

## The Division of Developmental Pediatrics, Department of Pediatrics, Faculty of Medicine and Dentistry, University of Alberta

## **SNAPSHOTS\* DEVELOPMENTAL MILESTONES**

| Mnemonic<br>Age | Gotta Find Strong Coffee Soon <sub>‡</sub>  |  |   |  |   |         |   |                            |
|-----------------|---|--|---|--|---|---------|---|----------------------------|
|                 | G = Gotta<br>Gross Motor  | F = Find<br>Fine Motor   | S = Strong<br>Speech / Language   | C = Coffee Cognitive / Problem Solving   | S = Soon<br>Social / Emotional  |         |   |                            |
|                 |   |  |   |  |   | Newborn | Primitive reflexes – step, place,<br>Moro, Babinski, ATNR<br>Flexor posture | Primitive reflexes – grasp |
| 2 mos           | Head steady when held<br>Head up 45° prone  | Hands open half of time<br>Bats at objects   | Turns to voice<br>Cooing  | Prefers usual caregiver Attends to moderate novelty Follows past midline                                 | Attachment (child → parent) Social smile  |         |   |                            |
| 4 mos           | Sits with support Head up 90° prone, arms out Rolls front → back                              | Palmar grasp Reaches and obtains items Brings objects to midline   | Laugh, razz, "ga", squeal   | Anticipates routines Purposeful sensory exploration of objects (eyes, hands, mouth)                      | Turn-taking conversations<br>Explores parent's face                                   |         |   |                            |
| 6 mos           | Postural reflexes<br>Sits tripod<br>Rolls both ways   | Raking grasp<br>Transfers hand to hand   | Babble (nonspecific)  | Stranger anxiety Looks for dropped or partially hidden object  | Expresses emotions: happy, sad, mad Memory lasts ~24 hrs                              |         |   |                            |
| 9 mos           | Gets from all 4s → sitting Sits well with hands free Pulls to stand Creeps on hands and knees | Inferior pincer grasp<br>Pokes at objects  | "Mama", "dada" (specific) Gestures "bye bye", "up" Gesture games ("pattycake")  | Object permanence<br>Uncovers toy<br>"Peek-a-boo"  | Separation anxiety  |         |   |                            |
| 12 mos          | Walks a few steps<br>Wide-based gait  | Fine pincer (fingertips) Voluntary release Throws objects Finger-feeds self cheerios                     | word with meaning (besides mama, dada)     Inhibits with "no!"     Responds to own name     1-step command with gesture | Cause & effect Trial & error Imitates gestures and sounds Uses objects functionally, eg rolls toy car    | Explore from secure base<br>Points at wanted items<br>Narrative memory begins         |         |   |                            |
| 15 mos          | Walks well  | Uses spoon, open top cup<br>Tower of 2 blocks  | Points to 1 body part 1-step command no gesture 5 words Jargoning   | Looks for moved hidden object if saw it being moved Experiments with toys to make them work              | Shared attention: points at interesting items to show to parent Brings toys to parent |         |   |                            |
| 18 mos          | Stoops and recovers<br>Runs   | Carries toys while walking<br>Removes clothing<br>Tower of 4 blocks<br>Scribbles, fisted pencil grasp    | Points to object, 3 body parts 10-25 words Embedded jargoning Labels familiar objects                                   | Imitates housework Symbolic play with doll or bear, eg "Give teddy a drink"                              | Increased independence<br>Parallel play   |         |   |                            |
| 2 yr            | Jumps on two feet Up & down stairs "marking time"   | Handedness established Uses fork Tower of 6 blocks Imitates vertical stroke                              | Follows 2-step command<br>50+ words, 50% intelligible<br>2 word phrases<br>"I", "me", "you", plurals                    | New problem-solving strategies without rehearsal Searches for hidden object after multiple displacements | Testing limits, tantrums Negativism ("no!") Possessive ("mine!")                      |         |   |                            |
| 3 yr            | Pedals trike Up stairs alternating feet   | Undresses Toilet trained (2 ½ - 3 ½ yrs) Draws circle, cross + Turns pages of books                      | 3-step commands 200 words, 75% intelligible 3-4 word phrases W questions ("why?") States full name, age, gender         | Simple time concepts Identifies shapes Compares 2 items (eg "bigger") Counts to 3                        | Separates easily<br>Sharing, empathy<br>Cooperative play<br>Role play ("pretending")  |         |   |                            |
| 4 yr            | Hops on one foot<br>Down stairs alternating feet  | Draws x, □, diagonals Cuts shape with scissors Buttons   | Sentences,100% intelligible<br>Tells a story<br>Past tense  | Counts to 4 Opposites Identifies 4 colours   | Has preferred friend<br>Elaborate fantasy play  |         |   |                            |
| 5 yr            | Balance on one foot 10 secs Skips<br>May learn to ride bicycle (if<br>available)              | Draw person (10 body parts) Tripod pencil grasp Prints name, copies letters Independent ADLs, incl tying | 5000 words<br>Future tense<br>Word play, jokes, puns<br>Phonemic awareness  | Counts to 10 accurately Recite ABC's by rote Recognises some letters Pre-literacy and numeracy skills    | Has group of friends<br>Follows group rules<br>Games with rules                       |         |   |                            |

<sup>©</sup> Compiled by Dr. Debbi Andrews, Division Director, 2009. Amended by D. Andrews and C. Dosman, August 2014.

\*Milestone ages approximate the 50th percentile.

‡ Sector heading mnemonic created by P. MacPherson, Class of 2012, University of Alberta Faculty of Medicine and Dentistry.

## **Development: trends, delays and disabilities**

| Sector  | Gross Motor   | Fine Motor   | Speech / Language   | Cognitive / Problem Solving   | Social / Emotional   |
|---|---|--|---|---|--|
| Domains/<br>skills/processes  | Posture Change of position Ambulation Strength Balance Coordination   | Tool use<br>Dexterity<br>Precision<br>Bi-manual coordination   | Communication Words and symbols (semantics) Grammar (syntax) Pragmatics Articulation/voice/fluency  | Intellect Thinking Remembering Categorising Problem-solving Analysis/synthesis  | Self-awareness<br>Empathy<br>Relationships<br>Emotional regulation   |
| Trends  | Primitive reflexes to volitional movement Cephalo-caudal Proximal to distal Flexor to extensor Postural reflexes fade as balance increases Single myts to sequences Effortful to automatic  | Primitive reflexes to volitional movement (grasp) Proximal to distal (whole hand to fingertips) Effortful to automatic Unilateral to bimanual coordination   | Primitive reflexes to volitional movement (suck) Proximal to distal (back of throat to lips, tongue, teeth) Understanding before speaking (rec before exp) Inc'ing length of utterance Inc'ing complexity of syntax "Metas"   | Implicit memory before explicit Specific>general>specific Increased # of dimensions attended to simultaneously "Trial & error" to mental rehearsal Concrete (sensory, hands-on) to abstract Inc'd use of executive functions Inc'd length of attention span "Metas"   | Bonding: parent>child Attachment: child >parent Increasing social circle: self >primary caregiver >extended family >peers >broader community >country & culture >world   |
| Examples of devt'l disorder in sector   | Cerebral palsy Muscular dystrophies DCD   | DCD<br>Dysgraphia  | Devt'l language disorders  Language-based learning disability (dyslexia)  Dysarthria/Stuttering   | Mental retardation (intellectual impairment) Learning Disabilities  | Autism spectrum disorders Reactive attachment disorder   |
| Examples of adult functional loss in sector   | Paresis/paralysis   | Paresis/paralysis<br>Apraxia   | Aphasias  | Dementia Specific stroke syndromes  | Mental health disorders Post concussion personality changes  |
| Adult disability (mostly based on loss of previously normal function, per Canada Revenue )  Vision: acuity in both eyes 20/200 (6/60) or less OR greatest diameter of field of vision in both eyes is 20 degrees or less. | Walking  "unable to walk even with approp. therapy, medication & devices; OR requires an inordinate amount of time to walk, even with approp. therapy, medication & devices"  | Feeding Dressing Elimination (toileting req'd for bowel or bladder functions)  "unable to do task even with approp. therapy, medication & devices; OR requires an inordinate amount of time to do task, even with approp. therapy, medication & devices" | Speaking Hearing  "unable to speak/understand even with approp. therapy, medication & devices; or requires an inordinate amount of time to speak/understand, even with approp. therapy, medication & devices" (hearing specifies "in a quiet setting")  | "Mental functions" = -Adaptive functioning (eg self-care, health & safety, social skills common, simple transactions) -Memory -Problem-solving, goal-setting, and judgment  "unable to perform mental functions* even with approp. therapy, medication & devices; OR requires an inordinate amount of time to do task, even with approp. therapy, medication & devices" | Adaptive functioning (eg self-care, social skills  "unable to perform mental functions* even with approp. therapy, medication & devices; OR requires an inordinate amount of time to do task, even with approp. therapy, medication & devices"   |
| Who assesses  | MD<br>PT  | MD<br>OT   | MD<br>SLP<br>Audiologist  | MD Psychologist Optometrist or Ophthalmologist  | MD<br>Psychologist<br>Mental health therapist  |
| RED FLAGS!  REGRESSION (loss of skills) & PARENTAL CONCERN are red flags at any age   | Persistent primitive reflexes Abnl tone or mvt patterns at any age, spasticity, hypotonia, absent DTRs Asymmetry Poor head control at 5 mos Not sitting independently with hands-free at 8 mos Not rolling back-front, not taking weight well through the legs when held at 9 mos Not walking by 18 mos | Lack of transfer at 7 mos Using one hand exclusively at any age Delayed self care (ADLs) at 4 years Delayed printing at school entry   | Problems with feeding and/or swallowing Parents suspect hearing loss, babbling stops at > 6 mos, lack of response to sound (check hearing!) No single words by 15 mos No combos by 24 mos Stutter past 3 ½ yrs (or earlier if anxiety/mannerisms) Idiosyncratic speech, disordered sequence of development Poor intelligibility for age | Lack of developmentally appropriate response to visual stimuli Immature play (like younger child) Stereotypic play; lack of pretend School failure (either for specific subjects like reading or math or generalised)  Always check vision and hearing if any concerns—can be assessed as young as newborn  | Emotional dysregulation Abnormal attachment patterns (over-clingy, indiscriminate) Limited social smiling and shared enjoyment by 6 mos Limited gestures like pointing, response to name, joint attention by 12 mos Limited social imitative play by 18 mos (eg imitating housework) Limited pretend play (eg feeding doll) by 24 mos No friends at school-age |

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