

PEDIATRIC GROWTH AND DEVELOPMENT STANDARDS

Age And Physical Characteristics	Motor Development	Psychosocial Socialization And Vocalization	Cognitive And Emotional Development
<p><u>Birth to one month</u> Neurological disorganization. Moro reflex, rooting reflex, disorganized sleep cycle, liquid food.</p>	<p>Eyes follow brightly moving objects, momentary visual contact with fixed objects. Lies awake on back with head averted. Drops objects placed in hands. Responds to bell and similar sounds. Hands fisted.</p>	<p>Mews and makes throaty noises. Smacks lips. Interested in human face. Trusts caregivers.</p>	<p>Reflexive. Responses are limited to tension states or discomfort. Satisfaction comes from feeding; being held, rocked, cuddled. Intense need for sucking pleasure. Quiets when picked up.</p>
<p><u>Two months</u> Crossed extensor reflex disappears. Tonic neck reflex begins to fade. When supine, arms and legs in flexion and to midline.</p>	<p>Reflexive behavior being replaced by voluntary movements. Turns from side to back. Can lift head momentarily from prone position. Eye coordination to light and objects. Will stop activity and listen to nearby sounds such as a bell. Eyes follow both vertically and horizontally; focuses well.</p>	<p>Begins vocalization; coos to a voice. Crying becomes differentiated. Looks for sounds. Touching, talking, or singing may lead to squeals of delight. Begins social smile. Eyes follow person more intently.</p>	<p>Recognizes familiar face. More aware and interested in surroundings. Anticipates being fed when in feeding position. Enjoys sucking - puts hand in mouth.</p>
<p><u>Three months</u> Positive support reflex disappears. Posterior fontanelle closes. Real tears, drooling, gastrointestinal juices increase.</p>	<p>Will rest on forearms when prone and keep head in midline. Makes crawling movements with legs, arches back, and holds head high; may get chest off surface. Shows preference for prone or supine position. Discovers hands; may strike at objects while watching hands. Can hold objects in hands. Brings objects to mouth. Has fairly good head control.</p>	<p>Smiles more readily. Babbles and coos. Stops crying when mother enters room or when caressed. Plays during feeding. Stays awake for longer without crying. Turns head to follow familiar person.</p>	<p>Active interest in surroundings. Recognizes familiar faces and objects. Focuses and follows objects. Repetitiveness in play. Is aware of strange situations. Pleasure from sucking; purposely gets hand to mouth. Begins to establish a routine prior to sleep.</p>
<p><u>Four to six months</u> Moro reflex fades. Stepping reflex disappears. Rooting reflex disappears. Weight about doubles birth weight. Grasp becomes more voluntary. Sucking becomes more voluntary.</p>	<p>Eyes focus on small objects. May pick a dangling ring. When pulled to a sitting position, holds head up. More interested in surroundings. Hand comes to meet rattle. Sits with minimal support. Intentional rolling over, back to side. Reaches for offered objects. Grasps objects in both hands. Everything goes into mouth.</p>	<p>Listens - turns head to familiar sound. Laughs and chuckles socially. Demands attention by fussing. Recognizes mother. Begins to respond to "No, no." Responds to speech by vocalizing. Develops coping sounds. Enjoys being propped in sitting position.</p>	<p>Enjoys attention; bored when left alone for long periods of time. Recognizes bottle. More interest shown to mother. Increasing trust and security. Sleeps through night; has defined nap time.</p>

PEDIATRIC GROWTH AND DEVELOPMENT STANDARDS

Age And Physical Characteristics	Motor Development	Psychosocial Socialization And Vocalization	Cognitive And Emotional Development
<p><u>Seven to ten months</u> Five to six months - tonic neck reflex disappears. Six to seven months - palmar grasp disappears. Seven to eight months two central lower incisors appear. Eight to nine months four upper incisors appear. GI system maturing enough for solid food.</p>	<p>Momentary sitting, with hand support. Bounces and bears some weight when held in standing position. Transfers and mouths objects in one hand. Discovers feet. Bangs objects together. Rolls over well. May begin some form of mobility.</p>	<p>Develops eye-eye contact while talking. Localizes sound. Engages in social games. Eustachian tub short and horizontal making infant prone to ear infections. Discriminates between strangers and familiar figures. Crows and squeals. Starts saying "ma" and "da". Waves "bye-bye." Self play is self contained. Laughs out loud. Makes "talking" sounds in response to others' talking. Begins fear of strangers.</p>	<p>Secures objects by pulling on string. Searches for objects that are out of sight. Inspects object. Likes to sit in high chair. Drops and picks up objects. Exploratory behavior with food. Beginning fear of strangers. Fretful when mother leaves. Much mouthing and biting.</p>
<p><u>Ten to twelve months</u> Nine to twelve months plantar reflex disappears and neck righting reflex disappears.</p>	<p>Sits without support. Recovers balance. Manipulates objects with hands. Unwraps objects. Creeps. Pulls self upright at crib rails. Uses index finger and thumb to hold objects. Rings a bell. Can feed self a cracker. Can hold a bottle. Can control lips around cup. Does not like supine position. Finger and thumb opposition.</p>	<p>Claps hands on request. Responds to own name. Aware of social surroundings. Imitates gestures, facial expressions, sounds. Smiles at image in mirror. Offers toy to adult but does not release it. Begins to test parents' reactions during feeding and at bedtime. Entertains self for long periods of time. Enjoys peek-a-boo and patty cake. Babbles monologue. Uses three words meaningfully.</p>	<p>Begins to imitate. More interest in picture books. Enjoys achievements. Strong urge toward independence: locomotion, feeding, dressing. Can follow simple, one-step directions.</p>
<p><u>Twelve to eighteen months</u> Landau reflex disappears. Weight should about triple birth weight. Two lower lateral incisors appear. Four first molars appear by 14 months.</p>	<p>Can walk alone (by 15 months.). Cruises around furniture. Can stand alone and toddle. Developing lordotic and lumbar curves to make walking possible. Turns pages in book. Tries tossing object. Shows hand dominance. Navigates stairs. Climbs on chairs. Builds a tower of two blocks. Puts balls in box. May use spoon. Can release objects at will. Regular bowel movements.</p>	<p>Uses jargon. Points to indicate wants. Enjoys give-and-take game. Responds to music. Enjoys being the center of attention. Repeats laughed-at activities. Six words - 15 months. 15 - 30 words - 18 months.</p>	<p>Shows fear, anger, affection, jealousy, anxiety, and sympathy. Experiments to reach goals. Determined to move barriers to action. Concepts of space, time, and causality begin to develop. Increased attention span. Listens to story.</p>

PEDIATRIC GROWTH AND DEVELOPMENT STANDARDS

Age And Physical Characteristics	Motor Development	Psychosocial Socialization And Vocalization	Cognitive And Emotional Development
<p><u>18 months</u> Anterior fontanelle closes. Abdomen protrudes. Arms and legs lengthen. Four cuspids appear. Fine muscle coordination begins to appear. Gains four to six pounds a year. Grows about four inches during second year.</p>	<p>Walks up stairs with help. Creeps downstairs. Walks without support. Walks with balance. Falls less frequently. Throws ball. Stoops to pick up toys. Turns pages of book. Holds and lifts cup. Builds three block tower. Picks up and places small beads in container. Begins to use spoon. Begins to run.</p>	<p>New awareness of strangers. Wants to explore everything in reach. Plays alone but near others. Dependent on parents but begins to reach for autonomy. Finds security in a blanket, toy, or thumb sucking. Uses phrases, imitates words. Points to objects named by adult. Follows directions and requests.</p>	<p>Imitates adult behavior. Retrieves toy from several hiding places.</p>
<p><u>Two years</u> Protruding abdomen less noticeable. Landau reflex disappears. Height increases by 14 to 15 inches. Slight bowing of legs with a wide-based walk. Handedness may become apparent.</p>	<p>Walks up and down stairs. Opens doors, turns knobs. Steady gait. Holds drinking cup well with one hand. Uses spoon without spilling food but may prefer fingers. Kicks a ball in front of him without support. Builds a tower of four to six blocks. Scribbles. Rides tricycle or kiddie car (without pedals).</p>	<p>Has 200 - 300 words in vocabulary and uses "mine" constantly. Uses "no" as assertion of self. Begins to use short sentences. Refers to self by pronoun. Is possessive with toys. Resists restrictions on freedom. Has fear of parents' leaving. Parallel play. Dawdles. Resists bedtime; uses transitional objects (blanket, toy). Vacillates between dependence and independence</p>	<p>Obeys simple commands. Does not know right from wrong. Begins to learn about time sequences. Routines and rituals are important. May begin cooperation in toilet training.</p>
<p><u>Two to three years</u> Legs are about 34% of body length. Weight gain is five pounds per year until age five. Full set of baby teeth by age two and a half. Second molars appear. Height gain of two to three inches. Lordosis and protuberant abdomen disappear.</p>	<p>Throws objects overhead. Pedals tricycle. Walks backward. Washes and dries hands. Begins to use scissors. Can string large beads. Can undress himself. Feeds self well. Tries to dance. Jumps in place. Builds tower of eight blocks. Balances on one foot. Swings and climbs. Can eat an ice cream cone. Can drink from a straw. Chews gum without swallowing it.</p>	<p>Developing independence - may say "no" to every command. Says name, age, sex. Talks in short sentences. Uses plurals. Attempts to sing simple songs. Has vocabulary of 900 words. Can repeat three numbers. Temper tantrums may result from frustration in wanting to do everything for self. Begins to play with others. Associative play. Fears become pronounced. Can handle short periods of separation from parents. Daytime bladder control; developing nighttime bladder control. More independent. Identifying gender roles. Explores outside environment. Creates different ways of getting desired outcome.</p>	<p>Increased attention span. Begins to ask "why". Rituals are important. Egocentric in thought and behavior. Mind and will of own. Can reflect on own behavior. Begins fantasy. Begins to understand what it means to take turns. Shows interest in colors. Can copy "o" and a vertical line.</p>

PEDIATRIC GROWTH AND DEVELOPMENT STANDARDS

Age And Physical Characteristics	Motor Development	Psychosocial Socialization And Vocalization	Cognitive And Emotional Development
<p><u>Three to four years</u> May appear “knock kneed.”</p>	<p>Drawings have form and meaning but not detail. Copies a circle and a cross. Buttons front and side of clothes. Laces shoes. Bathes self with direction. Brushes teeth. Continuous movement going up and down stairs. Climbs and jumps well. Tries to print letters.</p>	<p>Has vocabulary of 1500 words. Uses mild profanities and name-calling. Uses language aggressively. More active with peers and engages in cooperative play. Performs simple tasks. Has imaginary companion. Dramatizes experiences. Is proud of accomplishments. Exaggerates, boasts, and tattles on others. Can tolerate separation from mother longer without feeling anxiety. Keen observer. Good sense of “mine” and “yours.” Behavior still frequently ritualistic. Curious about life and sex; may masturbate.</p>	<p>Awareness of body is more stable. Aware of own vulnerability. Less negative. Learns some number concepts. Begins naming colors. Can identify longer of two lines. Asks many questions. May not understand body parts that can't be seen or felt. Can be given simple explanation of cause of effect. Thinks very concretely. Demonstrates irreversibility of thought. Immature concept of death; believes it is reversible. Begins to understand past and future. Egocentric in thought.</p>
<p><u>Four to five years</u> Adds nine to ten inches to height. At age four legs comprise about 44% of body length.</p>	<p>Hops two or more times. Dresses without supervision. Good motor control - climbs and jumps well. Walks up stairs without grasping handrail. Washes self without wetting clothes.</p>	<p>Has 2100 word vocabulary. Talks constantly. Uses adult speech forms. Can give “opposites” analogies; hot/cold, up/down, bright/dark. Comprehends prepositions. Participates in conversations. May still have imaginary companion. Sense of order; likes to finish what was started. Obedient and reliable. Protective toward younger children. Cooperative and sympathetic. Begins to develop conscience with some governance of behavior. Increased self-confidence. Accepts responsibility for acts. Less rebellious. Has dreams and nightmares. Generous with toys. Begins to questions parents' thinking. Identifies strongly with parent of same sex.</p>	<p>Asks for definitions. Knows age and residence. Identifies heavier of two objects. Knows weeks as time units. Names days of week. Begins to understand kinship. Knows primary colors. Can count to ten. Has high degree of imagination. Questioning is at a peak. Beginning to develop power of reasoning. Adds three or more details in drawings. Draws a square: can copy a triangle. Prints first name and other words.</p>

PEDIATRIC GROWTH AND DEVELOPMENT STANDARDS

Age And Physical Characteristics	Motor Development	Psychosocial Socialization And Vocalization	Cognitive And Emotional Development
<p><u>Five to nine years</u> Slow and steady growth rate. Average weight gain of seven pounds per year. Appears taller and slimmer. Begins to lose baby teeth. Permanent teeth appear at about four teeth per year. Early lordosis disappears. Eyes become fully developed. Vision approaches 20/20. Handedness should be will developed.</p>	<p>Neuromuscular and skeletal development allows improved coordination. <u>Six years</u>-Balance improves. Active and impulsive. Uses hands as manipulative tools in cutting, pasting, hammering. Draws large letters or figures. <u>Seven years</u>-Lower activity level. Capable of fine hand movements. Nervous habits such as nail biting common. Muscular skills such as ball throwing improved. <u>Eight years</u>-Moves with less restlessness. Has developed grace and balance, even in active sports. Has developed coordination of fine muscles. <u>Nine years</u>-Uses both hands independently. Skillful in manual activities because of improved eye-hand coordination.</p>	<p><u>Six years</u>-Uses sentences well. Uses language to share others' experiences. May swear or use slang. Acts out ideas of family. Enjoys painting, pasting, reading, simple games, watching TV, digging, running games, skating, bicycling, and swimming. <u>Five to nine year group</u>-Needs parental support but pulls away from overt signs of affection. Peer groups provide companionship. "Chum stage"-Child chooses a special friend of same gender and age. Play teaches the child new ideas and independence. Enjoys collections, clubs, table and card games, books, TV, records. Child uses tools of competition, compromise, cooperation, and is beginning collaboration. Body image and self-concept are fluid because of rapid physical, emotional, social changes. Latency-stage sexual drive is controlled and repressed. Development of skills and talents.</p>	<p><u>Six years</u>-Can print sentences. Begins to learn to read. Defines objects in terms of use. Time sense is as much in past as present. Is interested in relationship between home and neighborhood. Know some streets. Distinguishes morning from afternoon. <u>Seven years</u>-Deeper understanding of meanings. More reflexive. Interested in conclusions and logical endings. Begins scientific interest in cause and effect. More responsible in relation to time. Is more punctual. Sense of space is more realistic and child wants some of own space. Knows value of coins. Concept of death more mature including idea of irreversibility. <u>Eight years</u>-Aware of impersonal forces of nature. Understands logical reasoning, conclusions, and implications. Less self-centered. Goes places on own. Aware of time. Plans events of day. Understands right and left. Can write in script. <u>Nine years</u>-Realistic. Intellectually energetic and curious. Reasonable in thinking. Breaks complex tasks into steps. Focuses on detail. Sense of space includes entire earth. Participates in family discussions. Likes to have secrets.</p>

PEDIATRIC GROWTH AND DEVELOPMENT STANDARDS

Age And Physical Characteristics	Motor Development	Psychosocial Socialization And Vocalization	Cognitive And Emotional Development
<p><u>Nine to twelve years</u> Loses childish appearance of face. Growth spurts and some secondary sex characteristics appear. Increased height and weight. Increased perspiration and activity of sebaceous glands. Vasomotor instability. Increased fat deposits.</p> <p><u>Physical changes in girls</u> Pelvis increases in transverse diameter, hips broaden. Breast tissue tender. Appearance of pubic hair.</p> <p><u>Physical changes in boys</u> Size of testes increases, scrotum color changes, lightly pigmented hair at base of penis, increase in length and width of penis. Height and shoulder breadth increase.</p>	<p>Energetic, restless, active movements such as finger-drumming or foot tapping. Skillful manipulative movements nearly equal to those of adults. Works hard to perfect physical skills.</p>	<p>Gang becomes important and gang code takes precedence. Works out social patterns without adult interference. May strive for unreasonable independence from adult control. Interested in religion, morality. Increased interest in sexuality. Enjoys reading, TV, table games. Interested in active sports as a means to improve skills. Creative talents begin to appear. Can write for relatively long time with speed. Occasional privacy is important. Begins to have vocational aspirations.</p>	<p><u>10 years</u>-Likes to reason. Enjoys learning. Thinking is concrete. Wants to measure up to challenges. Likes to memorize, identify facts. <u>11 years</u>-Likes action in learning. Concentrates well when working competitively. Can understand relational terms such as weight and size. Perceives space as nothingness that goes on forever. Is able to discuss problems. Understands body parts. Can describe some abstract terms. <u>12 years</u>-Enjoys learning. Considers all aspects of a situation. Motivated more by inner drive than by competition. Able to classify, arrange, generalize. Likes to discuss and debate. Begins conceptual thinking. Verbal, formal reasoning. Recognizes moral of a story. Defines time as duration; likes to plan ahead. Understands that space is abstract. Can be critical of own work.</p>

PEDIATRIC GROWTH AND DEVELOPMENT STANDARDS

Age And Physical Characteristics	Motor Development	Psychosocial Socialization And Vocalization	Cognitive And Emotional Development
<p><u>Early Adolescence - 12 to 15</u> Begins when reproductive organs become functionally operative; ends when physical growth is completed. Skeletal system grows faster than supporting muscles. Large muscles develop more quickly than small muscles. Hands and feet grow proportionately faster than rest of body.</p> <p><u>Girls</u> Growth of axillary and perineal hair. Appearance of menarche. Deepened voice. Ovulation. Further development of breasts. Need for iron and calcium increase dramatically.</p> <p><u>Boys</u> Growth of axillary, perineal, facial, and chest hair. Deepening of voice. Produces spermatozoa. Nocturnal emissions.</p>	<p>Often uncoordinated. Poor posture. Tires easily.</p>	<p>Interest in opposite sex increases. Revolts from adult authority. Conforms with peer pressure. Reworks feelings for parent of opposite sex and unravels the ambivalence toward parent of same sex. Affection may turn to an adult outside of the family. Uses peer/group dialect-informal language or specially coined terminology. Peer groups very important. Cliques may develop. Dating develops from groups to double dates to single couples. "Hangouts" become important centers of activity. Begins questioning existing moral values. Likes social function, movies, sports, TV, music, telephone.</p>	<p>Great ability to acquire and use knowledge. Masters skills of language, writing, reading, math. Abstract thinking is sufficient to learn multiple ideas. Categorizes thoughts into usable forms. May project thinking into the future. Capable of highly imaginative thinking.</p>
<p><u>Late Adolescence - 16 to 21</u> Growth spurt tapers.</p>	<p>Increased energy.</p>	<p>More mature and inter-dependent relationship with parents. Romantic love affairs develop as a basis for mature relationships. Balances responsibilities with pleasure. Peer group affiliation is not as rigid. Likes attending and participating in sports activities. Likes beach and recreational activities. Likes reading, TV, music, radio, telephone. May take a part-time/full-time job.</p>	<p>Likes challenging games like chess and bridge. Enjoys working for altruistic causes. Begins to plan/work toward future vocation. Driver's education.</p>

References:

New York Emergency Room RN. (June 22, 20004). Pediatric admission health history and multidisciplinary assessment. Retrieved July 29, 2004 from <http://www.nyern.com/2/medical/o.htm>

Neal, M. C. & Cohen, P. F. (1977). Nursing care planning guides, set 3. Pacific Palisades, CA: Nurseco, Inc.

Nettina, S. M. (Ed.). (1996). The Lippincott manual of nursing practice (6th ed.). Philadelphia: J. B. Lippincott Company.