SNS COLLEGE OF PHYSIOTHERAPY COIMBATORE - 35

COURSE NAME: PHYSIOTHERAPY IN NEUROLOGICAL SCIENCES

SUBJECT CODE: 6288

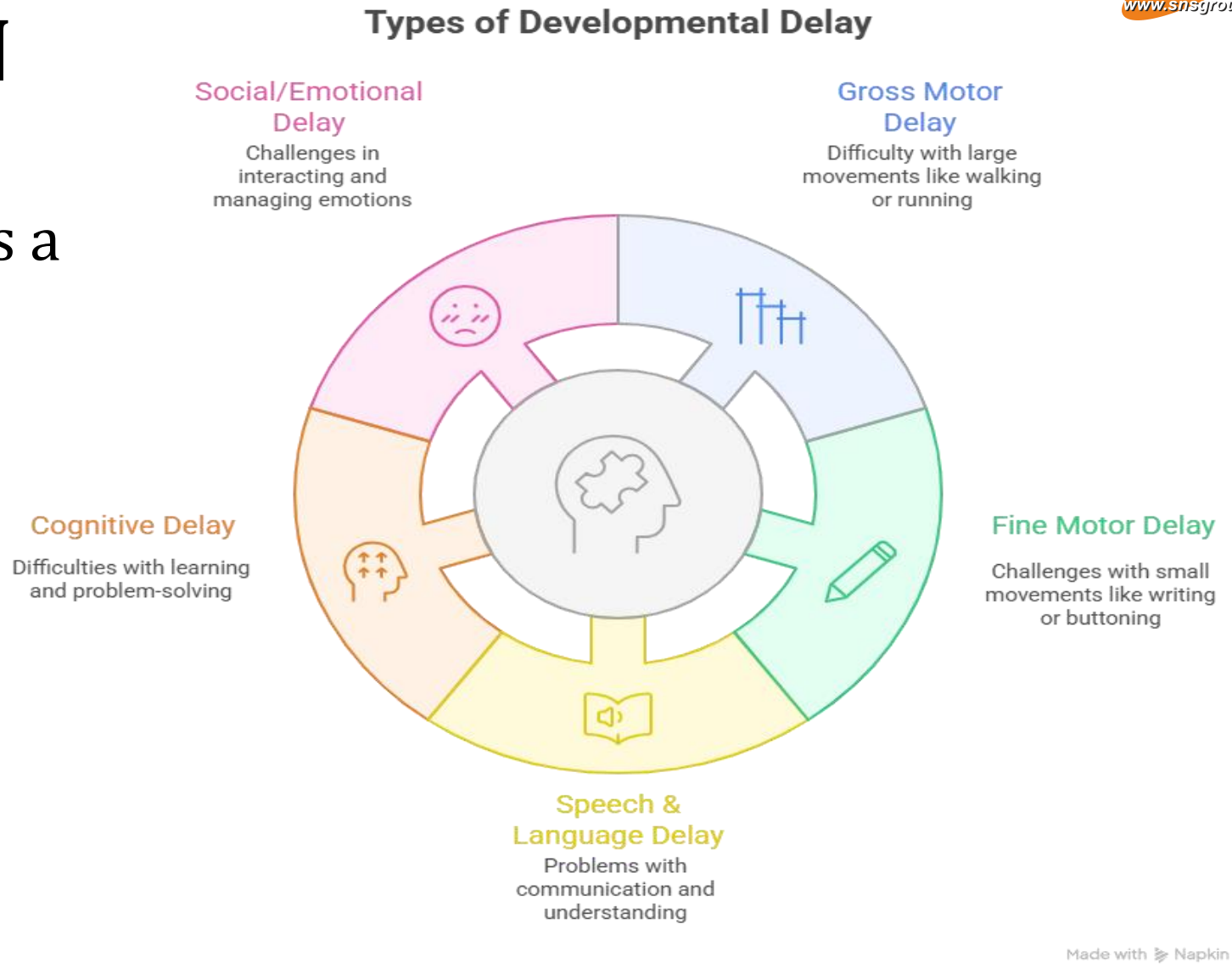
TOPIC: DEVELOPMENTAL DELAY

DESIGN THINKING IN DEVELOPMENTAL DELAY

- **Empathize** Understand child's difficulties, parental concerns, family's psychosocial needs.
- **Define** Identify nature of developmental delay (motor, speech, cognitive, social, global).
- **Ideate** Brainstorm physiotherapy interventions, interdisciplinary approaches, assistive technologies.
- **Prototype** Design individualized therapy plan (play-based therapy, positioning, stimulation).
- **Test** Implement, monitor progress, re-assess milestones, modify plan.

INTRODUCTION

- Developmental delay is a failure to achieve age-appropriate skills compared to peers.



DEFINITION

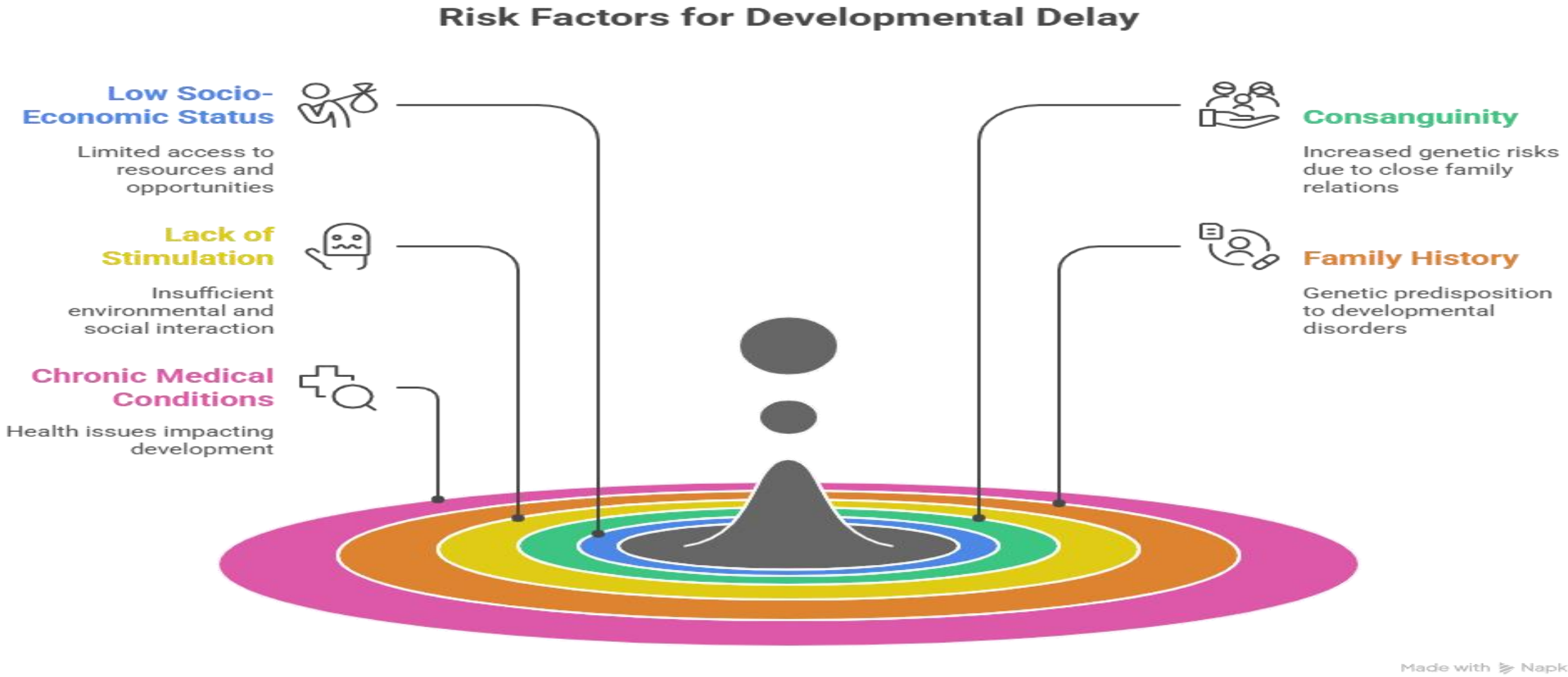
Developmental delay is a condition where a child does not reach developmental milestones within expected timeframes.

Global developmental delay (GDD): Delay in ≥2 domains.

ETIOLOGY

- **Prenatal**: Genetic syndromes, intrauterine infections, maternal malnutrition, substance abuse.
- **Perinatal**: Birth asphyxia, prematurity, low birth weight, neonatal sepsis.
- **Postnatal**: CNS infections, head injury, malnutrition, neglect, environmental deprivation.

RISK FACTORS



DEVELOPMENTAL DOMAINS

- Gross motor → Sitting, standing, walking.
- Fine motor → Grasp, manipulation.
- Speech & language → Babbling, first words, sentences.
- Cognitive → Problem solving, learning.
- Social/Emotional → Interaction, play, bonding.

DEVELOPMENTAL MILESTONES

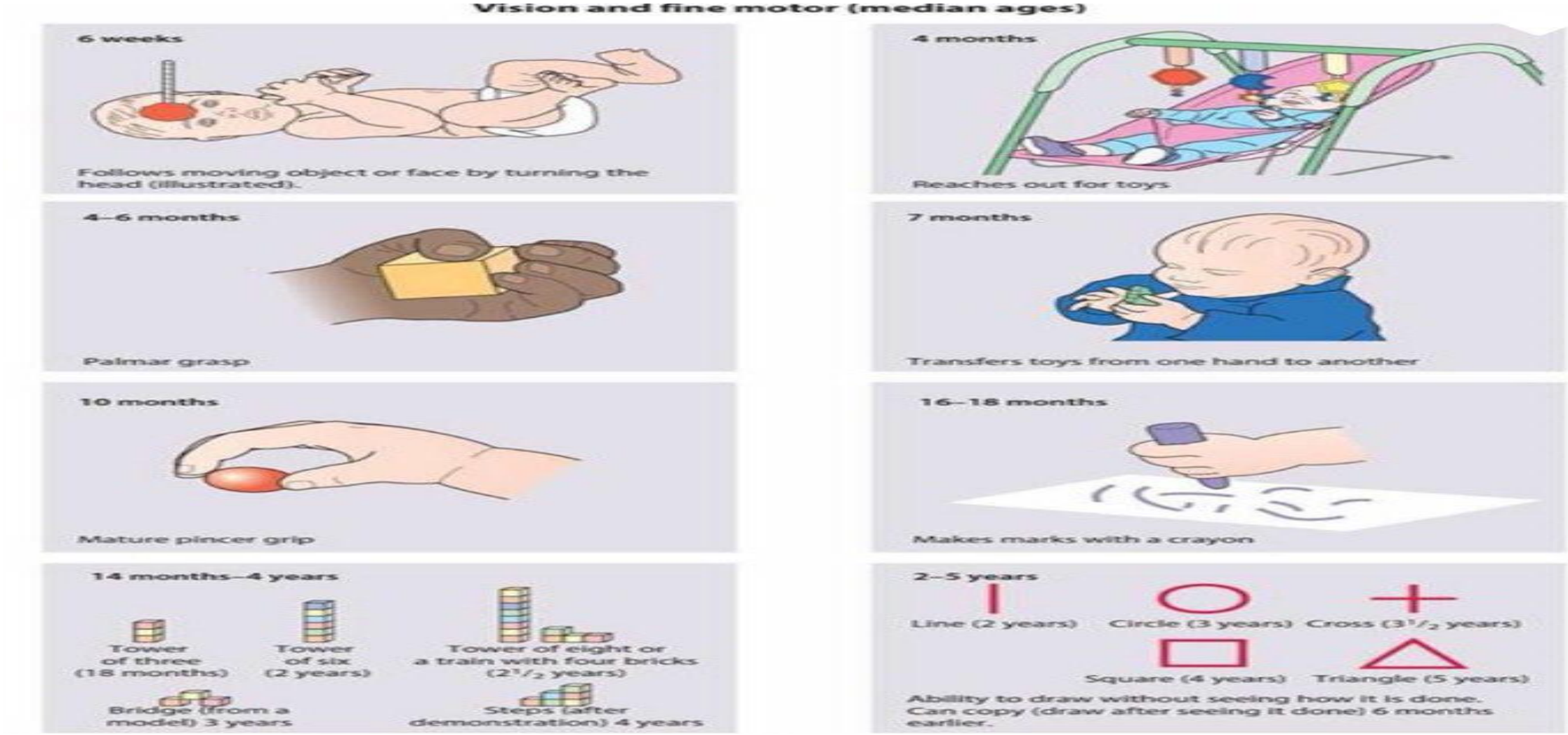
NORMAL DEVELOPMENTAL MILESTONES (Gross Motor)

3 months → Head control.
6 months → Rolls over.
9 months → Sits without support.
12 months → Stands, cruises.
15–18 months → Walks independently.

NORMAL DEVELOPMENTAL MILESTONES (Fine Motor & Speech)

- 6 months → Reaches, transfers objects.
- 9 months → Pincer grasp.
- 12 months → Scribbles.
- 18–24 months → Builds tower.
- Speech milestones: cooing (3m), babbling (6m), first words (12m), 2-word phrases (24m).

FINE MOTOR SKILLS



ASSESSMENT TOOLS

- **Screening tools:** Denver Developmental Screening Test (DDST II), Trivandrum Developmental Screening Chart (TDSC).

- **Standardized assessments:** Bayley Scales of Infant Development, Gross Motor Function Measure (GMFM), Pediatric Evaluation of Disability Inventory (PEDI).

RED FLAGS IN DEVELOPMENT

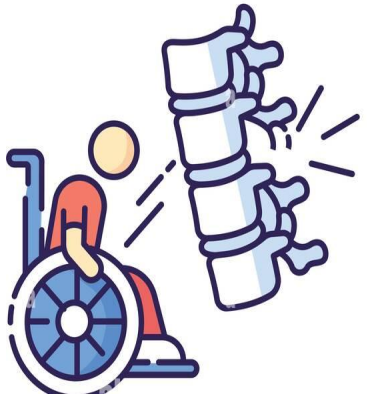
- No social smile by 3 months.
- Poor head control by 4 months.
- Not sitting by 9 months.
- Not walking by 18 months.
- No words by 2 years.
- Regression of skills at any age.

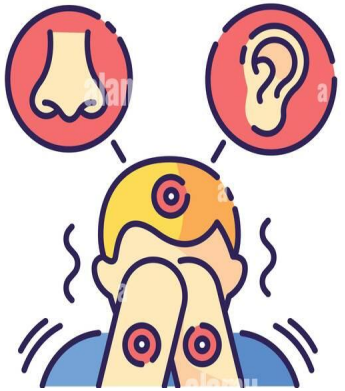
PHYSIOTHERAPY ROLE

- **Early intervention is the key:**
  Promote motor development via play.
  Facilitate normal movement patterns.
  Prevent secondary complications (contractures, deformities).
  Family education and caregiver training.

MANAGEMENT STRATEGIES

- Neurodevelopmental Treatment (NDT/Bobath).
- Sensory integration therapy.
- Constraint-induced movement therapy (CIMT).
- Task-specific training (play therapy).
- Positioning & handling techniques.
- Orthoses & adaptive equipment if needed.





TREATMENT

- Gross motor facilitation: Rolling, creeping, crawling, standing, gait training.
- Balance & coordination: Swiss ball, balance boards.
- Strengthening & stretching: To prevent contractures, promote endurance.
- Play therapy: Motivating child through functional play.
- Hydrotherapy: Buoyancy-assisted movement.

MULTIDISCIPLINARY APPROACH

Physiotherapist → Motor development.

Occupational therapist → ADLs, fine motor.

Speech therapist → Communication.

Psychologist → Cognitive & behavioral support.

Pediatrician/Neurologist → Medical management.

Parents → Home-based carryover.

IN CLASS ASSESSMENT

1. What is the definition of Global Developmental Delay (GDD)?

A) Delay in one developmental domain

B) Delay in ≥2 developmental domains

C) Delay only in motor skills

D) Delay due to environmental factors only

2. Which of the following is a prenatal etiology of developmental delay?

A) Birth asphyxia

B) Genetic syndromes

C) Head injury

D) Neonatal sepsis

IN CLASS ASSESSMENT

3. At what age should a child typically achieve independent walking?

- A) 9 months
- B) 12 months
- C) 15–18 months
- D) 24 months

4. Which assessment tool is used for standardized evaluation of infant development?

A) Denver Developmental Screening Test (DDST II)

B) Bayley Scales of Infant Development

C) Trivandrum Developmental Screening Chart (TDSC)

D) Gross Motor Function Measure (GMFM)

IN CLASS ASSESSMENT

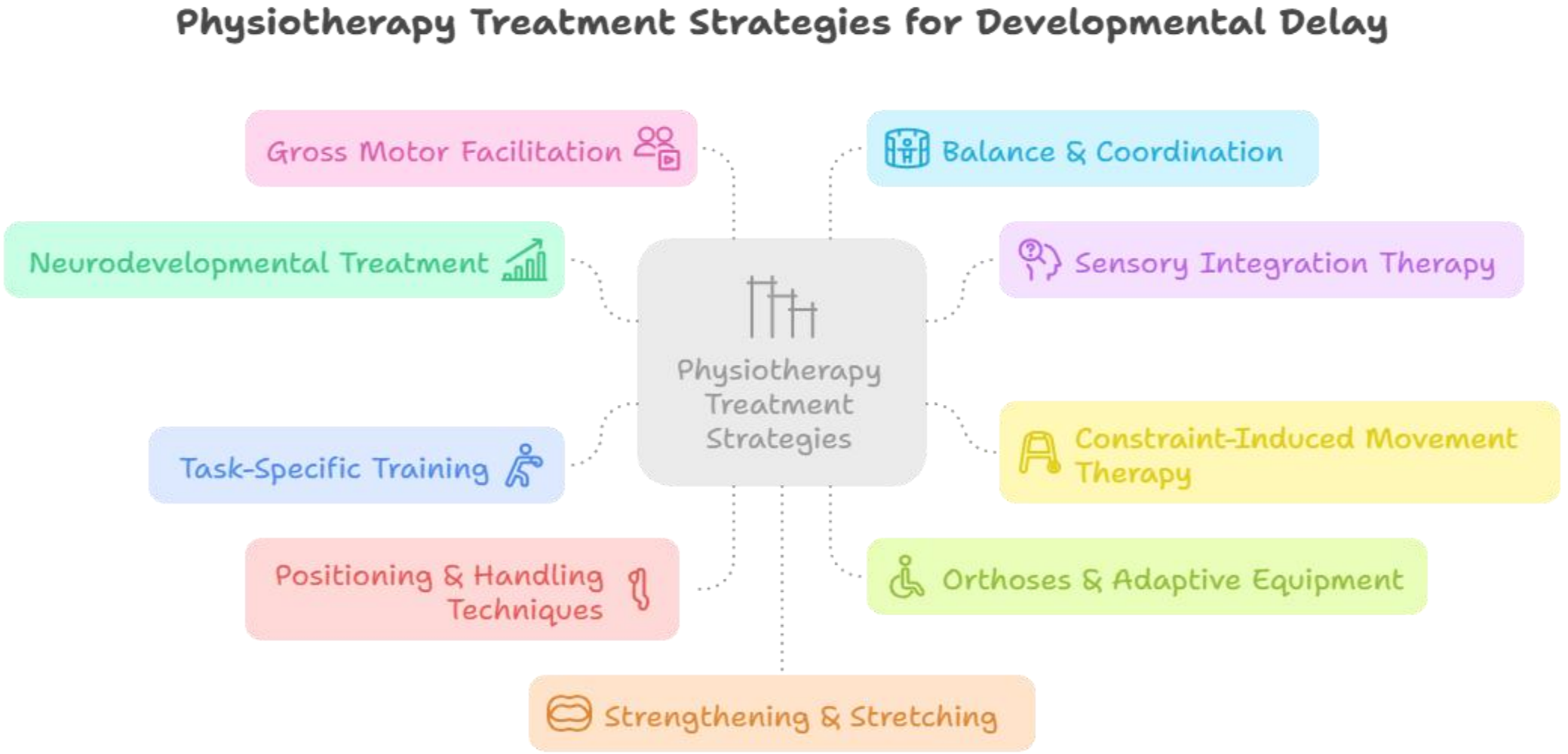
5. What is a key role of physiotherapy in managing developmental delay?

- A) Promoting motor development via play
- B) Prescribing medications
- C) Conducting psychological tests
- D) Performing surgical interventions

ANSWERS FOR IN CLASS ASSESSMENT

1. B) Delay in ≥2 developmental domains
2. B) Genetic syndromes
3. C) 15–18 months
4. B) Bayley Scales of Infant Development
5. A) Promoting motor development via play

THANK YOU


Physiotherapy Treatment Strategies for Developmental Delay
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Balance & Coordination
Neurodevelopmental Treatment
Sensory Integration Therapy
Task-Specific Training
Constraint-Induced Movement Therapy
Positioning & Handling Techniques
Orthoses & Adaptive Equipment
Strengthening & Stretching
Made with Napkin