Keys to Class II Isolation
Achieving proper isolation is essential in performing a Class II restoration. But what really constitutes complete isolation? And how does it relate to tight interproximal contacts? Read More

How to Achieve Tighter Contacts
More isolation is key in achieving marginal integrity and excellent proximal contacts. Watch Video

Flowable Composite Resins CE Course
Take advantage of this two-credit CE course and learn how to decrease micromovement and improve success in composite restorations. Take CE Course

Caulk Talk: Ask Dr. Janyavula
Dr. Janyavula takes on questions about some of the equipment used in a Class II restoration.

- How does restorative material type impact matrix selection?
- What is the advantage of a nickel titanium retainer ring over a traditional stainless steel retainer ring?
- What clinical tips should I be aware of when using Fluidion® Plus?
See Answers

Upcoming and Past Topics

Upcoming Topic
Join us each month as CaulkTalk features adaptation material placement.

Past Topics
- How to Achieve the Highest Efficiencies in Class II Restorations
- Using Temporary Storage and Etch
- Dating Options and Low Film Thickness
- Advancements in Nonexposure TechnologyTake on Welding

Want to feel the confidence of Fluidion® Plus? Request a Demo

You're receiving this newsletter because you've elected to receive the DENTSPLY Caulk Talk newsletter. If you no longer wish to receive this newsletter, please use the Unsubscribe link in the footer of this email.
DENTSPLY Caulk's Class II Composite Restorative Solution

Step 1: Isolation with Palodent® Plus Sectional Matrix System

The gold standard for isolation of the working field prior to a composite resin restoration is placement of a rubber dam. The creation of a drier environment, improved access, and increased injection control are just a few of the potential benefits; however the use of rubber dam isolation is not commonplace. In a recent meta-analysis including 639 clinical trials, it was the author's conclusion that composite restorations performed best after placement under rubber dam.

In the case of Class II composite restorations, isolation of the completed preparation with a matrix system that provides tight contacts and accurate contours is essential for successful placement. But why is isolation so important? And how much does matrix isolation really impact the long-term prognosis for the restoration? Not only does the selected matrix system need to seal the preparation to help achieve marginal integrity, it needs to mimic natural tooth contour and facilitate interproximal contact. Historically, circumferential matrices (Tofflemire Type, AutoMatrix) have been used, but have hindered inertants. While effective in sealing the preparation, Tofflemire matrices provide little help in creating proper interproximal contact, both in the shape and position of the contact or the actual strength of contact, all of which influence the potential for food impaction.

It was not until 1996 and the introduction of the BiTime sectional matrix system (Dawley Inc.) that a better system for creating Class II contacts in composite resin was introduced. Currently, the Palodent® Plus sectional matrix system (introduced in 2011) is designed to overcome the inadequacies of the circumferential matrix and the shortcomings of the BiTime system (e.g., seating and stabilizing the ring, preventing the ring from collapsing the matrix on a wide buccal-lingual prep). The three main parts of the Palodent® Plus system are: a nickel-titanium ring capable of separating the teeth and sealing the matrix, Palodent® Plus EZ/Cast matrices that offer a micro-thin super-curved form and non-stick finish to make matrix removal easier; and wave-shaped wedges.

In the past, it was the responsibility of the wedge to separate the teeth and seal the gingival margin of the preparation by adapting the matrix to the tooth. Palodent® Plus wave-shaped wedges have wings that compress during placement and then flare when inserted to help seal the matrix. The result is improved marginal integrity and anatomical proximal contour of the restoration. Because matrix design is not one size fits all, Palodent® Plus is offered with two ring sizes, five matrix sizes, and three wedge sizes making optimal fit and adaption simple.

An additional innovative component of the Palodent® Plus system is the wedge guard. To prevent unintended damage to adjacent teeth during preparation, wedge guards attach a thin piece of metal matrix to the top of a wedge. After preparation is complete the metal guard is easily detached leaving the wedge available for adaptation of the final matrix and ring placement.

For more information about Palodent® Plus Sectional Matrix System visit www.PalodentPlus.com or call 1-800-LD-CAULK.

References:
Ask Dr. Janyavula

Dr. Janyavula takes on questions about some of the equipment used in a Class II restoration.

Q. How does restorative material type impact matrix selection?

A. The condensability of amalgam allows the clinician to distend a flat teflonire style matrix band and facilitate contact against the adjacent tooth. When used with a composite in studies of Class II cavities, circumferential matrix systems have shown looser proximal contacts, which might be explained by the thickness and the shape of the matrix. Negative effects such as overhangs and distortions are common with increased manipulation in the proximal area when using a circumferential matrix. These challenges can be avoided with a sectional matrix system like Palodent® Plus. The combination of the separation rings and the pre-contoured matrices facilitate the creation of proximal contact and contour without the need for burnishing and distension of the matrix band. This results in predictable, accurate contacts in Class II composite restorations.²

Q. What is the advantage of a nickel titanium retaining ring over a traditional stainless steel retaining ring?

A. Stainless steel retaining rings are subject to elastic deformation (stretching out) with repeated usage. This makes it difficult to continually achieve adequate and consistent ring separation force over time. Nickel-titanium (NiTi), which is known for its ability to withstand elastic strain and return to its original shape when the load is removed, provides greater longevity and consistent separating force over time. This allows the operator to obtain tight, interproximal contacts even after repeated use.²

Q. What clinical tips should I be aware of when using Palodent® Plus?

A. Preparative Tip: When placed prior to and left on during cavity preparation, the retaining ring creates space interproximally. This makes it easier to place the wedge-guard after the anesthesia takes effect, which in turn protects the adjacent tooth from iatrogenic damage.²

Completing Multiple Restorations at Once: See the below images of the Palodent® Plus system set up to complete back to back MOD/O, and MOD restorations:

References: