

periphery (cephalocaudal-proximodistal) sequence.

Proportional Changes

During the first year of life, especially the initial 6 months, growth is very rapid. Infants gain 150 to 210 g (\approx 5 to 7 oz) weekly until they are approximately 5 to 6 months old, which is when the birth weight has at least doubled. An average weight for a 6-month-old child is 7.3 kg (16 pounds). Weight gain slows during the second 6 months. By 1 year old, the infant's birth weight has tripled, for an average weight of 9.75 kg (21.5 pounds). Infants who are breastfed beyond 4 to 6 months old typically gain less weight than those who are bottle fed, yet their head circumference is more than adequate. There is evidence that breastfed infants tend to self-regulate energy intake. This self-regulation of intake with breastfeeding (vs. formula [bottle] feeding) is believed to have further significance in the development of childhood obesity and subsequent cardiovascular disease ([Fewtrell, 2011](#)). Researchers also found that infants who were breastfed in early infancy were more likely to regulate their appetite in late infancy and childhood than infants who were bottle fed ([DiSantis, Collins, Fisher, et al, 2011](#)).

Height increases by 2.5 cm (1 inch) a month during the first 6 months of life and also slows during the second 6 months. Increases in length occur in sudden spurts, rather than in a slow, gradual pattern. The average height is 65 cm (25.5 inches) at 6 months old and 74 cm (29 inches) at 12 months old. By 1 year old, the birth length has increased by almost 50%. This increase occurs mainly in the trunk rather than in the legs and contributes to the characteristic physique of the infant.

Head growth is also rapid. Head circumference increases approximately 2 cm (0.75 inch) per month for the first 3 months, 1 cm (0.4 inch) per month from 4 to 6 months, then the rate of growth declines to only 0.5 cm (0.2 inch) monthly during the second 6 months. The average size is 43 cm (17 inches) at 6 months and 46 cm (18 inches) at 12 months. By 1 year, head size has increased by almost 33%. Closure of the cranial sutures occurs, with the posterior fontanel fusing by 6 to 8 weeks old and the anterior fontanel closing by 12 to 18 months old (average, 14 months old).

Expanding head size reflects the growth and differentiation of the nervous system. By the end of the first year, the brain has increased