THE READERS' CORNER

JOHN J. SHERIDAN, DDS, MSD

(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.)

1. Do you use any tooth-whitening procedures in-office? Describe the product and method of application.

The majority of respondents did not use any in-office tooth-whitening procedures, but did advise their patients to use home whitening products. Those who did bleaching in the office used various methods, but there was no indication that any particular brand was preferred over others. Products mentioned were Prestige Paste (Raintree Essix), Nite White Excel (Discus Dental), Nupro Gold (Dentsply), Opalescence carbamide peroxide (Ultradent) and bleaching trays, Brite Smile (commercial offices), and a bleaching gel applied in an Essix retainer at night.

Several clinicians were reluctant to use in-office tooth-whitening procedures because their general dentist referrers felt that tooth whitening was within their purview rather than the orthodontist's. Also, some respondents believed it was preferable to use the whitening products after fixed appliances were removed to avoid any unevenness in color in the bracket areas.

A specific comment was:

Dr. Sheridan is an Associate Editor of the *Journal of Clinical Orthodontics* and a Professor of Orthodontics, Louisiana State University School of Dentistry, 1100 Florida Ave., New Orleans, LA 70119.

• "I asked several of my referring dentists, and they felt that they should do these procedures. I didn't want to upset my referral base by stepping on their toes."

How do you measure the effectiveness of the procedure?

Several ways to measure effectiveness were listed, but the most common was a comparison of before-and-after shades using the guide included in the whitening kit. Also mentioned were photographic comparisons, patient satisfaction, and whitening the upper arch first and then checking it against the unwhitened lower arch.

Remarks included:

• "There is no way to accurately determine effectiveness other than with a shade guide."
• "I routinely use a Vita shade guide before and after the whitening procedure."

What commercial products do you recommend to patients for home use?

By far the most recommended product for home use was Crest White Strips, followed by Rembrandt Plus toothpaste. Many of the respondents left the recommendations to the family dentists. Several said they let their patients decide, as long as the products were certified by the ADA.

What percentage of your patients do you estimate are using tooth-whitening products?

There was a wide range of estimates, from 5% to 95%, but the average was around 27%.

Do you find that toothpastes that claim tooth-whitening ability are effective?

About two-thirds of the respondents did not believe that whitening toothpastes were effective. Many of them felt that the effects of these products were minor, and that it was difficult to quantify any change in tooth color. There were also many comments indicating that the products were not strong enough or not applied long enough to have any discernible effects.

Other clinicians thought the whitening toothpastes were somewhat effective if used in combination with Crest White Strips or paint-on bleaching products.

Teeth vary in color: for example, cuspids are generally darker than incisors. Are tooth-whitening products equally effective on all teeth?

There was a relatively even distribution of replies to this question. About one-third of the respondents believed that tooth-whitening products were effective on all teeth, another third believed they were not, and the remaining third had no definite opinion. The most frequent comment was that teeth tended to lighten proportionately to their original colors.

Some specific comments:

• "Professional bleaching seems to lighten all teeth."
• "Patients that have used tray-borne materials seem to have uniform whiteness."
• "These products work best on yellow-shaded teeth and least on gray-shaded teeth."
• "The effect is highly variable due to enamel formation, e.g., mottled and tetracycline-stained. Grays don't lighten as well as yellows."

Do you find that certain toothpastes prevent or correct discoloration around bonded brackets?

A substantial majority did not believe that toothpastes could prevent or correct discoloration around bonded brackets. On the other hand, a few clinicians did not want their patients using whitening toothpastes while in fixed appliances because, when the bonded appliances were removed, there could be a color disparity between the areas where the patient brushed and the areas under the bonded brackets.

Individual responses included:

• "I haven't been able to quantify any change with a shade guide."
• "Most staining is from failure to get the bristles to an area and keep it clean. It won't matter what toothpaste is on the brush if it doesn't reach the target area."
• "I don't recommend whitening toothpaste to patients in braces."

Do you find that certain toothpastes prevent discoloration of clear "O" ties used with ceramic brackets?

Only one respondent believed that the use of a whitening toothpaste could avoid discoloration of clear "O" ties. There was also a remark that baking-soda paste could prevent discoloration of these ligatures.

Specific comments were:

• "Most of the ties seem to stain from colored foods such as mustard, colas, coffee, etc., and toothpaste doesn't seem to remove these stains."
• "The stain is absorbed into the ties, and toothpastes can only work on surface discoloration."
• "Clear elastics attract color, especially dark colors. Once stained, the only way to solve the problem is to change the elastic. If possible, I prefer a tooth-colored elastic over clear ties when using ceramic brackets."

2. Do you base your treatment plan on the position of the upper incisors or the lower incisors, and in relationship to what landmark?

The respondents were fairly evenly divided between the upper incisors and the lower incisors, with a slight advantage to the position of the lower incisors. An equal number, however, used the positions of both the upper and lower incisors in their treatment planning.

Landmarks were varied, with the A-pogonion line the most cited, closely followed by the incisor mandibular plane angle, the mandibular plane angle, the "E" line, and the upper incisal edge to the upper lip. There were numerous comments that more than one reference plane or landmark was used in constructing the treatment plan, with emphasis on facial balance rather than on any cephalometric reference.

Individual remarks included:

• "I use the maxilla (A point) in conjunction with the vertical position of the lips in repose and smiling."

• "I used to use the lower incisor exclusively, but now I use the upper incisor more and more."

How much are you willing to compromise that relationship to avoid extraction?

The most frequent response was "some". There was a general tendency not to adhere to any strict cephalometric norm or analysis, or to specific tooth positions. The reasons given for being more flexible included abnormal growth patterns, racial norms, periodontal concerns, profile considerations, variations in informed consent, and avoidance of surgery.

Some specific comments were:

• "I will compromise quite a bit on older patients with relatively normal profiles. Any retraction of the lips, due to extraction, in these older patients simply makes them look even older."

• "If the profile is pleasing with lip competency and minimal crowding, less than 5mm, I will strip the incisors, and sometimes posterior teeth, to alleviate the crowding, thereby minimizing the impact of changes of the lower incisor to NB and the upper incisor to NA."

• "This is highly variable. It primarily depends on the informed consent of the patient and the family."

• "Cephalometric analysis is a static, arbitrary, and unscientific method to diagnose and treat. Which analysis? What landmarks? What significance? There are no analyses for different age groups, and we treat to a unisex standard, i.e., there are no commonly used standards to differentiate male from female facial profiles."

What is your criterion for the angulation of the upper incisors?

Again, it was apparent that the clinicians did not dogmatically follow any particular criteria. The most common answer was that the angulation of the upper incisors was correlated with the patient's facial esthetics, and that esthetics depended not only on skeletal considerations, but also on soft-tissue proportions. There was a specific concern about the harmony between the face and the position of the upper lip. Several clinicians, however, indicated angulations or amounts they were willing to compromise, such as 22° ± 5° to NA with the maxilla in normal position and an interincisal angle of 130-140°.

Does this vary depending on mandibular plane angle or depth of bite? And can you always achieve your treatment goal?

Fully 81% of the respondents said their criterion for angulation of the upper incisor varied with the mandibular plane angle or the depth of bite, and that they could not always achieve it. Their rationale centered, again, on facial considerations. Other strong indicators were a steep or low mandibular plane angle, a skeletal tendency to Class II or Class III, the vertical dimension, the position of the upper incisor within the cortical plate, the angulation of the lower incisor, patient compliance, and the insistence of some adult patients on nonextraction treatment.

Representative comments included:

• "As the ANB increases or the lower facial height increases (open-bite tendency), the upper incisors must be uprighted and the lower incisors flared to obtain incisor coupling."

• "At times I will elect to leave a slight protru-

sion of the upper incisors in Class II cases to preserve the upper lip contour, rather than extract and flatten the upper lip prematurely."
• "High-angle cases require less torque of the upper incisors and have less depth of bite."

What is the significance of the interincisal angle in treatment planning?

The responses were varied, with an emphasis on the importance of the interincisal angle in positioning the incisors to fit the face and to give adequate and esthetic support to the upper lip. Other clinicians noted that a proper interincisal angle contributed to better function and stability. On the other hand, 13% believed that there was "not much" significance to the interincisal angle or that it was simply a guide.

Some specific remarks:
• "If the maxilla and mandible are well positioned, then an ideal interincisal angle allows for the best fit of the anterior teeth for function. Variation is required as the maxilla and mandible vary from the ideal."
• "Average FMA = average interincisal angle, high FMA = obtuse interincisal angle, low FMA = more acute interincisal angle."
• "I try to always achieve proper torque on the upper and lower incisors independently, so I don't place any emphasis on the interincisal angle."

Is there an ideal interincisal angle?

About 40% of the respondents felt there was an ideal interincisal angle for each particular case, but not for general populations. The remainder thought there was no ideal interincisal angle, or that there was merely an acceptable range that could be used for reference.

One candid comment was:
• "Sure there is, but for each individual patient. Please, someone help me find it!"

Will an obtuse interincisal angle necessarily lead to bite closure?

More than 80% of the clinicians did not believe that an obtuse interincisal angle was directly correlated with bite closure. Their reasons were varied, including: muscle strength and posterior tooth support are more important; not when there is good occlusion of the posterior teeth; it depends on the mandibular plane angle; not in high-angle cases; the skeletal pattern rather than the interincisal angle could be the reason for the status of the bite; and only if the case is not retained properly.

A specific reply:
• "Lingual root torque to position the roots of the upper and lower incisors is very important. Also, adding a thin and narrow bite plate to the upper Hawley will protect against muscle forces that tend to cause bite closure."

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Dr. H. Eldon Attaway, Irving, TX
Dr. Robert R. Conner, Moraga, CA
Dr. Greg Costopoulos, Novato, CA
Dr. Gary J. Dilley, Cary, NC
Dr. Jennifer Eisenhuth, White Bear Lake, MN
Dr. Austin W. Feeney, New Canaan, CT
Dr. Thomas C. Flanagan, Chattanooga, TN
Dr. C. Steven Gulrich, Foxboro, MA
Dr. Curtis L. Hayden, Manhattan, KS
Dr. L. Clark Hodge, Gainesville, FL
Dr. Gary P. Horvath, Spartanburg, SC
Dr. Jaime de Jesús Viñas, Hato Rey, PR
Dr. Vaughn A. Johnson, Durango, CO
Drs. Lawrence A. Klar, Neal A. Klar, and Marni E. Voorhees, Virginia Beach, VA
Dr. Christopher K. Klein, Mt. Vernon, IL
Dr. Lee R. Logan, Northridge, CA
Dr. John D. Meschke, Hutchinson, KS
Dr. Michael D. O'Leary, Wisconsin Rapids, WI
Dr. Bernard J. Orlowski, Woodbridge, NJ
Dr. Thomas Robinson, Sault Ste. Marie, MI
Dr. J. Mike Rowan, Jr., Tyler, TX
Dr. John Russell III, Columbus, MS
Dr. David L. Schmidt, Universal City, TX
Drs. Gary D. Schuller, John R. Tibbetts, and Jonathan B. Schlosser, Williamsville, NY
Dr. J. Haldane Soutar, Miami Shores, FL
Dr. Lewis C. Walker, Jacksonville, FL
Dr. James Weissman, Encino, CA
Dr. John A. Yoffe, Harrisburg, PA