

# THE READERS' CORNER

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*(Editor's Note: The Readers' Corner is a quarterly feature of JCO in which orthodontists share their experiences and opinions about treatment and practice management. Pairs of questions are mailed periodically to JCO subscribers selected at random, and the responses are summarized in this column.)*

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## *1. What technique do you use for opening deep bites?*

Clinicians used a surprising variety of methods to open deep bites. In fact, most used a combination of techniques rather than any single procedure. The majority (65%) favored placing reverse curves in the mandibular archwires, often in conjunction with a biteplane. About 50% augmented the bite-opening mechanics with anterior or cervical high-pull headgear, utility arches, and selective bracket placement on anterior and posterior teeth. A few clinicians mentioned turbo brackets, functional appliances (Herbst, twin block, and bionators), Retinol wires, and posterior vertical elastics.

Some representative replies:

- "If the maxillary teeth relate normally to the upper lip during smiling, then I assume the overbite is due to overeruption of the lower incisors. For this problem I will place upper fixed appliances and an upper removable/fixed anterior bite plate, then bond the lower arch to encourage lower molar eruption with simultaneous incisor intrusion."



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- "Technique is dependent upon the need to extrude the posterior segments vs. intrude the anterior segments. Correction may involve intrusion utility archwires, reverse curve of Spee, and cervical pull headgear, and second molars are almost always banded."

## *Do the opened bites usually stay open?*

Fifty-eight percent of the respondents believed the bites would stay open, but 38% felt the stability of bite opening was too difficult to predict. Only two respondents claimed that opened bites do not stay open. A typical comment was:

- "Bites usually stay ideal if incisal torque is slightly exaggerated and overbite/overjet is close to ideal. Relapse usually occurs when these criteria are not established."

## *To what do you attribute the relapse of a corrected deep bite?*

The majority believed that musculoskeletal factors were involved. This response, however, was often qualified by factors including poor finishing procedures and lack of retainer wear. Also mentioned, but to a much lesser degree, were misdiagnosis, not opening the bite early enough in treatment, and inadequate overcorrection. Comments included:

- "I interpret relapse of a deep bite in mesofacial skeletal patterns as being an instance where treatment was compromised, but maintenance of a corrected deep bite in patients with brachyfacial skeletal patterns is simply not as predictable."

## *What technique do you use for closing open bites?*

Again, most respondents used a combination of techniques rather than a single method. By far the most popular procedure (63%) was the use of vertical anterior elastics. More often than not, this was coupled with some sort of habit appliance (tongue crib or spikes) and with swallowing and tongue exercises. Many clinicians (18%) said they placed step-bends in the archwires or bonded the incisors more gingivally. Posterior high-pull headgear and biteplanes were favored by some. Eight percent believed extractions were advisable to help close open bites. Also mentioned were Bioprogressive sectional archwires, the Woodside molar impactor, and transpalatal bars. Two respondents believed the most effective tool might be prayer.

*Do the closed bites usually stay closed?*

The key word in this question is "usually". The majority of respondents (58%) believed that it's difficult to predict whether a closed bite will stay closed. Twenty-one percent thought it would stay closed, but 19% believed it would not. There were many comments indicating that closing an open bite was the treatment procedure most susceptible to relapse.

*To what do you attribute the relapse of a corrected open bite?*

Most respondents ascribed relapse to a combination of tongue and swallowing patterns, closely allied with deviant growth and with muscle, airway, and skeletal problems. A few respondents implicated poor diagnosis, poor patient cooperation, or not retaining the correction long enough. An interesting comment was:

- "It takes time to alter a neuromusculature pattern. We usually get the open bite resolved at the end of treatment and then debond. The correction has only been in place for a few months, while this complex pretreatment problem has been evident for years. To expect the bite to be altered, and remain stable under these conditions, is somewhat naive."

*What technique do you use to distalize molars bilaterally? Unilaterally?*

Most clinicians listed a combination of techniques. By far the most popular distalization device was headgear, complemented by, in decreasing order of priority, Class II elastics and open-coil springs, the Hilgers Pendulum Appliance, and the Distal Jet appliance. Less frequently mentioned were Wilson modular devices, Jasper Jumpers, lip bumpers, Hawleys with jack-screws, and Gianelly distalization mechanics.

The same techniques were generally used to distalize molars unilaterally. Again, the most popular methods were headgear, in conjunction with open-coil springs, the Hilgers Pendulum Appliance, or the Jones Jig.

*Do you distalize mandibular molars, and how?*

Fewer than 5% of the respondents said they distalized mandibular molars frequently. The majority (65%) did so occasionally, while the remainder reported that they never distalized mandibular molars.

The device most commonly used was the lip bumper. Equal percentages either used open-coil springs (with or without supporting Class II elastics or headgear) or uprighted the molars through archwire manipulation, such as tipbacks, amplified by coil springs. One response:

- "I am hesitant to distalize lower molars because it causes the end-on or Class II molar relationship to worsen. Then I have to compensate for this situation with other mechanics."

2. *Do you use a visualized treatment objective (VTO)?*

Sixty-two percent of the respondents never used a VTO, 19% used it routinely, and 19% used it occasionally.

Individual comments were:

- "A VTO is an educated guess and only really helpful in long-face vertical growth patterns. How many orthodontists 10-20 years in practice are really using VTOs in treatment planning? Who has the time?"
- "I routinely use a VTO. I feel I can better anticipate growth direction, but I'm reluctant to predict it and will not rely on a VTO to validate an amount of growth."

*Can the amount and direction of growth be predicted, and how?*

Nearly twice as many clinicians thought the amount and direction of growth could not be predicted as thought it could. Many of the respondents believed the direction of growth may be more predictable than the amount.

The most common method of determining growth parameters was the use of a computer data system such as Zero Base or Quick Ceph. This was closely followed by resemblance to parents and siblings, and by presuming a continuation of the existing growth pattern. Smaller percentages used the Ricketts analysis or mandibular-plane and Y-axis recordings, or simply relied on experience.

*Is the pubertal growth spurt an important consideration in your treatment plans?*

Two-thirds of the clinicians said it was an important factor. A few indicated that the pubertal growth spurt was a particular consideration in Class III patients.

*Is it important to know the stage of skeletal maturation in a growing patient? Why or why not?*

Three-fourths of the respondents believed skeletal maturation was an important consideration. Their reasoning was that there was a window of opportunity in which to take advantage of the possibility of altering growth potential. Many

clinicians mentioned that the stage of skeletal maturation was more important in Class III and potential surgery cases, while 10% of the sample thought it more pertinent in Class II cases. Those who thought skeletal maturation was unimportant in treatment planning tended to believe that "you can't do much about it" or "it's just a guess".

More specific comments included:

- "Growth modification efforts result in only minimal skeletal changes. Most change is dental. Patients and parents need to understand what small changes can be effected, and clinicians need to face up to our limitations in this area."
- "If you believe in growth modification, it's crucial to the outcome—also timing of treatment. Early treatment may be undone by the resumption of an unfavorable post-treatment growth pattern."

*Are wrist x-rays valid measurements of the skeletal maturity of the jaws?*

Fifty-two percent thought wrist x-rays were valid, 38% felt they were not, and the remainder were unsure. A typical remark:

- "It's another contributing factor in diagnosis, but I rarely rely on them except in the timing of surgical cases."

*Do you rely on cervical vertebrae to determine skeletal maturity?*

Fully 95% of the clinicians did not use the cervical vertebrae to assess skeletal maturity. There was little elaboration on this question, although one orthodontist mentioned that such an assessment eliminated the need for an extra radiograph, since the cervical vertebrae can be evaluated from the lateral cephalometric film.

Two of the respondents who valued the analysis of cervical vertebrae quoted the literature to justify their opinion: Lamparski's Milo Hellman award-winning thesis (Skeletal age assessment utilizing cervical vertebrae, University of Pittsburgh, 1972), and Hassel and Farman's article (Skeletal maturation evaluation using cervical vertebrae, *Am. J. Orthod.* 107:58-66, 1995).

*What are the effects of post-pubertal growth on treatment?*

About half of the respondents directed their focus toward Class III cases. This was distantly followed by the effect on the stability of finished cases. There were more than a few responses indicating that post-pubertal growth was more of a concern in males than in females. An interesting comment:

- "Don't treat on opinion or guesswork, treat to the specifics of the case at the time. If post-pubertal growth severely affects the finished case, then it may have to be retreated, but this is practically impossible to predict. If post-treatment growth causes some incisor malalignment, then a simple strip-and-align touch-up usually resolves the problem."

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