After completing this course, the participant will have:

1. An appreciation for the prevalence of gingival recession in previously treated orthodontic patients.

2. An understanding of how maxillomandibular transverse widths are associated with various vertical facial patterns.

3. An awareness of how age may influence the biologic response of tissues to orthodontic forces.

4. Knowledge about factors that may influence the duration of surgical-orthodontic treatment of labial inversely impacted maxillary central incisors.

**Article 1: Gingival recession in orthodontic patients 10 to 15 years posttreatment: A retrospective observational study, by Meret Gebistorf et al**

1. The aims of this study were to retrospectively investigate the long-term development of periodontal disease in a cohort of orthodontic patients and to compare the prevalence of gingival recession and periodontal pockets in these patients 10 to 15 years posttreatment with that of untreated subjects with malocclusion.

   True

   False

2. The final study group comprised 118 previously treated orthodontic patients who were eventually evaluated for gingival recession.

   True

   False

3. The authors reported that buccal/labial gingival recession was more prevalent in women than in men.

   True

   False

4. The authors concluded that gingival recession in orthodontically treated patients seemed not to be compromised in the long term when compared with subjects with malocclusion that was left untreated for many years.

   True

   False

**Article 2: Three-dimensional evaluation of dentofacial transverse widths of adults with various vertical facial patterns, by Soonshin Hwang et al**

5. The purpose of this study was to investigate maxillomandibular transverse widths and molar inclinations of adults with hypodivergent, normodivergent, and hyperdivergent facial patterns using cone-beam computed tomography.

   True

   False

6. The sample comprised 121 adults with ANB angles between 0° and 4° classified as skeletal Class I, no matter their molar relationship.

   True

   False
7. The authors reported that men had significantly greater interjugular widths, antegonial widths, and maxillary transverse widths regardless of their vertical facial pattern.
   True
   False

8. The authors concluded that an increase in the mandibular plane angle is associated with tendencies of narrow mandibular arches, thinner maxillary alveolar bones at the midroot level, and higher palatal arches in both sexes.
   True
   False

**Article 3: Age-dependent biologic response to orthodontic forces, by Mani Alikhani et al**

9. The aim of this study was to investigate whether age-dependent biologic responses to orthodontic forces correlate with rates of tooth movement.
   True
   False

10. Part of the analysis on the sample involved antibody-based protein assays performed on gingival crevicular fluid samples to measure cytokine and osteoclast markers.
    True
    False

11. The authors found that adolescents reported higher and more sustained levels of pain and discomfort than did adult patients.
    True
    False

12. The authors concluded that equivalent orthodontic forces stimulated age-dependent increases in gingival crevicular fluid levels of inflammatory cytokines and osteoclast markers with higher, more sustained levels in adolescents compared with adults.
    True
    False

**Article 4: Factors affecting treatment duration of labial inversely impacted maxillary central incisors, by Chandradev Bhikoo et al**

13. The aim of this study was to examine factors that affect the surgical-orthodontic treatment duration of labial inversely impacted maxillary central incisors.
    True
    False

14. All patients in the study had treatment for impacted maxillary central incisors performed by orthodontic residents.
    True
    False

15. The authors reported that the treatment time was significantly affected by age, initial crown height, root dilaceration, and incisor length.
    True
    False

16. The authors concluded that the surgical-orthodontic correction of labial inversely impacted maxillary central incisors requires an average of 18 months.
    True
    False