After completing this course, the participant will have:
1. An understanding of the force degradation experienced by orthodontic latex elastics in the mouth.
2. An awareness of the release of bisphenol A by vacuum-formed retainers as well as heat and chemically cured Hawley retainers.
3. An appreciation for the effect on enamel surface roughness created by 3 different adhesive removal techniques.
4. Knowledge concerning the effectiveness of orthodontic miniscrew implants used for anchorage reinforcement as compared with traditional anchorage support during en-masse retraction.

**Article 1: Force degradation of orthodontic latex elastics: An in-vivo study, by Sadeq A. Qodcieh et al**

1. The objectives of this study were to assess the force degradation of orthodontic latex elastics over 48 hours in vivo and to study the relationship between the amount of mouth opening and the degree of force decay.
   True
   False
2. The sample comprised 52 orthodontic patients between 20 and 27 years of age.
   True
   False
3. The authors reported that 50% of force degradation occurs in the first 4 to 5 hours, followed by continuous and gradual force degradation for the remaining time intervals.
   True
   False
4. The authors suggested that orthodontic elastics should be changed every 24 hours because of breakage and oral hygiene. Otherwise, elastics could be used for 48 hours.
   True
   False

**Article 2: Comparative evaluation of salivary bisphenol A levels in patients wearing vacuum-formed and Hawley retainers: An in-vivo study, by Akila Srinivasan Raghavan et al**

5. The aims of the study were to evaluate and compare the bisphenol A levels in saliva in patients using vacuum-formed retainers or Hawley retainers, both chemical and heat cured.
   True
   False
6. Saliva samples were taken from each subject at the following time intervals: T0, just before placement of the retainer; T1, within 1 hour after placement; T2, 7 days after placement; and T3, 30 days after placement of the retainer.
   True
   False
7. The authors reported that increases in bisphenol A levels in saliva were noted in the Hawley retainer groups immediately after placement of the retainer, but no increases were observed in the vacuum-formed retainer group at the same time point.
   True
   False
8. The authors acknowledged that orthodontists have choices for types of removable retainers, and their recommendation in relation to bisphenol A release is to consider a Hawley retainer processed by heat curing.
   True
   False
Article 3: Evaluation of enamel surface roughness after orthodontic bracket debonding with atomic force microscopy, by Shadi Mohebi et al

9. The purpose of the study was to compare the enamel surface roughness values after orthodontic bracket debonding and resin removal using white stone burs, a tungsten carbide bur, and a tungsten carbide bur under loupe magnification.
   True
   False
10. The freshly extracted teeth were cleaned, mounted in acrylic blocks, and stored in isotonic saliva solution until testing.
   True
   False
11. The authors reported that the tungsten carbide bur, the white stone bur, and the tungsten carbide bur under loupe magnification had relatively similar effects on the enamel surface roughness.
   True
   False
12. The authors recommended the tungsten carbide bur as the method of choice for removal of adhesive remnants after debonding, since a white stone bur requires increased time and a dental loupe increases the cost.
   True
   False

Article 4: Effectiveness of orthodontic miniscrew implants in anchorage reinforcement during en-masse retraction: A systematic review and meta-analysis, by Joanna Antoszewska-Smith et al

13. The aim of this systematic review was to compare the effectiveness of orthodontic miniscrew implants for anchorage reinforcement during en-masse retraction compared with the use of surgical correction for a similar malocclusion.
   True
   False
14. From an original group of 10,038 articles, only 14 articles met all selection criteria.
   True
   False
15. The authors reported that the tipping of both molars and incisors during space closure does not differ between the 2 anchorage reinforcement methods.
   True
   False
16. The authors concluded that the use of orthodontic miniscrew implants enables better anchorage preservation compared with traditional reinforcement methods.
   True
   False