After completing this course, the participant will have:
1. An understanding of the potential for the reopening of first premolar extractions sites over time.
2. An appreciation for the influence of low-level laser therapy on both spontaneous and chewing pain after the placement of elastomeric separators.

**Article 1: Stability of extraction space closure**, by Daniela Gamba Garib et al

1. The objectives of this study were to evaluate the prevalence and long-term behavior of generalized space closure in patients with Class I malocclusion and to identify some associated factors.
   True
   False

2. Of the 43 subjects with 4 first-premolar extraction sites, 124 quadrants were fully closed at the end of orthodontic treatment, and only those sites were considered in the study.
   True
   False

3. The authors reported that 13.7% of the extraction sites reopened.
   True
   False

4. The authors concluded that the prevalence of reopened spaces tended to decrease by 5 years after treatment.
   True
   False

**Article 2: Effect of a single dose of low-level laser therapy on spontaneous and chewing pain caused by elastomeric separators**, by Irfan Qamruddin et al

5. The aim of this study was to see the effect of a single dose of low-level laser therapy on spontaneous and chewing pain after the placement of elastomeric separators.
   True
   False

6. The sample comprised 88 Pakistani patients (60 female, 28 male; age range, 13-30 years).
   True
   False

7. The authors reported that the maximum intensity of discomfort was associated with spontaneous pain in the placebo group.
   True
   False

8. The authors concluded that both spontaneous pain and the pain on chewing were not significantly reduced with 1 dose of low-level laser therapy.
   True
   False
Article 3: External root resorption during orthodontic treatment in root-filled teeth and contralateral teeth with vital pulps: A clinical study of contributing factors, by Yun Ju Lee et al

9. The purpose of this study was to compare the degree of external apical root resorption of root-filled teeth with that of contralateral teeth with vital pulp after fixed orthodontic treatment.
   True
   False

10. Three-dimensional cone-beam computed tomography images before and after orthodontic treatment were evaluated to determine the root lengths of the observed teeth.
   True
   False

11. The authors concluded that root-filled teeth appear to be associated with significantly less external apical root resorption than do contralateral teeth with vital pulps.
   True
   False

12. The authors even suggested that root canal treatment could be considered for stopping or decreasing severe external apical root resorption when it occurs during orthodontic treatment.
   True
   False

Article 4: Morphometric analysis of cervical vertebrae in relation to mandibular growth, by Sophie Gray et al

13. The aims of this study were (1) to analyze the morphometric changes in the outline of the second to fourth cervical vertebrae with growth and (2) to test the reliability of the cervical vertebrae maturation method for determining the mandibular growth peak.
   True
   False

14. The study comprised 25 subjects with cephalograms taken yearly from 10 through 16 years of age.
   True
   False

15. The authors reported that both the morphometric templates and the subjectively assessed cervical vertebrae stages accurately identify the mandibular growth peak.
   True
   False

16. The authors recommended the use of morphometric analysis of the cervical vertebrae to determine whether the mandibular growth peak has passed.
   True
   False