

Child Development

for

5th year Medical Students

By

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DEVELOPMENT

It is functional maturation and acquisition of skills. It includes motor and mental development.

It is a continuous process from conception to maturity and depends on myelination of nervous system.

Normal development follows a recognized sequence and the range of expected ages or milestones at which particular developmental skills are attained is well established

Development is grouped into 4 categories:

- **Gross motor**: sitting, walking and running.
- **Fine motor and vision**: hand skill and visual development.
- **Speech, language and hearing**: communication skills both verbal and non-verbal and hearing development.
- **Social behaviour**: feeding, toileting, dressing, play and social relationships.

Gross motor development

It proceeds in a head to toe direction (as a result of myelinations of nerves from above downwards).

Head, neck and trunk control is obviously a prerequisite for sitting.

Moving into prone position, kneeling on all fours allow crawling.

Control on lower limbs and feet allow standing then walking , running, jumping and hopping.

Gross motor

AGE	SKILL
6 WEEKS	<ul style="list-style-type: none">- Head lag on pulling from supine to sitting position- When held in ventral suspension, head can be held in the same plane as the body
3 MONTHS	<ul style="list-style-type: none">- Lifts head and shoulders off floor in prone position.- Little or no head lag on pull to sit.
6 MONTHS	<ul style="list-style-type: none">- Rolls front to back and usually back to front- Sits with support (curved back)
8 MONTHS	<ul style="list-style-type: none">- Sits independently without support (straight back)
10 MONTHS	<ul style="list-style-type: none">- Crawls
12 MONTHS	<ul style="list-style-type: none">- Pulls to stands- Cruising on furniture

Gross motor

AGE	SKILL
15 MONTHS	<ul style="list-style-type: none">- Walks independently
18 MONTHS	<ul style="list-style-type: none">- Squats to pick up objects- Carries toys while walking
2 YEARS	<ul style="list-style-type: none">- Runs- Kicks a ball- Climbs and descends stairs two feet per stair
3 YEARS	<ul style="list-style-type: none">- Pedals a tricycle- Stands on one leg momentarily- Jumps well- Climbs upstairs one foot per stair
4 YEARS	<ul style="list-style-type: none">- Stands on one foot well- Hops- Descends downstairs one foot per stair
5 YEARS	<ul style="list-style-type: none">- Runs upstairs and downstairs in adult manner- Bounces and catches a ball

Gross motor warning signs

MILESTONE	AGE LIMIT
NO HEAD SUPPORT	6 MONTHS
NOT SITTING UNSUPPORTED	9 MONTHS
NOT STANDING INDEPENDENTLY	15 MONTHS
NOT WALKING INDEPENDENTLY	24 MONTHS

- **At any age**
 - Parental concern
 - Regression in previously acquired skills

Fine motor development

Fine motor development require visual skills and control of the small muscles of the hands and the two are closely integrated.

Fine motor

AGE	SKILL
6 WEEKS	<ul style="list-style-type: none">- Maintains fixation and follows an object through 90' in the horizontal plane
3 MONTHS	<ul style="list-style-type: none">- Fixes and follows object through 180' in the horizontal plane- Attempts to make contact with offered objects
4 MONTHS	<ul style="list-style-type: none">- Reaches and grasps an object with palmar grasp
6 MONTHS	<ul style="list-style-type: none">- Transfers objects from hand to hand- Mouthing objects
10 MONTHS	<ul style="list-style-type: none">- Pincer grasps- Banging bricks together
15 MONTHS	<ul style="list-style-type: none">- Refined pincer grasp- Tiny objects can be picked up delicately

Fine motor

AGE	SKILL
18 MONTHS	<ul style="list-style-type: none">- Builds 2 or 3-brick tower- To and fro scribble
2 YEARS	<ul style="list-style-type: none">- Builds 6-brick tower- Draws vertical line
2.5 years	<ul style="list-style-type: none">- Builds 8-brick tower- Builds a train with 4 bricks- Draws horizontal line
3 YEARS	<ul style="list-style-type: none">- Copies 3-brick bridge- Draws a circle- Matches 2 colours
4 YEARS	<ul style="list-style-type: none">- Copies 6-brick steps- Draws cross and square- Draws man with 3 parts
5 YEARS	<ul style="list-style-type: none">- Draws triangle- Draws man with 6 parts

Fine motor warning signs

MILESTONE	AGE LIMIT
NO FIXATION OR FOLLOWING OBJECTS	3 MONTHS
PERSISTENT PRIMATIVE REFLEXES	AFTER 6 MONTHS
NOT REACHING FOR OBJECTS	9 MONTHS
NO PINCER GRASP	15 MONTHS
Presence of HAND PREFERENCE	BEFORE 18 MONTHS

- **At any age**
 - Parental concern
 - Regression in previously acquired skills

Language and hearing development

1st year (pre-lingual):

- Non-verbal communication and comprehension begins in the 1st year.
- Vocalizations start as open vowel sounds, followed by double syllable babble and variation in pitch and volume with facial expression.
- Receptive language precedes expressive language.

Language and hearing development

2nd year:

- Comprehension of single words begins.
- Expressive language develops with sound labels e.g. “mama”, “dada” followed by single word to label or request.
- Next comes ability to join two words together.

Language and hearing

AGE	COMPREHENSION	EXPRESSION
3 MONTHS	- Turns head to sounds at ear level	- Vowel sounds and cooing on social contact
6 MONTHS	- Turns when name is called	- Unintelligible babble
9 MONTHS	- Understand “No”	- Two-syllable babble “e.g. mama , dada , papa”
12 MONTHS	- Respond to “give it to me”	- Can say 2 words with meaning

Language and hearing

AGE	COMPREHENSION	EXPRESSION
18 MONTHS	<ul style="list-style-type: none">- Points to body parts- Understands up to 50 words- Follows one-step command “e.g. bring the doll”	<ul style="list-style-type: none">- Can say up to 20 words with meanings
2 YEARS	<ul style="list-style-type: none">- Follows 2 steps commands” e.g. get the ball and put it in box”	<ul style="list-style-type: none">- Use 2-word sentences- Can say up to 50 words
2.5 YEARS	<ul style="list-style-type: none">- Identifies objects by hearing their use- Select toy from others	<ul style="list-style-type: none">- Use up to 200 words- Uses pronouns “ I , me”

Language and hearing

AGE	COMPREHENSION	EXPRESSION
3 YEARS	<ul style="list-style-type: none">- Knows some colours- Understands plurals- Understands pronouns	<ul style="list-style-type: none">- Uses 3 to 4 –word sentences- Asks “what”, “who” questions
4 YEARS	<ul style="list-style-type: none">- Understands numbers- Understands past tense- Knows several colours	<ul style="list-style-type: none">- Counts to 10- Asks “when”, “why”, “how” questions
5 YEARS	<ul style="list-style-type: none">- Understands prepositions” on, under, over, in front of”- Understands opposites” cold/hot, big/small”	<ul style="list-style-type: none">- Counts to 20- Can tell a story with details

Language and hearing warning signs

MILESTONE	AGE LIMIT
NO CONSONANT BABBLING	12 MONTHS
LESS THAN 6 WORDS WITH MEANING	2 YEARS
NOT JOINING WORDS	2.5 YEARS
UNINTELLIGIBLE SPEECH	4 YEARS

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Social and behavioral development

The development of self-help skills such as feeding, dressing and toileting is influenced by family environment.

Social and behavioral development

AGE	SKILL
6 WEEKS	<ul style="list-style-type: none">- Smiles in response to appropriate stimuli
3 MONTHS	<ul style="list-style-type: none">- Social smile
6 MONTHS	<ul style="list-style-type: none">- Play with feet- Holds onto bottle when fed
9 MONTHS	<ul style="list-style-type: none">- Stranger awareness
12 MONTHS	<ul style="list-style-type: none">- Waves bye-bye- Claps hands- Play peek-a-boo
15 MONTHS	<ul style="list-style-type: none">- Holds cup to drink- Indicate wants without crying “e.g. pointing or pulling,”

Social and behavioral development

AGE	SKILL
18 MONTHS	<ul style="list-style-type: none">- Holds spoon and get food to mouth- Takes off socks and hat- Indicates toilet need
2 YEARS	<ul style="list-style-type: none">- Symbolic play “e.g. feeding doll”
3 YEARS	<ul style="list-style-type: none">- Out of nappies by day- Separate easily from mother- Dress with supervision- Eat with fork and spoon
4 YEARS	<ul style="list-style-type: none">- Out of nappies by night- Toilet alone- Brush teeth- Share toys with other kids
5 YEARS	<ul style="list-style-type: none">- Choose friends- Comforts other kids when distressed- Act in role playing games- Do buttons in clothes

Social and behavioral warning signs

MILESTONE	AGE LIMIT
NO SMILE	10 WEEKS
NO FEAR OF STRANGERS	10 MONTHS
NO SYMBOLIC PLAY	2.5 YEARS
NO INTERACTIVE PLAY	3.5 YEARS

- **At any age**
 - Parental concern
 - Regression in previously acquired skills

THANK YOU