

RUBBER DAM AND ISOLATION

Dentalelle Tutoring

The Basics

- The rubber dam is available in various sizes and shapes. Most rubber dams are made of latex although non latex rubber dams are available. A size 5 X 5 inch medium gauge rubber dam is best suited for use in children. The darker the color, the better the contrast between the dam and the tooth.
- The Frame:
 - Rubber dam frames are available in plastic and metal and various sizes corresponding to the size of the dam. **The frame is positioned on top of the dam so that the top edge of the dam coincides with the top of the frame arms.**
 - The holes for the teeth are punched so the rubber dam is centered horizontally on the face and the upper lip is covered by the upper border of the dam without blocking the nostrils. The size 1 hole punch is used for the mandibular incisors, the size 2 hole punch is used for the maxillary incisors and the size 3 hole punch is used for the canines. Punch the minimum number of holes necessary to adequately isolate the tooth. **For class I or class V restorations only the tooth or teeth to be restored need to be isolated.** When treating interproximal lesions adjacent teeth are also isolated.

Basic Clamps

- **The 12A clamp** for clamping the maxillary left second primary molar and the mandibular right second primary molar
- **The 13A clamp** for clamping the maxillary right second primary molar and the mandibular left primary second molar
- **The 2A clamp** for clamping the first primary molars
- **The 14 clamp** for clamping fully erupted permanent molars.
- **The 14A clamp** for clamping partially erupted permanent molars.

--After selecting the appropriate clamp, place a piece of dental floss on the bow of the clamp to aid in retrieval of the clamp if it is dislodged from the tooth and falls into the posterior pharyngeal area.

Isolation – The Why

- Not only is rubber dam isolation better from an infection control standpoint – it helps the operator greatly
- It also protects the integrity of the restoration. Any saliva in the area the operator is working on is NOT GOOD
- Procedure such as the root canal treatment – rubber dam is needed because sodium hypochlorite is being used
- The rubber dam protects the patient AND operator
- *Other methods of isolation can include:*
 - cotton rolls, gauze, barriers and retractions

Benefits of the Rubber Dam

- Dry, clean operating field
- Improved access and visibility
- Improved properties of dental materials
- Patient protection
- Improved infection control
- Increased operating efficiency

Placement and Tips

- **Hole position:** Holes should be placed far enough apart so that if the rubber dam were laid passively over the dental arch, each hole would be located over the center of its corresponding tooth. When restoring a facial class V lesion requiring gingival retraction with a 212 retainer, punch hole to the facial of the normal arch form for the tooth to be treated. Use a larger hole than normal and allow more space between it and the adjacent holes.
- **Hole size:** Use the larger holes for the posterior teeth and correspondingly smaller holes as you go forward in the mouth. Use the largest hole on the punch for the tooth to receive the rubber dam retainer. This facilitates stretching the dam over the retainer during placement.
- **Common hole placement problems:**
 - Holes punched too close together ⇒ holes pull away from teeth causing leakage
 - Holes punched too far apart ⇒ dam bunches up between teeth
 - Hole position too low on dam ⇒ dam covers patient's nose or eyes
 - Hole position too high on dam ⇒ dam does not extend over upper lip

Continued

- **Use a sharp, nick-free punch**
 - Examine the rubber dam for cleanly punched holes. Tags remaining in the holes after punching generally indicate a dull or nicked cutting edge on the punch. Even though the tags can be removed, a ragged edge remains which often causes the dam to rip when stretched over the teeth.
- **Water-soluble lubricant**
 - Possibly the most common rubber dam placement error is attempting to place it without lubrication. Lubrication greatly facilitates passing the dam through the interproximal contacts. Use a water-soluble lubricant (e.g. brushless shave cream, a slurry from ordinary bar soap). ***Avoid petroleum based lubricants (e.g. Vaseline) as they are difficult to remove and can contaminate dental materials.***

Clamp/Retainer

- W56 most molars
- W4 most premolars
- W7 mandibular molars
- W2 small premolars
- W8 maxillary molars
- W8A maxillary molars
- W27 distal extension-mandibular molars –
- Hyg B-6 anterior teeth

- W- wingless, D distal extension, A active

Modifying is OK

- The Ferrier 212 retainer is designed for tissue retraction for Class V restorations.
- DO NOT be afraid to modify rubber dam retainers.
- Examples may include removing a bow from the 212 clamp, shortening a prong to achieve 4-point contact, removing an interfering wing, etc. Discard sprung retainers.
- *BUT DO NOT over-expand retainers when engaging them with the forceps.* All retainers applied before the rubber dam is in place must be ligated.

Pre-Attach

- Pre-attach dam to frame
 - **To avoid fighting with the corners of the rubber dam during placement, attach dam to the frame prior to inserting it in the mouth.** Stretch the dam taut from side to side at the top and attach to the frame as close to the top edge of the dam as possible.

Stretch the dam taut from side to side at the bottom and attach to the frame as close to the bottom of the dam as possible.

The dam attached at the top and the bottom will sag in the middle. This is enough slack to easily slip the most distal hole over the retainer.

*I use this method 😊 it helps me!

Floss through

- Fine unwaxed floss will often cut the dam rather than pull it through the interproximal contacts.
 - For best results: Floss through interproximal contacts prior to dam placement. Smooth rough fillings and cavity margins to avoid tearing the dam. * Use waxed dental tape or floss. After the distal hole has been slipped over the retainer, stretch the dam so that the remaining holes line up with the teeth.
 - Begin with the **most anterior hole and work back**. Stretch the septum between the first two holes and start an edge through the embrasure. Carry the rubber dam on through the interproximal contact with floss or tape. If the dam is not totally carried through the contact, the lingual end of the floss is looped over and carried through the embrasure again.
 - The floss, now doubled upon itself, can be removed to the facial without disturbing the dam. This process can be repeated until the septum is completely through the contact. Do not allow the rubber dam to bunch up in the embrasure and then attempt to pass the entire septum through the contact. **This will generally result in a cut or torn dam.**

Comfort and Ease

- **Rubber Dam Napkin**

- The rubber dam napkin is primarily for patient comfort. It reduces skin irritation from dam placement and absorbs saliva that may leak from the oral cavity. With allergies to latex becoming more commonplace, the use of rubber dam napkins may be an important step in reducing skin exposure to latex.

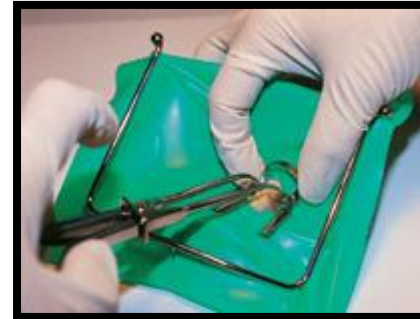
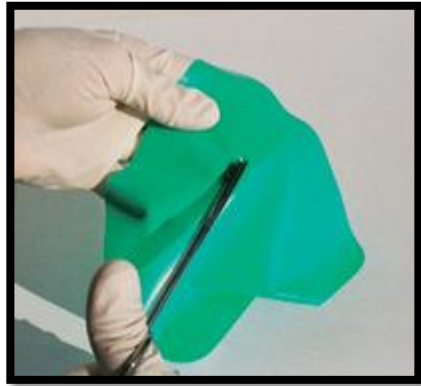
- **Heavy Rubber Dam**

- Thin rubber dam is easier to apply but is more subject to tearing. Heavier dam, though more difficult to pass through interproximal contacts, is more tear resistant and gives better soft tissue retraction.

- **Pre-wedge**

- Inserting a wedge in the gingival embrasure prior to preparing a tooth for a Class II restoration protects the rubber dam from being damaged by the rotating dental bur.

Placement



Rubber Dam Material

- **For fun:** you can see some different ones here:
<https://www.pattersondental.com/Supplies/ProductItemFamily/86096/Rubber-Dam-Accessories?ss=86148>
- Videos to refresh your knowledge (sorry for the outdated videos but these are the best I could find 😊)
 - <https://www.youtube.com/watch?v=2v12aoPjVvk> – Basics
 - <https://www.youtube.com/watch?v=OKFm1aH236s> – Preparing and Applying
 - <https://www.youtube.com/watch?v=7LXWvfV7b9k> – Tips
 - https://www.youtube.com/watch?v=VFHE_o_LlkQ&list=PL7EQfS3Gpy_ENS1HUS2WE4_yL0OEFPAgBN – Good technique here