



Normal child development

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Learning Outcomes

- At the end of this session you should:
- Be able to detail the main developmental domains and key milestones
- Be able to assess a child and estimate their developmental age



Child development

- Gross motor function
- Fine motor function
- Language and hearing
- Social & behaviour



Gross motor function

Looks at posture and large movements-

- Sitting
- Standing
- Kicking a ball
- Climbing stairs
- Peddling a tricycle



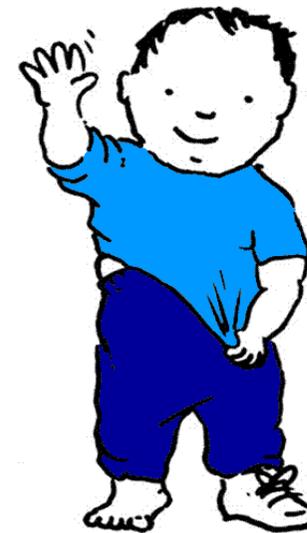


Fine motor function & vision

Looks at hand function & eye-hand coordination

Also tends to give information on cognitive function

- Hand function
- Holding objects
- Picking up objects
- Throwing objects
- Pointing
- Waving





Language and hearing

Need normal hearing for normal speech development.

- Laughing
- Babbling
- Words
- Sentences
- Social communication





Social behaviour and play

Looks at interaction with others and self care skills

- Stranger wary
- Anticipation
- Play
- Feeding
- Toileting





Gross motor development

- Lying immobile → standing walking



Development proceeds in cephalo-caudal direction



Gross motor development

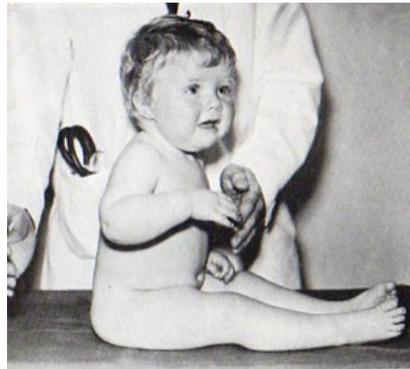
- Lying immobile \longrightarrow standing walking
- Flexion \longrightarrow extension





Gross motor development

- Lying immobile ➡ standing walking
- Flexion ➡ extension
- Rolling ➡ sitting ➡ crawling/shuffling





Gross motor development

- Lying immobile ➡ standing walking
- Flexion ➡ extension
- Rolling ➡ sitting ➡ crawling/shuffling
- Standing Walking





Gross motor development

Primitive reflexes

Present at birth and go to allow purposeful movement

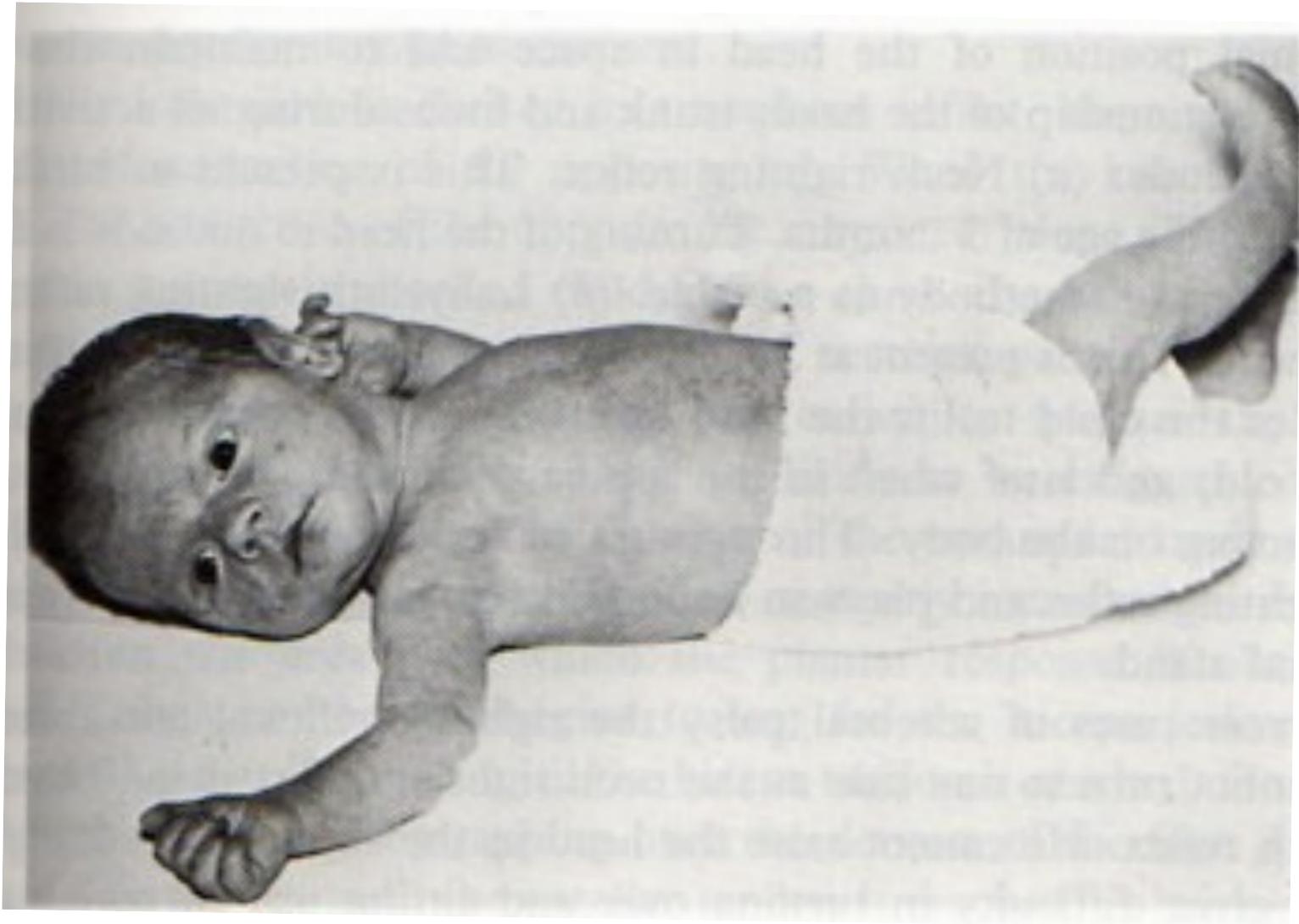
- Rooting 4
- Stepping response 6
- Moro 6
- Asymmetric tonic neck reflex 6
- Plantar grasp 9-12



Stepping reflex



Morrow Reflex



Asymmetric Tonic Neck Reflex (ATNR)

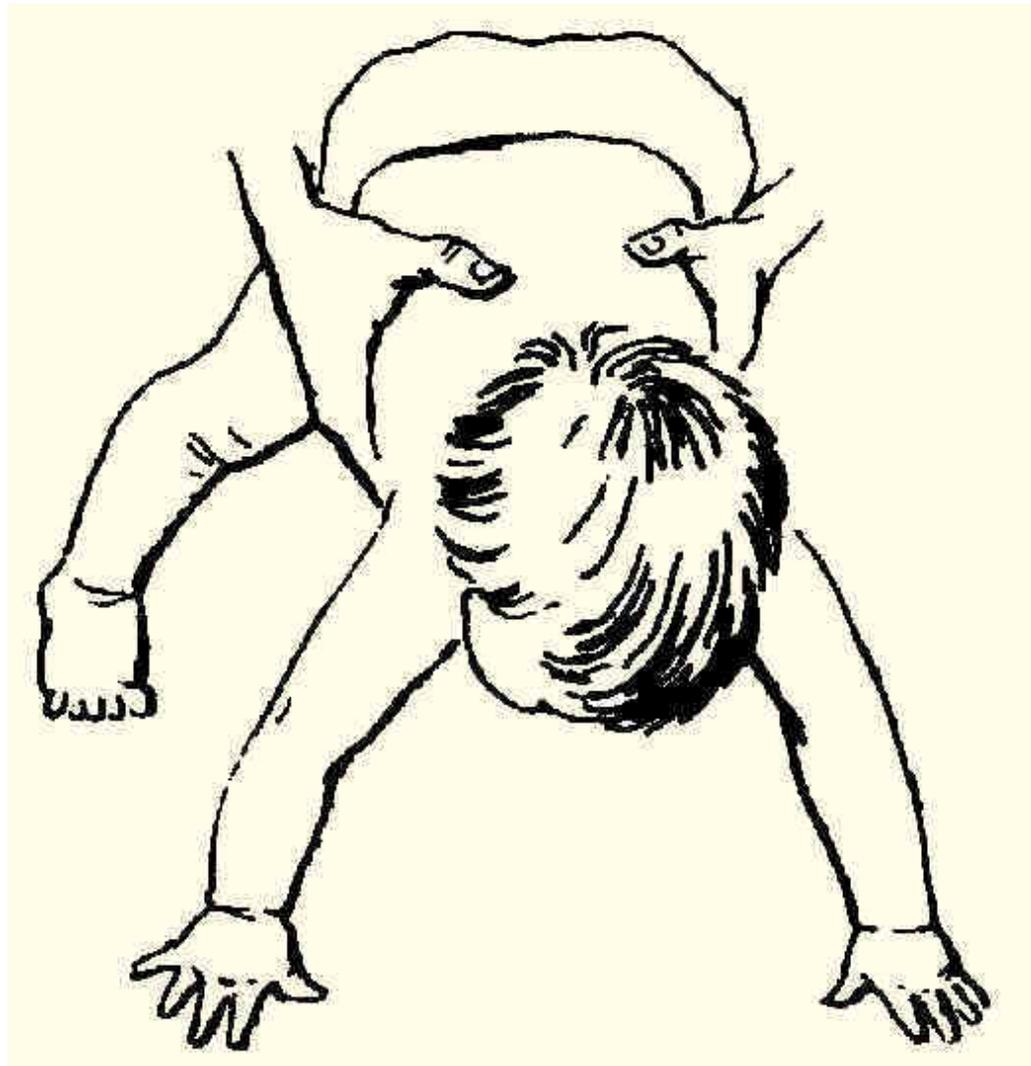


Grasp Reflex



Gross motor development

- Protective responses
 - Have to develop before can attain motor development
- Head righting
- Downward parachute by 4-6 months
- Forward parachute by 7-9 months



Forward Parachute Reflex

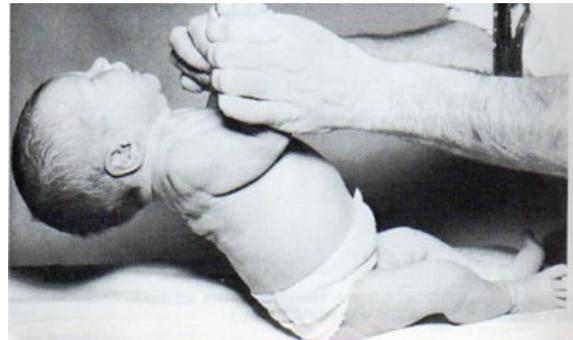


Gross motor milestones

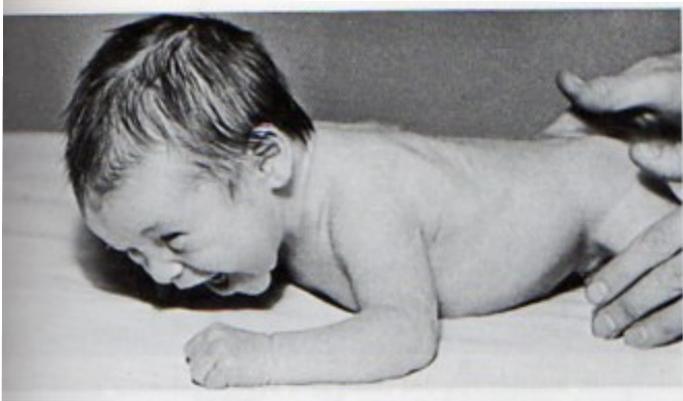
- Head control **3m**
- Hands to midline **3m**
- Prone pushes up on forearms **3m**
- Looks at and plays with feet **6 m**
- Sits with support **6 m**
- Rolls front to back **6 m**
- Bounces on feet **6 m**

Head Lag

Are they the same developmental age?



Pushing up from prone



6 weeks



10-12 weeks



Gross motor milestones

- Sits alone 8m
- Pivots to reach toys 9m
- Crawls 10m
- Pulls to stand 10m
- Cruises around furniture 11m
- Walks 12/15m
- Stairs 15m



Gross motor milestones

- Runs 18m
- Pulls toys along 18m
- Climbs onto chair 18m
- Carries toy whilst walking 18m
- Squats to pick up toy 18m
- Climbs on furniture to get things 2y
- Walks up stairs holding rail 2 feet / step 2y
- Sits on toy and propels with feet on floor 2y



Gross motor milestones

- Jumps with feet together 2y
- Kicks a ball 2y
- Stairs with alt feet 3y
- Pedals tricycle 3y
- Stands on one foot 4y
- Hops 5y

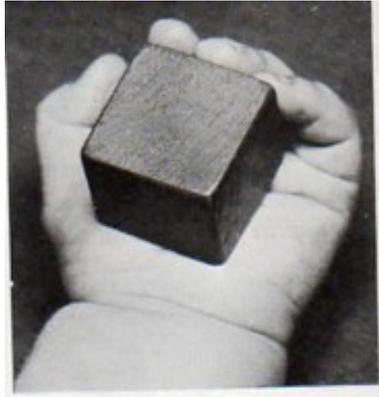


Fine motor and vision milestones

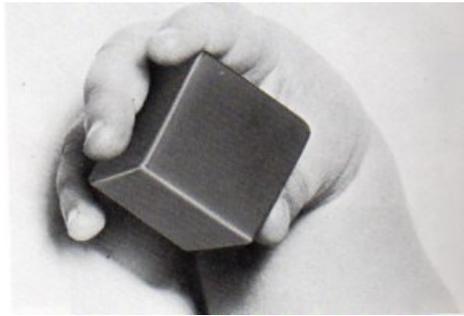


Fine motor and vision milestones

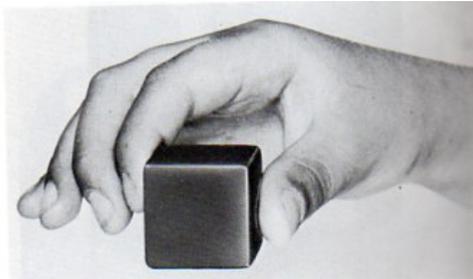
- Fixes gaze 1m
- Follows through 90° 6w
- Moves head to look around 3m
- Looks at hands 3m
- Opens and closes hands 3m
- Hold object in hand (but not regard it) 3m
- Follows adults around room 6m
- Palmar grasp 6m
- Transfers objects 6m



- Palmar grasp - 6 months



- Intermediate grasp - 8 months



- Mature grasp - 1 year



Fine motor and vision milestones

- Radial grasp 9m
- Release/press toy 9m
- Looks for fallen object 9m
- Points at objects with hand 10m



Fine motor and vision milestones

- Pincer grasp 12m
- Casting 12m
- Object permanence 12m
- Points at object with index finger 12m
- Recognises familiar people 12m
- Looks at pictures 12m
- Knocks bricks together 12m



- Pincer grasp
- 12 months



Fine motor and vision milestones

- Copies 2 cube tower 15m
- Requests objects by pointing 15m
- Crayon palmar grasp 15m
- Copies 3 block tower 18m
- Looks at books 18m
- Scribbles to and fro 18m
- May have hand preference 18m



Fine motor and vision milestones

- Tower of 6 blocks 2y
- Circular scribble 2y
- Vertical line 2y
- Turns pages of book 2y
- Builds bridge 3-3.5y
- Thread beads 3-3.5y

• Tripod pencil hold 3-4 y



Fine motor and vision milestones

- Draws circle 3y Draws cross 4 y
- Draws square 5y Draws triangle 6 y

Side to side scribble 18/12



Fig. 135 1 year 6 months



Fig. 136 2 years 3 months.

Circular scribble 28/12



Fig. 137 2 years 11 months



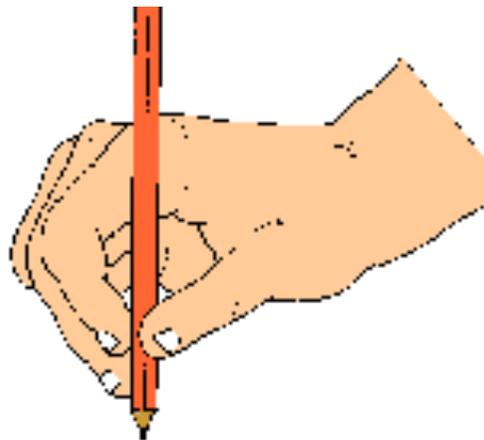
Fig. 138 3 years 4 months.

Immature man 3 1/2yrs



Fine motor and vision milestones

- Pen grasp
 - Supinator 18m
 - Pronator 2-3y
 - Tripod 3-4y





Language & hearing

- Startle response 1m
- Settles to voice 1m
- Turns to voice 1m
- Coos 6w
- Vocalises when happy 3m
- Excitement in anticipation 3m
- Laughs and squeals in play 3m
- Double syllable babble 6m
- Screams if annoyed 6m



Language & hearing

- Conversational babble 9m
- Shouts 9m
- Understands: no, bye-bye 9m
- Imitates 9m
- Responds to name 1y
- Understands several words 1y
- Definition by use 1y
- First word 1y



Language & hearing

- Jabbers 15m
- Obeys simple instructions 15m
- 12 words 18m
- Sings 18m
- Doll/self body parts 18m
- Joins 2 words together 2y
- Talks incessantly 2y
- Echolalia 2y



Language & hearing

- Large vocabulary 2 ½ y
- Questions 2 ½ y
- Plays with miniature toys 2 ½ y
- Enjoys listening to stories 3y
- Use language to meet needs 3y
- Uses language socially 3y
- Knows colours 4y
 - Recognises
 - Names



Hearing screening tests

- Neonatal screening
 - ABR
 - OAE
- Distraction hearing test 8m
- Pure tone audiometry 3-4y



Social behaviour & play

- Calms to voice 1m
- Smiles 6w
- Enjoys bath 3m
- Smiles spontaneously 3m
- Plays with hands 3m
- Plays with feet 6m
- Plays with cause and effect toys 6m



Social behaviour & play

- Stranger wary 7m
- Feeds self finger foods 8m
- Plays peek a boo 9m
- Holds out toy to adult 9m
- Claps hands 9m
- Drinks from cup 12m
- Helps with dressing 12m
- Object permanence 12m
- Waves 12m



Social behaviour & play

- Uses spoon 15m
- Explores toys 15m
- Removes shoes and socks 15m
- Stopped mouthing 15m
- Indicates when wet/dirty 15m
- Plays alone happily 18m
- May indicate need to toilet 18m
- Imitative play 18m



Social behaviour & play

- Eats with spoon and fork 2y
- Puts on shoes 2y
- Washes hands 2y
- Symbolic play 2yr
- Dry/clean by day 2-3y
- Separates from mother 3-4y
- Dresses self 3-4y



Clinical examination

- Watch the child
 - Gross motor
 - Fine motor
 - Speech
 - Social & play
- Give the child appropriate props
 - Bricks
 - Pencil & paper
 - Ball
 - Cup & spoon



The children!