

Development of the Human Fetus

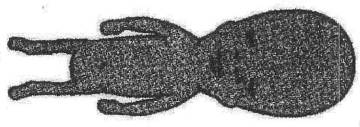
Table

Development of the Human Fetus

Time

Changes/accomplishments

8 weeks
(end of embryonic period)



Head nearly as large as body; all major brain regions present
Liver disproportionately large and begins to form blood cells
Limbs present; though initially webbed, fingers and toes are free by the end of this interval

8 weeks

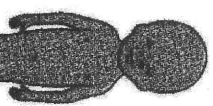
9-12 weeks
(third month)



Bone formation begun
Heart has been pumping blood since the fourth week
All body systems present in at least rudimentary form
Approximate crown-to-rump length: 30 mm (3 cm; 1.2 inches); weight: 1 gram (0.03 ounces)
Head still dominant, but body elongating; brain continues to enlarge
Facial features present in crude form
Walls of hollow visceral organs gaining smooth muscle
Blood cell formation begins in bone marrow
Bone formation accelerating
Sex readily detected from the genitals

12 weeks

13-16 weeks
(fourth month)



Approximate crown-to-rump length at end of interval: 90 mm (9 cm)
General sensory organs are present; eyes and ears assume characteristic position and shape; blinking of eyes and sucking motions of lips occur
Face looks human and body beginning to outgrow head
Kidneys attain typical structure

16 weeks

Most bones are distinct and joint cavities apparent
Approximate crown-to-rump length at end of interval: 140 mm (14 cm)

Table 16.1: Development of the Human Fetus (continued)

Table 16.1 (continued)

Time	Changes/accomplishments
17–20 weeks (fifth month)	<p>Vernix caseosa (fatty secretions of sebaceous glands) covers body; silklike hair (lanugo) covers skin</p> <p>Fetal position (body flexed anteriorly) assumed because of space restrictions</p> <p>Limbs achieve near-final proportions</p> <p>Quickening occurs (mother feels spontaneous muscular activity of fetus)</p> <p>Approximate crown-to-rump length at end of interval: 190 mm (19 cm)</p>
21–30 weeks (sixth and seventh months)	<p>Substantial increase in weight (may survive if born prematurely at 27–28 weeks, but hypothalamus still too immature to regulate body temperature, and surfactant production by the lungs is still inadequate)</p> <p>Myelination of spinal cord begins; eyes are open</p> <p>Skin is wrinkled and red; fingernails and toenails are present</p> <p>Body is lean and well proportioned</p> <p>Bone marrow becomes sole site of blood cell formation</p> <p>Testes enter scrotum in seventh month (in males)</p> <p>Approximate crown-to-rump length at end of interval: 280 mm (28 cm)</p>
At birth 30–40 weeks (term) (eighth and ninth months)	<p>Skin whitish pink; fat laid down in subcutaneous tissue</p> <p>Approximate crown-to-rump length at end of interval: 350–400 mm (35–40 cm); 14–16 inches; weight: 2.7–4.1 kg (6–10 pounds)</p>

