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## **Learning Objectives**

After completion of this exercise, the participant will be able to:

1. Follow a protocol for using the Invisalign Palatal Expander (IPE).

2. Discuss the appropriate indications for early expansion treatment.

3. Describe a hybrid Class II treatment approach involving a miniscrew-supported Pendulum and clear aligners.

4. Review the biomechanics for traction of bilateral ectopic mandibular canines.

## Article 1

Nicozisis, J.L.: *Protocol for the Invisalign Palatal Expander* (pp. 725-730)

1. The IPE is designed to expand the dentition in increments of:

- a) .1mm
- b) .25mm
- c) .5mm
- d) 1mm
- 2. The IPE is directly printed from:
  - a) polyamide-12
  - b) TC-85
  - c) polymethyl methacrylate
  - d) thermoplastic polyurethane

3. IPE attachments are bonded to the upper first

- permanent molars and:
  - a) first premolars
  - b) second premolars
  - c) second deciduous molars
  - d) either b or c

- 4. For rapid expansion, the expanders should be changed:
  - a) twice daily
  - b) daily
  - c) every other day
  - d) weekly

## Article 2

Palomo, J.M.; Garib, D.; Jarosz, K.F.; Raj, V.; Bird, S.; and Tamburrino, R.K.: *JCO Roundtable: Expansion in Early Treatment* (pp. 734-744)

5. Maxillary palatal expanders utilized by the panelists include all of the following except:

a) traditional Hyrax

b) micro-implant-assisted rapid palatal expander (MARPE)

- c) Invisalign Palatal Expander
- d) Quad Helix

6. Based on published data, MARPE becomes less predictable beyond the age of:

- a) 9-10
- b) 14-15
- c) 19-20
- d) 30

7. In Class I skeletal patterns, maxillary constriction usually causes:

- a) a posterior crossbite
- b) an anterior open bite
- c) a Class III sagittal discrepancy
- d) all of the above

8. A recent AAO White Paper recommends expansion only if the patient exhibits:

a) sleep-disordered breathing

- b) a transverse discrepancy
- c) a posterior crossbite
- d) attention-deficit/hyperactivity disorder

#### Article 3

Palone, M.; Preite, C.; Averta, F.; Cremonini, F.; and Lombardo, L.: *Treatment of a Class II*, *Division 2 Subdivision Left Malocclusion with a Unilateral Boneborne Pendulum Appliance and Clear Aligners* (pp. 745-757)

9. Intraoral Class II distalizers have the major disadvantage of:

a) the need for patient compliance

b) a force vector passing coronally to the maxillary arch's center of resistance

c) anterior anchorage loss

d) an inability to be used simultaneously with multibracket appliances

10. The palate is considered the most appropriate insertion site for miniscrews supporting an intraoral distalizer because it:

a) is free of dental roots and other anatomical structures that complicate insertion

b) does not create a force vector passing coronally to the maxillary arch's center of resistance

- c) takes advantage of bicortical anchorage
- d) all of the above

11. In this case, the authors identified the most favorable palatal sites for miniscrew insertion by using the:

- a) MAPA system
- b) MARPE system
- c) F22 system
- d) ADA system

12. The second phase of this treatment involved clear aligners worn simultaneously with:

- a) an M-Pendulum appliance
- b) vertical extrusion elastics

c) a sectional fixed lingual appliance

d) full fixed appliances

#### Article 4

Coelho Lorenzoni, D.; Mota-Júnior, S.L.; Vieira Faria, T.; and Mattos, C.T.: *Cantilever Arms for Traction of Bilateral Impacted Lower Canines in the Mixed Dentition* (pp. 762-774)

13. The vertical position of an impacted lowercanine crown in relation to the adjacent incisor is most commonly:

- a) in the apical third
- b) in the middle third
- c) in the cervical third
- d) above the cementoenamel junction

14. Transmigration of an impacted lower canine beyond the sagittal midline becomes likely when the angulation of the canine in relation to the sagittal plane exceeds:

- a) 20°
- b) 30°
- c) 50°
- d) 90°

15. The optimal time for assessment and intervention in patients with impacted lower canines is considered to be during the:

- a) deciduous dentition
- b) early mixed dentition
- c) first transitional phase of the mixed dentition
- d) beginning of the second transitional phase

of the mixed dentition

16. Common treatment options for an impacted lower canine include all of the following except:

- a) traction
- b) intentional ankylosis
- c) extraction
- d) autotransplantation