# 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.)*

*1. Do you use indirect bonding? What do you find are the advantages and disadvantages of indirect bonding?*

Only 12% of the respondents indicated that they used indirect bonding. Accordingly, most of the clinicians believed the disadvantages of the system outweighed the advantages. The drawbacks mentioned were that improper seating of the indirect tray requires a complete redoing of the procedure and possibly a reappointing of the patient, that the amount of composite flash involves extra chairtime to remove, and that excessive laboratory time is needed for construction of the indirect setup.

Advantages listed by the respondents who used indirect bonding were more precise bracket placement, reduced chairtime and stress in bonding, and the ability to delegate the procedure.

Typical comments included:

• "The advantage is more precision in bracket placement. The disadvantage is the possibility of a disaster if the transfer trays are not seated fully."

• "The disadvantages of increased lab costs and setup time outweigh the advantage of improved indirect bracket placement. For instance, I still have to deal with bonding adhesive thickness, the composite flash is less controllable and therefore takes more chairtime to clean up, and 1st-order bend adjustments still must be made."

• "Within my treatment modalities, indirect bonding takes more ancillary time, lab time, chairtime, and patient visits than direct bonding."

• "The occasional bracket failure is when indirect bonding defeats its purpose."

*How does indirect bonding compare to direct bonding in terms of cost-effectiveness?*

There was a distinct difference of opinion between those who used indirect bonding and those who preferred direct bonding. The indirect bonding advocates believed that reduced chairtime and delegation of the procedure made it cost-effective. Conversely, the other orthodontists believed that all the steps required for the impression, cast construction, placement of brackets, construction of the transfer tray, and seating of the tray made the technique more expensive.

Some representative comments:

• "Indirect bonding is more time-consuming and expensive, but worth it."

• "When it works well, indirect bonding probably is more cost-effective for me because it minimizes the need to reposition brackets and/or place detail bends. I find the bond strengths are usually equal, or sometimes better, than with direct bonding."

• "Considering the time and procedures necessary with indirect bonding, I find direct bonding

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to be more cost-effective."

*If you who use indirect bonding, how do you make the setups? What transfer tray material do you use? What bonding material do you prefer?*

Nearly all of the respondents constructed the indirect setups and transfer trays in their offices without using commercial laboratories. The preferred tray material was either a silicone-based impression material or a vacuum-formed plastic. Only one respondent used a hot-glue gun. No one reported using a hybrid tray (a silicone core with a vacuum-formed shell).

The adhesive preferred by a majority of the clinicians was a two-paste, chemically cured system, but this was closely followed by a light-cured system. No respondents used a one-step, chemically cured system or a heat-cured/chemically cured combination.

*What are the advantages and disadvantages of your indirect bonding system compared to others you have tried?*

In general, when clinicians changed their indirect bonding systems, it was because they felt that a new protocol would be more clinically efficient than the one it replaced. The primary consideration cited was the best seating of the transfer tray with the least chance for distortion or excessive composite flash.

Pertinent remarks included:

• "I have control over bracket position. I personally do all final positioning. I prefer to use silicone tray material because it's easy to apply, easy to remove, and seats accurately. I have used indirect bonding for 23 years continuously."

• "Since I have used a light-cured system, there is less flash. I used to get unfilled bonding resin in my self-ligating bracket bases, which could prevent opening and closing of the ligating gate. Also, I can seat the transfer tray without time constraints and make sure it is seated properly before curing."

• "I use the system exactly as Dr. Anoop Sondhi teaches. The vacuum-formed plastic trays are very thin and easy to work with. Clinically, the change in the viscosity of the two-part system makes the clinical bonding very accurate and very rapid. No composite setting takes place until the trays are completely seated, and then the set is very rapid—approximately 30 seconds for the preliminary set."

• "I am unable to band the first molars on the same visit because separators move teeth slightly and the indirect trays don't fit precisely."

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*2. What percentage of your patients are being treated with Invisalign appliances?*

Forty-six percent of the respondents reported that they had not incorporated Invisalign appliances into their practices. For the remainder, the percentage of patients treated with Invisalign varied from .1% to 10%, with the vast majority in the 1-3% range.

*What percentage of your patients are being treated with similar multistage plastic appliances?*

Another 26% of the clinicians used similar (not Invisalign) plastic appliances. The percentage of patients treated with these devices was between 1% and 8%, with most respondents using them in 1-2% of their cases.

*What percentage of your practice's gross income is attributable to treatment with Invisalign or similar appliances?*

For the overwhelming majority, the percentage of gross income attributable to Invisalign or similar appliances ranged from less than 1% to 2%. A few clinicians, however, reported percentages of gross income as high as 6%, 10%, or 18%.

*What percentage of your Invisalign cases finish on time?*

There was a wide range of answers, but most respondents indicated that 80-95% of their Invisalign cases finished on time. Still, more than 13% reported that 50% or fewer of their cases finished on time, and two clinicians said that none finished on time.

*What is the most complicated case you have treated with Invisalign appliances?*

The most common reply was a Class I case with moderate upper and lower crowding. A few clinicians reported using Invisalign appliances in treatment involving lower incisor extractions, upper bicuspid extractions, or space closure, and one reported treating a four-bicuspid extraction case with Invisalign.

*What problems have you encountered with Invisalign treatment?*

Numerous problems were listed, the most prevalent being the precision of final detailing. Finishing issues included residual spacing, occlusal difficulties, uncorrected rotations and intrusion, inadequate vertical control, and posterior open bite, as well as the need to retake impressions for a finishing set of aligners. Other problems involved poor patient compliance with wearing the aligners as directed and a lack of effective communication with the laboratory.

Specific comments included:

• "There is limited finishing control. Although the appliance is an excellent method for 'straightening teeth', achieving functional occlusal results, in my opinion, is pot luck, especially for those whose goal is to treat to a seated condylar position."

• "Occasionally aligners have stopped fitting. This is almost always due to poor cooperation, and we have to do a midcourse correction."

• "Results at the end of aligner use do not match the ClinCheck diagnostic workup. This has been a recurring problem."

• "I have problems correcting retroclined incisors and difficult rotations. I have had to retreat a few cases with conventional orthodontic treatment because the Invisalign appliance could not get the results that I wanted."

• "I just feel I can do a better job with conventional braces. I think the technology behind Invisalign is intriguing, but I don't like to pass its expense along to the patient."

*Have you treated adolescents with Invisalign? If so, how would you describe their cooperation?*

Of those who reported using Invisalign appliances, twice as many clinicians had treated adolescents as had not. A distinct majority of those who had used the aligners in adolescents reported that their level of cooperation was generally good, excellent, or fair. Only two clinicians reported poor cooperation, attributing this to lost appliances.

*If you encounter relapse, do you restart with the appropriate appliance in the sequence?*

Seventy percent of those who used Invisalign appliances said they would restart with the appropriate appliance in the sequence. Some clinicians, however, reported that patients had either thrown away or lost all their used aligners, or that no previous aligner fit the existing archform. A typical answer was, "If the patient has stopped wearing their aligners, we return to the appropriate aligner, if it can be found, and start again."

*Do you charge for retreatment with Invisalign or extra Invisalign appliances?*

Two-thirds of the respondents did not charge for retreatment or additional aligners. These clinicians usually purchased the insurance from the Align Corporation to cover such a contingency. Several respondents noted that a charge would not be applied unless the retreatment were due to the patient's negligence or lack of cooperation.

Interesting individual comments were:

• "I don't charge for retreatment because I purchase the $50 insurance to absorb this cost if retreatment is necessary."

• "If the patient was compliant and the results do not match the ClinCheck, I don't feel that I can recharge the patient. If the relapse is from lack of retainer wear, I would charge a fee."

• "If Invisalign does not reach my expectations, I absorb the fee for the finishing details."

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