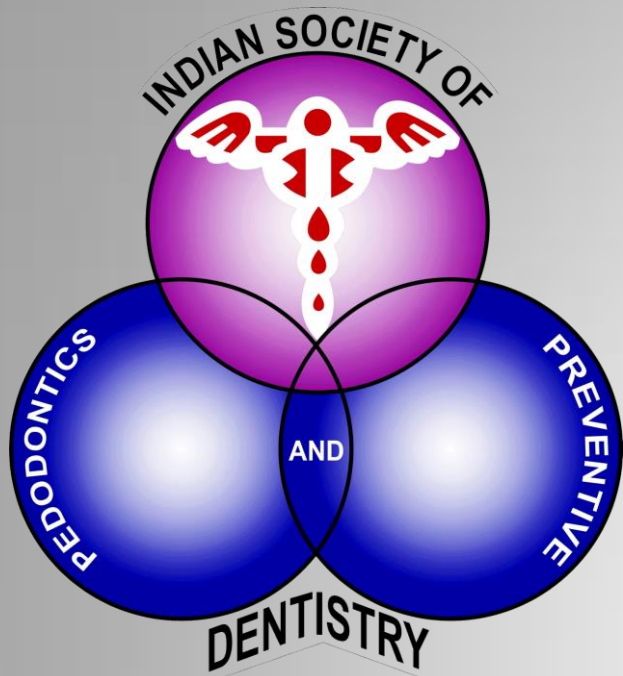


# Prof Dr. Neeraj Gugnani

- Department of Pediatric and Preventive Dentistry, JN Kapoor DAV (C) Dental College Yamunanagar, India.
- MDS from KGMC, Lucknow
- MSc in Clinical Trials from University of London.
- Commonwealth Scholarship at University of Manchester, UK
- Research interests : Caries, ECC, restorative dentistry .. Etc.



# ***"CONTEMPORARY MANAGEMENT STRATEGIES FOR TEETH IN DIFFERENT STAGES OF ECC !!"***

**Neeraj Gugnani, MDS, MSc (UoL)**

*Professor, Department of Pediatric Dentistry*

*DAV (C) Dental College*

*Yamunanagar*



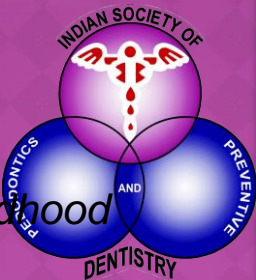
# ECC and its impact.. !!

- ✓ Impact on Child
  - ✓ Dental and general /systemic health
  - ✓ School performance
  - ✓ Quality of life, Severe disability
  - ✓ Behaviour
- ✓ Impact of family
- ✓ Impact on community
- ✓ Impact on health-care system



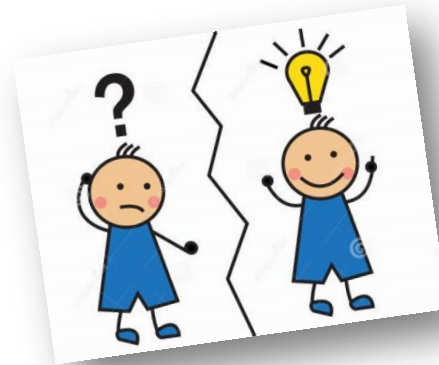
We are dealing with such a dreadful disease..

*Casamassimo PS<sup>1</sup>, Thikkurissy S, Edelstein BL, Maiorini E. Beyond the dmft: the human and economic cost of early childhood caries. J Am Dent Assoc. 2009 Jun;140(6):650-7.*



...We have been trying to prevent this disease since years..  
But it still exists.. All over the world in all communities !!

- ❖ Childhood Early caries remains a highly prevalent worldwide disease..
- ❖ And has a major impact on 'children' and parents quality of life..



# FOCUS ON CONTROL OF THE DISEASE PROCESS..



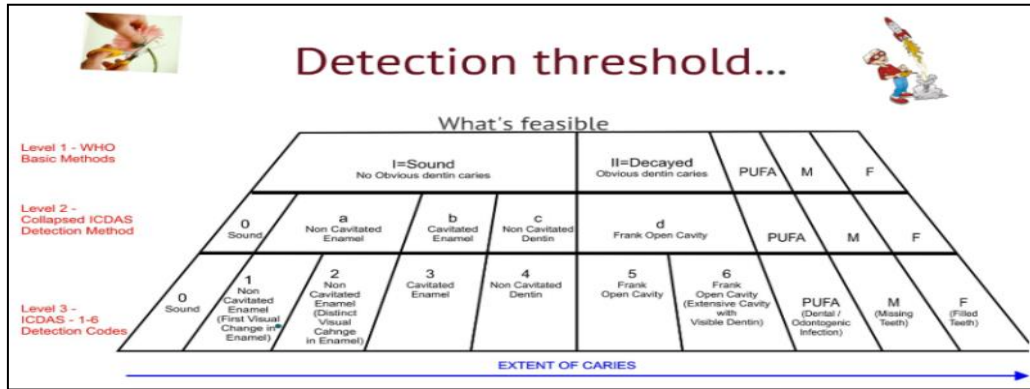
# Protocol based approach for control of disease

#1 Caries Risk assessment based approach

#2 Use Individualised *non-operative care*

#3 For operative care: *apply the principles of MID*

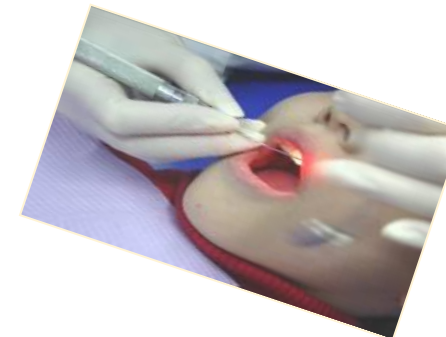
# #1. Caries risk assessment based approach (Discussed by Dr. Arun)



DIAGNOdent



Fibre Optic Trans Illumination

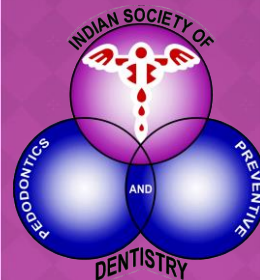


Use of ICDAS/ Collapsed ICDAS

QLF



Electronic Caries Monitor



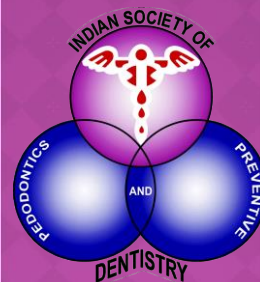
## #2. Individualised *non-operative therapy* (Discussed by Dr. Latha)

- ❖ Brushing
- ❖ Diet modification
- ❖ Sealants
- ❖ Fluorides
- ❖ Remineralizing agents
- ❖ Antimicrobials etc.
- ❖ Recall as per caries risk

Standard of Care

Enhanced Care as per  
Risk category

**BDS-FRAR**





### #3. Operative care (discussed by myself)

❖ **Micro-invasive**  
*Resin Infiltration*

❖ **Invasive**  
*Restorations*  
*Pulp therapy*  
*Crowns*





**Initial**



**Deep Carious**



**Severe/ damaged**



**Traumatic**

**Non-  
cavitated  
lesions**



- ✓ **Lesion Remineralization**
- ✓ **Stop the lesion progression**

**Cavitated Lesions / Traumatic**



- ✓ **Restoration**
- ✓ **Rehabilitation**

# Non-cavitated Lesions



## Facial lesions



## Proximal lesions



Dry with Ethanol



Apply Infiltrant

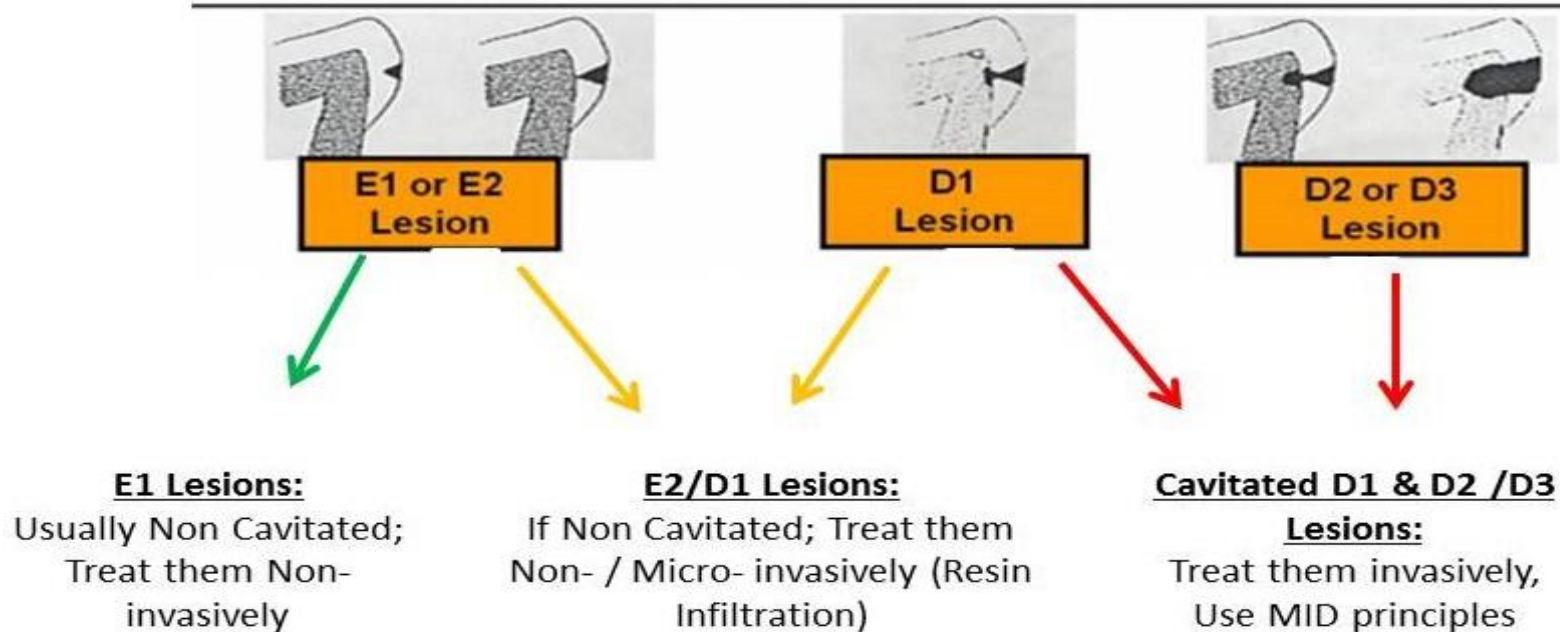


Etch with 15% HCl



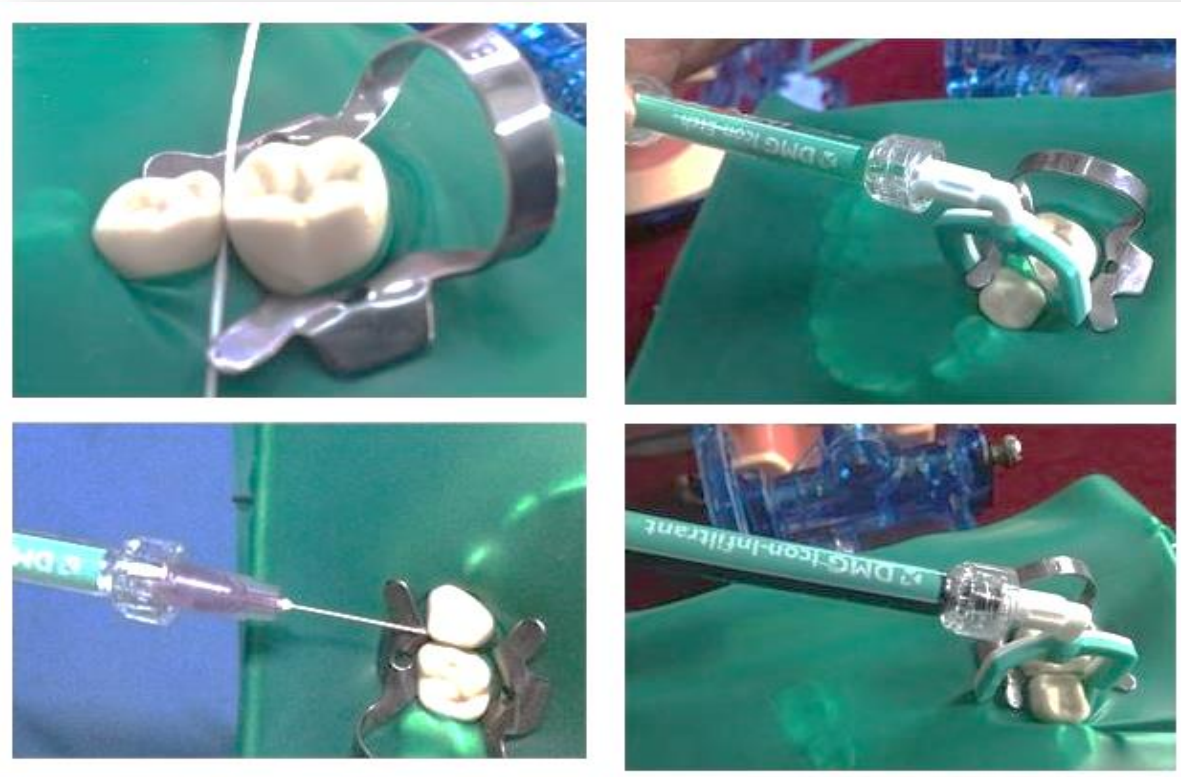
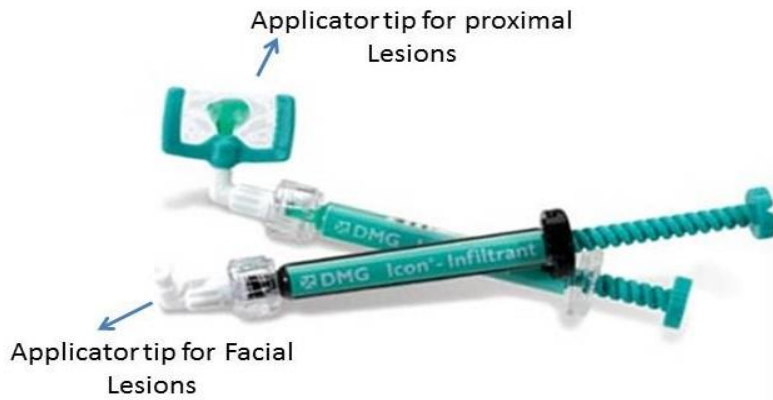
# Which proximal lesions can be treated with resin infiltration?

## Diagnosis and Management of Caries Lesions in proximal Surfaces of Primary teeth



*Clinical decision tree as adapted and modified using the decision tree for permanent teeth given by University of Texas health Science centre at San Antonio.*

# Steps for Resin infiltration:



# Clinical case




# DO WE HAVE EVIDENCE FOR RI ..?

Journal of Dental and Orofacial Research Vol 13 Issue 1 Suppl 01 Jan 2017 JDOR

## Resin Infiltration in Proximal Lesions of Primary Teeth: Do We Have Enough Evidence For Its Recommendation?

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DAV (C) Dental college  
Yamuna Nagar 135001  
Haryana  
INDIA



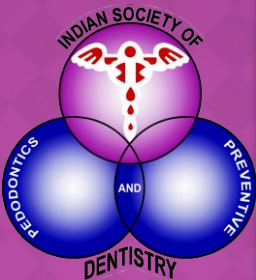
**Introduction:**  
The term Early Childhood Caries (ECC) was introduced in 1990s in an attempt to focus attention on multiple factors that contribute to caries rather than ascribing sole causation to inappropriate feeding methods.<sup>1</sup> It is defined as the presence of one or more decayed (non cavitated to cavitated lesions), missing (due to caries), or filled tooth surfaces in primary tooth in a child under the age of 6 while presence of any smooth surface caries in children younger than three years constitutes Severe-ECC.<sup>2</sup>

ECC is prevalent in both developed and developing countries and its prevalence has

cavities. In general, the management of Early Childhood Caries should always be based on a risk assessment approach and should include formulating an individualized care plan – including intervention for both non-cavitated and cavitated lesions.<sup>6</sup> Although there is no consensus as to which formal risk assessment tool should be used, the guidelines suggest using an age based risk assessment tool that should involve evaluation of biological factors, defensive/offensive factors and clinical findings including components of Key's triad, saliva, socio-economic and behavioural factors.<sup>7,8</sup> A

We do have evidence favouring micro-invasive Resin Infiltration procedure in the management of Non-cavitated proximal lesions in primary molars.

- Q. Is it working?
- Q. Is it safe?
- Q. Is it acceptable to dentists?
- Q. Do the SR proves the evidence?

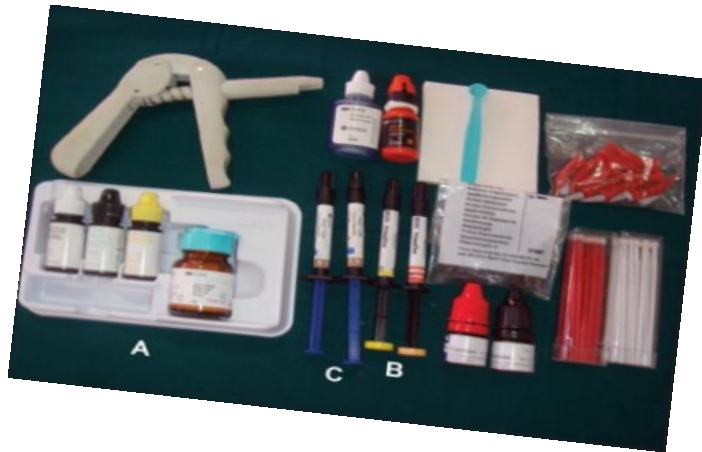




# A CAVITATED LESION.. WHAT ARE THE OPTIONS..?

The only option is to restore the cavity...

Excellent materials available with us...



... in a minimal invasive manner.

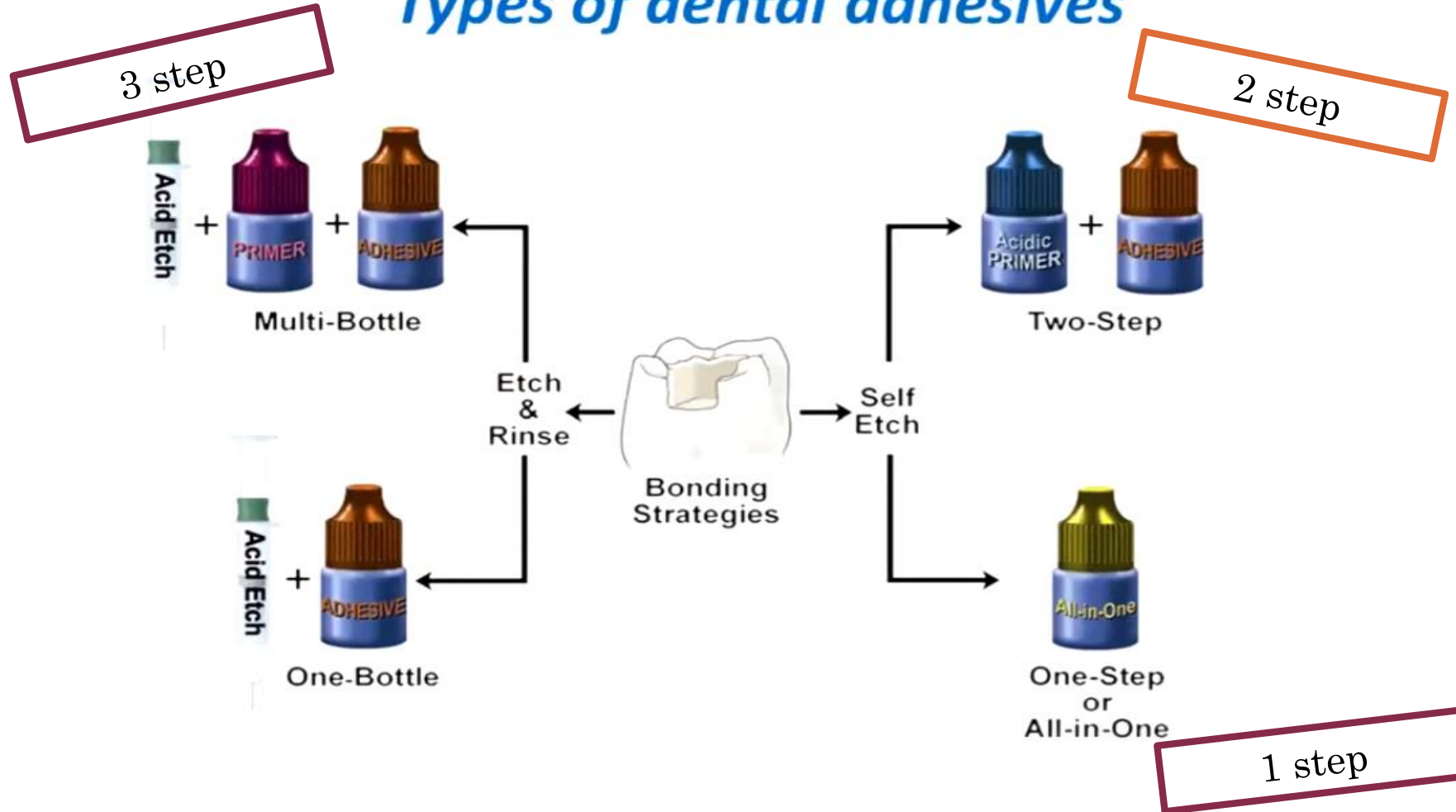
# CHOICE OF RESTORATIVE MATERIAL



# UNDERSTANDING AVAILABLE COMPOSITES

1. Etching
2. Primer
3. Adhesives

## Types of dental adhesives



# EVIDENCE AND RECOMMENDATIONS

- ❖ Composite restorations are more successful than GICs.
- ❖ Conventional GIC restorations exhibit poor anatomical form and are NOT recommended for Class II restorations in primary molars.
- ❖ Based on a meta-analysis, RMGIC is more successful than conventional glass ionomer.

Multi-surface composite restorations have lower retention rates.

Composite resin ~ Compomer ~ RMGIC > GIC  
>> silver-reinforced glass ionomer cement



# What should be done when the caries is close to pulp or exposed the pulp?

- Deep dentinal caries

Asymptomatic deep dentinal caries.. In close proximity to pulp

Signs/ symptoms of IRREVERSIBLE pulpitis

Pulp exposed  
Signs/ symptoms of REVERSIBLE pulpitis

Non-vital Pulp therapy

**VITAL PULP THERAPY**

**Indirect pulp treatment**

**Pulpotomy**

# IPT: When to stop..?..

Prefer incomplete caries excavation techniques

- ❖ partial (one-step)
- ❖ stepwise (two-step) excavation,

**#1. When to stop the excavation..?**

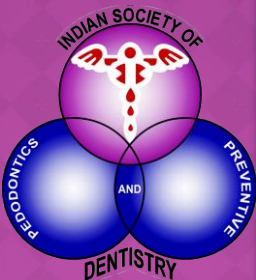
**#2. Material used to cap the pulp..?**

**#3. Final restoration..?**

... evidence from RCTs / SRs that incomplete caries excavation in primary and permanent teeth with normal pulps or reversible pulpitis, either partial (one-step) or stepwise (two-step) excavation, results in fewer pulp exposures and fewer signs and symptoms of pulpal disease than complete excavation. ...

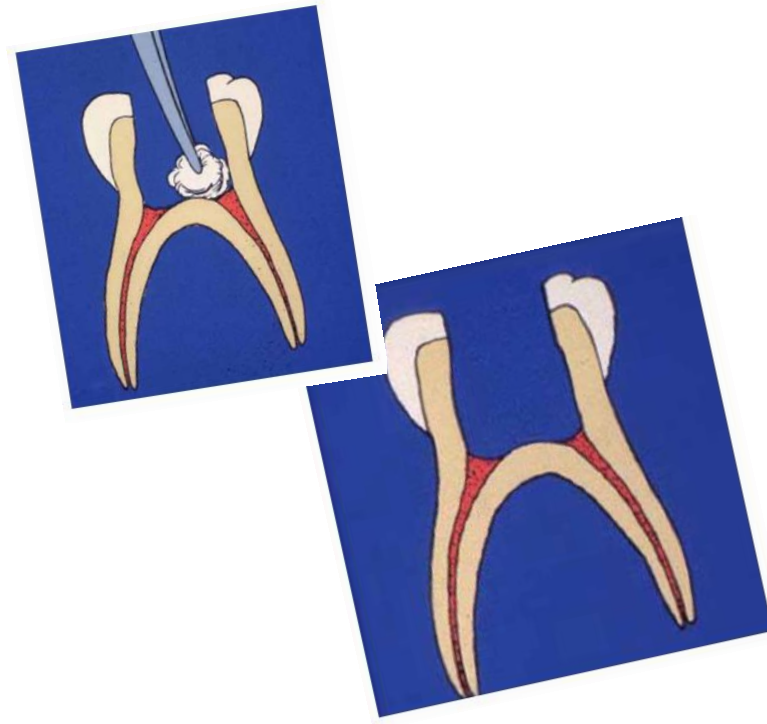


Falk et al.



# Pulpotomy and Root canal procedures

- ❖ Definition
- ❖ Technique
- ❖ Material used
- ❖ Reported Success rates



# Extra-coronal Restorations: Bonded or cemented

Type of Extracoronaral restorations	Good points	✓ Difficult points
Strip crowns with composites	<ul style="list-style-type: none"> <li>❖ Good esthetics</li> <li>❖ High success rate</li> </ul>	<ul style="list-style-type: none"> <li>✓ Technique sensitivity</li> <li>✓ Surface area..? {Break or fail..?}</li> <li>✓ Discolor with time..</li> </ul>
Zirconia and pre-veneered SS crowns	<ul style="list-style-type: none"> <li>❖ Excellent esthetics</li> <li>❖ Good retention</li> </ul>	<ul style="list-style-type: none"> <li>✓ Require excessive tooth reduction..?</li> <li>✓ Difficult to adapt due to inability to crimp</li> <li>✓ <u>Very costly.</u></li> </ul>

**Help to rehabilitate and achieve esthetics**



- ✓ Strip crowns had higher success rates (>80%, 2 years) than class III and IV fillings.



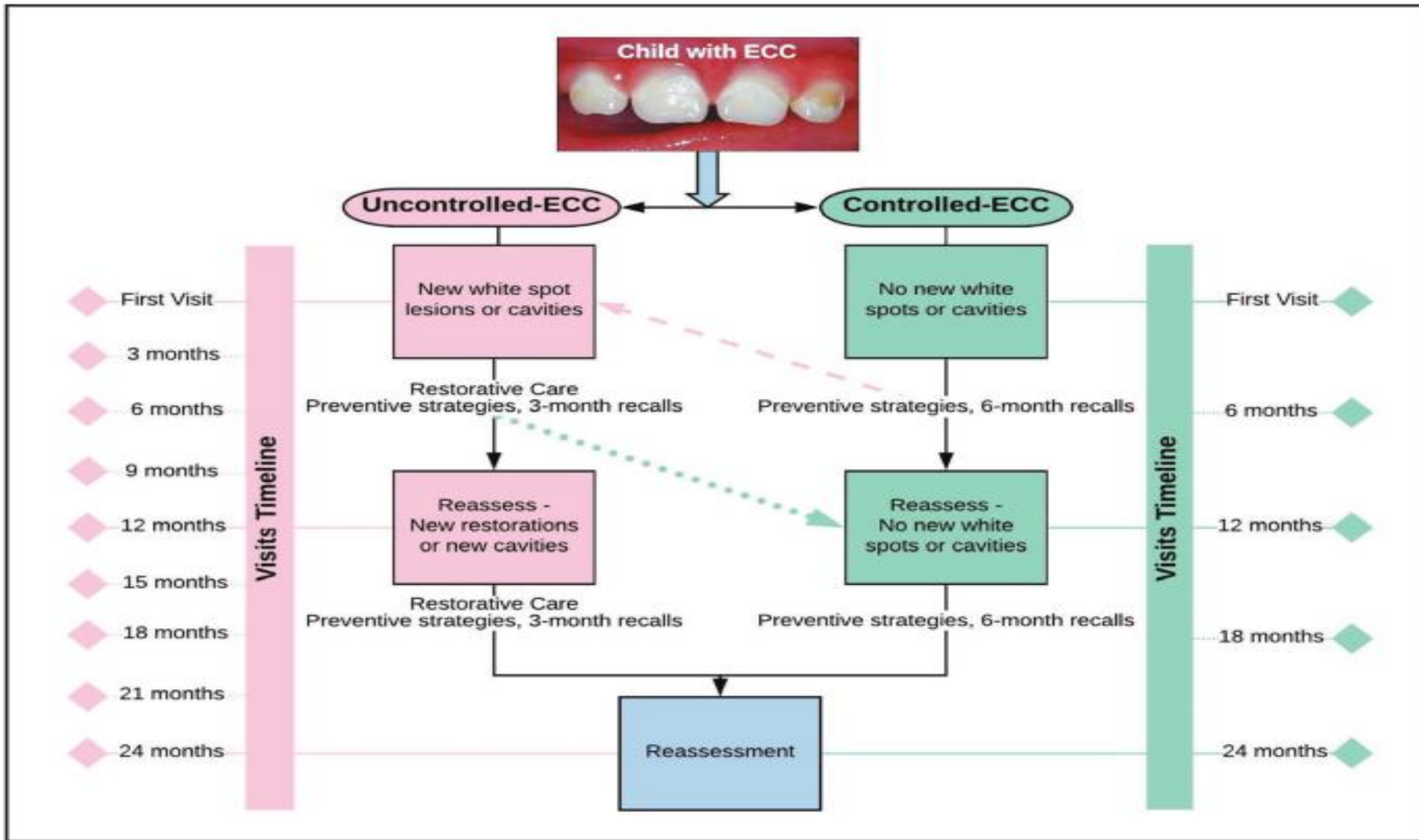
- ✓ Good esthetics reported by pre-veneered stainless steel and zirconia crowns.
- ✓ Good success rates with posts in restoring carious primary anterior teeth with composite strip crowns [Sawant et al., 2017].

# Recall intervals: based on their caries risk

- Low risk: every 6-12 months
- Moderate risk: every 4 months
- High risk: every 3 months

Active lesions  Inactive lesion

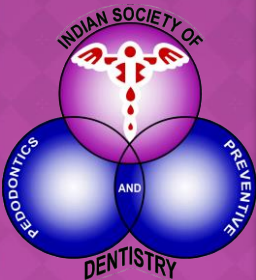
High risk  Medium risk  Low risk



Dhar V. 2020 Ped. Dent.

# Take home message.. !!

1. **ECC: a challenging disease requires challenging solutions.**
2. **Focus on control of the disease process.**
3. **Risk based approach: detect caries at its incipient stages- use ICDAS / other modern tools.**
4. **Use Individualized non-operative care. (BDS-F-RAR).**
5. **Use Resin infiltration for Early Caries Lesion.**
6. **Use minimal excavation techniques for restorations (Step wise/ One-step).**
7. **Rehabilitate using proper crowns – for mastication and aesthetics.**



**Its not the end ....  
it must be the beginning ...**



**Thanks...**

**[drgugnani@gmail.com](mailto:drgugnani@gmail.com)**

