Learning Objectives
After completion of this exercise, the participant will be able to:
1. Describe an approach to correcting periodontally compromised incisors using minitubes and thermoactive nickel titanium wires.
2. Compare palatal locations for mini-implant insertion.
3. Discuss the use of a slow-expansion device in the mixed dentition.
4. Devise a multidisciplinary treatment plan for a tooth with a subgingival fracture.

Article 1
Hwang, H.S.; Jeon, H.R.; Lee, K.M.; and Boyd, R.L.: Use of a Minitube Appliance in Periodontally Compromised Adult Patients with Severely Displaced Incisors (pp. 533-542)
1. The pressure produced by orthodontic force in the periodontal ligament area of a periodontally compromised tooth with marginal bone loss:
   a) is greater than in a normal tooth
   b) is less than in a normal tooth
   c) is greater for a horizontal force than for a vertical force
   d) is greater for a vertical force than for a horizontal force
2. If a severely displaced incisor is not incorporated in the orthodontic appliance:
   a) only an extrusion force will occur
   b) only a retraction force will occur
   c) only a tipping force will occur
   d) any force may occur, depending on the adjacent teeth
3. The authors use thermoactive light nickel titanium wires to deliver:
   a) a constant light force
   b) a light force only in low-temperature environments
   c) an intermittent light force
   d) any of the above, depending on the clinical situation
4. The authors bond passive multistranded wires to the anchor teeth to:
   a) allow physiological mobility without the risk of loosening
   b) prevent undesirable movement of the adjacent teeth
   c) prevent excessive movement of the posterior teeth in the same arch
   d) all of the above

Article 2
5. Strategies that appear to enhance the prospects of successful mini-implant retention include all of the following except:
   a) select the optimal insertion site
   b) avoid direct root contact
   c) use implants with optimal biomechanical versatility
   d) avoid placing an implant within the intended path of tooth movement
6. For paramedian insertion, two palatal mini-implants are placed:
a) in a transverse configuration, 5-10mm apart  
b) in a transverse configuration, 7-14mm apart  
c) in a sagittal configuration, 5-10mm apart  
d) in a sagittal configuration, 7-14mm apart  
7. To achieve maximal retention within bone, the tip of a median palatal implant should preferably be inserted:  
a) within the palatal rugae  
b) perpendicular to the palatal vault  
c) perpendicular to the occlusal plane  
d) at a 30° angle to the palatal vault  
8. Advantages of paramedian insertion of a palatal implant include:  
a) more available bone  
b) less risk of root injury  
c) less risk of penetrating the incisive canals  
d) all of the above  

Article 3  
Lanteri, C.; Beretta, M.; Lanteri, V.; Gianolio, A.; Cherchi, C.; and Franchi, L.: The Leaf Expander for Non-Compliance Treatment in the Mixed Dentition (pp. 552-560)  
9. Instead of a midline jackscrew, the Leaf Expander uses:  
a) fixed nickel titanium wires  
b) a double nickel titanium leaf spring  
c) open-coil nickel titanium springs  
d) an open nickel titanium leaf spring  
10. Reactivation of the expander is performed:  
a) at home by a quarter-turn daily  
b) at home by 10 quarter-turns per month  
c) in the office by three quarter-turns per week  
d) in the office by 10 quarter-turns per month  
11. The maximum amount of expansion is:  
a) 3mm  
b) 6mm  
c) 10mm  
d) 30mm  
12. Active expansion generally takes about:  
a) six weeks  
b) three months  
c) six months  
d) nine months  

Article 4  
Hashim, A.; Shaz, A.; Shetty, N.; and Husain, A.: Management of a Subgingivally Fractured Tooth with Miniscrew-Anchored Extrusion (pp. 570-574)  
13. Endodontic treatment of a tooth with a subgingival fracture is more problematic because of:  
a) the lack of coronal ferrule  
b) a damaged root structure  
c) a compromised biological width  
d) both a and c  
14. Advantages of orthodontic extrusion of a subgingivally fractured tooth include all of the following except:  
a) retention of a natural tooth  
b) shorter treatment duration  
c) preservation of healthy periodontal tissue  
d) avoidance of surgical crown lengthening  
15. For slow extrusion, the maximum orthodontic force should be:  
a) less than 30g  
b) less than 15g  
c) greater than 50g  
d) 30-50g  
16. Placing restorative margins within the biological width of a fractured tooth can lead to:  
a) gingival inflammation  
b) loss of clinical attachment and bone  
c) a destructive inflammatory response  
d) all of the above