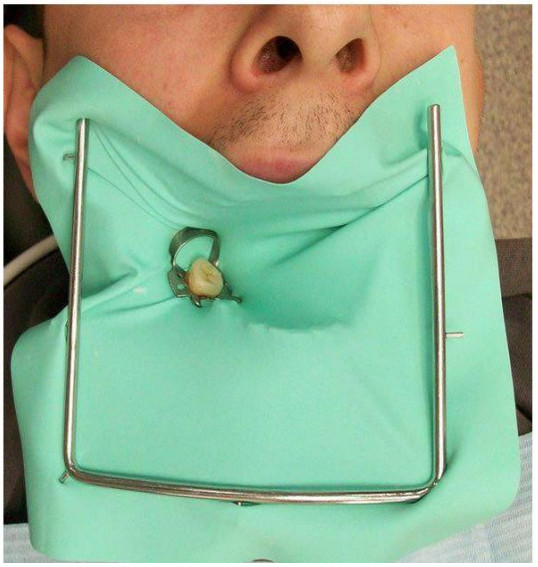
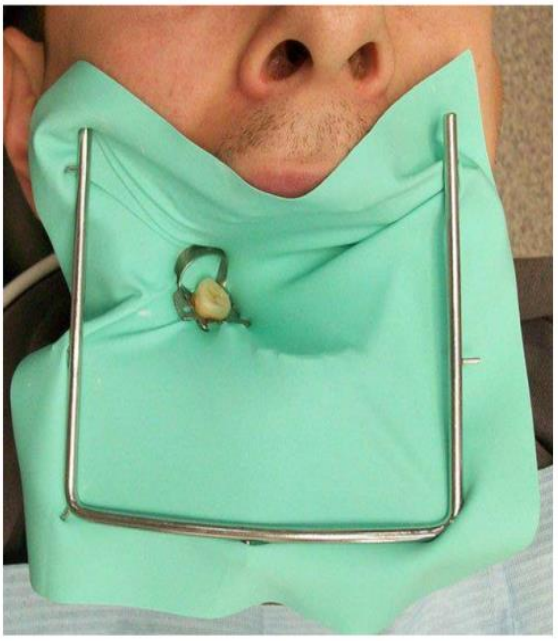
Rubber Dam types and application procedures

In 1864 S.C. Barnum, a New York City dentist, introduced the rubber dam into dentistry. Use of the rubber dam ensures appropriate dryness of the teeth and improves the quality of clinical restorative dentistry.



Advantages of rubber dam:



Patient related factors:

- Provides comfort to the patient.
- Protects the patients from swallowing or aspirating foreign bodies.
- Protects the patient's soft tissues by retracting them from the operative field

Advantages of rubber dam:

Operator related factors:

- Stress free environment.
- Dry, clean operating field.
- Magnification is better to be used with rubber dam.
- prevents Contamination of restorative material led to decrease in physical properties, also Prevents contamination of tooth preparation (itched enamel and dentin) lead to decrease bond strength.
- Moisture control (saliva, sulcular fluid & gingival bleeding).
- Avoid any delay.
- Infection control by minimizing aerosol production.
- Increased accessibility to operative site (access to 2nd molar).
- Less fogging of the dental mirror.

Disadvantages of using a rubber dam:

- Takes time to apply (but saves more time during procedure)
- Cost.
- Communication with the patient can be difficult.
- Incorrect use may traumatize the gingival tissues.
- Insecure clamps can be swallowed or aspirated.

Indication & contraindication:

Rubber Dam is indicated for any case and for every case, except:

- Asthmatic patients.
- Epileptic patients.
- Mouth breathers.
- Extremely malpositioned tooth.
- Third molar (in some cases).

Components of rubber dam:

1. **Sheets.**
2. **Template**
3. **Frame.**
4. **Forceps.**
5. **Punch.**
6. **Clamps.**
7. **Scissors.**

1- Sheets:

Colors:

- light blue, green, white, purple, black.

light blue: provides: better contrast, more light and Good photos.

Thickness

- **Thin** (0.15mm) this thickness is indicated in teeth with tight contact areas. It can be used in lower anterior teeth & partially erupted posterior teeth.
- **Medium** (0.2mm) It is indicated in general for all teeth.
- **Heavy** (0.25mm). It has the advantage of providing great adaptation around the teeth and does not tear easily but it exerts much force on the lips & cheek.

Surface

- **Dull surface:** avoid reflection of light during photographing.
- **Shiny surface.**

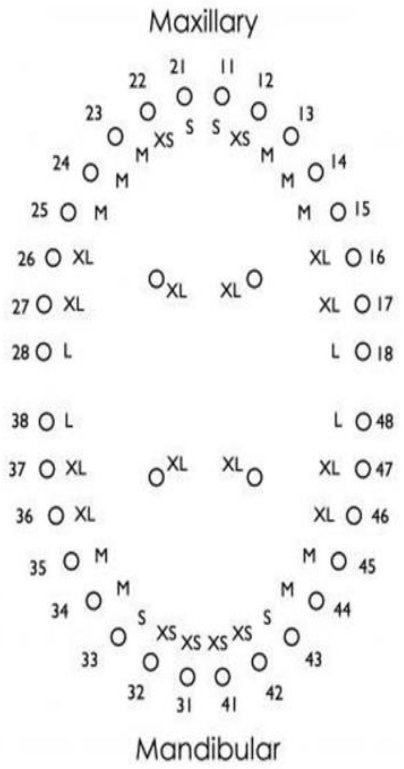
Size

- 5 x 5 inch (12.5 x 12.5 cm) usually used for children
- 6x6 inch (15x15cm)

2- Template

Templates are **available to guide the marking of the dam**. These templates are approximately the same size and shape as the unstretched rubber dam itself. Holes in each template correspond to tooth positions.

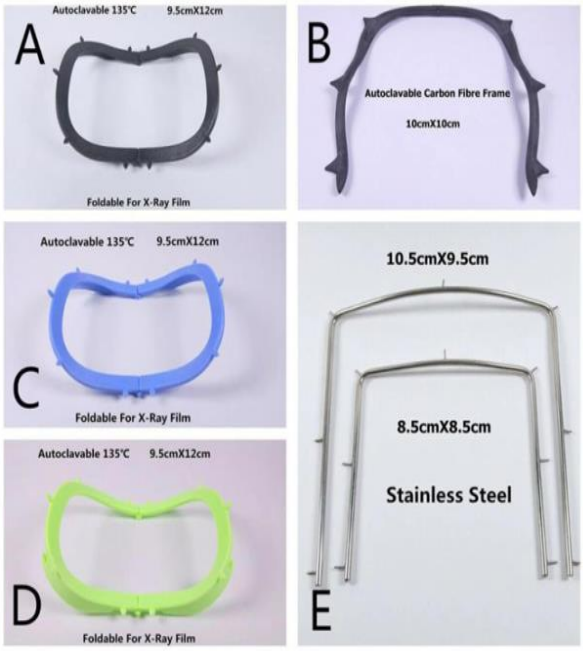
The template is laid over the dam, and a **pen is used to mark through selected holes** onto the dam. With the template, the dam can be marked and punched before the patient is seated.



3- Frame

Used to maintain tension in rubber dam. So, it helps in retraction of lip and cheek and tongue. It may be **metal or plastic**.

A plastic frame is advantageous when radiographs will be a part of the procedure because it is radiolucent.

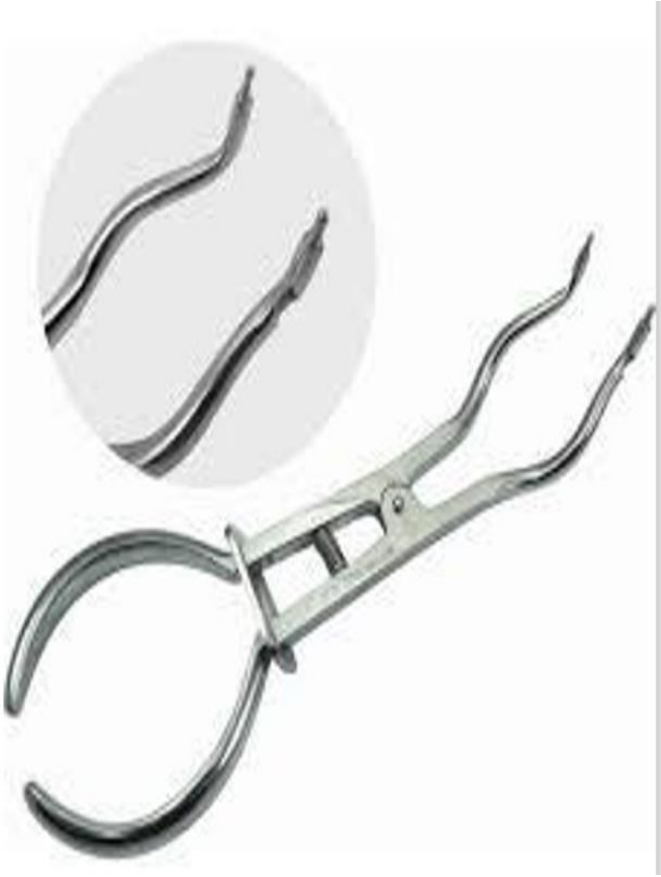


4. Rubber dam holder (clamp forceps)

It is used for placement and removal of the retainer or clamp from the tooth. There are two designs of forceps:

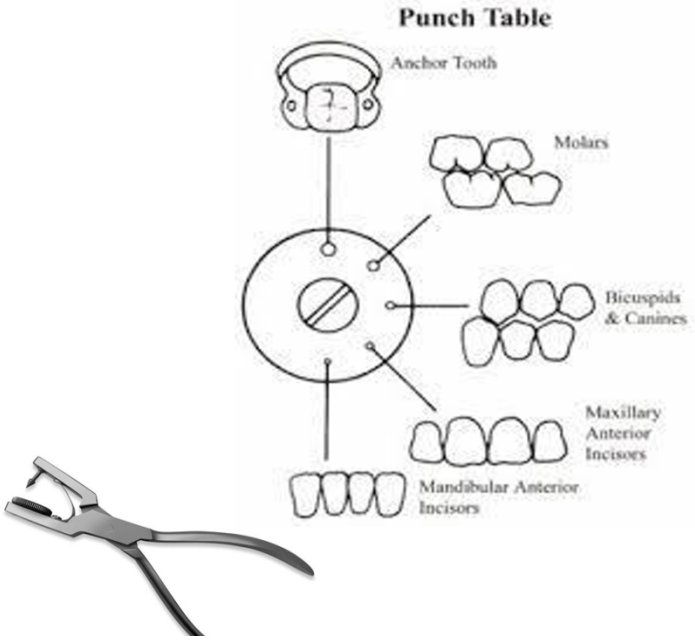
1- Straight one.

2- S-shape one: it is better than straight one as it is widely opened.



5. Punch

The rubber dam punch is an instrument used to **create a hole in rubber dam**, having a rotating metal table disc (cutting table) with holes of varying sizes and a **tapered, sharp-pointed plunger.** The hole should be clear without any tags or tears.



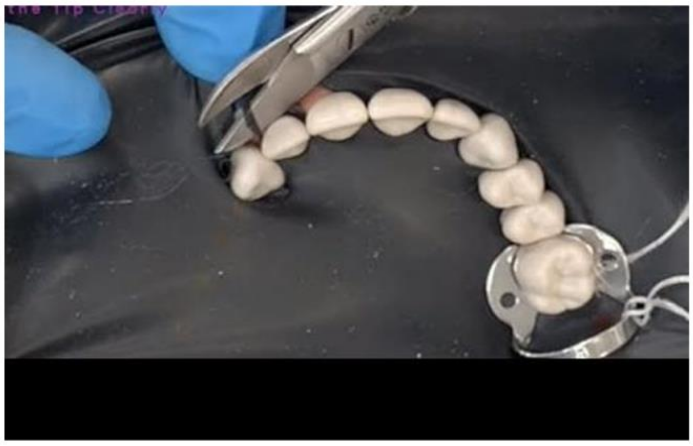
6. Clamps (Retainer)

The rubber dam retainer consists of **four prongs and two jaws** connected by a bow. It is used to Anchor/retain dam on teeth.

When positioned on a tooth, a properly selected retainer should contact the tooth on its four contact points (prongs) to prevent rocking or tilting of the retainer. **Wingless and winged** retainers are available

7. Scissor

Scissors are often useful in **preparing the dam for insertion** and are a necessity for cutting the dam for removal.



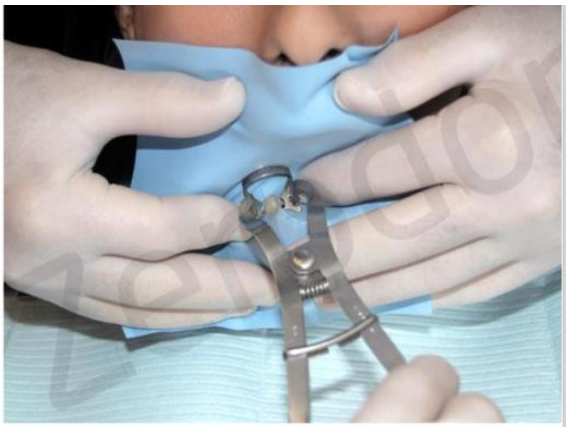
❑ Methods for application of rubber dam

1. Clamp and Dam Together

A winged clamp is placed into the punched hole of the rubber dam.

Both clamp and dam are carried together to the tooth using forceps.

Advantage: Quick, secure, commonly used in endodontics. (No need for assistant help) Disadvantage: May obstruct vision during placement.



2. Clamp First Method

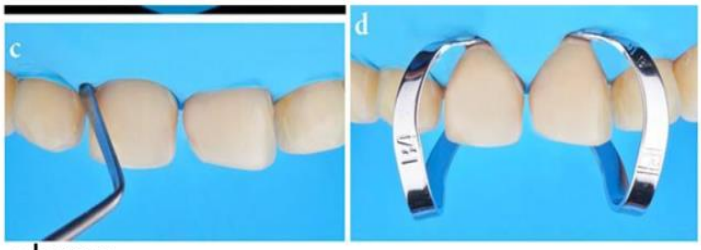
- The clamp is placed directly on the tooth first, using forceps.
- After securing the clamp, the rubber dam sheet (with pre-punched hole) is stretched over the clamp and tooth.
- A frame is then placed to secure the dam.

Advantage: Good visibility, especially for beginners.

Disadvantage: More difficult to stretch the dam over the clamp. (Tearing of the dam)

3. Dam First Method

- The rubber dam sheet (with punched hole) is first stretched over the tooth
- Then the clamp is placed through the dam and onto the tooth.



Advantage: Easier for anterior teeth.

Disadvantage: Can be difficult to seat the clamp properly. (Need an assistant help)