

# A New Approach to Interproximal Reduction

by Wm. Randol Womack, DDS

Interproximal reduction is an integral part of solving specific orthodontic tooth size discrepancies. Since I developed the IPR protocol and DVD for Invisalign in 2002, I recently refined and improved the technique for more accuracy and precision.

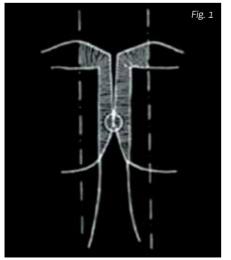
Dr. Jack Sheridan says, "Interproximal reduction is the process of making incremental reductions to tooth enamel to create sufficient space between teeth for successful movement/ realignment." Dr. Sheridan documented air-rotor stripping in his 1985 publication. It has been established that the technique for posterior tooth-size reduction (distal to cuspids) was best accomplished with the air-rotor approach. However, the

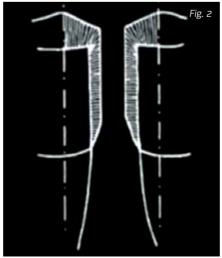
approach to IPR from cuspid to cuspid is more easily, accurately and precisely accomplished with a different technique.

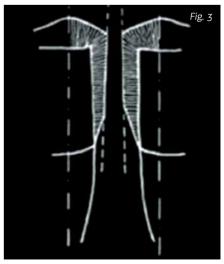
 ${f X}$   ${f X}$  feature // clinical

Dr. Sheridan clearly identified the correct form of an interproximal opening between teeth and he also clearly defined the "fatal error" (Fig. 1) of creating the incorrect interproximal opening. When the opening is correct, the opposing surfaces that have been reduced must be parallel or converging toward the incisal to create the proper form of the opening (Figs. 2 and 3). Form is equally important as the size of the opening!

I developed a refined technique for IPR that is more comfortable for the patient and more accurate and precise for the doctor. It involves a simple four-step approach.







continued on page 36















Previously, I used a single-sided Flex-View interproximal strip which was "seesawed" back and forth between two teeth until the contact was separated (Fig. 4). It was generally uncomfortable for the patient and inefficient for the doctor.

The new technique utilizes the flexible, single-sided blades of the Ortho-

Slenderizer (Fig. 5). This unique rechargeable instrument with a specialized contact opener blade enables a gentle polishing movement to begin the process of separating the contact between teeth (Fig. 6). I have utilized both approaches with a single patient and without hesitation the Slenderizer was preferred over the "seesaw" technique.



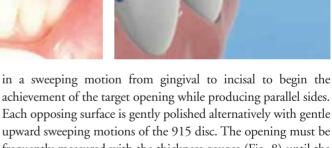
Using the right and left single-sided blades of the Slenderizer will complete the opening of the contact to .20mm as measured with the thickness gauge.

## Step 3: Placing the Disc and Polishing

After the contact opening is .20, the 915 finishing disc (single-sided) can easily be placed between the teeth such that the thin 1.5mm abrasive area is below the contact area of the teeth (Fig. 7). The tongue and lip can easily be protected with a mouth mirror on the lingual and the doctor protecting the lip on the labial.

Using a slow speed straight handpiece, the 915 disc can then be rotated (rotation always toward the mirror) and can be moved





achievement of the target opening while producing parallel sides. Each opposing surface is gently polished alternatively with gentle upward sweeping motions of the 915 disc. The opening must be frequently measured with the thickness gauges (Fig. 8) until the proper size is achieved and the gauge confirms that the proper "form" has been established, avoiding the fatal error." (Fig. 9).

#### **Step 4: Finishing the Anatomic Contours**

Using the Flex-View strip, the labial and lingual line angles must be restored after IPR (Fig. 10).

#### The Goal

The goal is to create the precise IPR size and form of the interproximal reduction, as required for the case, and to have your patient return to his general dentist without detecting any surfaces have been slenderized.

## Clinical Guidelines

First and foremost, there will never be a replacement for clinical judgment and experience. The evaluation of which tooth

surfaces can be reduced is of utmost importance. Computergenerated IPR guidelines or the doctor's personal selection of tooth size analysis is critical for accuracy. IPR reductions must be done on the anatomical contact area of the tooth and at right angles to the M/D axis of the tooth (Fig. 11).

The finished contact opening must be the proper size and form. Tooth anatomy must be restored after slenderization.

Every clinician will evaluate technique and decide on the approach to IPR that is the most comfortable for him/her. This technique shows the use of an exposed disc with the tongue being protected by a mirror and the lips retracted safely with the doctor's fingers. The disc is always revolved toward the mirror (not toward the lip). This approach offers the best direct visualization and control of the enamel reduction process.

When practiced carefully, there is no risk of injury to the patient's soft tissues. There are disc guards (metal and plastic) that can be used, but they severely limit the view of the tooth surface being reduced and add a large degree of inaccuracy to the process. There are also other stripping instruments from oscillating to reciprocating to vibrating that will also reduce enamel. However, the key to accuracy in size and form of the space created by IPR is best achieved in the finishing steps by using the 915 disc. This disc and the finishing step of this technique are often omitted from the IPR process, regardless of the choice of the other materials and instruments by the clinician. The use of this technique is more clearly described in a comprehensive IPR manual and an accompanying DVD which is now available.



Would you like to learn more from the author? Visit Orthotown.com/magazine.aspx, locate this article and post your comment.



### **Author's Bio**

Dr. Wm. Randol Womack is a board certified orthodontist. He practices at Affiliated Orthodontics in Peoria, Arizona. He serves on Align Technology's Clinical Advisory Board and is on the orthodontic faculty at the Arizona School of Dental and Oral Health.

