



Physical Development in Infancy & Toddlerhood

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Human Growth and development
2nd Grade
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- **Infancy Stage (The First Year of Life)**
- During this very important first year babies grow dramatically, not only physically in weight and height, but developmentally.

Rapid Physical Changes

- After about a 5% weight loss in the first few days, there is a period of rapid growth.
- By the time, an infant is 4-6 months old, it usually doubles in weight and by one year has tripled its birth weight.
- By age 2, the weight has quadrupled.
- The average length at **one year** is about 75 cm.



- ❖ **Two hormones** are very important for this growth process.
- ❖ **The first** is **Human Growth Hormone (HGH)** which influences all growth except that in the Central Nervous System (CNS).
- ❖ **The second** hormone influencing growth in the CNS is called **Thyroid Stimulating Hormone**.

Proportions of the Body

- Another dramatic physical change that takes place in the first several years of life is the change in body proportions.
- The head initially makes up about 50 percent of our entire length when we are developing in the womb.
- At birth, the head makes up about 25 percent of length .
- By age 25 it comprises about 20 percent our length.

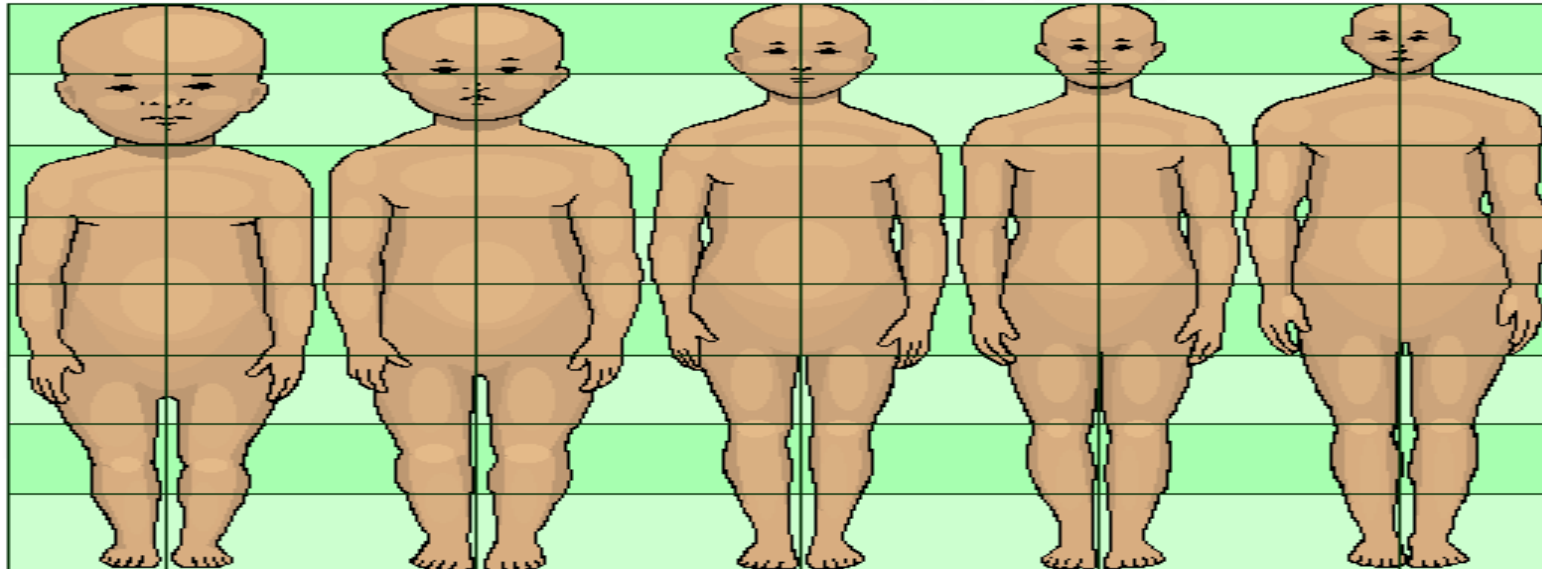


Figure 4.3 - Shown from left to right: Human body proportions at birth, at 2 years, at 6 years, at 12 years, and at 19 years.



- Some of the most dramatic physical change that occurs during this period is in the brain. At birth, the brain is about 25 percent its adult weight and this is not true for any other part of the body. By age 2, it is at 75 percent its adult weight, at 95 percent by age 6 and at 100 percent by age 7 years.

Physical **Gross Motor** Milestones



Typical Age	What Most Children Do by This Age
2 months	<p>Can hold head up and begins to push up when lying on tummy (abdomen)</p> <p>Makes smoother movements with arms and legs</p> <p>Holds head steady, unsupported</p> <p>Pushes down on legs when feet are on a hard surface</p>
4 months	<p>May be able to roll over from tummy (on abdomen) to back <input type="checkbox"/> Brings hands to mouth</p> <p>When lying on stomach, pushes up to elbows</p> <p>Rolls over in both directions (front to back, back to front)</p> <p><input type="checkbox"/> Begins to sit without support</p>
6 months	<p><input type="checkbox"/> When standing, supports weight on legs and might bounce</p> <p><input type="checkbox"/> Rocks back and forth, sometimes crawling backward before moving forward</p>

Cont:Physical Gross Motor Milestones



Typical Age	What Most Children Do by This Age
9 months	Stands, holding on Can get into sitting position Sits without support Pulls to stand Crawls , . Gets to a sitting position without help
1 year	Pulls up to stand, walks holding on to furniture (“cruising”) May take a few steps without holding on
18 months	<ul style="list-style-type: none">• Walks alone• May walk up steps and run• Pulls toys while walking• Can help undress self . May stand alone
2 years	Stands on tiptoe Kicks a ball Begins to run Climbs onto and down from furniture without help Walks up and down stairs holding on Throws ball overhand

Fine Motor Skills

- Newborns cannot grasp objects voluntarily but do wave their arms toward objects of interest.
- These include the ability to **reach and grasp** an object in coordination with vision.
- **Newborns cannot grasp objects** voluntarily but do wave their arms toward objects of interest.
- **At about 4 months** of age, the infant is **able to reach for an object**, first with both arms and within a few weeks, with only one arm.
- **Grasping** an object involves the use of the **fingers and palm**, but no thumbs.
- Use of the **thumb** comes at about **9 months**. This is known as the pincer grip.
- **By 9 months**, an infant **can also watch a moving object**, reach for it as it approaches and grab it.

Fine Motor Milestones



Typical Age	What Most Children Do by This Age
2 months	<ul style="list-style-type: none">• Grasps reflexively• Does not reach for objects• Holds hands in fist
4 months	<ul style="list-style-type: none">• Brings hands to mouth• Uses hands and eyes together, such as seeing a toy and reaching for it• Follows moving things with eyes from side to side• Can hold a toy with whole hand (palmar grasp) and shake it and swing at dangling toys
6 months	<ul style="list-style-type: none">• Reaches with both arms• Brings things to mouth• Begins to pass things from one hand to the other
9 months	<ul style="list-style-type: none">• Puts things in mouth• Moves things smoothly from one hand to the other• Picks up things between thumb and index finger (pincer grip)

Cont: Fine Motor Milestones



1 year	<ul style="list-style-type: none">• Reaches with one hand• Bangs two things together• Puts things in a container, takes things out of a container• Lets things go without help• Pokes with index (pointer) finger
18 months	<ul style="list-style-type: none">• Can help undress herself• Drinks from a cup• Eats with a spoon with some accuracy• Stacks 2-4 objects
2 years	<ul style="list-style-type: none">• Builds towers of 4 or more blocks• Makes copies of straight lines and circles• Enjoys pouring and filling• Unbuttons large buttons• Unzips large zippers• Drinks and feeds self with more accuracy

- **Sleep**

- A newborn typically sleeps approximately 16.5 hours per 24-hour period. The infant is averaging 15 hours per 24-hour period by one month, and 14 hours by 6 months.
- By two years, they are averaging closer to 10 hours per 24 hours.





Hearing

- Infant can distinguish between very **similar** sounds as early as one month after birth and can distinguish between a **familiar** and unfamiliar voice even earlier.
- Newborns also prefer their mother's voices over another female when speaking the same material . Additionally, they will register in utero specific information heard from their mother's voice.

Nutrition



- Breastfeeding: Colostrum, the first breast milk produced during pregnancy and just after birth has been described as “liquid gold” and exclusive breastfeeding for six months ,
- Formula fed infants experience more diarrhea and upset stomachs. The absence of antibodies in formula often results in a higher rate of ear infections and respiratory infections.
- Children who are breastfed have lower rates of childhood leukemia, asthma, obesity, type 1 and 2 diabetes, and a lower risk of SIDS.
- Complementary food have to start at six months when developmentally are prepared.



Growth problems

- **Child Malnutrition**
- **Failure to Thrive (FTT)** Occurs in children whose nutritional intake is insufficient for supporting normal growth and weight gain.
- FTT typically presents before two years of age, when growth rates are highest.
- Parents may express concern about picky eating habits, poor weight gain, or smaller size compared relative to peers of similar age. Physicians often identify FTT during routine office visits, when a child's growth parameters are not tracking appropriately on growth curves.

Common Physical Conditions and Issues during Infancy

- Some **physical conditions and issues** are very common during infancy. New parents and caregivers often have questions about the following:
- **Immunization**
- **Jaundice**
- **Colic**
- **Bowel Movements**
- **Diaper Rash**
- **Spitting Up/Vomiting**
- **Teething**

Safety

- Children 1 to 4 years of age had the highest rates of nonfatal falls and poisoning.
- And the leading causes of injury death also differed by age group.
- For children less than 1 year of age, two–thirds of injury deaths were due to suffocation.
- Nonfatal suffocation rates were highest for those less than 1 year of age.
- Rates for fires or burns, and drowning were highest for children 4 years and younger.



Immunization

One way we can protect a child's health (and those around them) is through immunization.



The vaccines (given through injection) may hurt a little...but the diseases they can prevent can hurt a lot more! Vaccinations, are essential. They protect against diseases like **measles, mumps, rubella, hepatitis B, polio, diphtheria, tetanus and pertussis (whooping cough)**.

Any vaccine can cause side effects. For the most part these are minor (for example, a sore arm or low-grade fever) and go away within a few days.

However, a **decision not to immunize** a child also involves risk and could put the child and others who come into contact with him or her at risk of contracting a potentially deadly disease.

Thanks

