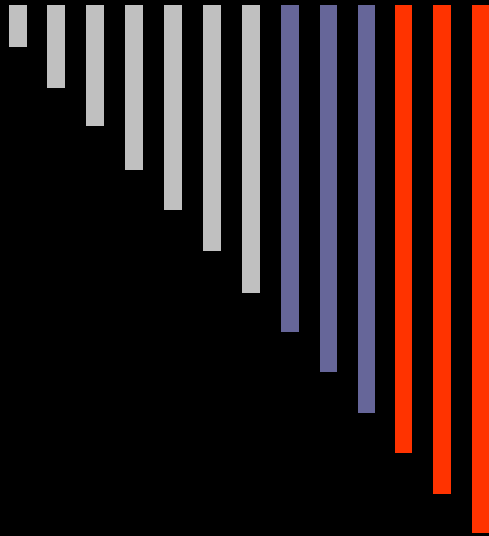
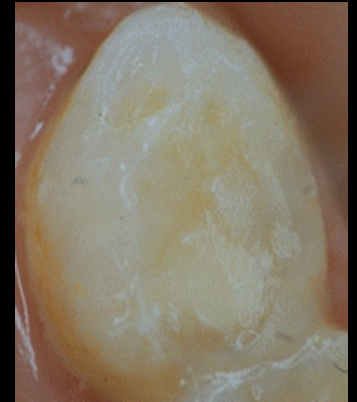
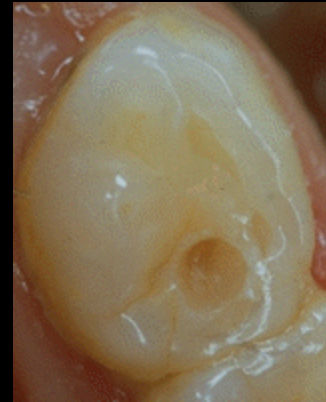


Good Morning



ART

.....



Atraumatic Restorative treatment



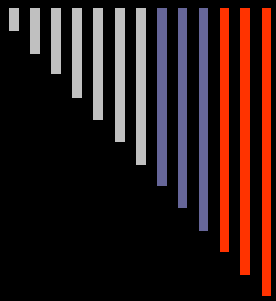
Outline

- Introduction .
 - Development of an ART .
 - Application of ART.
 - Instruments used.
 - Principal steps involved.
 - Indication and contraindications.
 - Advantages and limitations.
 - Conclusion.
-



Introduction

- Although dental caries has substantially decreased in the industrialized countries,
 - It remains to be a widespread problem all over the world.
 - Most of the carious teeth in the developing countries tend to go untreated to such an extent that the only treatment option available is extraction.
-

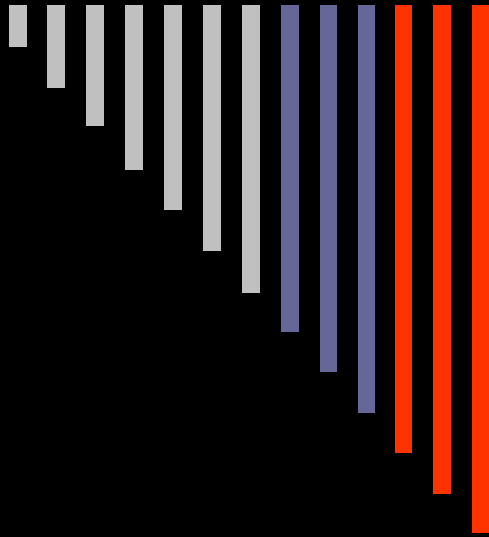


- Atraumatic restorative treatment Approach was developed
- ART approach includes both prevention and treatment of dental caries.
- Often abbreviated to the acronym ART.
- Based on Minimal intervention technique.

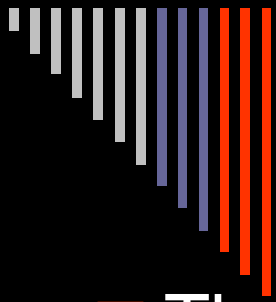


Principle of ART

- This procedure is based on the principles
 - Removing caries using hand instruments only.
 - Restoring the tooth with an adhesive filling material - glass ionomer .
-

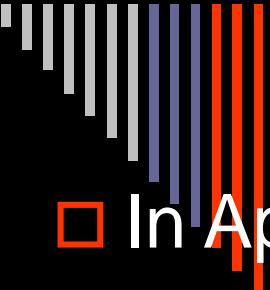


Development of ART



- The technique of ART was pioneered in Tanzania in the mid 1980's. - Jo Frencken.
- In 1988 ,Jo Frencken and T. Pilot worked for WHO collaborating center , to develop a model for primary oral health care for refugees.
- A symposium devoted to ART was held at the 1995 IADR.

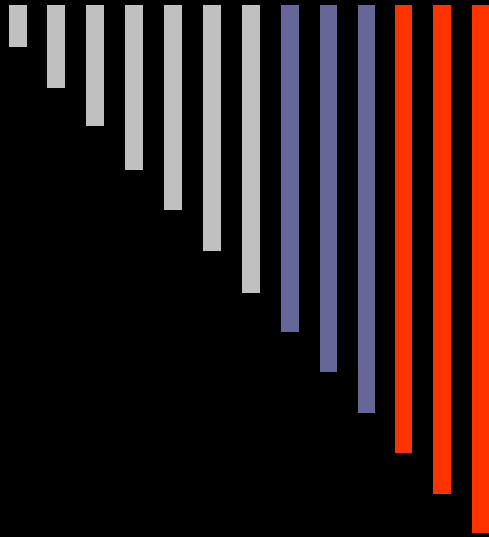
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-
- A community field trial to compare ART with the mobile conventional equipment cavity preparation – amalgam approach was started in 1991 in Thailand
 - Drawing on his experiences in Thailand, Jo Frencken started another series of community field trials in Zimbabwe during 1993.
 - This was followed by Evert Van in Pakistan, Christopher Holmgren in China and Frencken and Beiruti in Syria.
-

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-
- In April 1994, the World Health Organization introduced ART as part of the world health day.
 - ART has been placed on the agenda of the International Dental Federation (FDI) to consider ART's appropriateness, effectiveness and potential training programmes.
 - At least 25 countries around the world are carrying out clinical or laboratory experiments on ART related questions.
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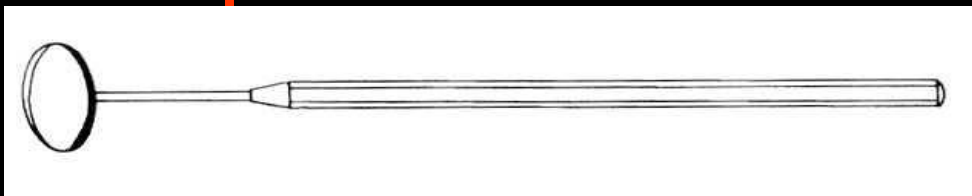
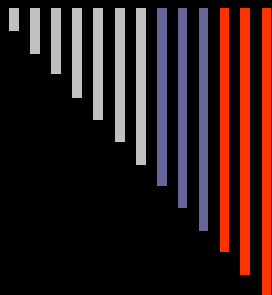


Applications of ART

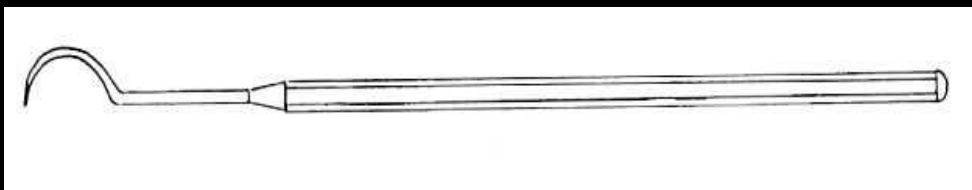
- Introducing oral care to very young not previously exposed to dentistry.
 - For patients with extreme fear/anxiety.
 - For mentally and / or physically handicapped patients.
 - For home – bound elderly and those living in nursing homes.
 - In high – risk caries clinics as an intermediate treatment to stabilize conditions.
-



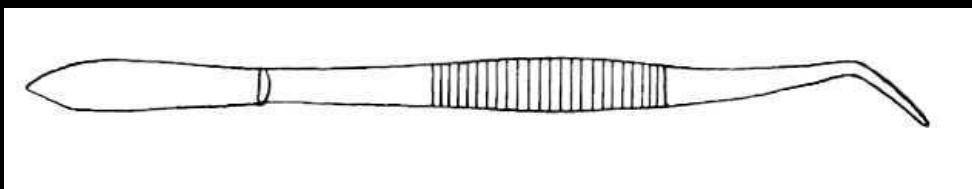
Instruments and Materials used in ART



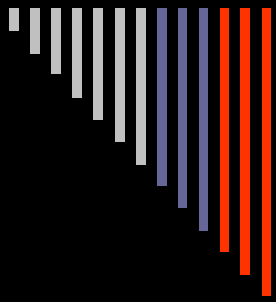
□ Mouth mirrors



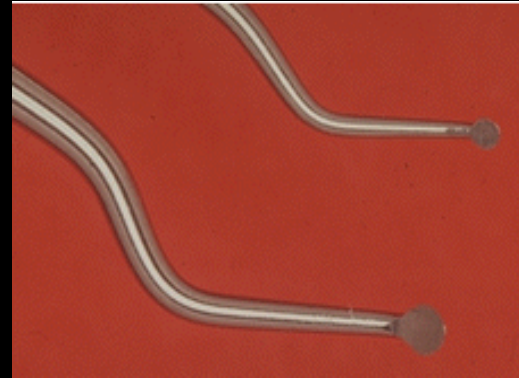
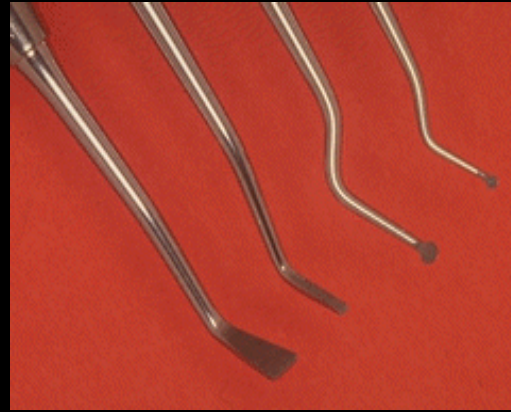
□ Explorers

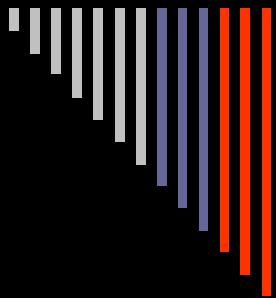


□ Pair of tweezers

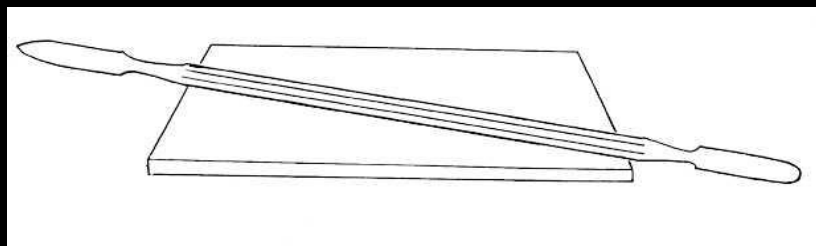
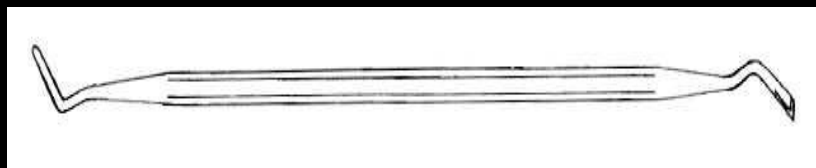


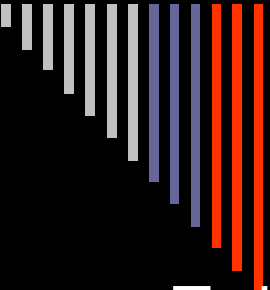
- Dental hatchets
- Small and medium sized spoon excavators,

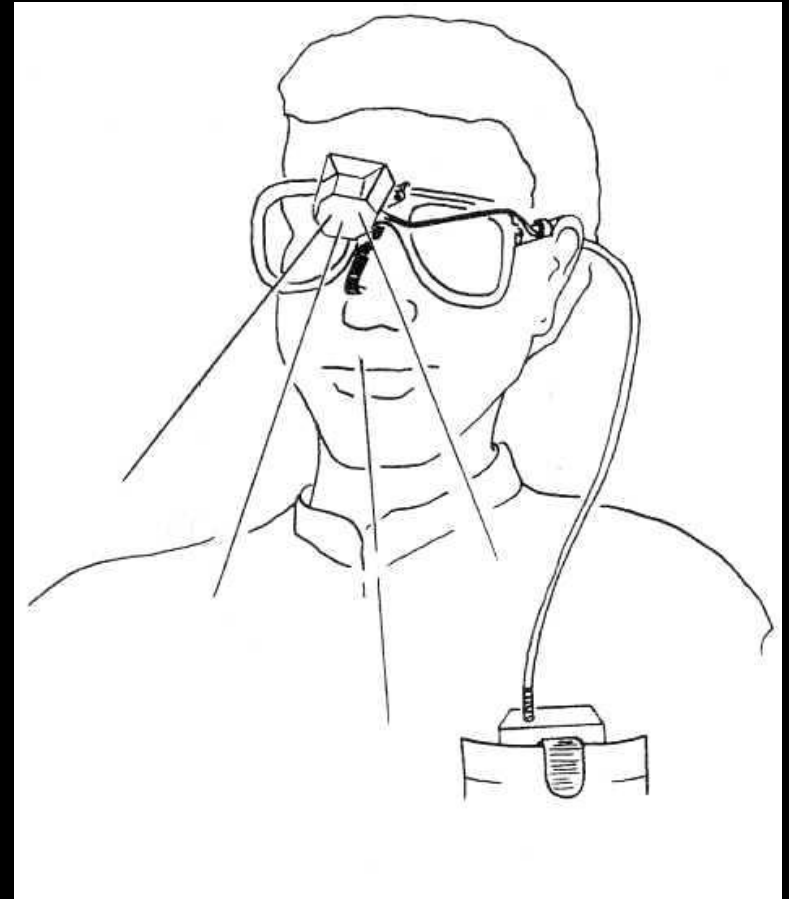


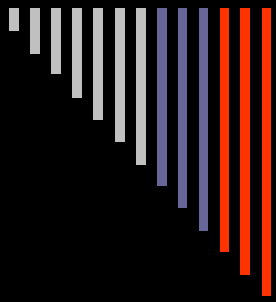


- Carvers
- Appliers
- Glass slab
- Spatula

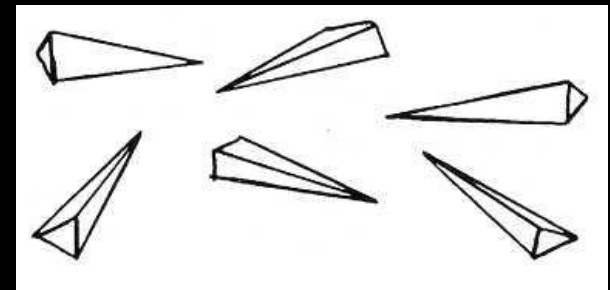
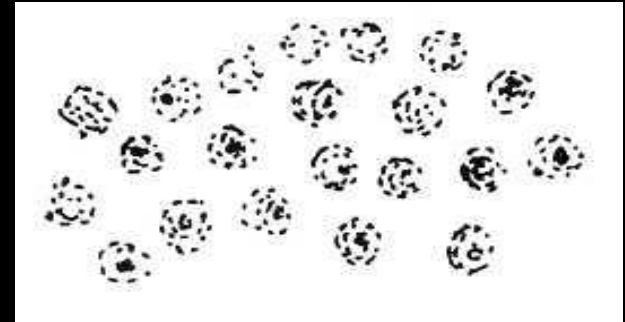
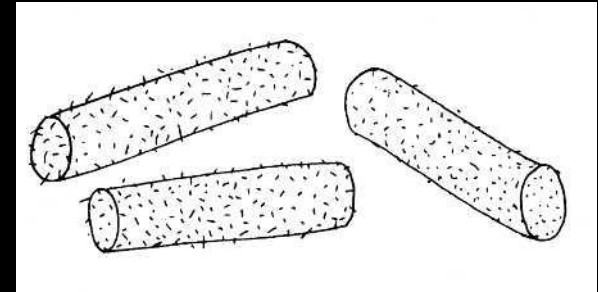


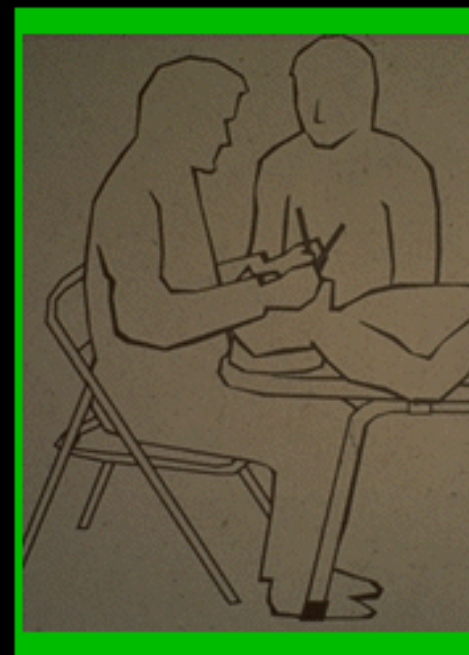
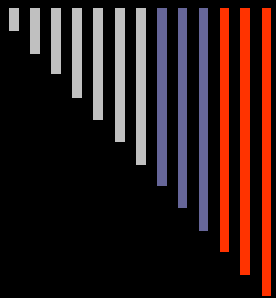
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- To improve visibility, a special light source fixed to a pair of spectacle frames that is powered by a rechargeable battery source (Voroscope) is used.
 - This unit also permits magnifying glasses to be attached.



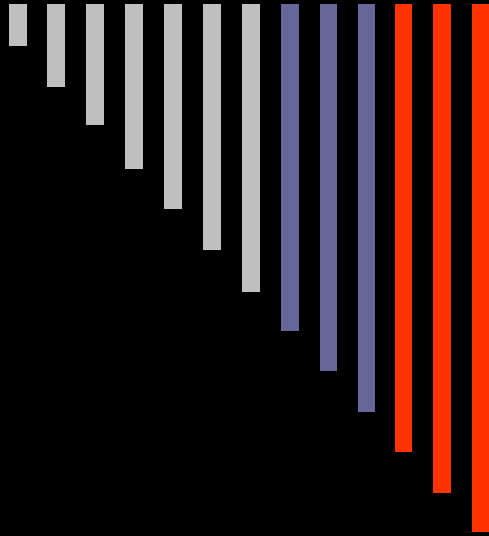


- The essential materials are gloves.
- cotton wool rolls and pellets (size 4).
- glass ionomers, restorative material (FUJI IX) and conditioners.
- petroleum jelly (Vaseline) wedges, plastic strips and clean water.





Operating Positions



The principal steps of ART

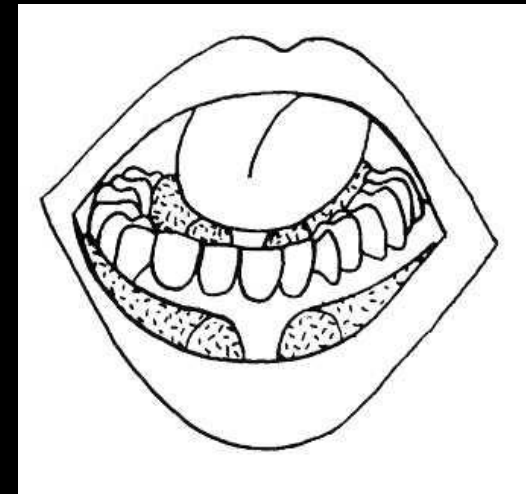
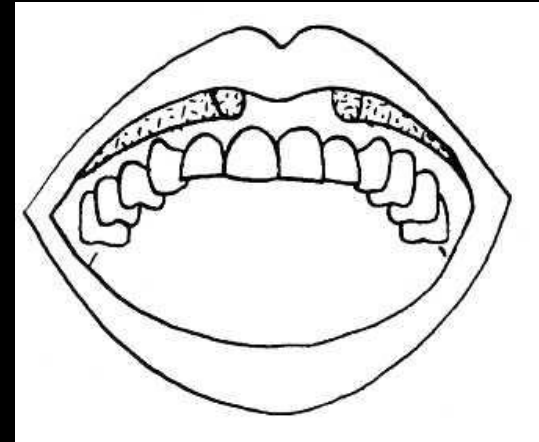




➤ ***Isolate the tooth with
cotton wool rolls***

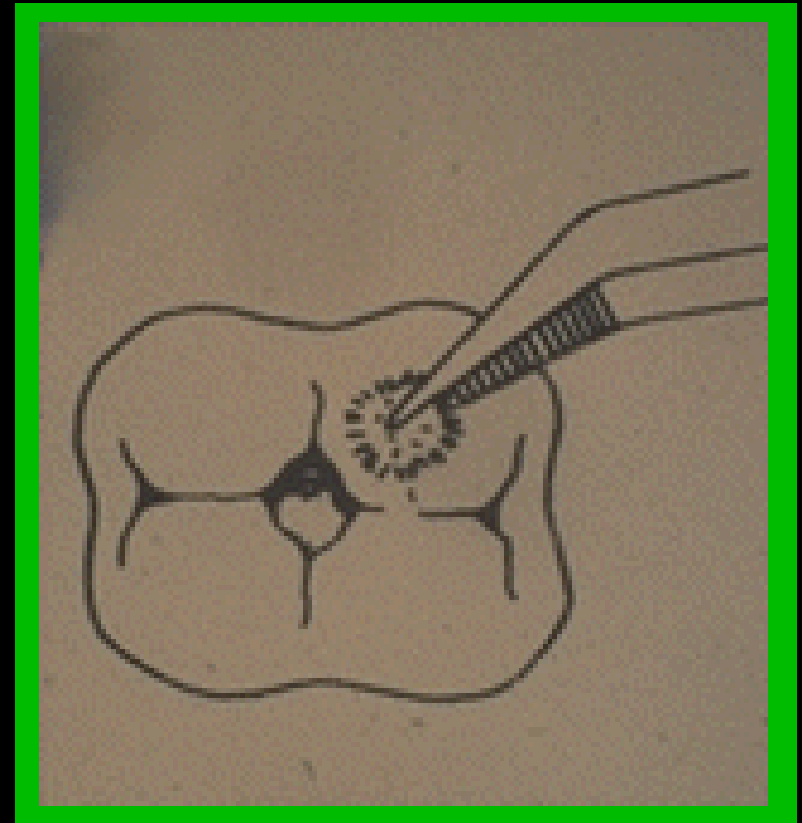
Rationale: It is easier to work in a dry environment than in wet one.

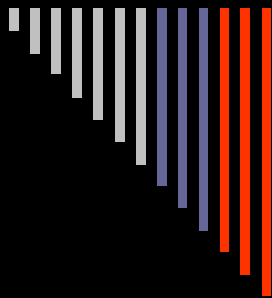
Cotton wool rolls are available in all parts of the world.



***Clean the tooth surface
to be treated with a wet
cotton wool pellet***

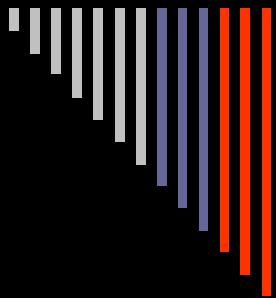
Rationale: The wet cotton wool pellet remove debris and plaque from the surface, thus improving visibility of the extent of the lesion.





➤ ***Widen the entrance of the lesion***

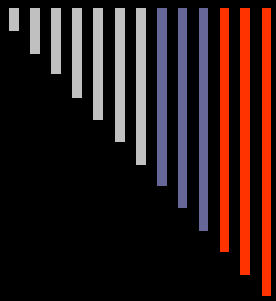
Rationale: The hatches replaces the bur, by rotating the instruments tip, unsupported enamel will break off, making an opening large enough for the small excavator to enter.



➤ ***Remove caries:***

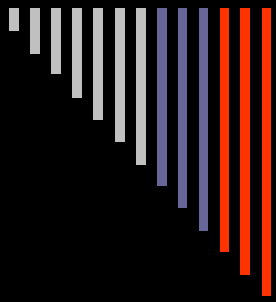
Depending on the size of the cavity, use either the small / the medium sized excavator.





- ***Rationale:*** All soft caries should be removed.

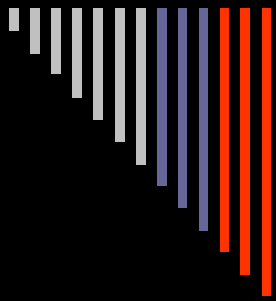
To prevent caries progression and to obtain a good seal of the coronal part of the restoration.



- **Clean the occlusal surface:** All pits and fissures should be clear of plaque and debris as much as possible.

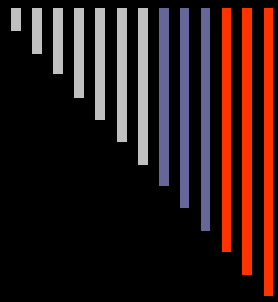
Rationale: The remaining pits and fissures will be sealed with the same material used for filling the cavity.



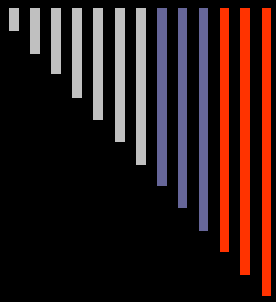


- ***Provide pulpal protection if necessary***

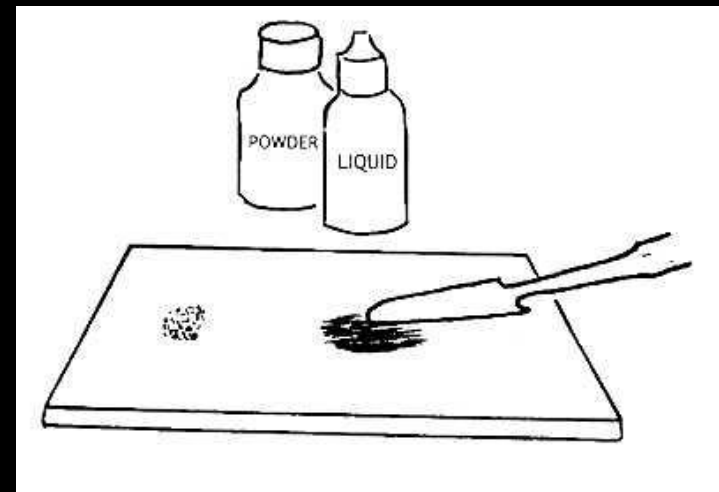
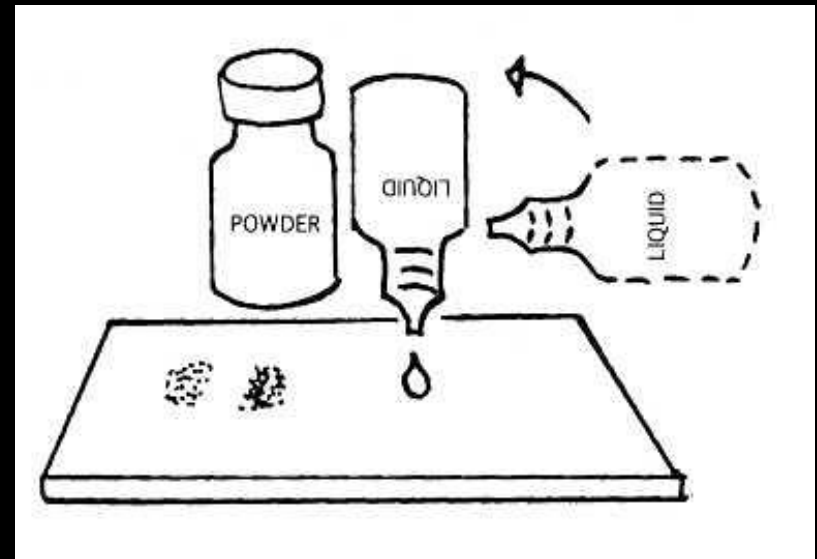
Rationale: Calcium hydroxide stimulates repair of dentin and glass ionomers are biocompatible.

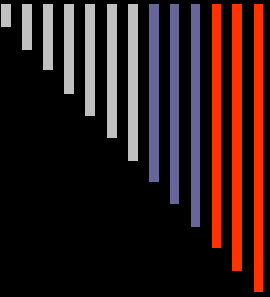


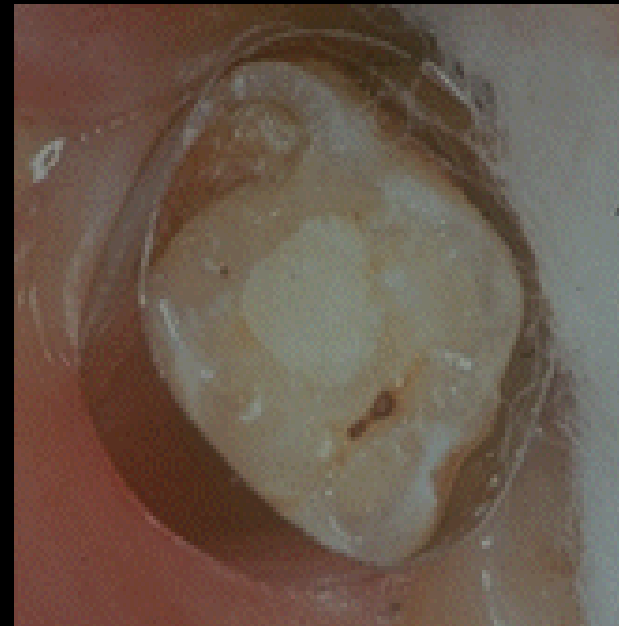
- ***Condition the cavity and occlusal surface.***
- ***Rationale:*** Conditioning increases the bond strength of glass ionomers.

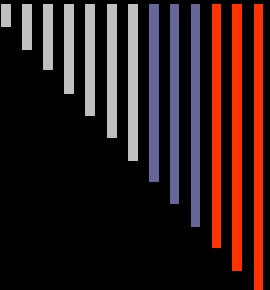


- ***Mix glass ionomer according to manufacturer's instructions:***

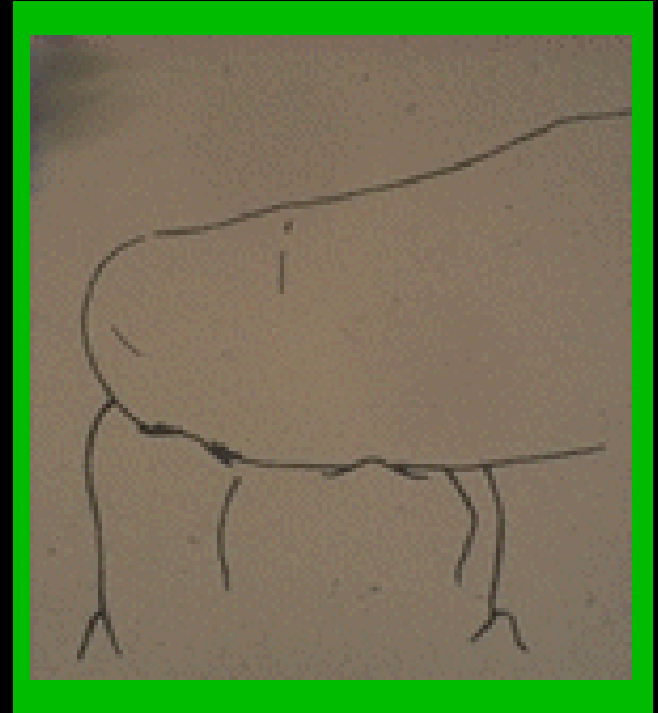


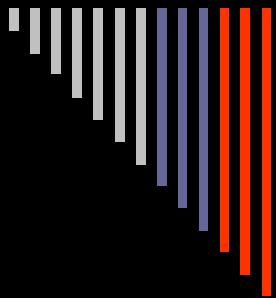
-
- 
- ***Insert mixed glass ionomer into the cavity and overfill slightly***



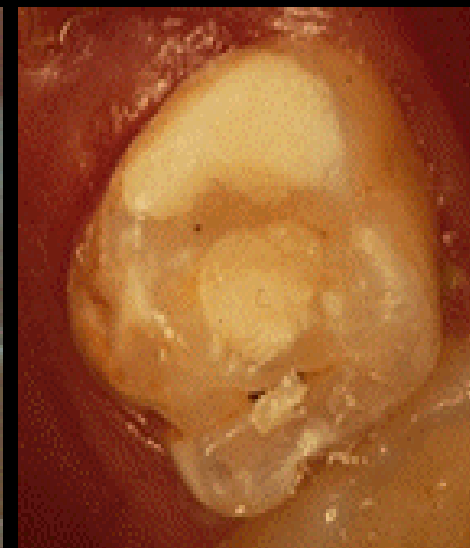
- 
- ***Press coated gloved finger on top of the entire occlusal surface and apply slight pressure***

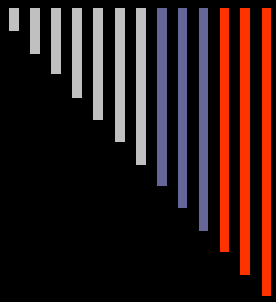
Rationale: The finger pressure should push the Glass Ionomer into the deeper parts of the pits and fissures.





- ***Remove excess material with the carvers***





- Cover filling / sealant with petroleum jelly (Vaseline) / apply varnish.
- ***Instructs the patient not to eat for at least one hour***
- For restoring approximal cavities, a plastic strip and wedges are used to produce a correct contour to the filling.



Indications and Contra-Indications for ART

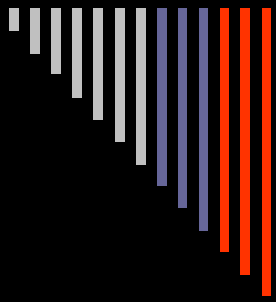
- In general ART is carried out only in the small cavities (involving dentine) and in those that are accessible to hand instruments.

 - ART is not used when:
 1. There is an abscess (swelling) near the carious tooth.
 2. The pulp of the tooth is exposed.
 3. Carious cavity not reachable with hand instruments.
-

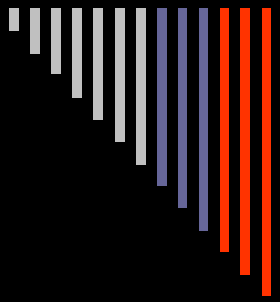


Advantages of ART

- Easily available and relatively inexpensive hand instruments are used rather than expensive electrically driven dental equipment.
 - A biologically friendly approach involving the removal of only decalcified tooth tissues, which results in relatively small cavities and conserve sound tooth tissue.
 - The limitation of pain, thereby minimizing the need for local anesthesia.
-



- A straightforward and simple infection control practice without the need to use sequentially electroclaved hand pieces.
 - The chemical adhesion of Glass Ionomer that reduces the need to cut sound tissues for retention of the restorative materials.
-

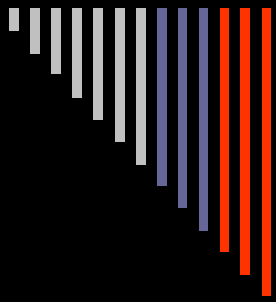


- The leaching of fluoride from glass ionomers, which prevents secondary caries development and probably remineralizes carious dentin.
 - The combination of a preventive and curative treatment in one procedure.
 - The low cost.
-

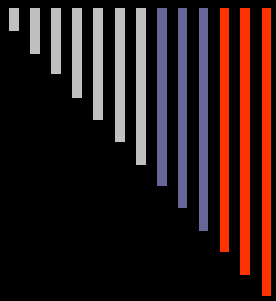


Limitations of ART

- ❖ Survival rate - the largest study reported so far is of 3 years duration.
 - ❖ The techniques acceptance by oral health care personnel is not yet assured.
 - ❖ limited to small and medium sized, one surface lesions
-



- ❖ The possibility exists for hand fatigue from the use of hand instruments over long periods.
- ❖ Hand mixing might produce a relatively unstandardized mix of glass ionomers

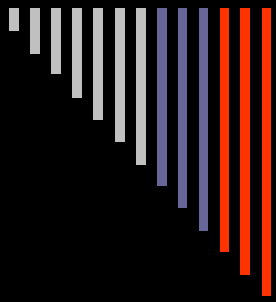


- ❖ A misconception by the public that the new glass ionomer “white fillings” only temporary dressings.



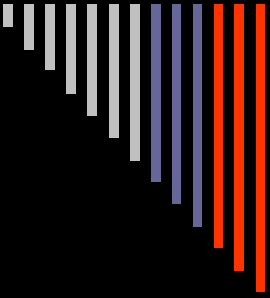
Conclusion

- ART is NOT a compromise but a perfect alternative treatment approach for developing countries and special groups in the industrialized world.
 - There is great potentials for its use among children, fearful adults, physically and mentally handicapped and the elderly.
-



- It makes restorative care more accessible for all population groups.





Thank you



References :

- <http://www.dhin.nl/literature.htm>
 - <http://www.whocollab.od.mah.se/exp/artintrod.html>
 - Ho T.F., Smales R.J. and Fang D.T. : A 2 year clinical study of two glass ionomer cements use in the atraumatic restorative treatment (ART) technique. Community Dent Oral Epidemiol. 1999 Jun; 27 (3) : 195-201.
 - Frencken Jo E., Pilot T., Songpaisan Y., Phantumvanit P. Atraumatic restorative treatment (ART) : rationale, technique and development. J Pub Health Dent 1996 ; 56 : 135-140.
 - Anusavice K.J. : Does ART have a place in preservative dentistry? Comm Dent Oral Epidemiol. 1999 ; 27 : 442-448.
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