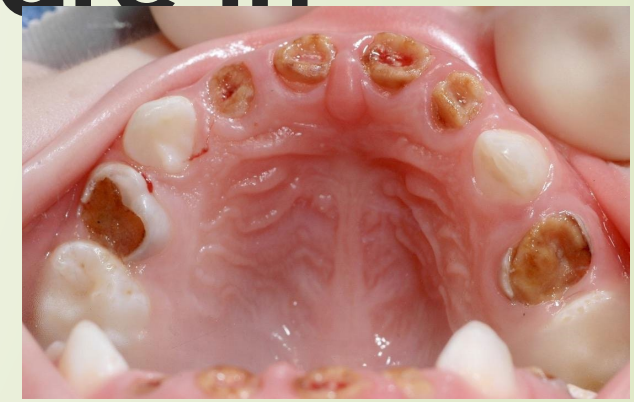
Children's Dental Care in our New World Then and Now - A Paradigm Shift? And how can you fit in?



Stephen C Mills, DDS, FICD, FASD, DABPD

Samoset Resort, Rockport Maine

Scarborough, ME

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What “was” it like

- I have been a dentist for 41 years and a pediatric dentist for 35 years
- In the beginning of my career children’s dental care was primarily on disease recognition, and treatment and prevention of disease in a healthy mouth (mostly ‘cavities”)
- We knew that decay or caries was a microbe mediated process but we did not understand the concept of BIOFILM and Micro environment.
- Treatment of dental decay was surgical (drill and fill)
- Prevention was brush, floss, fluoridated toothpaste and water, and dental applied fluoride treatments.
- Oral health was largely separate from total health
- Caries was a disease that was treated only when we saw clinical evidence, i.e. a cavitated lesion or cavity You were otherwise considered healthy
- Materials used were silver amalgam, stainless steel, early composites, and sealants were new-”ish”.

We now talk about "preventing" progression of "non cavitated lesions". (1^0 Prevention)

Versus "treatment" of "cavitated lesions". (2^0 Prevention)

Both can often be done outside of the Dental Office

Prevention

This can be done in a variety of settings And by different individuals

- Early intervention and education. The Age One Dental Home Concept. Risk assessment, education and treatment as needed
- Multiple Risk Assessment tools available
- Fluorides: toothpaste and Water still the two biggies but Fluoride Varnish has taken over the professional area and is effective.
- Total Health Integration into primary care.
- Sealants. (Primary or secondary prevention)
- Recognition of pre cavitated lesions
- The future holds promise for individualized risk assessment but this is years away from being practical in a population aspect.
- We have to look at this not just in the context of a "Dental Office"

Treatment…Here is where we have the biggest changes

- We no longer have to drill and fill every cavitated lesion…."Well Mom..."
- The "needs" of the patient have become more complex (eg. Size of lesion, Age, behavior, finances, stage of development, how long to treatment, how long until exfoliation)
- Filling materials have changed, again, based on the needs of the patient.
- Behavior and sedation options have changed.
- It is no longer "simple" to decide what to do
- These things often can be done by others than just by dentists
- The concept of Minimally Invasive Dentistry

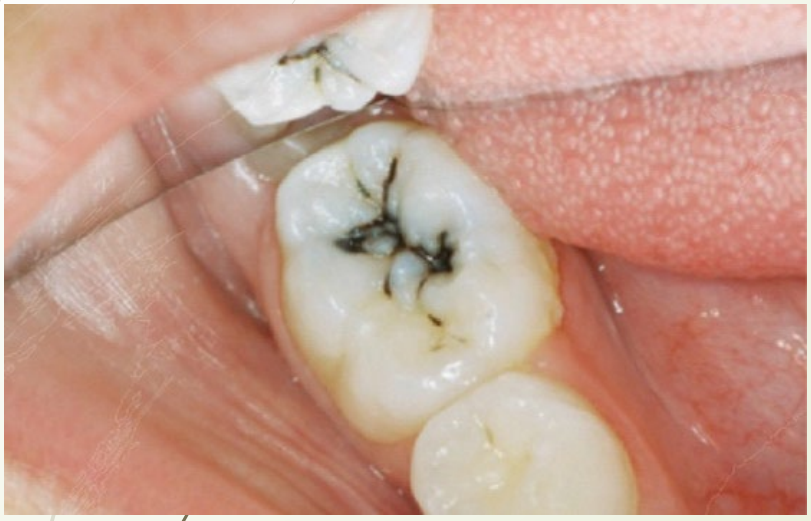
So let's look at some pictures of a new tool: SDF as an example

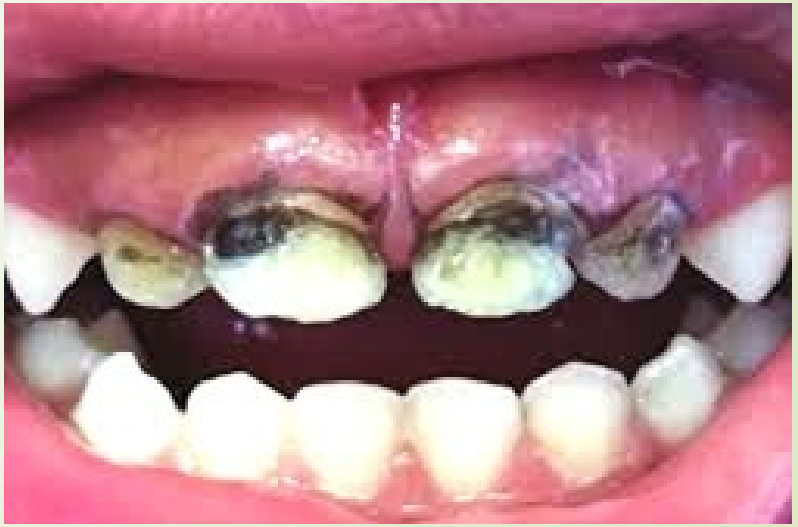
What's that? Silver Diamine Fluoride

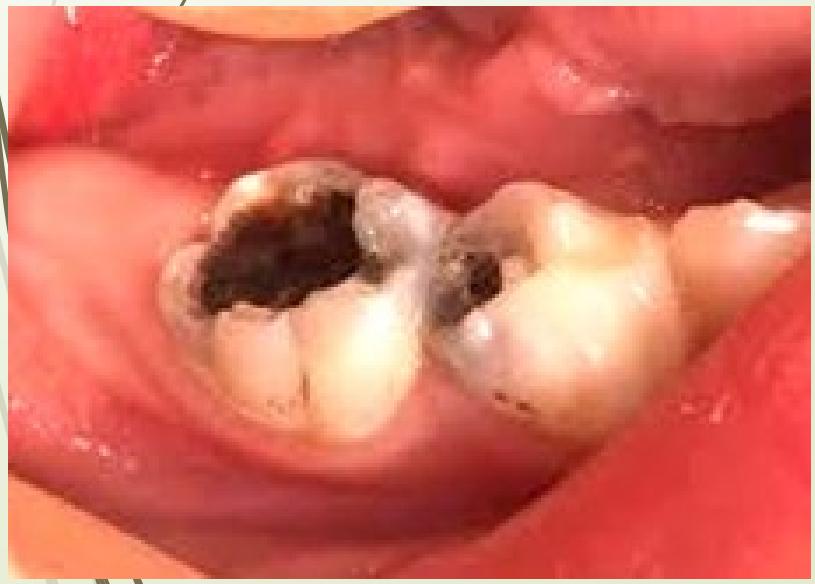
SDF is made of:

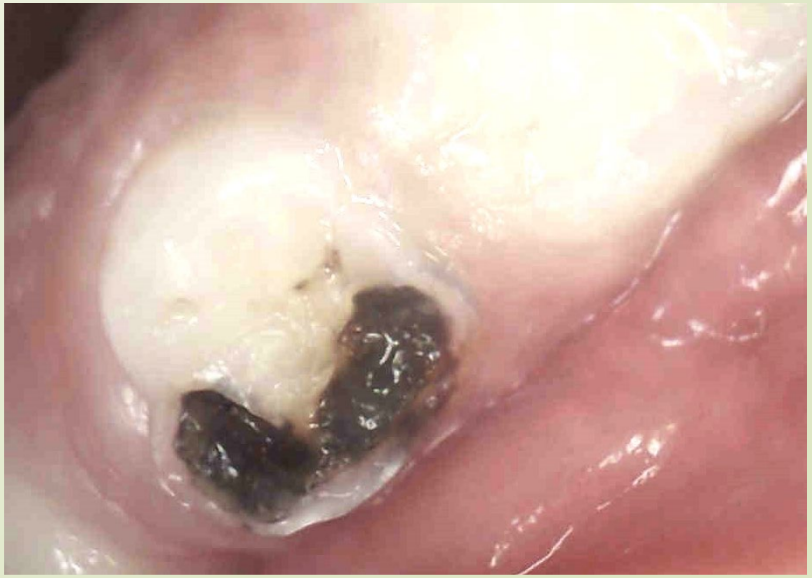
- **silver:** helps kill bacteria
- **water:** provides a liquid base for the mixture
- **fluoride:** helps your teeth rebuild the materials they're made of (known as remineralization Trusted Source)
- **ammonia:** helps the solution remain concentrated so that it's maximally effective against cavity resonance

Why am I seeing more kids with black cavities now?









Why are dental professionals (or in this case ME) using it?

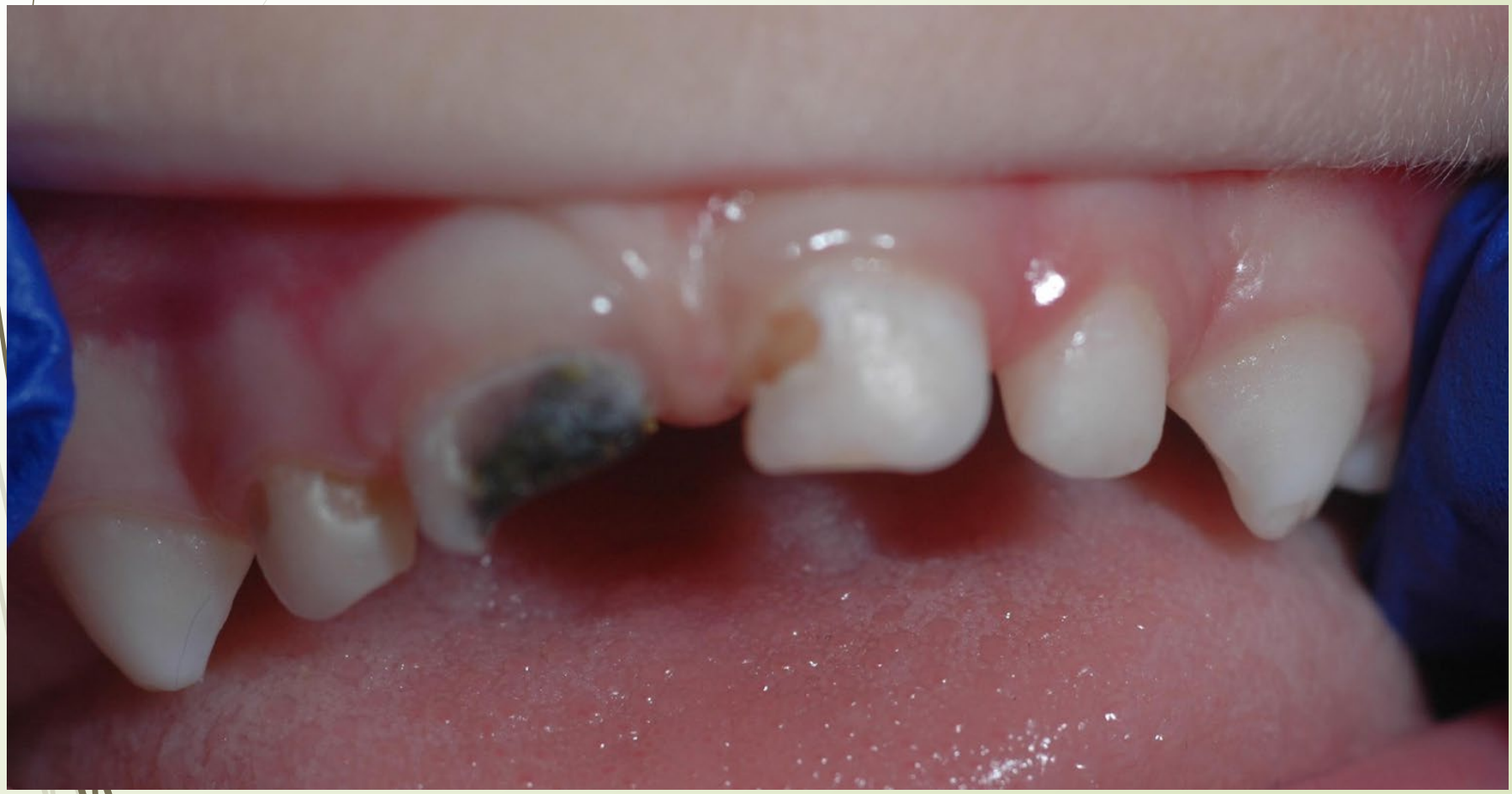
- It ARRESTS carious lesions from getting progressively larger
- It allows me to not force care on emotional individuals (very young, intellectual delayed, or just very anxious)
- It allows me to delay care until appropriate or until it is no longer needed (baby teeth fall out, the patient can tolerate care, or the appointment date is reached)
- It is way cheaper than fillings

So, what's wrong with it?

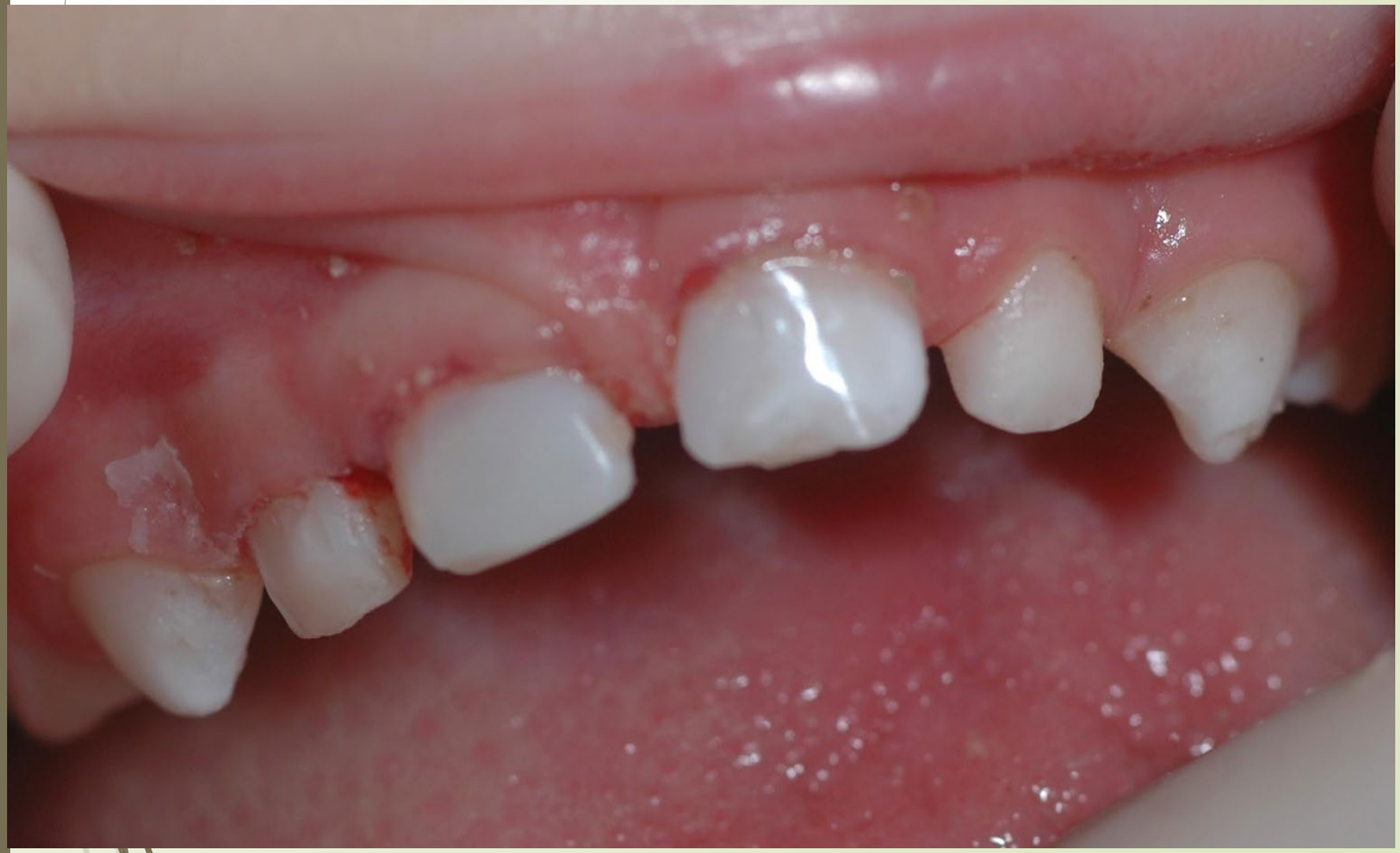
- It turns teeth black (the cavity)
- It tastes really yucky
- It is not definitive care and should be replaced
- It doesn't always work
- It will tattoo the skin or gums or cheek. (about 1-2 weeks)
- Currently this treatment is viewed as solid in the dental literature.

Here are some examples…

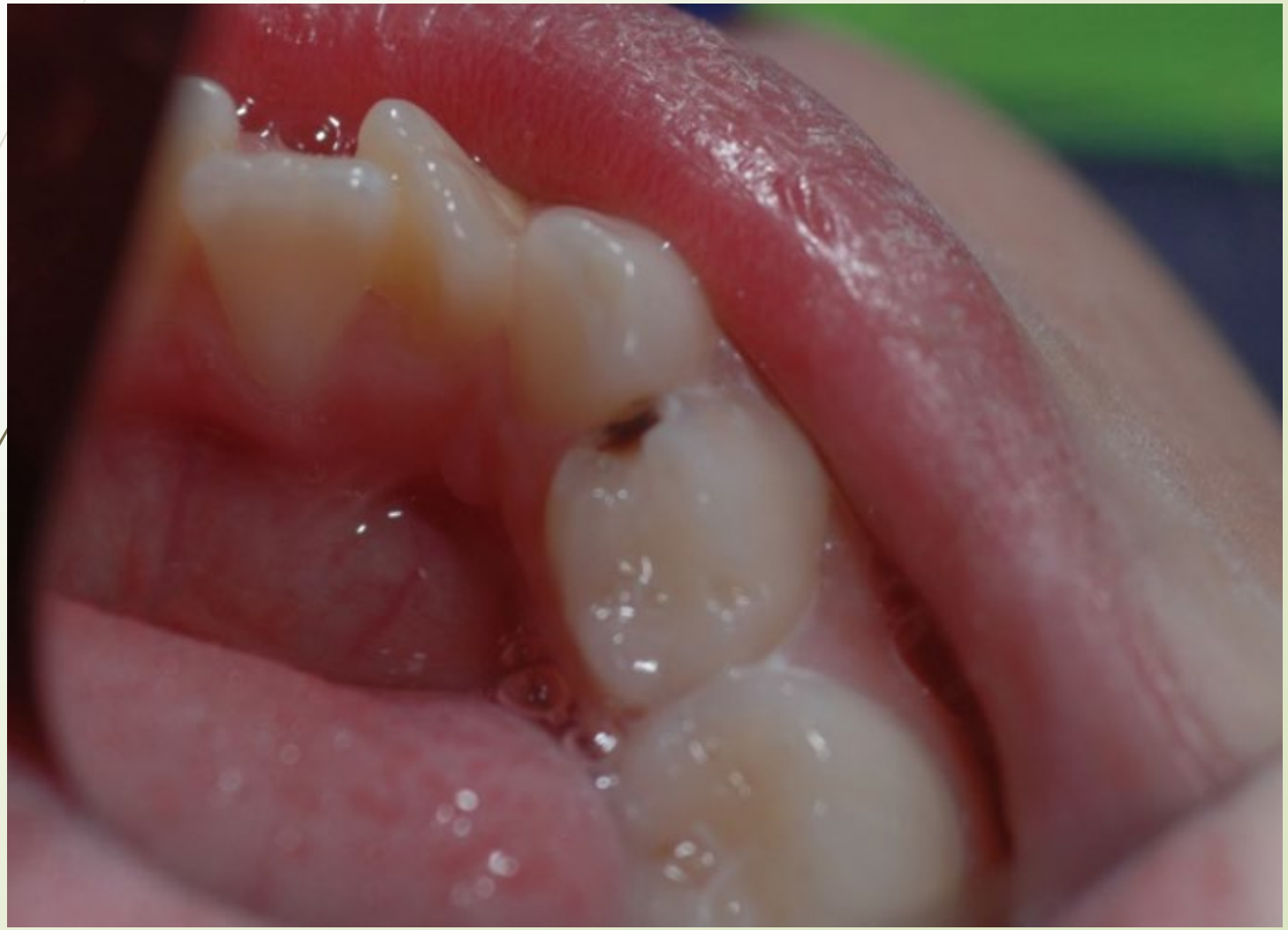
1. Planning for the OR in 6 months



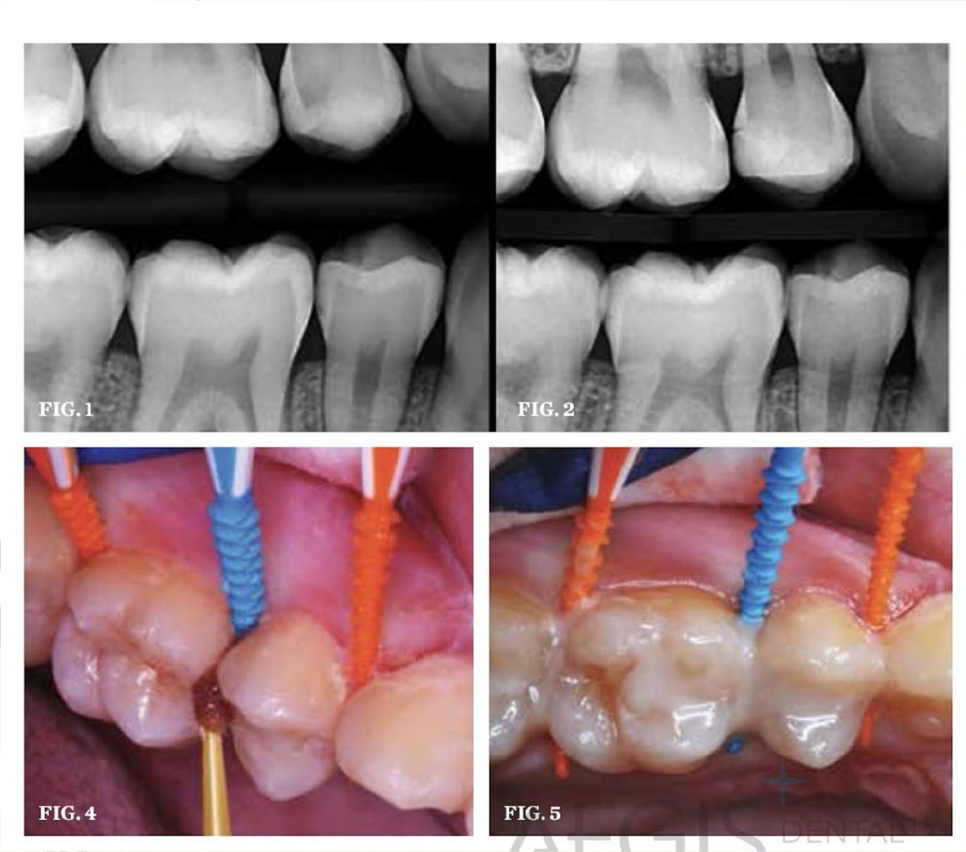
Restored with a Strip Crown

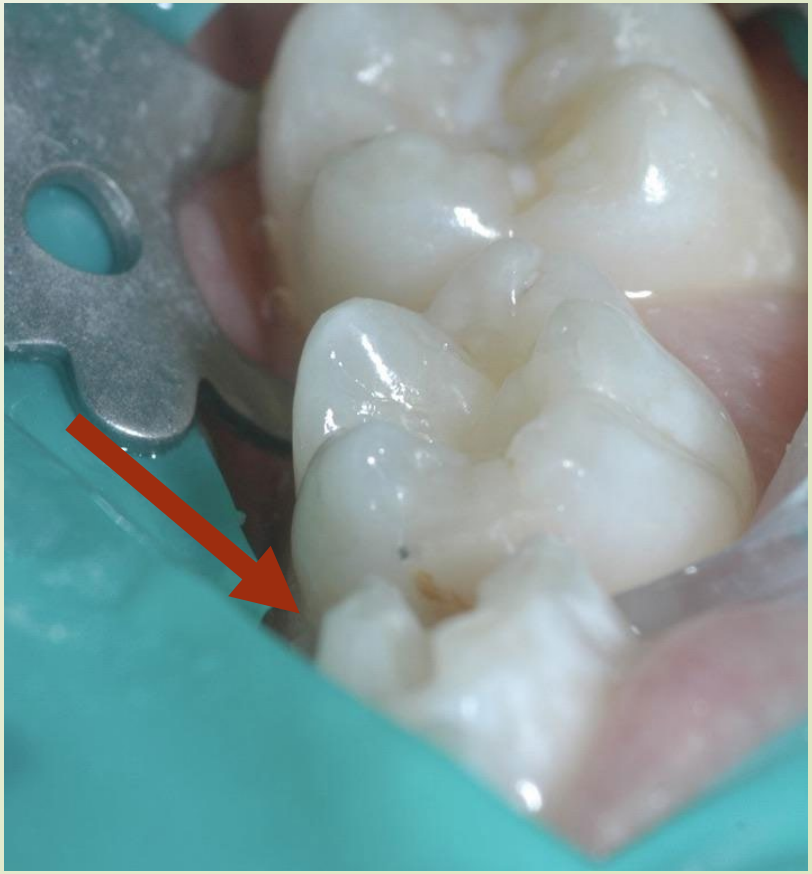


2. 9 ½ year old, root resorption has begun Cried when he heard about a cavity

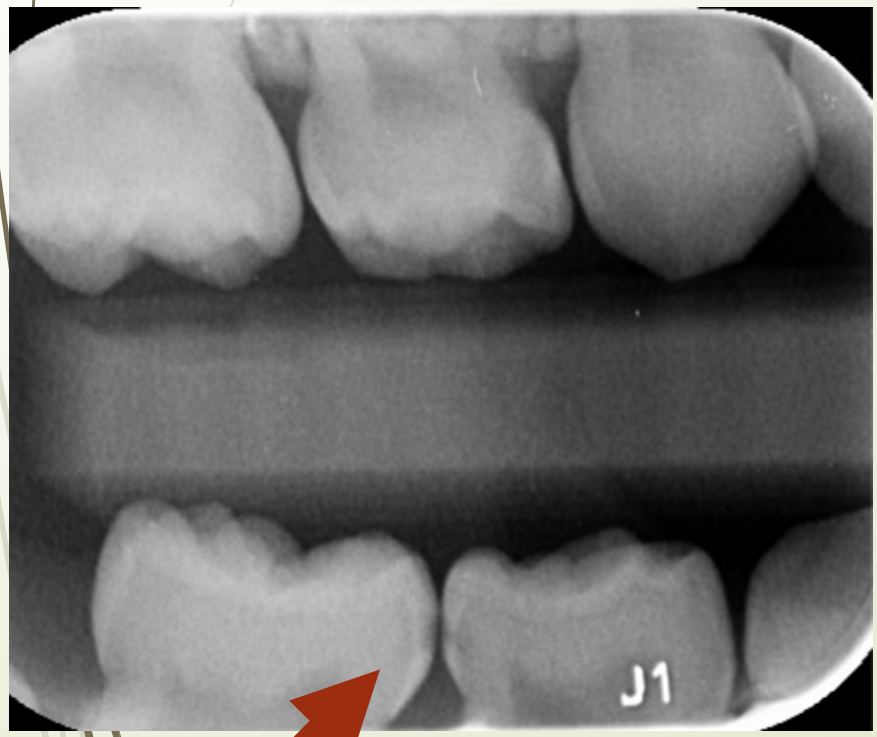


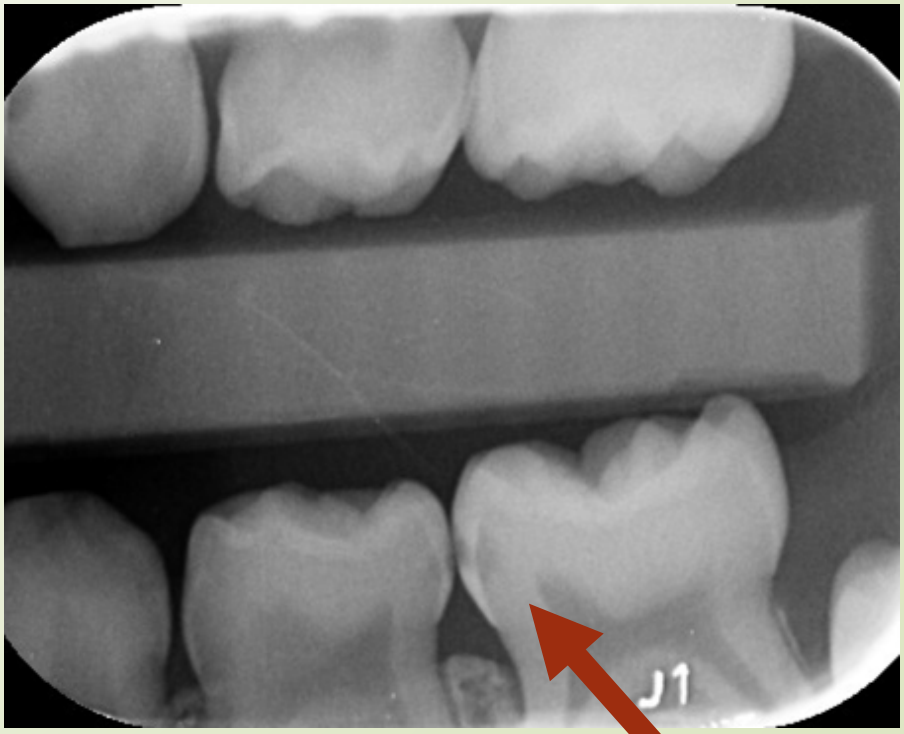
3. Interproximals and recurrent decay



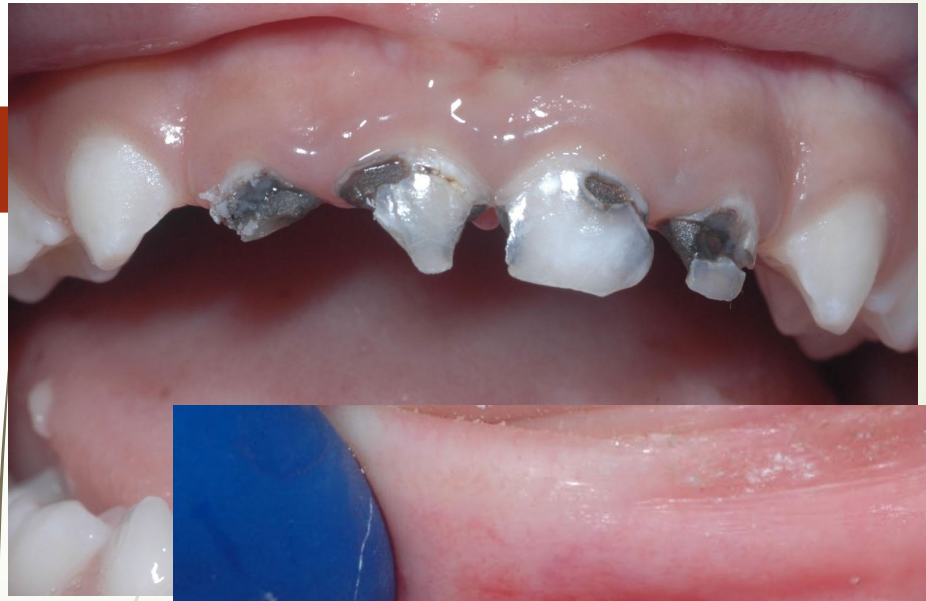


4. This used to not be an issue. 4 years old a little nervous

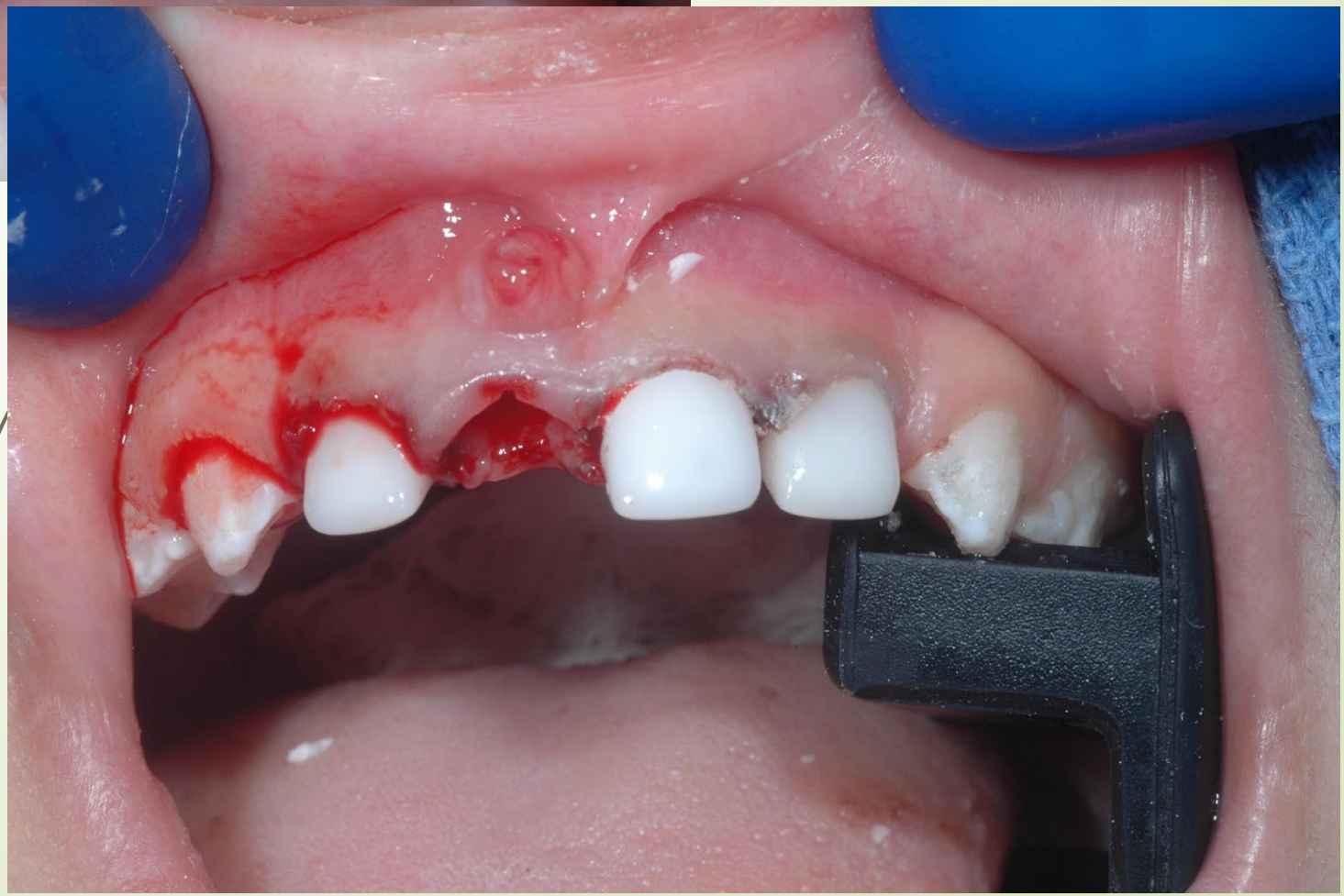




SDF or…….



SDF is very useful but not perfect Not a silver bullet!!



This article sums up our options in a systematic review

Clinical Review

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Nonrestorative Treatments for Caries: Systematic Review and Network Meta-analysis

2019

O. Urquhart[1], M.P. Tampi[1], L. Pilcher[1], R.L. Slayton[2], M.W.B. Araujo[3], M. Fontana[4], S. Guzmán-Armstrong[5], M.M. Nascimento[6], B.B. Novy[7], N. Tinanoff[8], R.J. Weyant[9], M.S. Wolff[10], D.A. Young[11], D.T. Zero[12], R. Brignardello-Petersen[13], L. Banfield[14], A. Parikh[15], G. Joshi[16], and A. Carrasco-Labra[1,17]

Abstract

The goal of nonrestorative or non- and microinvasive caries treatment (fluoride- and nonfluoride-based interventions) is to manag the caries disease process at a lesion level and minimize the loss of sound tooth structure. The purpose of this systematic review ar network meta-analysis was to summarize the available evidence on nonrestorative treatments for the outcomes of 1) arrest or revers of noncavitated and cavitated carious lesions on primary and permanent teeth and 2) adverse events. We included parallel and spli mouth randomized controlled trials where patients were followed for any length of time. Studies were identified with MEDLINE ar Embase via Ovid, Cochrane CENTRAL, and Cochrane Database of Systematic Reviews. Pairs of reviewers independently conducte the selection of studies, data extraction, risk-of-bias assessments, and assessment of the certainty in the evidence with the Grading Recommendations Assessment, Development, and Evaluation (GRADE) approach. Data were synthesized with a random effects mod and a frequentist approach. Forty-four trials (48 reports) were eligible, which included 7,378 participants and assessed the effect 22 interventions in arresting or reversing noncavitated or cavitated carious lesions. Four network meta-analyses suggested that sealan + 5% sodium fluoride (NaF) varnish, resin infiltration + 5% NaF varnish, and 5,000-ppm F (1.1% NaF) toothpaste or gel were the mo effective for arresting or reversing noncavitated occlusal, approximal, and noncavitated and cavitated root carious lesions on prima and/or permanent teeth, respectively (low- to moderate-certainty evidence). Study-level data indicated that 5% NaF varnish was t most effective for arresting or reversing noncavitated facial/lingual carious lesions (low certainty) and that 38% silver diamine fluorid solution applied biannually was the most effective for arresting advanced cavitated carious lesions on any coronal surface (moderate high certainty). Preventing the onset of caries is the ultimate goal of a caries management plan. However, if the disease is present, the is a variety of effective interventions to treat carious lesions nonrestoratively.

Key points:

- Sealants plus NaF varnish, resin infiltrations plus varnish, and high Fluoride Toothpaste were most effective against non cavitated and some cavitated lesions.
- 5% NaF Varnish was most effective for arresting or reversing non cavitated facial /lingual lesions.
- SDF applied bianually was most effective for arresting advanced cavitated lesions.
- It is still a work in progress…..
- " It may be useful to clinical trialists if experts could establish a core set of outcomes informing benefits and harms of non- restorative treatments for caries management and definitions of these outcomes. "

Okay, so what does that mean to me as the dentist? Do I still drill and fill?

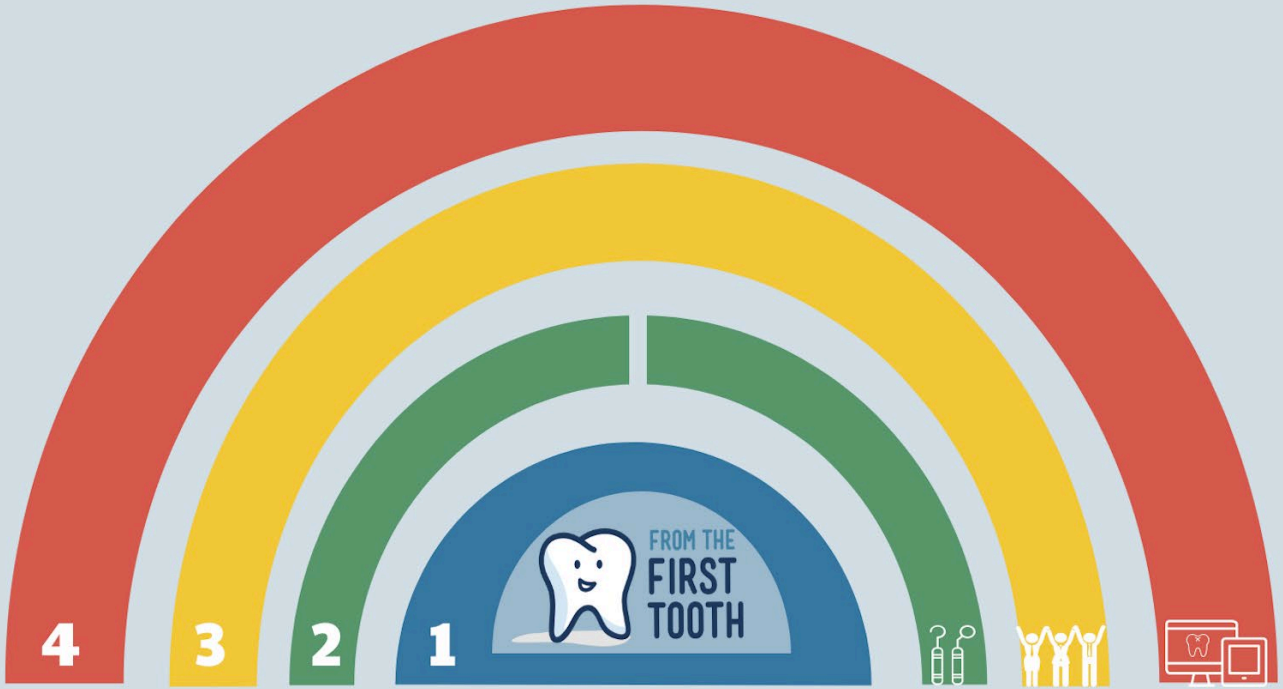
- Yes, but it is not my only choice.
- The new tools are being used every day.
- The new tools work but are not perfect.
- The new tools are very often able to be used by our expanded workforce and in different settings (like primary care? and hygiene centers?)
- It's kind of fun, but lots more things to think about in our new world.
- AND NEXT!!!!!

Oral Health Integration Models for Primary Care and Dental Practices

Children's Oral Health Network of Maine

Blend Models to Meet the Needs of Your Community

1. From the First Tooth
2. Co-located / Embedded Dental Hygienist
3. Integrated Dental Hygienist
4. Virtual Dental Home



Improved Health Outcomes

Increased:

- Access to Care
- Comprehensive Care
- Coordinated Care
- Early Prevention of Disease
- Patient Satisfaction

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