8.2A: Fibrous Joints

Fibrous joints are also called fixed or immovable joints because they do not move.

Learning Objectives

• Describe fibrous joints

Key Points

• A joint is the location at which two or more bones make contact.
• Joints are classified based on structural and functional properties.
• Fibrous joints, such as sutures, syndesmoses, and gomphoses, have no joint cavity.
• Fibrous joints are connected by dense connective tissue consisting mainly of collagen.
• Fibrous joints are called “fixed” or “immovable” joints because they do not move.

Key Terms

• syndesmoses: Slightly movable articulations where the contiguous bony surfaces are united by an interosseous ligament, as in the inferior tibiofibular articulation.
• suture: In anatomy, a suture is a fairly rigid joint between two or more hard elements such as the bony plates of the skull.
• gomphoses: A joint that binds the teeth to bony sockets (dental alveoli) in the maxillary bone and mandible.
A joint is the location at which two or more bones make contact. They are constructed to allow movement (except for skull bones), provide mechanical support, and are classified structurally and functionally. Structural classification is determined by how the bones connect to each other, while functional classification is determined by the degree of movement between the articulating bones. In practice, there is significant overlap between the two types of classifications.

**Fibrous Joints**: The adult skull is normally made up of 22 bones. Except for the mandible, all are joined together by sutures, semi-rigid articulations formed by bony ossification. The presence of Sharpey’s fibers permit a little flexibility. Fibrous joints are joined by dense irregular connective tissue that is rich in collagen fibers.

**Characteristics of Fibrous Joints**

Fibrous joints are connected by dense connective tissue consisting mainly of collagen. These joints are also called fixed or immovable joints because they do not move. Fibrous joints have no joint cavity and are connected via fibrous connective tissue. The skull bones are connected by fibrous joints called sutures. The skull bones of a fetus are unfused so that they can move over each other slightly to compress skull size during birth. After birth, the bones slowly begin to fuse to become fixed, making the skull bones immovable in order to protect the brain from impact.

Syndesmoses of long bones and gomphoses of teeth are also types of fibrous joints. The movement of the root within a gomphosis has a threefold effect. It lessens some of the impact between the upper and lower teeth in biting. It also pumps blood and lymph from the periodontal membrane into the dental veins and lymph channels and stimulates sensory nerve terminals in the membrane to send signals to the brain centers that control the muscles of mastication.