Rubber Dam and Its applications

The rubber dam is a disposable aid in endodontic treatment for the following reasons:

1. It prevents accidental swallowing or aspiration of the small, easily dropped endodontic instruments.
2. It prevents intracanal irrigants from entering to the mouth because most of them are of unpleasant taste.
3. It helps to maintain a dry field of operation by eliminating salivary contamination.
4. It eliminates soft tissue interference by retracting the cheek & tongue.
5. It enhances better concentration of the dentist by showing only the tooth to be treated.

Rubber Dam Materials

It comes in a variety of thicknesses, colors & sizes.

1. T**hickness**
    1. **Thin – weight:** This thickness is indicated in lower anterior teeth & partially erupted posterior teeth.
    2. **Medium – weight:** It is indicated in general all-around in the mouth.
    3. **Heavy – weight:** It has the advantage of providing great adaptation around the teeth & does not tear easily but it exerts much force on the lips & cheek



2. **Color**
    1. **Light:** It provides better illumination of the field
    2. **Dark:** It provides a sharp contrast between the tooth & the dark background.

3. **Size**: The rubber dam comes in precut sheets of different dimensions



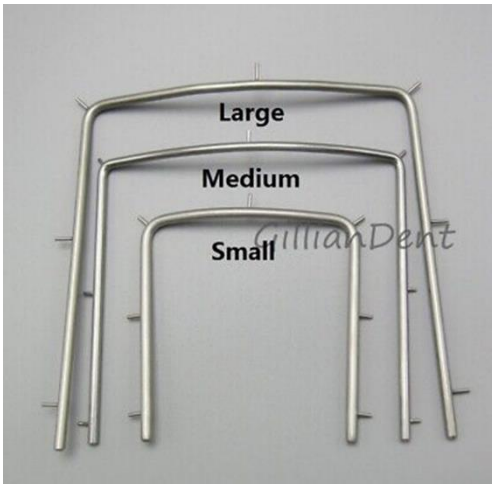
Rubber Dam Frame

The purpose of the rubber dam frame is to hold the rubber dam in a manner to:

1. Provide lip & cheek retraction.
2. Provide unobstructed access to the tooth to be treated.

Types

- **Type A:** This is called Young's frame. It is U– shaped, and made of metal. It might interfere with the X-ray causing obscuring of important structures in the radiograph.



❖ **Type B:** This is called the Starvisi frame. It is a U– shaped frame, and made from radiolucent plastic & nylon materials. It is regarded as a suitable substitute for Young's frame.



❖ **Type C**: This is called Nygard – Ostby frame. It is made from radiolucent plastic & nylon materials & can be left inside the patient's mouth while taking a radiograph without obstruction in the radiograph.



Rubber Dam Clamps

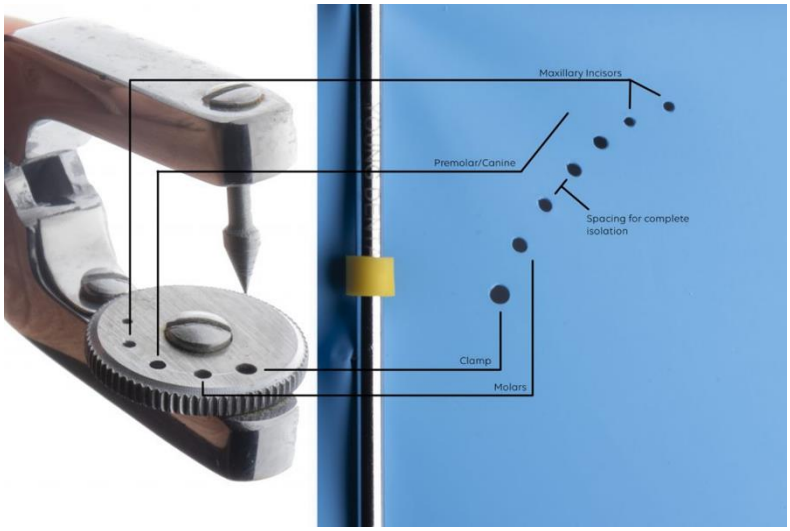
The R.D. clamp is used to grasp the tooth needed to be endodontically treated and secure the rubber dam material and frame in place. There are many types of R.D. clamps, and each one of them is placed in a different tooth or region.



Type of Clamp	Used for
Ivory No. 9	Incisors and bicuspids
Ivory No. 1	Bicuspids
Ivory No. 26	Molars
Ivory No. 0	Incisors and cuspids Multiple isolation
Ivory No. 14A	Molars (partially erupted, badly broken-down, when other clamps fail)

Rubber Dam Puncture

It is an instrument used to create a hole in a rubber dam. The hole should be clear without any tags or tears. The size of the hole punched or created depends on the tooth to be isolated. The puncture provides this hole to give maximum adaptation of the rubber dam around the tooth



Clamp Holder

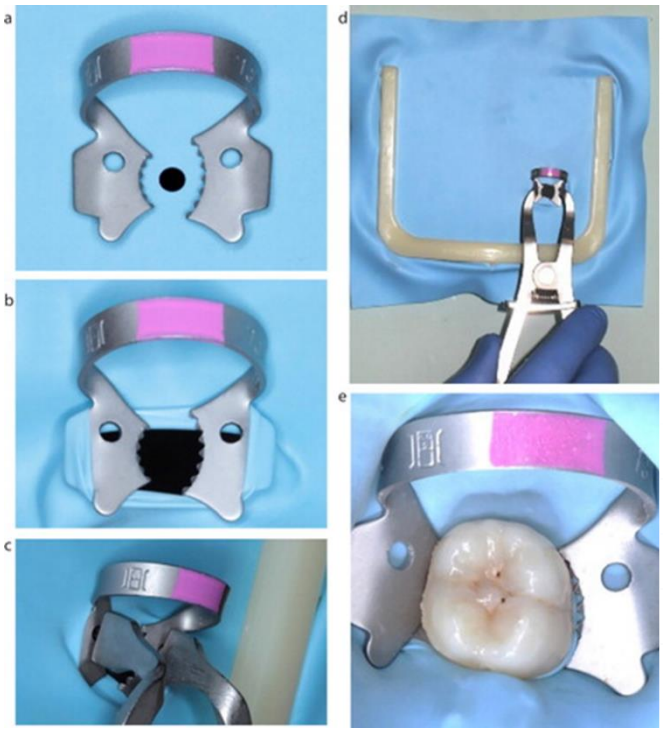
Sometimes it's called a forceps. This holder or forceps is used to place the clamp on the tooth by grasping the R.D. clamp from 2 lateral holes and widening the clamp to fit on the tooth



Methods of Applying The Rubber Dam

❖ **Method 1**: Application of the clamp & rubber dam together

1. Select the suitable clamp to be used.
2. Insert the wing in the hole after stretching the rubber dam on the frame with the forceps.
3. Apply the clamp on the tooth.
4. Release the wing from the dam.
5. Restretch the rubber dam on the frame tightly to provide a good retraction to lips & cheek.
6. Swab the isolated tooth & the adjacent dam with a suitable disinfectant.



❖ **Advantages:**

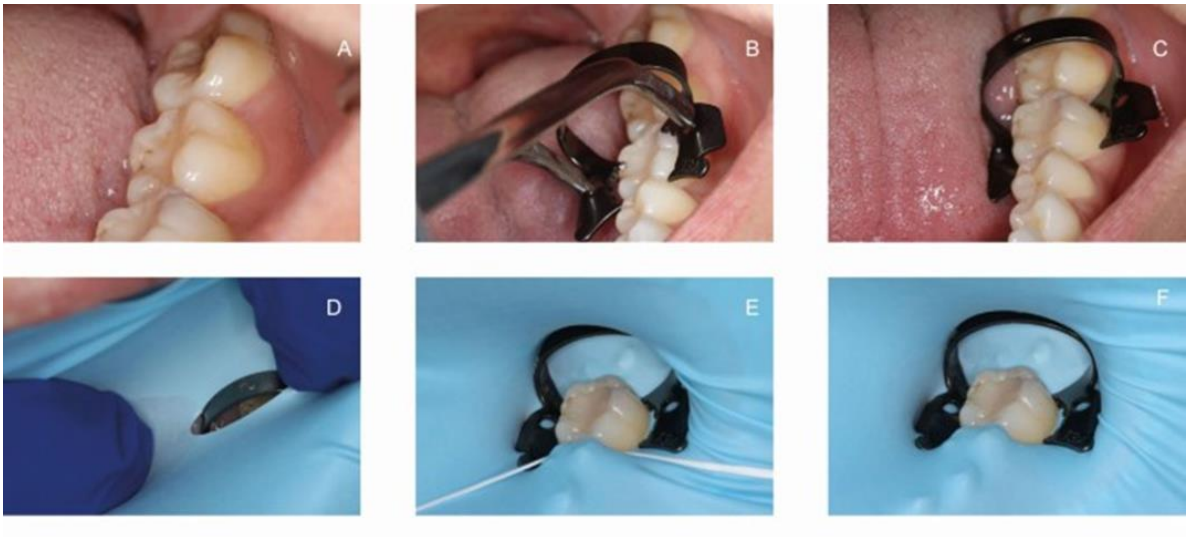
1. Easy & fast.
2. It doesn't require the aid of assistance.
3. If the clamp snaps during placement, it's held by the dam.

❖ **Disadvantage:**

1. It doesn't permit direct visualization of the tooth & soft tissues during placement.

❖ **Method 2**: Application of clamp & then dam.

1. Select the suitable clamp to be used.
2. Place the clamp on the tooth.
3. Stretch the dam on the frame.
4. Draw the dam over the clamp.



❖ **Advantages:**

1. It allows unobstructed visualization of the tooth & surrounding tissues during clamp placement.
2. Its most efficient method of dam placement if there's difficulty in securing the clamp.

❖ **Disadvantages:**

1. Tearing of the dam.
2. Dislodgment of clamp during rubber dam drawing.

❖ **Method 3**: Application of dam & then the clamp.

1. Select the suitable clamp to be used.
2. Stretch the dam on the frame.
3. Apply the dam on the tooth.
4. While retracting the dam to expose the tooth & the adjacent gingiva, place the clamp on the tooth.



❖ **Advantages:**

1. There's little tendency to dislodgement of the clamp during placement.
2. It provides direct visualization of the tooth & adjacent gingiva.

❖ **Disadvantage:**

1. It needs the help of assistance, especially in post. teeth as the mandibular molars.









