

# CONTINUING EDUCATION

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## Learning Objectives

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

1. Describe a procedure for producing a Hybrid Hyrax appliance by fully digital design and manufacturing.
2. Review orthodontic techniques and appliances that may need to be modified in the post-COVID-19 era.
3. Consider recommendations for human resource and financial management in the current practice environment.
4. Discuss the potential for orthodontic treatment to resolve skeletal imbalance and alleviate scoliosis.

## Article 1

Othman, A.; Arnold, J.; Ströbele, D.; and von See, C.: *A Digitally Designed and Sinter Laser-Melted Hybrid Hyrax* (pp. 336-340)

1. The authors designed a Hybrid Hyrax using software called:
  - a) CoDiagnostiX
  - b) Appliance Designer
  - c) Aadv Design
  - d) 3Shape TRIOS
2. A surgical guide for miniscrew insertion was three-dimensionally printed using:
  - a) sinter laser-melting
  - b) fused deposition modeling
  - c) digital light processing
  - d) electron beam melting
3. Reasons why the 3D-printed Hybrid Hyrax did not work as intended might have included:

- a) digital design details such as the thickness of the connecting bars
  - b) patient noncompliance
  - c) inappropriate activation protocol
  - d) all of the above
4. Miniscrews for skeletal anchorage of the Hybrid Hyrax must be drilled to their full length and properly affixed to the appliance to ensure:
    - a) proper oral hygiene
    - b) patient cooperation
    - c) adequate bone support
    - d) sufficient transverse expansion

## Article 2

Srirengalakshmi M.; Venugopal, A.; Pangilinan, P.J.P.; Manzano, P.; Arnold, J.; Ludwig, B.; Cope, J.B.; and Bowman, S.J.: *Orthodontics in the COVID-19 Era: The Way Forward* (pp. 341-349)

5. The need for an aerosol-generating procedure during orthodontic bonding can be reduced by utilizing:
  - a) light-cured resin-modified glass ionomer cement
  - b) a self-etch primer
  - c) a dry cotton roll instead of a three-way syringe to clean the enamel
  - d) any of the above
6. Open-coil springs should be prescribed with caution to avoid:
  - a) excessive space opening
  - b) root convergence
  - c) proclination of anterior teeth
  - d) all of the above

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7. Overactivation of a rapid palatal expander can result in:

- a) buccal tipping of posterior teeth
- b) root convergence
- c) proclination of anterior teeth
- d) reciprocal extrusion of posterior teeth

8. The use of intermaxillary elastics should be minimized because they may cause:

- a) "pseudo-activation" of active tiebacks
- b) adverse tipping and bite deepening
- c) premature contact of posterior teeth
- d) all of the above

### Article 3

Park, J.H.; Kim, J.H.; Kai, A.; Rogowski, L.; and Liu, A.: *Post-COVID-19 Management Guidelines for Orthodontic Practices* (pp. 351-355)

9. Information obtained during daily symptom and temperature screening of a staff member is considered:

- a) a public record
- b) a medical record
- c) documentation required by the Department of Labor
- d) under the jurisdiction of the state health department

10. An employer with less than 50 employees may be exempt from requirements for sick leave and expanded family leave under the Families First Coronavirus Response Act if:

- a) the leave would cause expenses to exceed revenue and the employer to cease operating at minimal capacity
- b) the leave would pose substantial financial risk because of the employee's specialized skills or knowledge
- c) the employer cannot find replacement workers who can perform enough labor or services to continue operation at minimal capacity
- d) any of the above

11. According to Cain Watters & Associates, if a practice returns to average start levels in the third

month after reopening, overall profits will be:

- a) 25% lower than before the shutdown
- b) 50% lower than before the shutdown
- c) the same as before the shutdown
- d) impossible to recapture

12. The AAO's COVID-19 financial management resources cover all of the following topics except:

- a) unemployment benefits
- b) small business loans
- c) cash-flow monitoring systems
- d) the Paycheck Protection Program

### Article 4

Wu, K.; Yan, B.; Zhang, X.; and Zhao, C.: *Orthodontic Treatment of an Adult with Mandibular Deviation and Scoliosis* (pp. 357-368)

13. Imbalances of the occlusal, muscular, and skeletal systems can result in:

- a) malocclusion
- b) TMD
- c) cervical dysfunction
- d) any of the above

14. In the case shown here, orthodontic treatment began with:

- a) a flat deprogramming splint
- b) an anatomical deprogramming splint
- c) a transpalatal arch
- d) an .014" nickel titanium archwire

15. An abnormal occlusion stimulates the nociceptors and mechanoreceptors of the dental pulp and periodontal tissue through:

- a) low-threshold mechanosensory fibers
- b) their Ruffini endings
- c) dysfunction of the condyles
- d) trigeminal ganglion cells

16. Occlusal disturbances and mandibular deviation can result in any of the following except:

- a) unbalanced bilateral masticatory muscle contractions
- b) abnormal mandibular movements
- c) progressive remodeling of the condyles
- d) an abnormal trigemino-cervical reflex