Embryogenesis and fetal development are an intricate and precisely timed series of events in which all parts must be properly integrated to ensure a coordinated whole. Insults during development or abnormalities in differentiation or in the proper timing of organogenesis may result in a variety of congenital anomalies. **Congenital anomalies**, or birth defects, occur in 2% to 4% of all live-born children and are often classified as deformations, disruptions, dysplasias, or malformations. **Deformations** are often caused by extrinsic mechanical forces on normally developing tissue. Club foot is an example of a deformation often caused by uterine constraint. **Disruptions** result from the breakdown of previously normal tissue. Congenital amputations caused by amniotic bands (fibrous strands of amnion that wrap around different body parts during development) are examples of disruption anomalies. **Dysplasias** result from abnormal organization of cells into a particular tissue type. Congenital abnormalities of the teeth, hair, nails, or sweat glands may be manifestations of one of the more than 100 different ectodermal dysplasia syndromes (National Foundation for Ectodermal Dysplasias, 2015). **Malformations** are abnormal formations of organs or body parts resulting from an abnormal developmental process. Most malformations occur before 12 weeks of gestation. Cleft lip, an example of a malformation, occurs at approximately 5 weeks of gestation when the developing embryo naturally has two clefts in the area. Normally, between 5 and 7 weeks, cells rapidly divide and migrate to fill in those clefts. If there is an abnormality in this developmental process, the embryo is left with either a unilateral or bilateral cleft lip that may also involve the palate.

The types of anomalies that can result from genetic or prenatal environmental causes can be major structural abnormalities with serious medical, surgical, or quality-of-life consequences, or they can be minor anomalies or normal variants with no serious consequences, such as a sacral dimple, an extra nipple, or a café-au-lait spot. Congenital anomalies can occur in isolation, such as congenital heart defect, or multiple anomalies may be present. A recognized pattern of anomalies resulting from a single specific cause is called a **syndrome** (e.g., Down syndrome, fetal alcohol syndrome). A nonrandom pattern of malformations for which a cause has not been determined is called an **association** (e.g.,