

# CONTINUING EDUCATION

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## Learning Objectives

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

1. Discuss trends in orthodontic practice administration and economics over the past two years.
2. Follow the procedure for digitally designing and fabricating a boneborne rapid palatal expander.
3. Summarize the key factors involved in treatment planning and clinical management with the LightForce appliance system.
4. Describe the technology used in direct 3D printing of clear aligners.

## Article 1

Kravitz, N.D.; Vogels, D.S. III; and Vogels, P.B.: 2023 JCO Orthodontic Practice Study (pp. 567-584)

1. Compared with the 2019 Practice Study, median gross income in this report was:
  - a) down by 10%
  - b) about the same
  - c) up by 10%
  - d) up by 20%
2. The percentage of respondents who reported changing fees every 12 months was the highest, and the percentage who reported changing “not regularly” was the lowest, since the:
  - a) 2019 Study
  - b) 2013 Study
  - c) 2009 Study
  - d) 1981 Study
3. For the first time, referral awards to patients and parents were rated as more effective practice-building methods than:

- a) follow-up calls after difficult appointments
  - b) letters of appreciation to patients and parents
  - c) entertainment of patients and parents
  - d) entertainment and gifts to GPs
4. The most effective of the seven practice-building categories was considered to be:
    - a) new-patient incentives
    - b) internal referrals
    - c) management changes
    - d) expand services

## Article 2

Aghazada, H.; Campobasso, A.; Annarumma, F.; and Battista, G.: *Design and Manufacturing of a Fully Digital Boneborne Palatal Expander* (pp. 585-593)

5. The design of a boneborne palatal expander should account for all of the following variables except the:
  - a) patient's age
  - b) patient's genetic background
  - c) width of the palate
  - d) magnitude of force required
6. In the authors' protocol, virtual positioning of the miniscrews is performed using:
  - a) Dolphin 3D software
  - b) OrthoCAD software
  - c) Appliance Design software
  - d) Rhinoceros software
7. The authors' surgical guides are 3D-printed in the office using:
  - a) a biocompatible resin
  - b) selective laser melting

- c) a cobalt chromium alloy
  - d) fused deposition modeling
8. The PowerScrew is a versatile expansion screw because it is:
- a) produced by 3D metal printing
  - b) connected to rings on the miniscrew heads
  - c) available in five sizes
  - d) all of the above

### Article 3

Waldman, A. and Bonebreak-Jackson, C.: *Introduction to LightForce, Part 2: Treatment Planning and Clinical Management* (pp. 594-605)

9. In a surgical-orthodontic case, the clinician can use LightPlan software to visualize:
- a) a “surgical jump”
  - b) the surgical cuts
  - c) intermaxillary fixation
  - d) “mirroring” of certain teeth
10. Custom bite turbos are:
- a) bonded directly
  - b) bonded indirectly with specialized trays
  - c) bonded indirectly with rebonding jigs
  - d) not possible with this system
11. The “mirroring” feature in LightPlan is used to design a:
- a) “surgical jump”
  - b) gingival extension
  - c) custom bracket for an unerupted or partially erupted tooth
  - d) custom mini-tube
12. A second scan can be taken mid-treatment to:
- a) “pick up” the remaining permanent teeth after they have erupted

- b) produce a bracket for a late-erupting or impacted tooth
- c) perform “digital repositioning”
- d) any of the above

### Article 4

Sim, M. and Park, S.: *Orthodontic Treatment Using Directly 3D-Printed Clear Aligners* (pp. 606-613)

13. In the author’s technique, the shells for clear aligners are designed in:
- a) Dolphin 3D software
  - b) OrthoCAD software
  - c) Appliance Design software
  - d) Rhinoceros software
14. The 3D printer model used by the authors was:
- a) Kulzer
  - b) Sonic 4K
  - c) Formlabs
  - d) both a and b
15. Aligners were manufactured in thicknesses ranging from:
- a) 30µm to 50µm
  - b) .2mm to .5mm
  - c) .18" to .25"
  - d) .5cm to .9cm
16. The time required to manufacture each 3D-printed clear aligner was:
- a) two to five minutes
  - b) 15-20 minutes
  - c) 40-50 minutes
  - d) 60-90 minutes