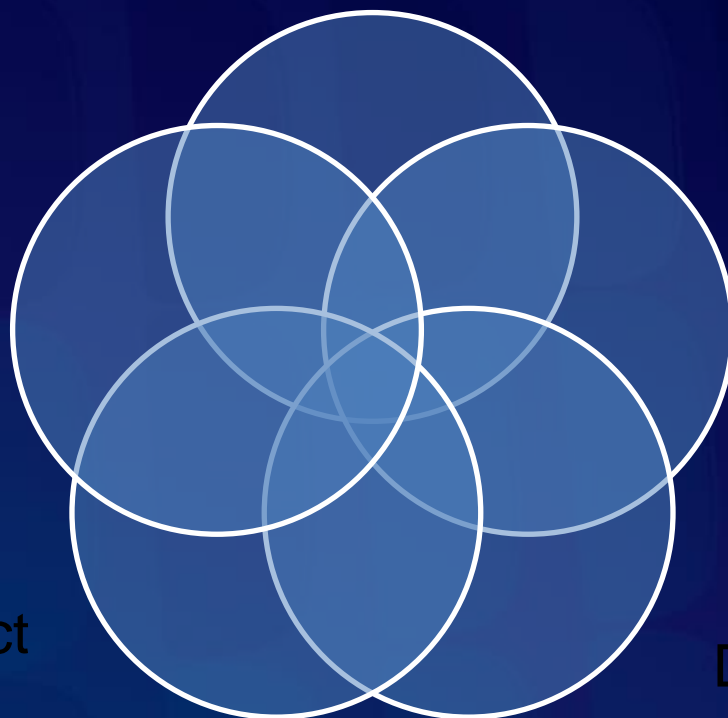
- Dyslexia is a specific learning disability that is neurobiological in origin. It is characterised by difficulties with accurate and/or fluent word recognition and poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction

Overlapping Conditions

Autism/Asperger

Centre for Community Child Health Syndrome

Intellectual
Disability



Language
Disorder
Learning
Difficulties

Severe neglect
Attachment
disorder

Anxiety
Disorders/OCD

Selective
Mutism

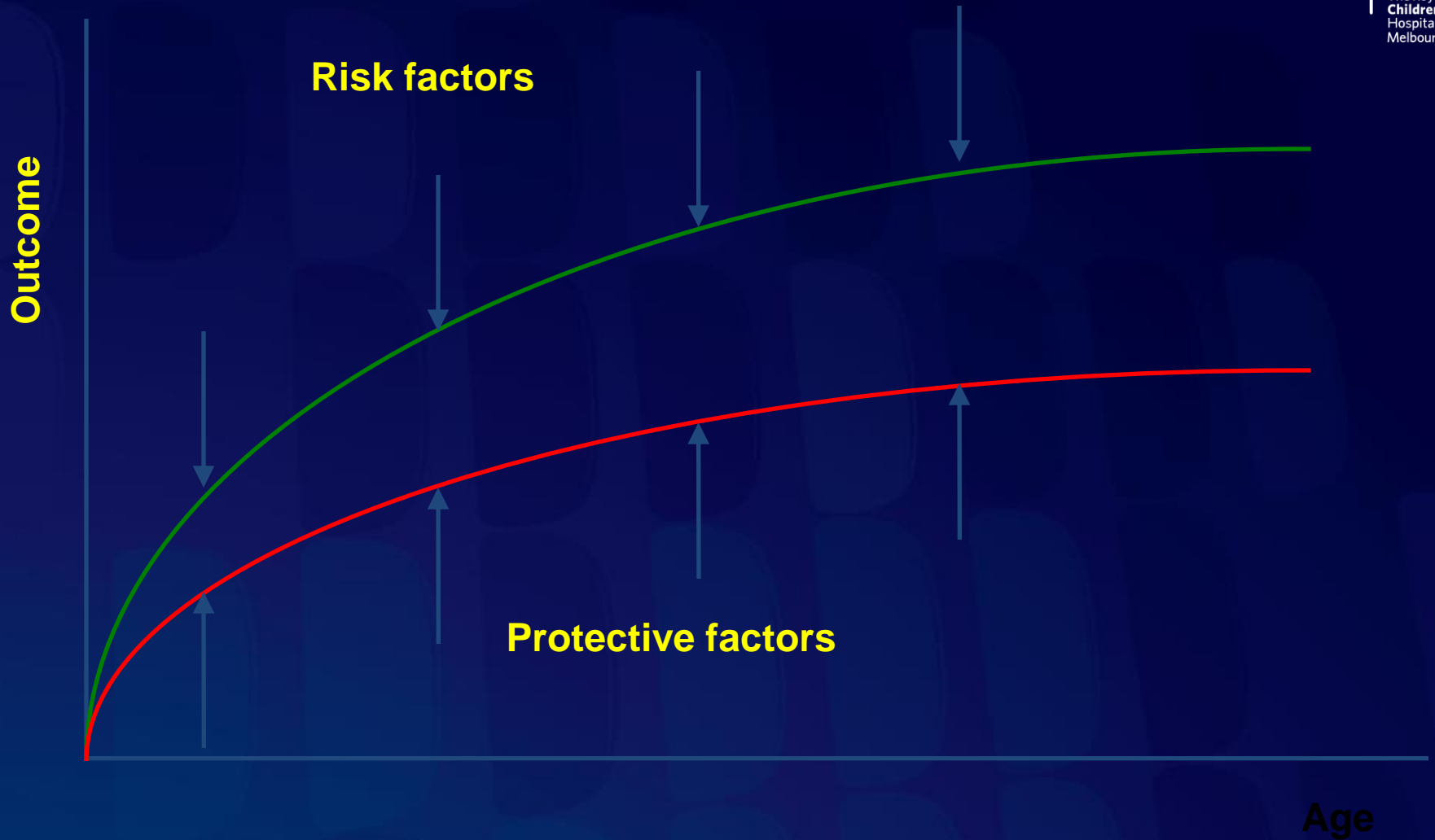
Social gradient of health

- Learning to read critical in modern urban society
- Primary school success dependant on good quality early childhood care and education
- Secondary school success dependent on good reading skills in primary school
- Adult work critical to stay in control of own life
- The more control over own life, the better health in middle to older age

Life course perspective

- The best predictor of ill health and even death in middle age may be failure to learn to read by the age of 8 years

The developmental trajectory and life course



Constitutional factors

- Genetic
- Perinatal stress
- Temperament
- Behaviour
- Health
- Vision and hearing
- Age
- Gender
- Developmental status

Environmental factors

- Poverty, socio economic status
- Cultural, language differences
- Family factors eg level of stimulation, organization, attitudes, dynamics
- Inappropriate expectations
- Limited preschool experience
- School factors

Gender issues

- Often male/female ratio quoted 5 to1
- But actual male/female ratio is 1.5 to1
- Boys recognised more, because more likely to show difficult behaviour
- Many boys with discipline problems are reacting to years of school failure

Co morbidities

- Language delay
- ADHD, other Externalising Behaviour Problems
- Autism Spectrum Disorder
- Emotional disorders
- Family dysfunction
- Medical conditions eg epilepsy, VLBW
- NB giftedness, borderline Intellectual Disability

Early predictors of reading difficulty

- Poor phonological awareness
- Language delay
- Poor self regulation
- Family history – ~60% variance genetic

Early recognition, early intervention essential – gap widens after 8 years

Presentation with LD

- Delayed reading/writing
- Behaviour problems
- Social emotional difficulties
- School failure
- School refusal

May not be recognised until late

Patterns

- Reading difficulties 80%
- Associated with spelling and writing difficulties
- Isolated maths or writing difficulties less common

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**I have great ideas, but when I write
them down they look dumb**

10 year old boy

The Children's

Excellence in
clinical care,
research and
education



Murdoch
Children's
Research
Institute



Readiness to learn ~ 5 years

- Reading - phonological awareness, beginning knowledge of alphabet, auditory memory, literacy experiences
- Writing - motor skill, perceptual organization
- Maths - one to one correspondence
- Behaviour – self regulation, emotional security, self confidence

Cognitive processes in learning

- Phonological processing
- Memory and attention
- Working memory
- Language processing
- Perceptual motor processing
- Visual processing
- Processing speed
- Executive function; integration of information, planning and organisation

INFORMATION PROCESSING

Phonological processing

- Phonological awareness – ability to recognise, identify, and manipulate syllables and sounds within spoken language
- Phonics – association of letters and sounds to understand written symbols

Development of phonological awareness

- Awareness of whole words
- Awareness of syllables
- Awareness of phoneme-level units of language

Reading develops phonemic awareness

- 4yr old - beginning
- 5yr old - 17%
- 6yr old – 70%

Working memory

- System responsible for temporarily storing and manipulating information
- Limited capacity, develops over time
- Independently related to reading, mathematical and general learning difficulties (better predictor of achievement than IQ)
- Previously thought not remediable, recent computer studies showing improvement

Paediatric assessment -individual differences model

- Developmental perspective
- Measure strengths and weaknesses
- Assessment goal -accurate *description*
- Individual management plan, specific to child and relevant to school

Approach to assessment

- Understand systems – preschool, school, special needs support, special schools, community support
- Multidisciplinary – parent, child, teacher, other disciplines eg psychology, speech pathology, special education, occupational therapy
- Avoid labelling unless specific purpose

Process of paediatric assessment

- Multiple sources information – parent and teacher questionnaires, Achenbach Child Behaviour Check List (CBCL), Teacher Report Form (TRF)
- Detailed history
- Physical, neurological examination
- Neurodevelopmental assessment
- Referral for more detailed assessments if appropriate

Parent Questionnaire

- Problems, ? cause
- Previous help in and out of school
- Perinatal history
- Health
- Behaviour
- Development
- Daily skills rated 1-3
- Strengths
- Family history
- Achenbach Child Behaviour Checklist

Teacher questionnaire

- Difficulties and strengths
- Specific questions needing help
- School setting, resources
- Previous evaluations
- Typical daily performance rated 1- 4
- Achenbach Teachers Report Form

Assessment of development

- Historical clues
- Current abilities, as rated by parent, teacher and child
- Administration of age appropriate developmental items

Neurodevelopmental assessment

- Neuromaturation
- Gross motor and fine motor skills
- Visual-motor integration
- Sequential organization – auditory and visual
- Working memory
- Language – observation, screening tools
- Note attention and related behaviours

Neuromaturation

- Window on developing CNS
- Minor neurological signs
- Laterality
- Propriokinaesthetic function – sensory feedback
- Position in space

Gross Motor Function

- Coordination
- Motor planning, motor sequencing
- Linked with visual motor and spatial functioning
- Affected by impulsivity, poor self monitoring
- Important for self esteem, body image

Fine Motor Function

- Small muscle manipulation
- Includes motor planning and motor sequencing
- Linked to visual motor integration, attentional control
- If subtle, may not be apparent till later grades

Evan

Evan

My name is

EVAN

I like to

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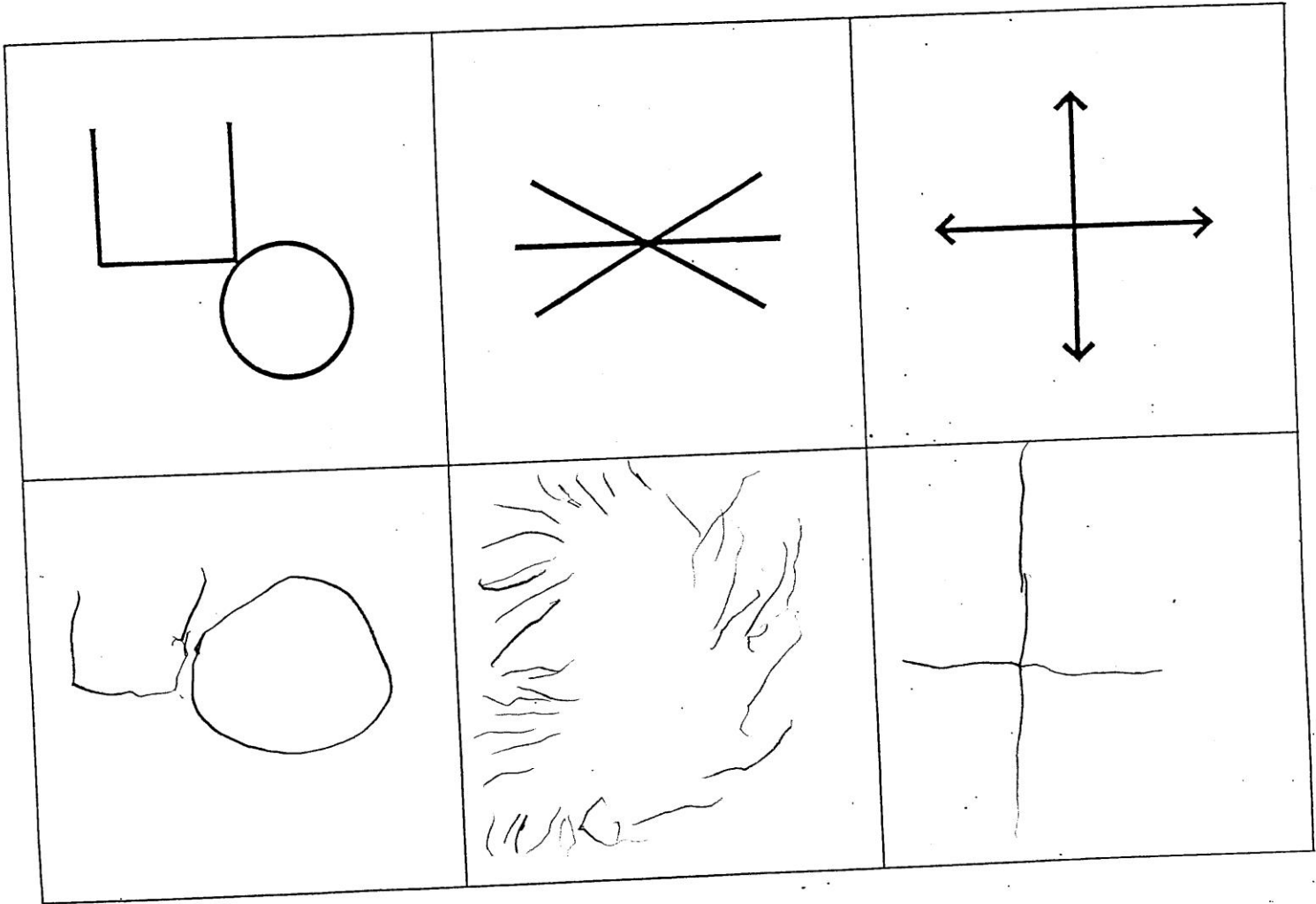
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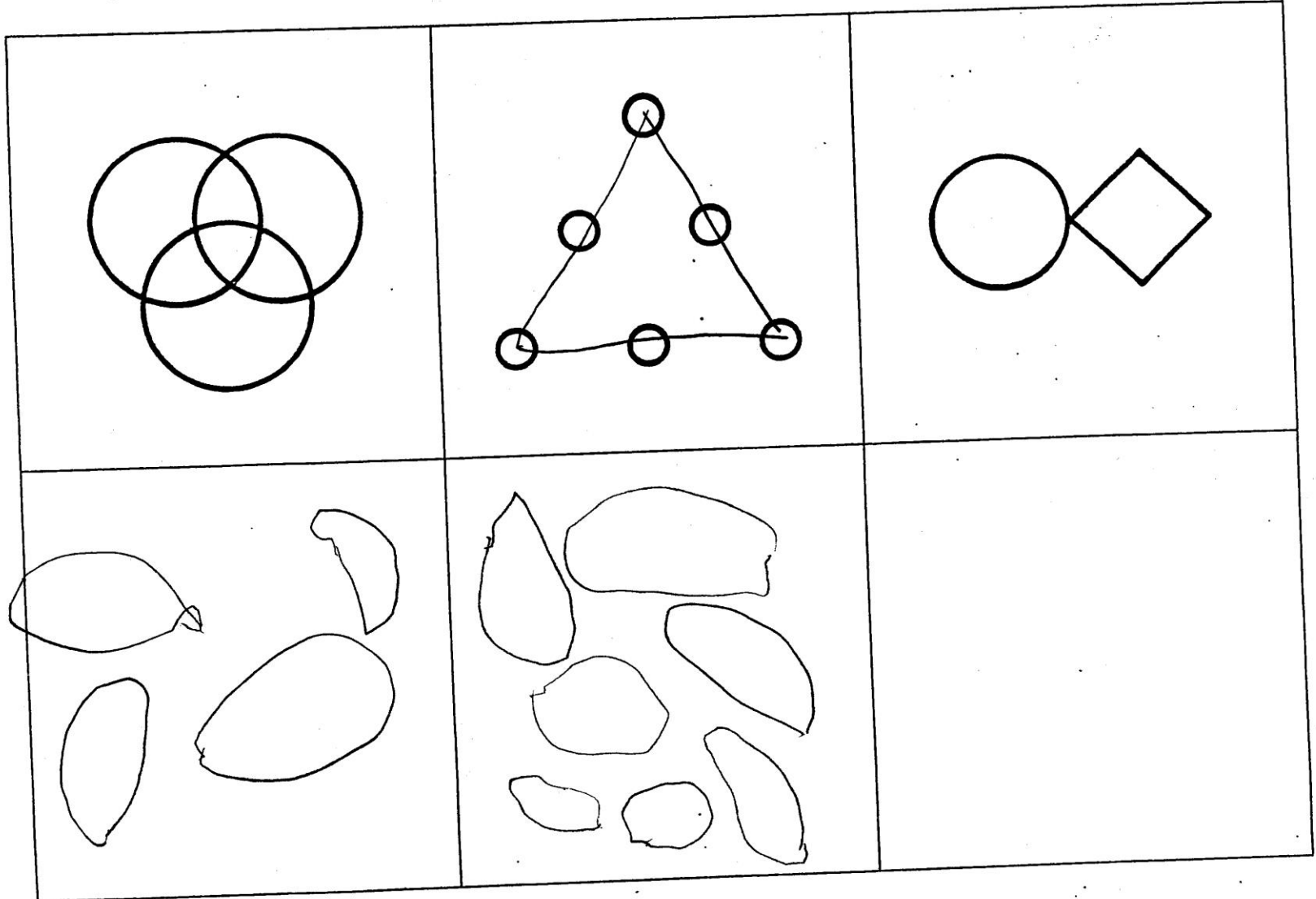


Visual motor integration

- Discrimination of visual details
- Spatial relationships
- Patterns/shapes in written material
- Meaning of maths symbols

Evan





Temporal-sequential organization

- Auditory sequencing (Short Term Auditory Memory)
- Visual sequencing
- Understanding of time concepts
- Organization and planning
- Secondary attentional problems

Language

- Receptive and expressive language
- Comprehension
- Grammatical structure
- Concepts, eg irony, sarcasm, humour
- Spoken and written organization
- Pragmatics ie social rules

Behavioural observations

- Attention
- Emotional status
- Adaption to examination
- Self monitoring, risk taking, task avoidance

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ROYAL CHILDREN'S HOSPITAL, MELBOURNE

NEURODEVELOPMENTAL ASSESSMENT

SCORE SHEET

Child's name:.....

Date of exam:

Examiner's name:

School:

Child's age: yrs mths

NEURODEVELOPMENTAL PROFILE

	NEUROMATURATION			MOTOR			VISUAL MOTOR INTEGRATION		SEQUENCING		COMM ^N	BEHAVIOUR		
	Soft signs	Assoc mgment	Propriokina esth	GM	Motor Planning	FM	Perf	Gestalt	Auditory	Visual		Attn	Affect	Adapt
Strong														
Average														
Weak														
Very weak														

Paediatric Report

- Clear simple language
- Paint a picture of child, **STRENGTHS**
- Acknowledge contribution of school
- List issues and actions
- Provide information about development and effects on learning eg STAM, working memory, language delay, visual sequencing, visual motor integration
- Address comorbidities
- Don't tell teachers how to teach

Advocacy

- Individual by clarity of reports, support for parents, engagement with school
- System – paediatric contribution to MOH, MOE policy and planning

Learning difficulties matter

- High prevalence, long term consequences, need data and surveillance
- Prevention (early literacy)
- Early recognition and effective intervention
- Opportunity for advocacy at health – education interface

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