

## Gross Motor Skills Development in babies and children under 5 years: Part 2



This Good Practice Point aligns to the NMC 2022 Standards of Proficiency for SCPHN Health Visitors, in particular Sphere of Influence D: Population health: enabling, supporting and improving health outcomes of people across the life course. See the [Nursing and Midwifery Council](#) for more details.

Please read this Good Practice Point in conjunction with GPP: Supporting Motor Development Skills in Babies and Children under 5 Years: Part 1 ([bit.ly/4dObQaA](https://bit.ly/4dObQaA)).

Gross motor development describes the skills that children develop using their whole body. These involve the large muscles to produce gross movements<sup>1</sup> such as in their legs, arms and trunk.

Health visitors have a unique role in the early promotion of gross motor development and the identification of babies and children with gross motor developmental needs. There are **3 steps** to consider when mapping a child's development against childhood milestones:

- 1. Surveillance** - the process of recognising children with, or at risk of, developmental delay.
- 2. Screening** - the use of standardised tools to identify and refine that recognised risk.
- 3. Evaluation/examination** - a process aimed at identifying specific developmental disorders that are affecting a child.

Health visitors may carry out one or more of the above steps at any given visit/contact by:

- **A. Taking a subjective history** and observing how babies and children move and stay, as well as the quality of their movement, handling them to understand how they feel.
- **B. Use of recommended assessment tools for systematic enquiry from parents.** The Ages and Stages Questionnaire (ASQ) is an example of a recommended tool that draws on parents' knowledge of their child's development. For example, questions at 16 months include: "does your child stand in the middle of the floor by himself and take several steps forward?"; "does your child bend or squat to pick up an object from the floor and then stand up again without any support?"; "does your child move around by walking, rather than crawling on her hands and knees?"<sup>2</sup>. **NOTE:** The ASQ is a population measure and not a screening tool - it needs to be used alongside observation and clinical judgement, as part of a holistic assessment<sup>3</sup>.
- **C. Structured observations of developmental abilities.** The Schedule of Growing Skills (SoGS) is an example of a more detailed assessment tool, administered by a trained health visitor, and enables observation and assessment of child development in partnership with parents.

Knowledge of developmental milestones or the developmental timeline<sup>4,5</sup> is important when interpreting findings from recommended tools and making professional observations and judgments, and timely decisions on the potential next steps described in steps 2 and 3. Information collected through these approaches should be complemented with holistic assessments to obtain an understanding of other aspects of the child's life which may impact their development (for example, lack of opportunities to play and be physically active).

### Assessing gross motor development

An approach to assessing 'gross motor' skills include the 'Posture/Movement/Tone' structure<sup>5</sup>:

- **Posture:** Observe how the child is 'holding' themselves when lying, sitting or standing.
- **Movement:** Observe head, body, arm and leg movements, are they smooth or jerky? Is there enough movement or is there paucity of it? Is there asymmetry?
- **Tone:** Feel the tone. For example, does the infant feel floppy or stiff on handling?

[More information on page 2](#)

For additional resources see [www.ihv.org.uk](https://www.ihv.org.uk)

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### Gross motor development timeline

The table below<sup>6,7</sup> describes typical gross motor development in the 'developing' child. Red flags describe development that is atypical for a child's age and warrant urgent follow-up and assessment following local pathways. It is important to listen to parent/carer's thoughts and concerns about their child's development.

Milestones	Typical Gross Motor Development	Red Flags of Gross Motor Development
<b>Newborn</b>	<ul style="list-style-type: none"> <li>Stiff arms and legs, and weak trunk and neck</li> <li>Flexed limbs</li> <li>On ventral suspension, head lags or falls forward</li> <li>On tummy – head to side, buttocks humped, knees tucked under abdomen</li> <li>Primitive reflexes present – Moro reflex, stepping, palmar grasp</li> </ul>	<ul style="list-style-type: none"> <li>Excessive floppiness or stiff on handling</li> <li>Poor quality in movement or chaotic movement</li> <li>Asymmetry in Moro reflex</li> <li>Lack of primitive reflexes, grasping</li> <li>Persistent head position</li> </ul>
<b>6-8 weeks</b>	<b>By 2 months</b> <ul style="list-style-type: none"> <li>Smooth arm and leg motions</li> <li>When placed on tummy, able to lift head to 45 degrees angle</li> <li>Head stable when supported</li> <li>Able to turn head towards a stimulation</li> <li>Bringing hands to midline and face</li> </ul>	<ul style="list-style-type: none"> <li>Doesn't bring hands to mouth</li> <li>Unable to hold head up while on tummy</li> <li>Persistent head position</li> <li>Absent fidgety movements or exaggerated fidgety movements</li> <li>Uses one side of the body preferentially</li> </ul>
<b>2-3 months</b>	<ul style="list-style-type: none"> <li>Chin tuck when pulled to sit</li> <li>Head stable in supported positions</li> <li>Able to prop on elbows and lift head to look around</li> <li>Requires support when sitting (flexed posture)</li> <li>Swiping towards objects or people</li> <li>In supported weight bearing, beginning to push reciprocally</li> </ul>	<ul style="list-style-type: none"> <li>Unable to bring hands to mouth</li> <li>Unable to hold head up steadily</li> <li>Fisting of hands beyond 3 months</li> </ul>
<b>3-4 months</b>	<b>By 4 months</b> <ul style="list-style-type: none"> <li>Able to hold head up/support own head when held horizontally or vertically</li> <li>Able to lift head to 90 degrees angle on tummy with stretched arms</li> <li>Can reach with one hand while on tummy</li> <li>Rolling from tummy to back</li> <li>Sitting with support, may be able to sit momentarily without help</li> </ul>	<ul style="list-style-type: none"> <li>Head lag when pulled to sit - by 4 months</li> <li>Seems too stiff or too floppy</li> <li>Asymmetric limb movements</li> </ul>
<b>4-6 months</b>	<b>By 6 months</b> <ul style="list-style-type: none"> <li>Lying on back – lift head, grasp feet</li> <li>Sits with support and turns head</li> <li>Braces shoulders when pulled to sit</li> <li>Head erect, back straight when sitting</li> <li>On tummy, supports self on extended arms</li> <li>Bears weight on feet when they touch surface</li> </ul>	<ul style="list-style-type: none"> <li>Not reaching or grasping by 6 months</li> <li>Not rolling in either direction by 6 months</li> <li>Seems too stiff or too floppy</li> <li>Can't roll over in either direction</li> <li>Doesn't attempt to grab objects nearby</li> <li>Persistence of primitive reflexes beyond 6 months</li> <li>Any asymmetry</li> </ul>
<b>6-9 months</b>	<b>By 9 months</b> <ul style="list-style-type: none"> <li>Able to get into a sitting position and sit without support</li> <li>Lean forward without losing balance</li> <li>Pulls to stand but cannot lower self</li> <li>Attempts to move (crawl, shuffle)</li> </ul>	<ul style="list-style-type: none"> <li>Unable to sit independently</li> <li>Not sitting independently (for example, for a period long enough to lean over, manipulate toys, without losing balance)</li> <li>Not attempting to pull to stand</li> <li>Persistence of stiff legs/pointed toes (flexor hypertonia) in the lower limbs – stiff legs, pointed toes</li> <li>Can't transfer toys between hands</li> <li>Asymmetry                             <ul style="list-style-type: none"> <li>sits with weight to one side</li> <li>uses one arm to pull to stand</li> <li>uses one hand to maintain sitting balance</li> </ul> </li> </ul>

More information on page 3

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Milestones	Typical Gross Motor Development	Red Flags of Gross Motor Development
<b>9-12 months</b>	<b>By 12 months</b> <ul style="list-style-type: none"> <li>Can rise to sitting from lying</li> <li>Moving around the floor: can be by rolling, commando crawl, 4-point crawl, bottom shuffle</li> <li>Moving in and out of sitting confidently</li> <li>Cruising using furniture</li> <li>May take steps</li> </ul>	<ul style="list-style-type: none"> <li>Dragging foot behind when crawling</li> <li>Not standing with support</li> <li>Any asymmetry</li> </ul>
<b>12-18 months</b>	<b>By 18 months</b> <ul style="list-style-type: none"> <li>Walking independently, flat footed, broad base</li> <li>May start walking up stairs</li> <li>Pulls toys while walking</li> <li>Runs carefully</li> <li>Tripping/ falling can be common</li> <li>Squat to the floor</li> <li>Exploratory climbing</li> <li>Symmetry with movement</li> </ul>	<b>By 18 months</b> <ul style="list-style-type: none"> <li>Not walking independently</li> <li>Not cruising</li> <li>Dragging foot behind when walking</li> <li>Any asymmetry</li> </ul>
<b>2-3 years</b>	<b>By 2-years-old</b> <ul style="list-style-type: none"> <li>Running</li> <li>Throw a ball</li> <li>Walking upstairs, two feet at a time</li> </ul> <b>By 3-years-old</b> <ul style="list-style-type: none"> <li>Walking in heel-toe gait</li> <li>Walking up and down stairs, one foot at a time</li> <li>Able to jump and clear the floor</li> <li>Kick a ball</li> <li>Ride a tricycle</li> </ul>	<ul style="list-style-type: none"> <li>Not running at 2½-years-old.</li> <li>Not jumping at 3-years-old</li> <li>Any asymmetry</li> </ul> <p>*Gowers Sign* (climbs to a stand, by “walking” hands progressively up shins, knees, and thighs)</p>
<b>4-5 years</b>	<b>By 4-years-old</b> <ul style="list-style-type: none"> <li>Hopping</li> </ul> <b>By 5-years-old</b> <ul style="list-style-type: none"> <li>Skipping</li> <li>Standing on one foot</li> </ul>	<ul style="list-style-type: none"> <li>Struggling with stairs/going uphill</li> <li>Persistent tiptoe walking</li> <li>Asymmetry of movements</li> <li>Pain in limbs</li> <li>Frequent trips and falls</li> </ul> <p>*Gowers Sign* (climbs to a stand, by “walking” hands progressively up shins, knees, and thighs)</p>
<p><b>At any developmental stage, note any regression of previously acquired skill/s.</b>  <b>This is a universal red flag.</b></p>		

### Summary of ‘red flags’ requiring urgent follow up and assessment following local pathways

- Regression or loss of previously acquired skills at any time
- Positional head preference
- Asymmetry of movements at any time
- Hand preference before 18 months
- Too floppy/ too stiff at any time
- Floppy baby - delayed head control
- Not sitting by 11-12 months
- Not walking by 18 months
- Not able to stand up without leverage at 2-3 years of age
- Atypical movement patterns

### Action to take if red flags are identified:

Seek advice from another healthcare professional. Local referral pathways may involve one referral to the child development team and/ or options for individual referrals to specific departments. Referrals would include:

- Referral to physiotherapist
- Referral to occupational therapist
- Referral to GP
- Referral to Community/General Paediatrics

**More information on page 4**

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## Keep in contact with the family and offer support during the referral process

\*Disclaimer – always consult your local policy on the appropriate referral pathways to specific healthcare professionals

### Important points to include when making a referral to other healthcare professionals and teams:

- Concerns identified by the family, health visitor and others involved in supporting the child's development, such as playgroup or nursery.
- Antenatal history, such as maternal substance misuse.
- Details about the child's birth history (for example pre-term birth), past medical history and family history, such as consanguineous relationships (between two blood-related individuals who are second cousins or closer), learning difficulties, developmental delay or regression.
- Assessment of motor development describing 'posture, movement and tone'. Include evidence of any assessments undertaken, such as the ASQ or SoGs.
- Highlight if there is delay or regression/ loss of skills.

### Watchful wait

Child development is not linear. Children can achieve typical gross motor skills within a window of time<sup>4</sup> and a 'watchful wait' approach can be adopted during this time, please see examples below:

- Lower end for motor development profile but making forward progress (with no red flags)
- Typical variant gait (in-toeing, out-toeing, knock knees, flat feet, symmetrical and with typical development milestones achieved)
- Not enjoying tummy time

- Not crawling but using other skills moving forward such as bottom shuffling

**If in doubt check it out:** Always discuss with another healthcare professional (for example, GP, physiotherapist, occupational therapist, community/general paediatrician) to guide how urgently the child needs to be reviewed.

- Effective communication with other professionals is key to timely and appropriate assessment and early intervention to support child development and improve outcomes.
- Work in partnership with parents: Open and honest communication with parents/ carers is fundamental throughout the referral process.
- The period before diagnosis can be stressful for families. Health visitors have a key role in supporting families during this time and facilitating evidence-based health-enhancing activities to support child development while waiting for the child to be seen.

### Resources for further information

- RCPCH – Recognising Neuromuscular Disorders: A practical approach: [bit.ly/4adHOKh](https://bit.ly/4adHOKh)
- iHV Insights Event. Gross motor skills: discussing gross motor development in babies and young children: [bit.ly/3SvdgN2](https://bit.ly/3SvdgN2)
- Action Cerebral Palsy. If In Doubt. Check It Out. [bit.ly/44QZS7z](https://bit.ly/44QZS7z)
- Think 3 for SMA. For Babies with Spinal Muscular Atrophy (SMA): [bit.ly/3UNw6k6](https://bit.ly/3UNw6k6)

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