TOOTH ISOLATION

the Rubber Dam

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• The need to work under dry conditions, free of saliva, has been recognized for centuries, and the idea of using a sheet of rubber to isolate the tooth dates almost 150 years!

• The introduction of this notion is attributed to a young American dentist from New York, Sanford Christie Barnum, who in 1864 demonstrated for the first time the advantages of isolating the tooth with a rubber sheet.
At that time, keeping the rubber in place around the tooth was problematic, but things soon improved a few years later, when in 1882 White introduced a rubber dam punch similar to that used still now.

In the same year, Dr. Delous Palmer introduced a set of metal clamps which could be used for different teeth.

The Quality Assurance Guidelines of the American Associations of Endodontists says that “cleaning, shaping, disinfection and obturation of all canals are accomplished using an aseptic technique with dental dam isolation whenever possible”.

According to the author’s opinion, when it is not possible, the clinician has two options: one is to make it possible and the other is to extract the tooth! There is no other choice.
• In dentistry, as in general surgery, isolation of the operative field is imperative, even for a simple filling.

• Furthermore, an endodontic treatment should not be undertaken if there is no rubber dam unless the tooth damaged which allowed easy positioning of the rubber dam.

• There should be no excuse for not using the rubber dam in Endodontics; the law should severely punish the dentist who causes serious injury, including death, to a patient because he did not use rubber dam.

• Patrick Wahl in a recent article says that in the United States any law suit is lost if the rubber dam has not been used. (WAHL & P.; 1997)

• So the only tooth that may be treated without the rubber dam is the tooth that is so severely damaged that the only instruments to be used are the extracting forceps.
BENEFIT FOR USE RUBBER DAM

1. The patient are protected from the ingestion or, worse, the aspiration of small instruments, dental fragments, irrigation solutions, or irritant substances.

2. To operate in a clean surgical field.

3. Retraction and protection of the soft tissues (gums, tongue, lips, and cheeks).

4. Better visibility in the working area.

   ****The advertisement of a famous manufacturer of instruments for the assembly of the rubber dam correctly reads:

   “Do better what you see and see better what you do”.

5. Reduction of delays: the patients will not have to rinse their mouth every five minutes.
6. The dentists and dental assistants are protected against infections which can be transmitted by the patient’s saliva.

7. The dentists are more comfortable, which can leave patient for any important reason with dry field and well protected with rubber dam.

8. The patients are more comfortable, as they do not feel that their mouth is invaded by hands, instruments, and liquids.
• A contraindication to the use of the rubber dam is a patient’s allergy to the chemical constituents of rubber.

• In this case, the teeth may be isolated with polythene sheets. Today “no-latex” dam is available, to be used on allergic patients.
RUBBER DAM CONSISTENT OR INSTRUMENTS

1. Rubber dam
2. Rubber dam punches
3. Rubber dam clamps
4. Rubber dam clamp forceps
5. Rubber dam frame
6. Lubricant
7. Rubber dam napkins
8. Dental floss
9. Assistant
10. Special elastic wires
Rubber dam

• The dam comes in different sizes (5" x 5" inches and 6" x 6" inches, as well as rolls), colors (light, blue, gray, and green), and thicknesses (special heavy, extra heavy, heavy, medium, and thin).

• The 6" x 6" format is useful in restorative dentistry, where it is necessary to isolate several teeth at the same time. In Endodontics, where one tooth is isolated at a time, the 5" x 5" format is more than sufficient, even for working in the posterior sectors of the mouth.

• Some prefer the dark colors, since the tooth stands out better, but it is really a question of habit.

• The light-colored dam is slightly transparent, unlike the other colors, which may be helpful in positioning the intraoperative radiograph.
**Rubber dam punches**

- It is used to make round holes of different diameters (0.7 – 2 mm), depending on the tooth to be isolated.

**Rubber dam clamps**

- The fit of the rubber dam essentially depends on the choice of the appropriate clamp and its correct positioning.
- The clamps are classified as winged or wingless. The dentist may choose those with which he feels more comfortable. Sometimes wingless clamps are preferable, as they are less bulky and may be used easily in the posterior sectors in patients with thick cheeks.
• FRONT TEETH:

IVORY.......# 6
IVORY.......# 9
IVORY.......# 90N
IVORY.......# 212S
IVORY.......# 15
• PREMOLARS:
  IVORY.......# 1
  IVORY.......# 2
  IVORY.......# 2A
• Molars that are completely erupted, whole, or covered by full crowns:
  IVORY.......# 7

• Molars that are incompletely erupted or already prepared for a full crown:
  IVORY.......# 14
  IVORY.......# 14A
  IVORY.......# 7A

• Asymmetrical molars, in particular the second and third:
  IVORY.......# 10
  IVORY.......# 11
  IVORY.......# 12A
  IVORY.......# 13A

• Wingless, to be used when the wings obstruct the working field:
  IVORY.......# W8A
  IVORY.......# 26N
• Moreover, there is no reason not to use a premolar clamp on a small molar or frontal tooth, any such adaptation is permitted, as long as the final result is achieved.
Rubber dam clamp forceps

• This instrument is necessary to open the clamp and position it around the tooth.
• The Ivory forceps are preferable, because they allow the dentist to apply direct pressure toward the gum, which is frequently necessary to position the clamp securely below the tooth crown.

Rubber dam frame

• This is necessary to maintain tension in the dam so that the lips and cheeks may be retracted well.
• Some frames are metal and some are plastic.
Lubricant

• Before positioning the dam, it is advisable to lubricate the inner surfaces well with Vaseline or, more simply, soap, so that the sheet will slide better over the contours of the teeth, more easily overcome the contact areas, and close tightly around the cervix of the tooth.

Rubber dam napkins

• These prevent direct contact between the rubber sheet and the patient’s cheek. By absorbing the saliva that accumulates beneath the dam by capillary action, they facilitate treatment. Their use is not mandatory; however, they are particularly indicated in cases of allergy to the rubber of the dam.
**Dental floss**

- Apart from preventing the ingestion or aspiration of the clamp.
- Dental floss is particularly useful for assessing the condition of the mesial and distal contact areas, and thus for facilitating the passage of the rubber sheet beneath them.
The dentist may position the rubber dam on any tooth using only his hands, but it is obvious that this procedure is facilitated by the help of an assistant.
Special elastic wires

• Special elastic wires are also available in different thickness.
• It stabilize the dam by passing below the contact areas of the adjacent teeth or same teeth.
The clamp was interfering with the mirror in this case, therefore the elastic wires were used.
POSITIONING OF THE DAM
• After using **dental floss** to check the nature of the contacts and determine whether there is welding between prosthetic crowns or whether there are irregularities of old restorations that need to be eliminated, selects the **clamp** that one thinks might be appropriate for the case and tries it in the mouth.

• It is advisable to secure the clamp with dental floss, to protect the patient from the ingestion or the aspiration of the clamp.
First Method
• The rubber sheet is punched with the rubber dam punch

• The rubber dam is stretched over the wings of the selected clamp
• With the help of an assistant, the dam and clamp are placed in position in the patient’s mouth.

• The rubber dam clamp forceps positions the clamp around the tooth to be treated.
• Frame is positioned to produce tension in the dam.

• Using an instrument, the dam is slipped beneath the clamp wings on the buccal side and lingual side.
• Dental floss is used to force the dam through the interproximal contacts.
Second Method
• The fingertip is introduced in the dam opening to better illustrate to the patient the functions of this rubber sheet.

• The assistant’s hands position the dam directly around the tooth to be treated.
• The dentist positions the clamp.

• With assistance, the dentist positions Young’s frame.
Third Method

Using wingless clamp
• The clamp’s arch is passed through the dam’s opening.

• The rubber dam clamp forceps are introduced into the clamp’s openings.
• The dam is folded with the clamp at the tip, while the clamp is moved toward the tooth.

• The clamp has been positioned.
• The dam is stretched with Young's frame.

• The dentist is sliding the dam completely below the clamp with the fingers.
THANK YOU