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DEVELOPMENTAL PERIODS

It is customary to divide human development into prenatal (before birth) and postnatal (after birth) periods. The development of a human from a zygote to birth is divided into two main periods, embryonic and fetal. The main changes that occur prenatally are illustrated in the Timetable of Human Prenatal Development (see Fig. 1.1). Examination of the timetable reveals that the most rapid advancement occurs during the third to eighth weeks—the embryonic period. During the fetal period, differentiation and growth of tissues and organs occur, and the rate of body growth increases.

STAGES OF EMBRYONIC DEVELOPMENT

Early development is described in stages because of the variable period it takes for embryos to develop certain morphologic characteristics. Stage 1 begins at fertilization, and embryonic development ends at stage 23, which occurs on day 16 (see Fig. 1.1). A trimester is a period of 3 months, one third of the 9-month period of gestation. The most critical stages of development occur during the first trimester (13

INFANCY

Infancy is the period of extraneous life, roughly the first year after birth. An infant age 1 month or younger is called a neonate (newborn). The transition from intrauterine to extraneous existence requires many critical changes, especially in the cardiovascular and respiratory systems. If neonates survive the first crucial hour after birth, their chances of living are usually good. The body grows rapidly during infancy; total length increases by approximately one half, and weight is usually tripled. By 1 year of age, most infants have six to eight teeth.

CHILDHOOD

This is the period between infancy and puberty. The primary (deciduous) teeth continue to appear and are later replaced by the secondary (permanent) teeth. During early childhood, there is active ossification (formation of bone), but as the child becomes older, the rate of body growth slows down, but before puberty, however, growth accelerates—the prepubertal growth spurt.

PUBERTY

Puberty is the period when humans become functionally capable of procreation (reproduction). In females, the first