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| 2A-3 |
| **Basic Science Question:** |
| What are the parts and functions of the periodontium? |
| **Report:** |
|  The periodontium is the hard and soft tissues supporting the tooth. It anchors the teeth into the maxillary and mandibular alveolar processes. The periodontium consists of gingiva and gingival attachment to the tooth, cementum, periodontal ligament, and alveolar bone. There are three epithelial layers covering the underlying tissue. The visible section of the periodontium is the keratinized ginigival epithelium. The sulcular epithelium lines the crevice around the tooth and is made of parakeratinized or nonkeratinized tissue. Finally, the junctional epithelium, the unattached epithelium, forms the epithelial attachment to the tooth surface. Junctional epithelium provides a barrier between plaque and connective tissue. When the gingiva is healthy, the epithelium attachment, often called the free gingiva, is usually at or slightly coronal to the cemento-enamel junction. The cementoenamel junction is the border between the apical extent of the enamel and the coronal extent of the cementum. Periodontal ligaments are fibers that maintain the teeth in their sockets. They also provide sensory feeling, nutritional support from blood vessels, maintain boney formation of the alveolar bone, and assist in bone resorption. Sharpey fibers of the periodontal ligament insert into the cementum of the tooth and alveolar bone to help anchor the tooth. Cementum is a thin layer of hard, calcified connective tissue that covers and protects underlying dentin. Alveolar bone is made of porous, woven bone. The external surface of the alveolar process is made of compact bone, while the alveolar bone socket is made of trabecular bone. The function of alveolar bone is to support, protect, and form the bony sockets for the roots of the teeth. |
| **References:** |
| Rose, Louis F, et al. *Periodontics: Medicine, Surgery, and Implants*. Mosby, 2004. |