

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

“قَالُوا سُبْحَانَكَ لَا عِلْمَ
لَنَا إِلَّا مَا عَلَّمْتَنَا إِنَّكَ
أَنْتَ الْعَلِيمُ الْحَكِيمُ”

الآية 32 من سورة البقرة

Restoring Young Permanent Teeth *“Hints and Tips”*

By

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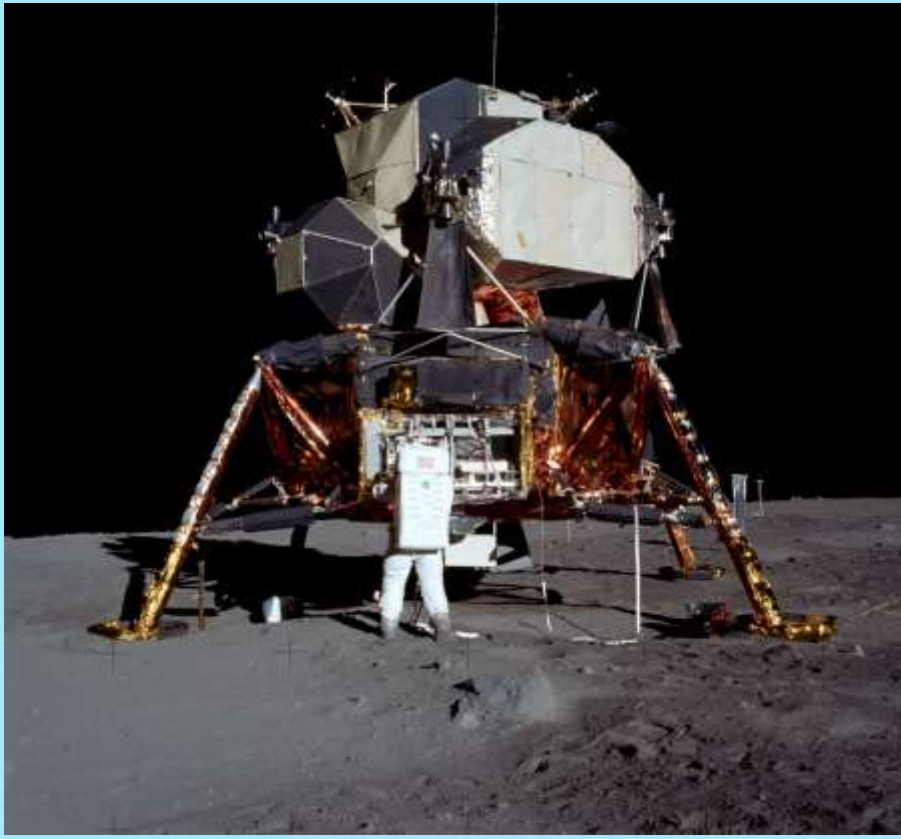
One Chance Only Job

- A simple soccer match could lead to a big diplomatic crisis between two “*brother*” nations. Simply because it’s a one chance only job...





- Photography is another one chance only job. If the artist fails to push the shutter button on the right time, this photo will become of no interest... a picture of ordinary faucet.



- .. So is coming back to earth. If that man fails to turn on that single engine at the right time, he will consume his Oxygen and die on the lunar surface.



Pediatric dentistry is a **one chance only job because it deals with, unfriendly and fearful children who leave you with very little window through which you try to do your job!**

Do your job now or your child patient might never open his mouth again!!!!

A One Chance Only Job Should Be.....

- Fast
- Durable
- Keeps Future
in Mind



Something leads to another....

- Patient *selection*,
tooth, tooth surface



- Material selection



- Technique selection



Patient, Tooth and Tooth Surface Criteria

- Child's age is between 6 to 12.
- At the beginning of that period, management is preventive, conservative.
- As time goes by, management would be more aesthetic-oriented
- In Pediatric Dentistry, we have two customers... a child and parents



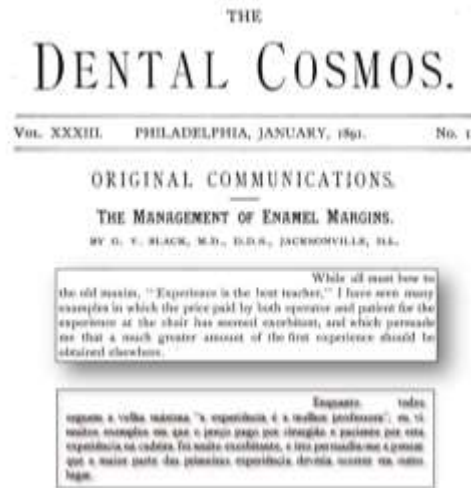
Unique characteristics of the young permanent dentition



- Eruption adjacent to primary teeth & into a pre-existing oral environment
- Molars are susceptible to occlusal caries soon after eruption
- Young patients with a history of caries in the primary dentition are at higher caries risk in the early mixed dentition

- Which tooth to be filled ?
- Which tooth to be sealed?
- Which tooth to be left for observation?

We need to diagnose before we treat!!!



When Mr. Black classified dental caries, he had only one Material of choice that was Amalgam. His classification was perfect for the material he had and the technique he adopted.

That was Black's principles for cavity preparation.

Let's be more specific and look for another new way of dental caries classification that suits the new trends, materials and techniques

International Caries Detection and Assessment System. Please visit.

<http://www.icdas.org>

ICDAS CARIES CLASSIFICATION.

In the ICDAS-system, caries is scored after cleaning of the teeth



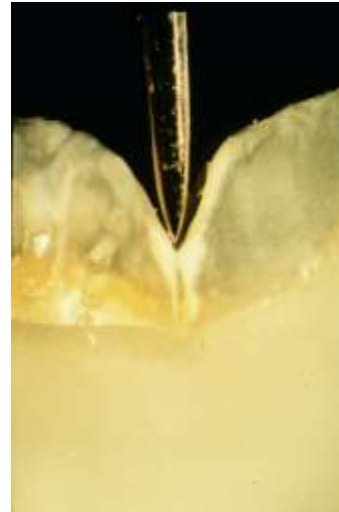
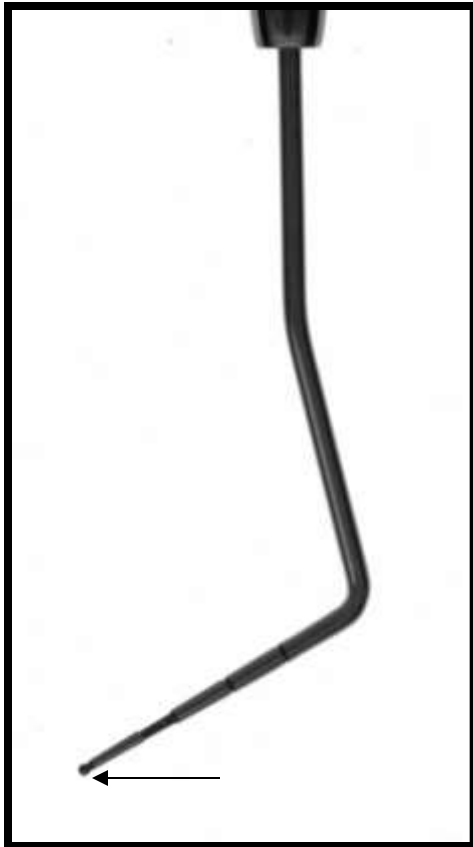
Otherwise caries will be
underscored



Probes ...Explorers?

In the ICDAS-system perio-probes are used to feel with

Explorers are not recommended as they may produce traumatic defects.



ICDAS-detection criteria

The classification system operates with 7 scores.

Score 0=sound

Scores 1-2 involve different stages of white or brown spot lesions

Score 3= Lesions with microcavities

Score 4= Shadowed lesions

Scores 5-6 involve cavitated (into the dentine) lesions



SOUND	OPACITY with air- drying: WHITE, BROWN	OPACITY without air- drying: WHITE, BROWN	SURFACE INTEGRITY LOSS	UNDERLYING GREY SHADOW	DISTINCT CAVITY	EXTENSIVE CAVITY
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Score
0

Scores
1

Scores
2

Score
3

Score
4

Score
5

Score
6



Sound

Ekstrand et al., (1997) modified by ICDAS (Ann Arbor), 2002 and again in 2004 (Baltimore)

14 November 2014

Dr. Hisham El-Batawi

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To decide a line of treatment, it is not enough to classify decayed teeth. You may also need to classify patients using the Caries Risk Indicator (Caries assessment Tool CAT)

Low Risk

Optimal fluoride exposures both systemic and topical

Consumption of simple sugars or limiting to mealtime

High caregiver socioeconomic status (financially stable)

Regular dental visits

Caries risk indicator

Moderate Risk

Suboptimal systemic fluoride exposure with optimal topical exposure

Between meal snacking (1-2)

Midlevel caregiver socioeconomic status .

Irregular use of dental services

Caries risk indicator

High Risk

Suboptimal topical fluoride exposure

Frequent between meal snacking (3 or more)

Low level caregiver socioeconomic status.

No usual source of dental care

Caries risk indicator

High Risk

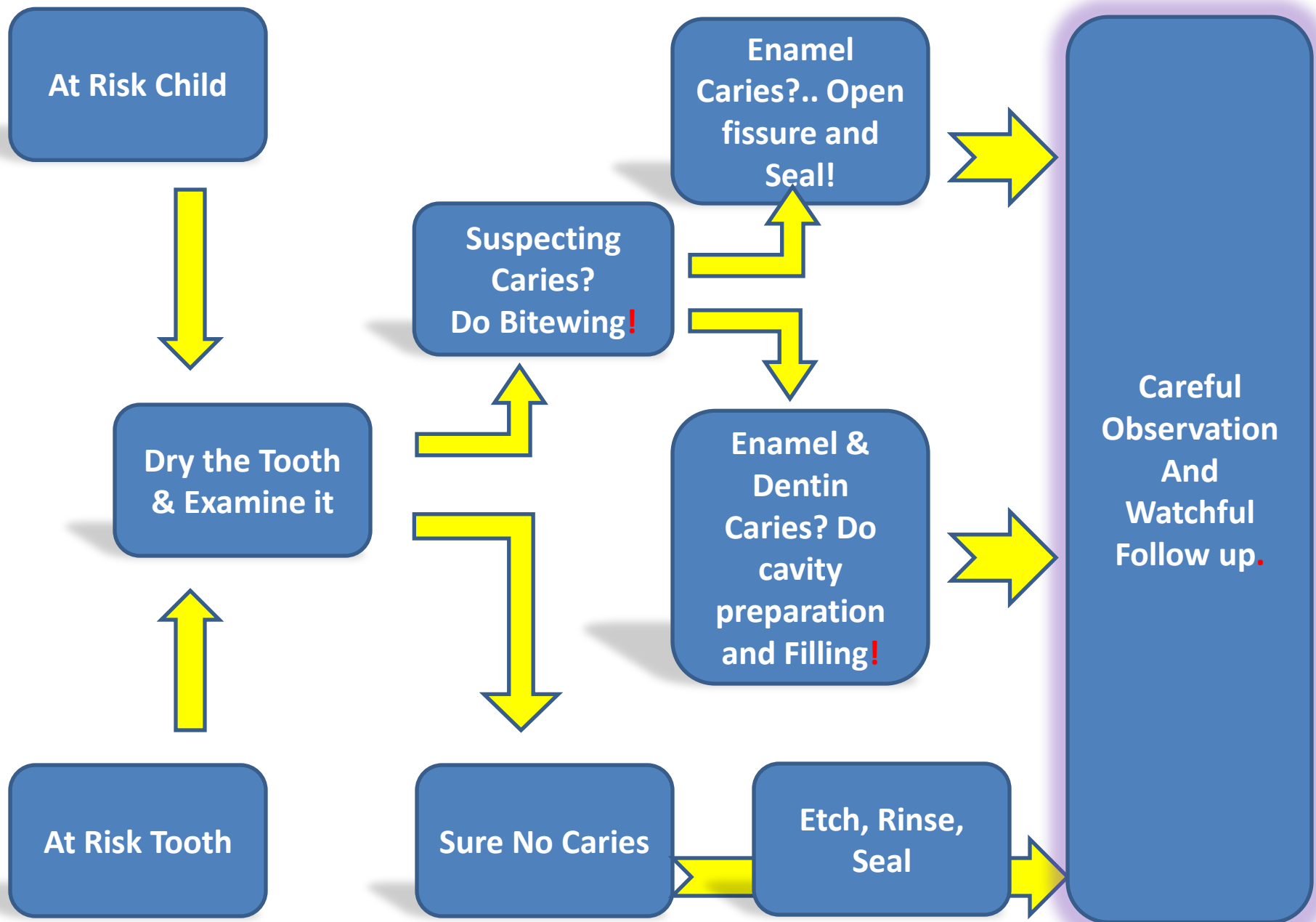
Active caries present in the mother

Children with special health care needs

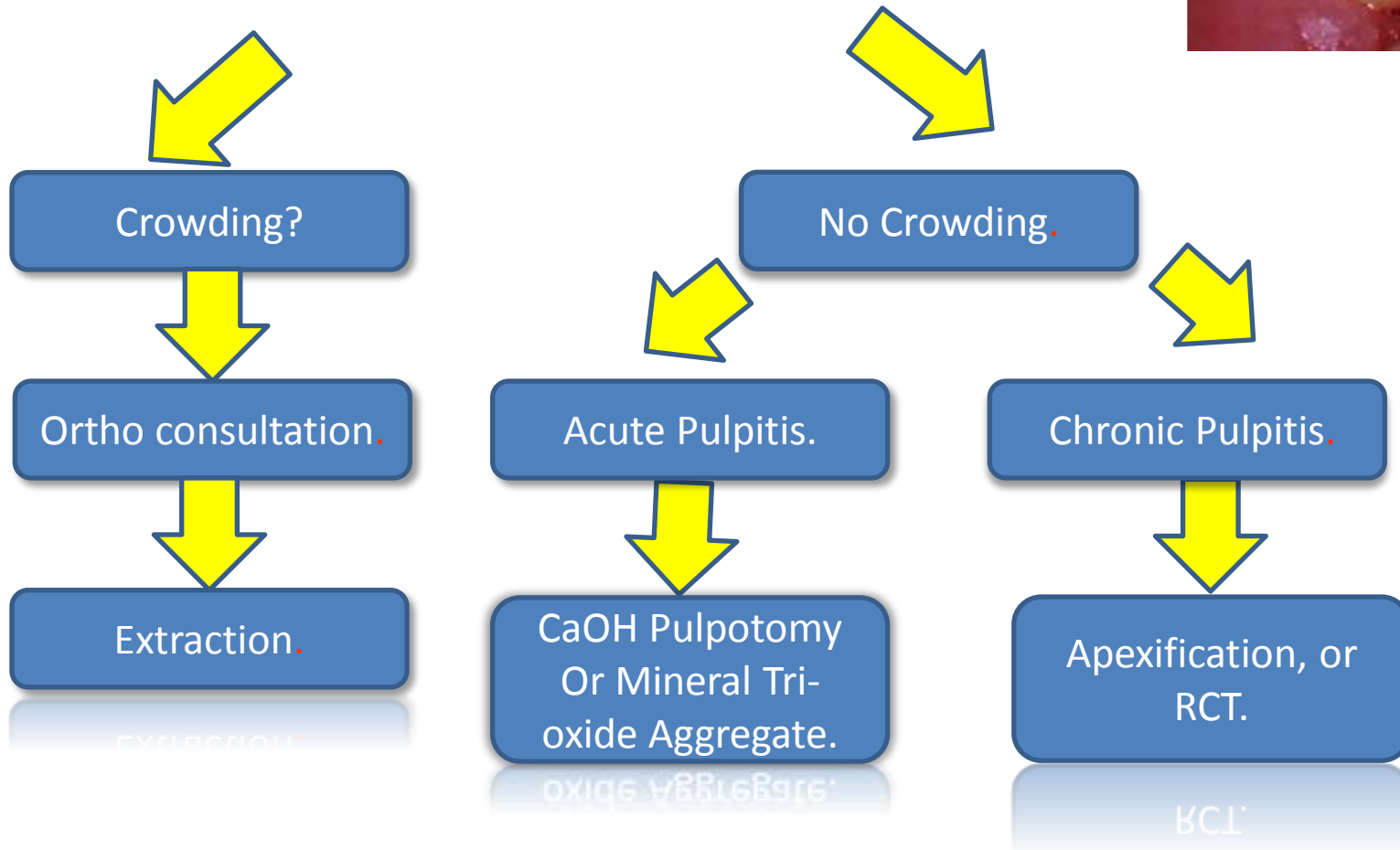
Conditions decreasing saliva flow
(medications, radiotherapy)

After classifying carious teeth and patients' risks, may be now you can answer those questions

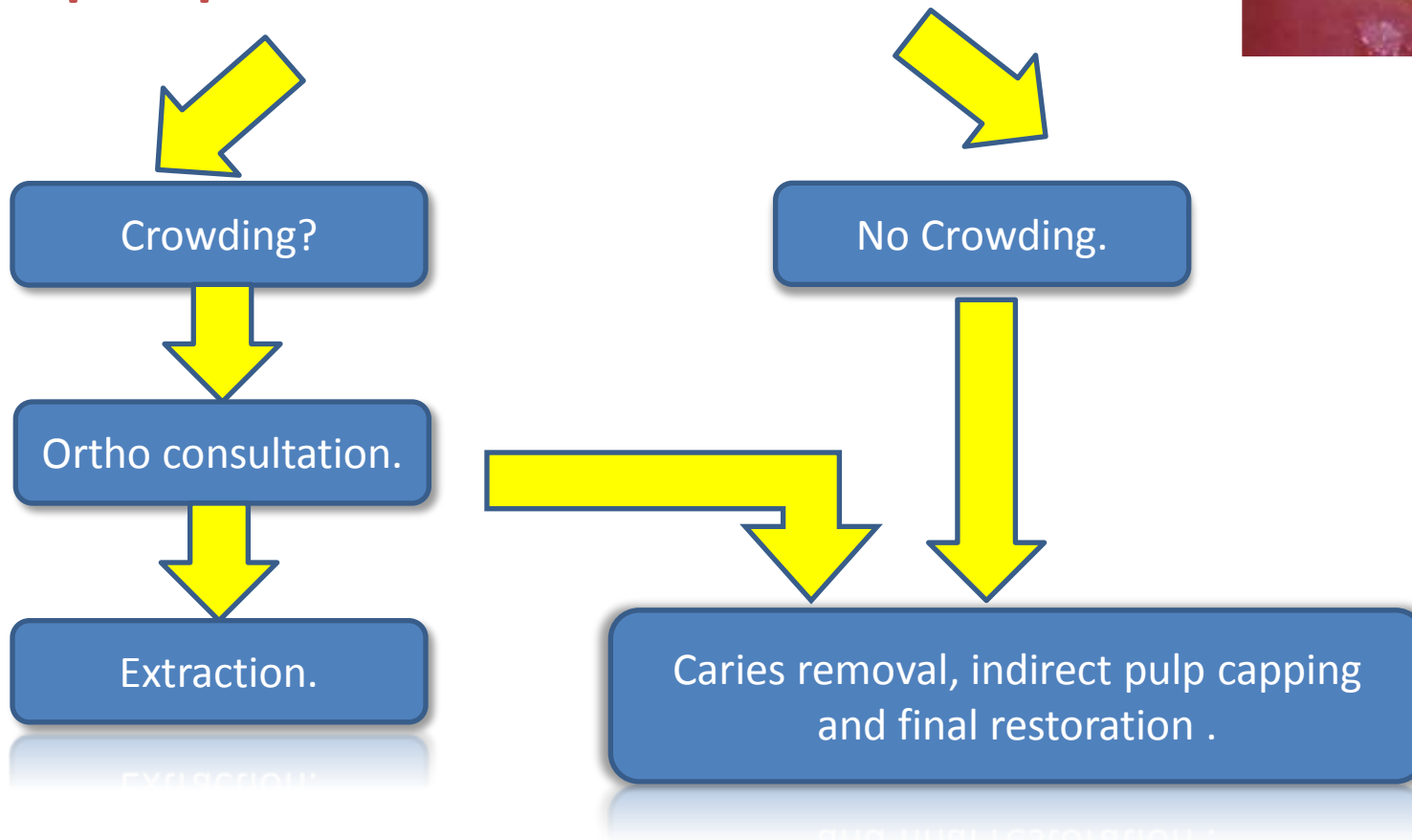
- Which tooth to be filled ?
- Which tooth to be sealed?
- Which tooth to be left for observation?



1st. Permanent molar with deep caries and signs of pulpitis.



1st. Permanent molar with deep caries and **no** signs of pulpitis.



Removal of 1st. Permanent molar? Isn't it a crime?

A tooth that was brand new, in perfect condition, designed and made by God's Hands to stay for more than 100 years and your patient destroyed it 3 years!!

What do you think the prognosis and durability of that tooth would be after root canal treatment?

The answer is no, it is not a crime to remove it provided that It is removed at the right time. When there is evidence of wisdom tooth by radiographic examination... that is at the age of 9 Y 6 M. Remember, a one chance only job should be done at the right time.

.... Extraction of 1st. permanent molar



- Hoping the 2nd. Molar will erupt in the space created by extraction.
- Assuming that the child will have a 3rd. Molar to erupt in place of the 2nd.
- When can you verify presence of 3rd. Molar?

Material Selection

“Say bye to Black’s principles”



Changes in caries prevalence, emphasis on prevention and minimal intervention dentistry

Majority of caries confined to pits and fissures

Concerns about environmental pollution and mercury toxicity from amalgam restorations

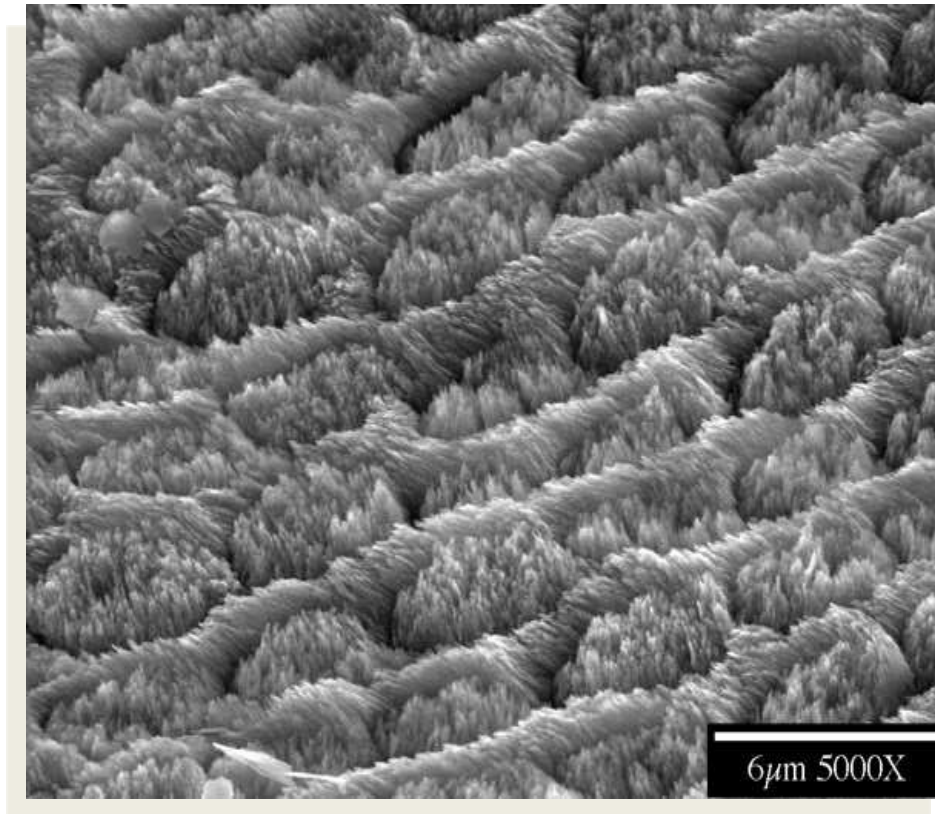
Advances in tooth-coloured restorative materials

Aesthetic desires of patient and parent

The seven alternatives

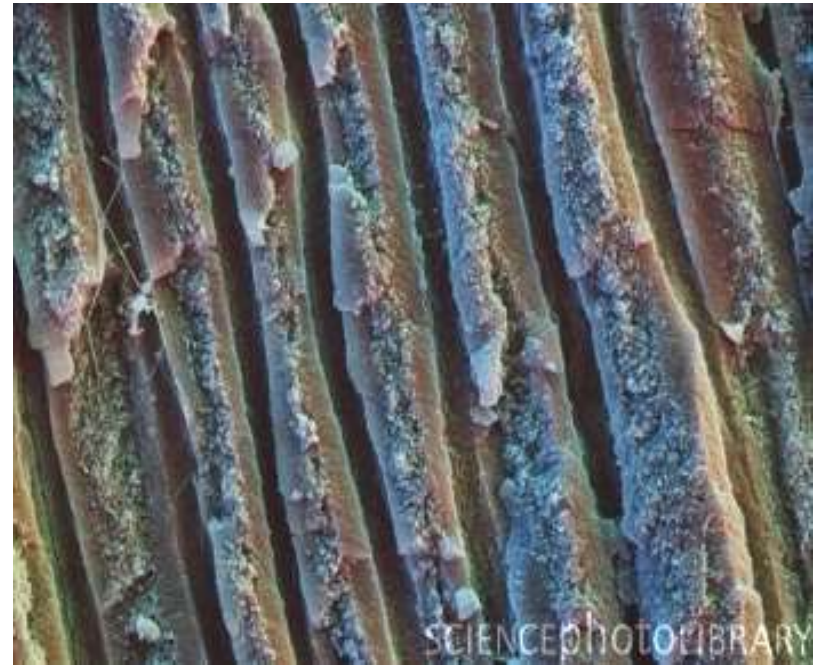
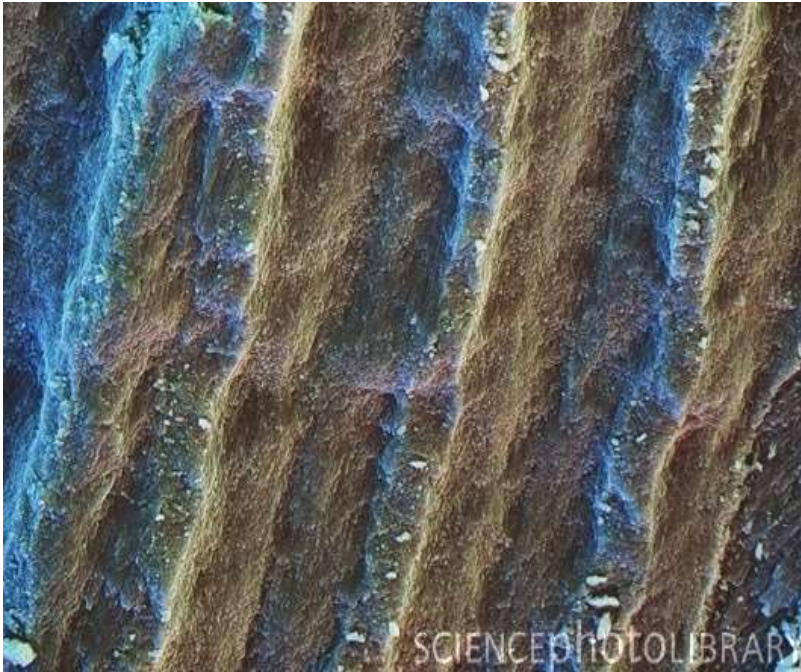
1. Glass Ionomer (packable)
 2. Resin Modified GI
 3. High Viscosity GI
 4. Polyacid-modified composite resin (compomers)
 5. Composite
 6. Amalgam
 7. Steel crowns
- How many of these were not available to Mr. Black?**

Bonding to Enamel is simple



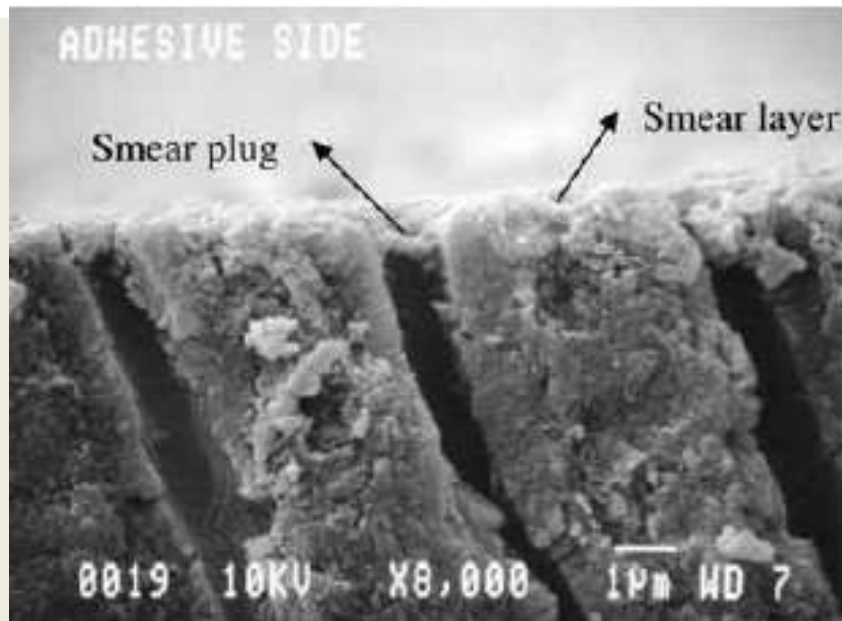
From SciencePhotoLibrary.com

Enamel vs. Dentine



From SciencePhotoLibrary.com

Complicated Dentine

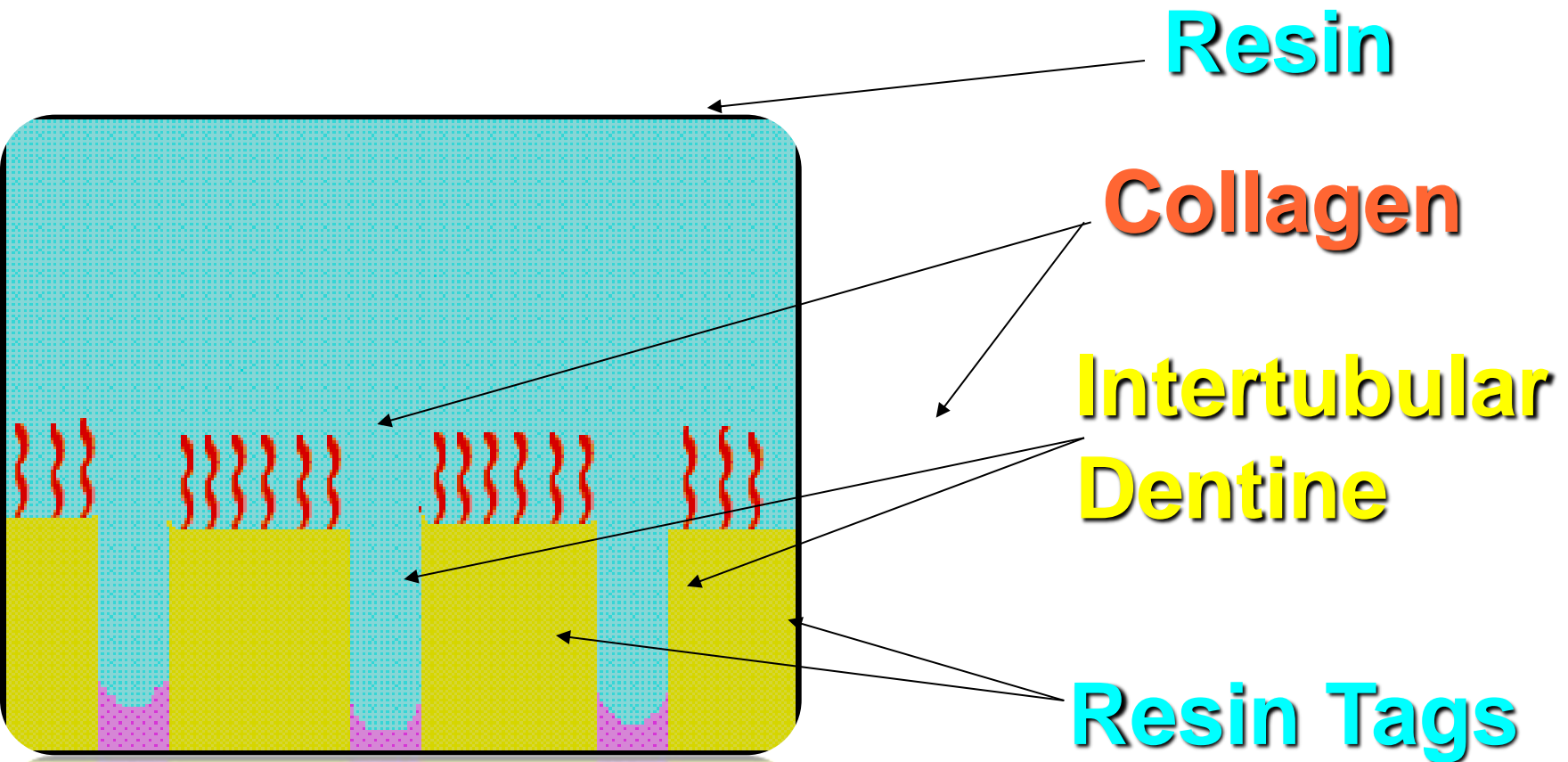


From 3m Espee



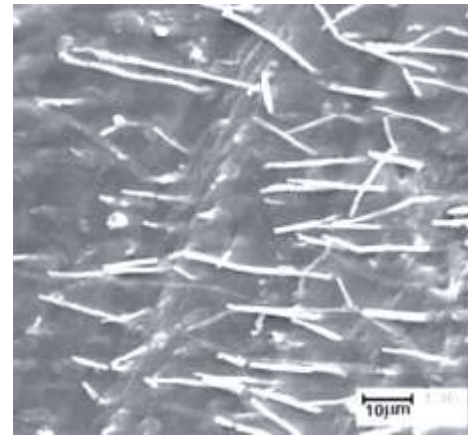
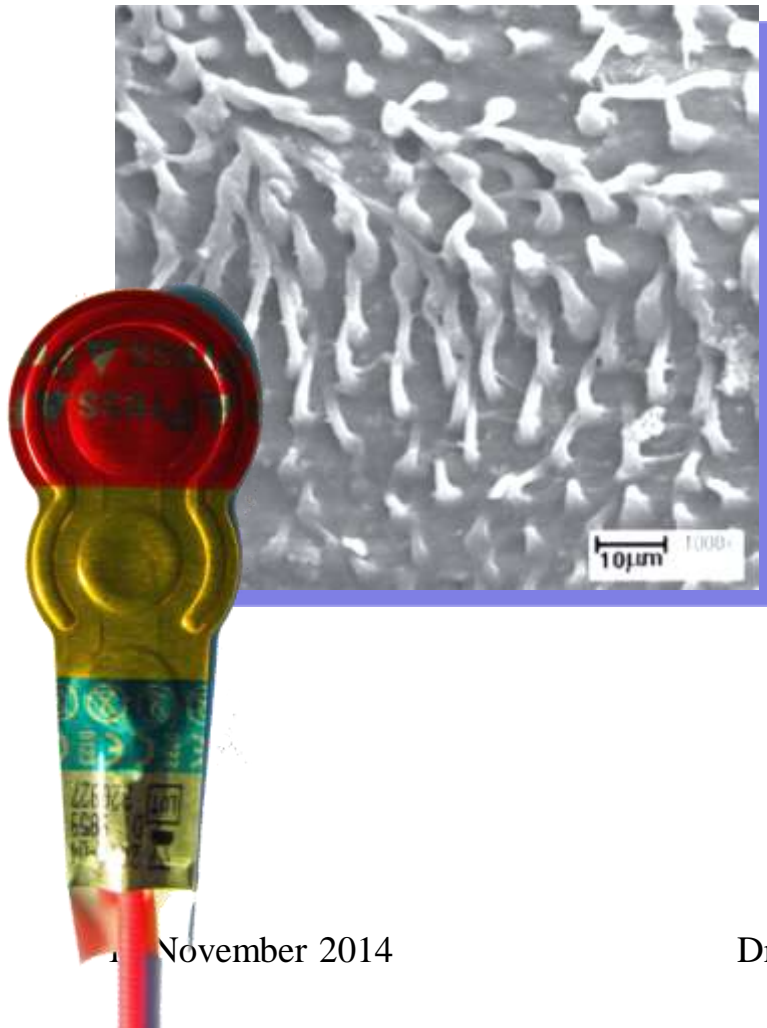
J. Perdigao, University of Minnesota

Bonding to Dentine

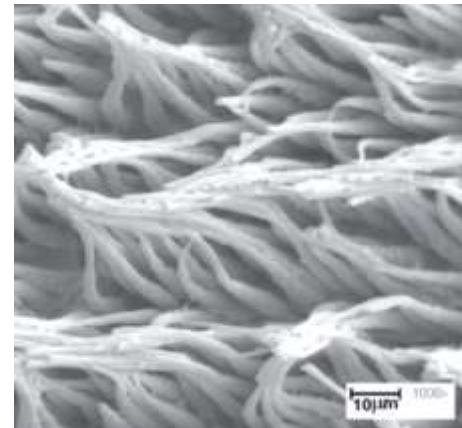


Bonding to Dentine

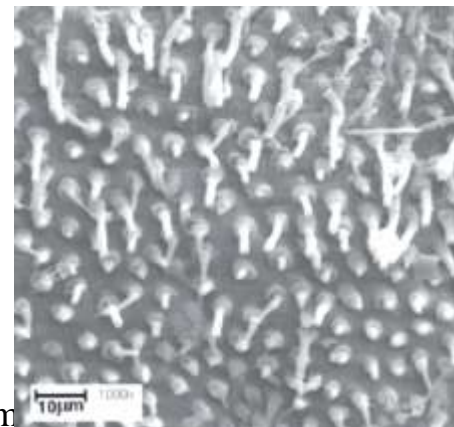
The Adhesive....



Plane



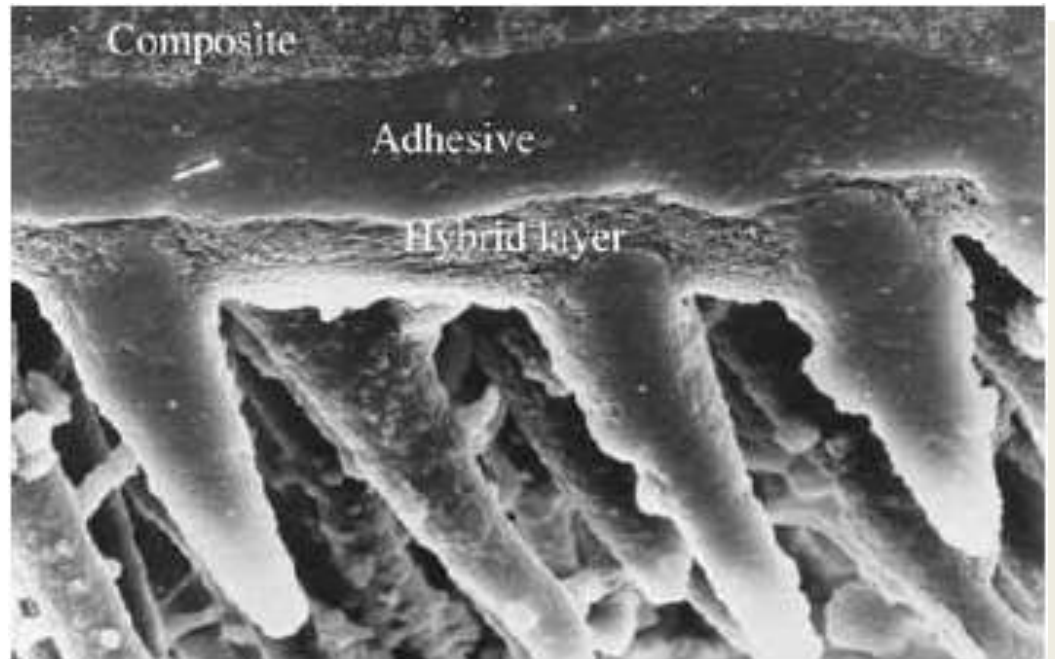
With Etchant



With Conditioner



The Adhesive (cont.)



From 3m Espe

Etch & Rinse



Vs.

Self-Etch



Water's Power of Destruction

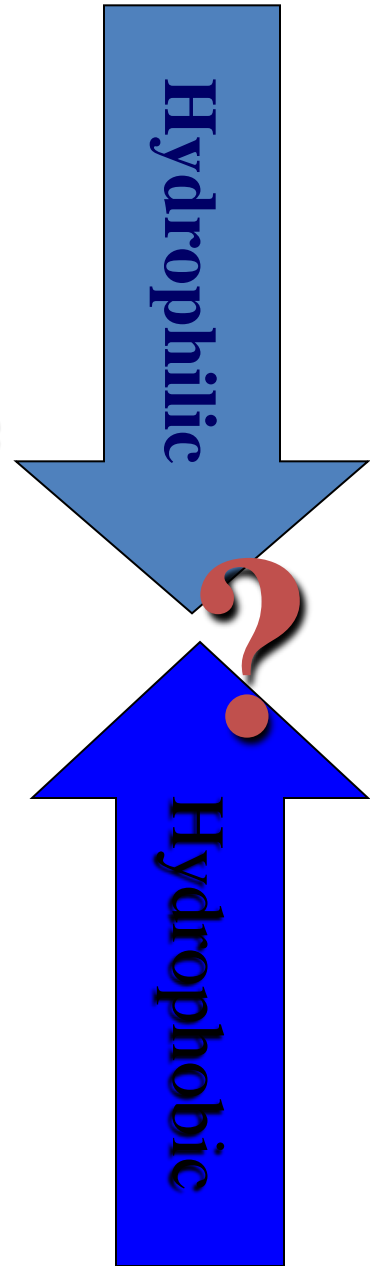
When it rains I Jeddah, it's Venice



Where Will Water Come From?
From dentinal fluid and from micro leakage



Etch & Rinse or Self Etch + Flowable



Etching, rinsing and bonding is the gold standard, but some times the limited cooperation of your child patient does not allow for that multiple step and technique sensitive procedure.

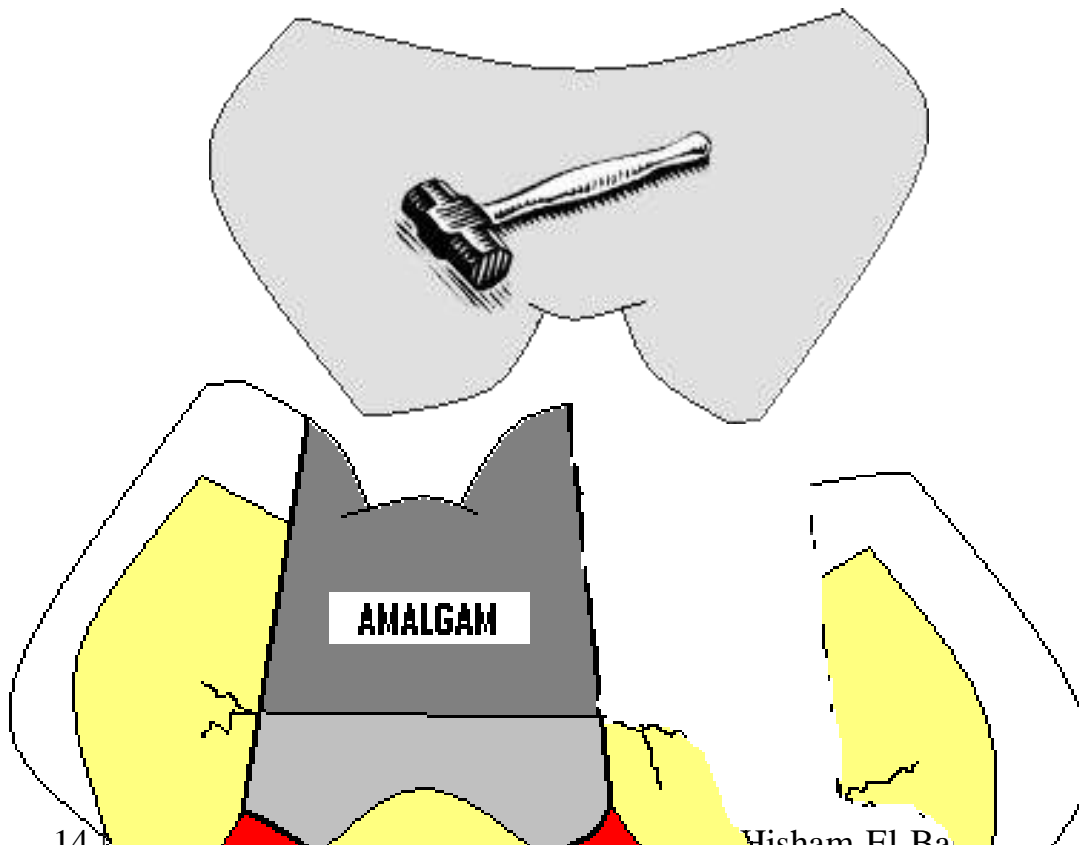
Then the single step, self etching procedure might be recommended.

Should you use it, it is recommended to use a layer of flowable composite after bonding.

Amalgam Vs. Tooth-Colored

Sharp Line Angels Vs. Rounding

- No Amalgam for Pulpotomized Teeth.
- Tooth-Colored fillings show minimal micromovement.

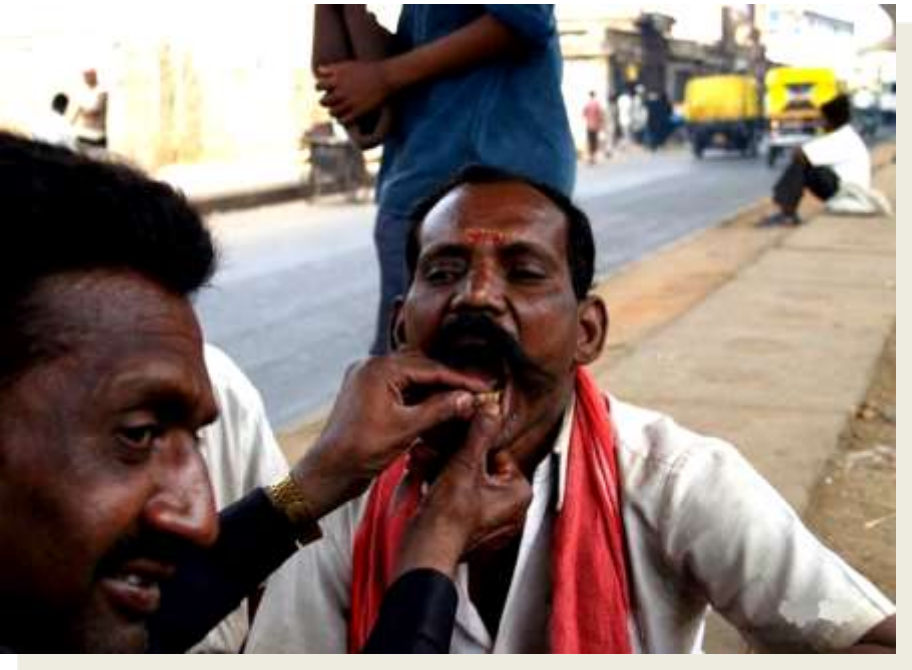


Amalgam still has a place in our practice

- **Dental Public Health Perspective**
- **Dentist Friendly**
- **Durable.**
- **Cheap.**

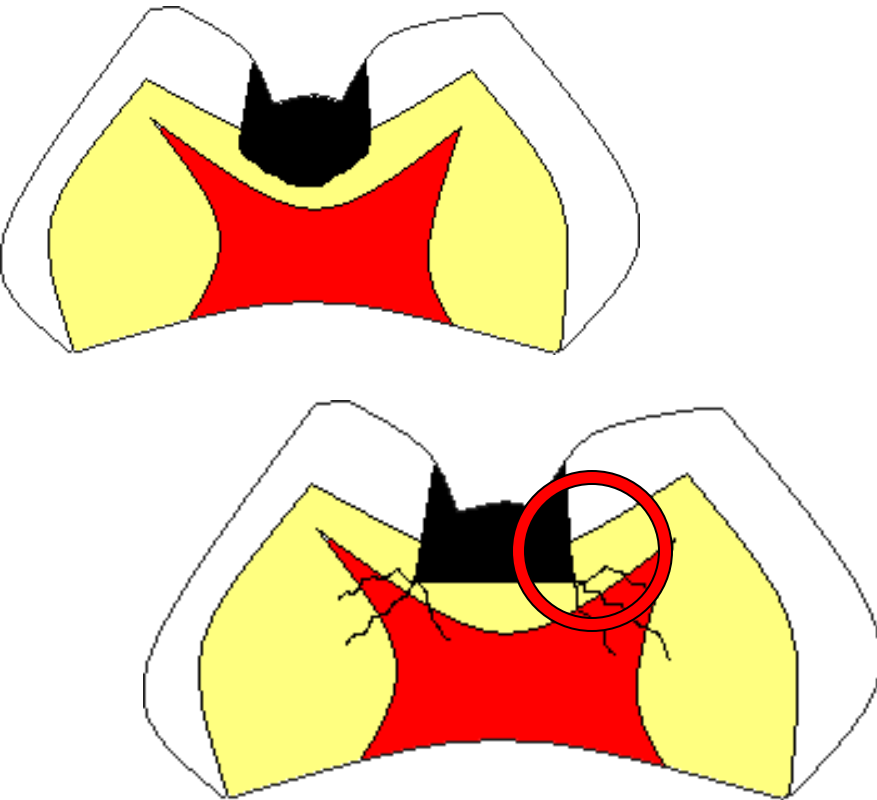


If we can't reach the poor....



Someone else will do.

When using Amalgam is unavoidable...



- No sharp line angles.
- Add bulk through width and depth.
- Do undercuts for retention.
- No flat pulpal floor.

We are destroying teeth!!!

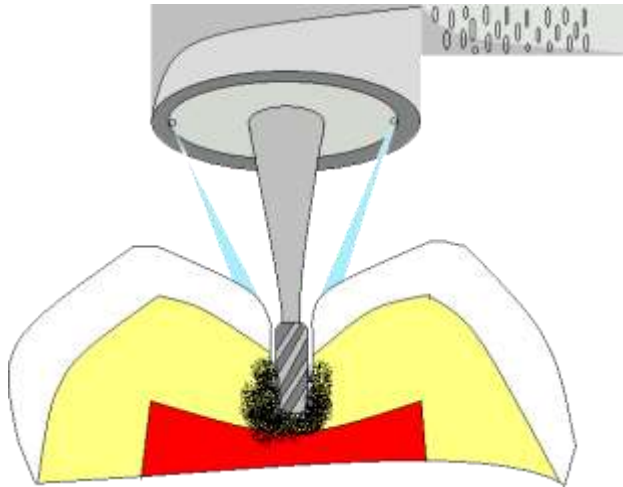
- We have to stop that



About the design of our tools



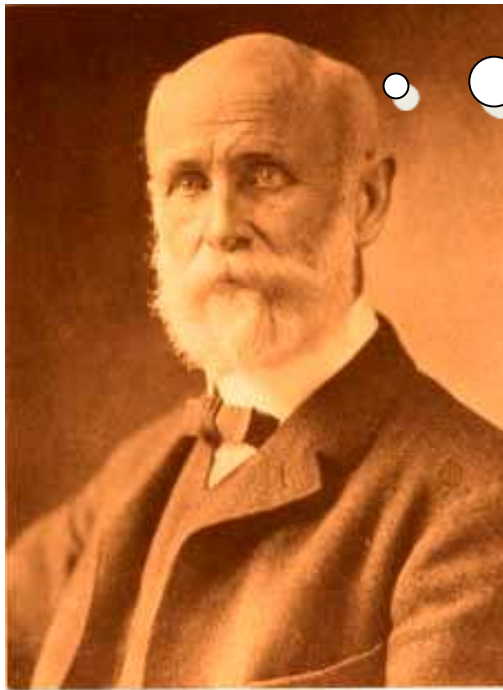
About the design of our tools



- Even when using coolant, the bur goes alone and water is left out. The deeper you go, the more dentin you burn.



Black's principles were good for his
time



*Yours truly
E. W. Black*

*Fast, Durable
and keeps
Future in Mind*

Extension for Prevention

Extension for Retention

Mr. Greene Vardiman Black (1836-1915)



- Introduced rotary instruments to Operative Dentistry.
 - Classified Dental Caries.
-
- Introduced Black's Principles for Cavity Preparation

Fast, Durable andKeeps Future in Mind

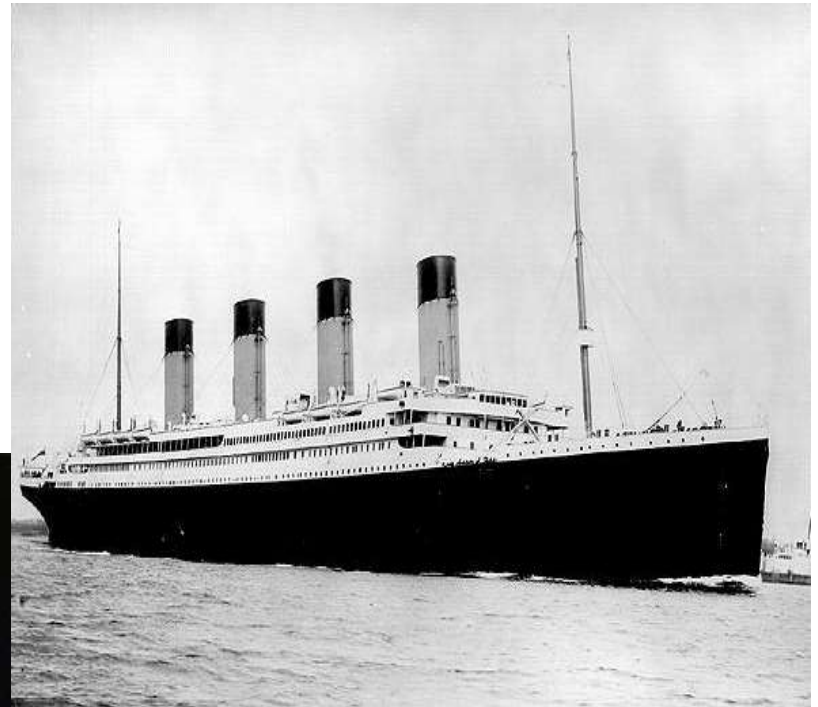
We no longer use Black's dental chair, should we Insist to use his cavity preparation principles?



The disaster of Challenger.



The disaster of Titanic.



We trusted
metals so much....

The disaster of...The Comet



The comet was the world's 1st commercial jet liner.

Vogel, November 15, 1952

QUIDA WAGNER'S DESK HAS WINGS!
B.O.A.C.'s adviser on flight technique, Quida Wagner gets her facts firsthand along 1000 routes around the world.



AROUND THE WORLD ON 55 POUNDS!
Five continents. Forty-six thousand miles. Eighteen climates. And looking for just all the rest... after the regular B.O.A.C. baggage allowance.
You'll be interested to see on the following pages the "air-conditions!" Quida Wagner picked for her world flight of destiny. You'll be even more interested to get her friendly, helpful counsel on how to plan and where to pack for your own B.O.A.C. flight.

"QUIDA WAGNER" THE "QUIDA" FACTOR. B.O.A.C. Add Midland, America, New York, N.Y. And in most of Europe the first-packed. JOHN FORD, "THE LAMAR GALT."

THE COMET JETLINER
B.O.A.C. Speedbirds
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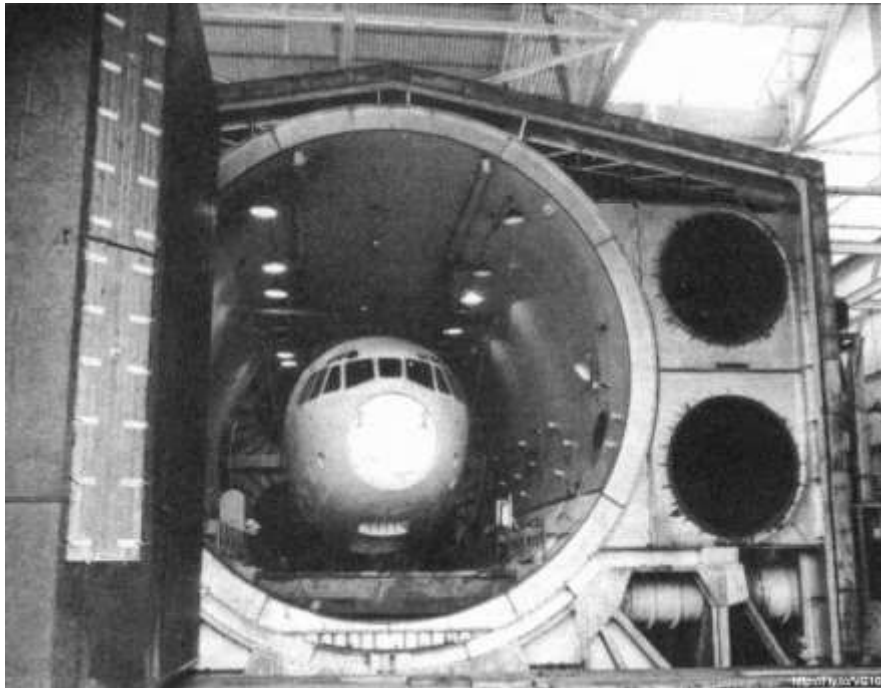
NOVEMBER 15, 1952

Most of comets
crashed during flight
without clear
explanation

10th January 1954

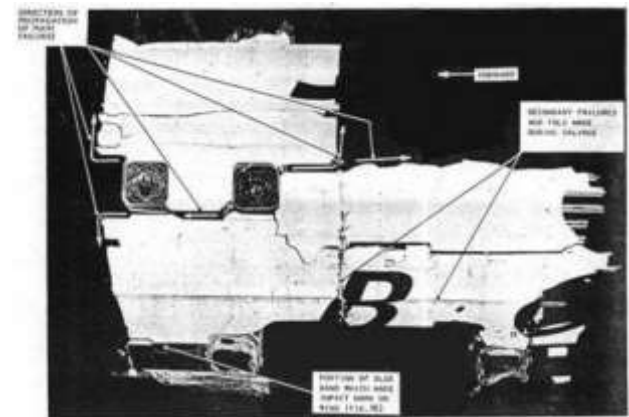
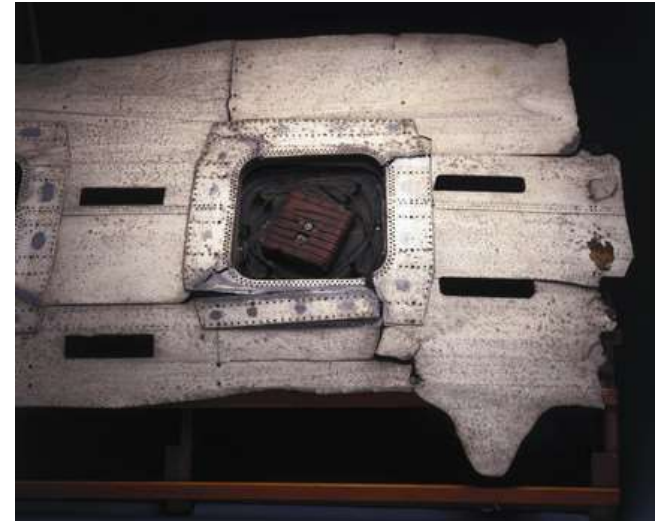
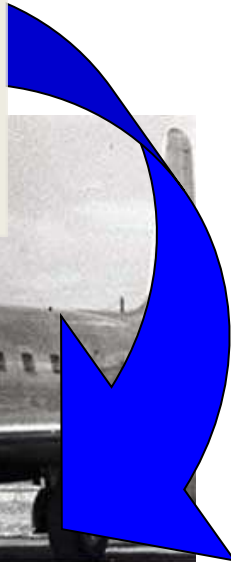
Comet jet crashes with 35 on board

Thirty-five people are
missing, feared dead, after a
Comet jet airliner crashed
into the Mediterranean.



Trying to find an explanation,
investigators inserted the body in
a bunker and applied repeated
cycles of air compression and
decompression simulating
flight conditions.

Investigators noticed that the sharp line angles of the aircraft windows started to show cracking similar to those of the remaining wreckage.



So... investigators learned that using Black's principles in air craft design is a HUGE mistake!!!

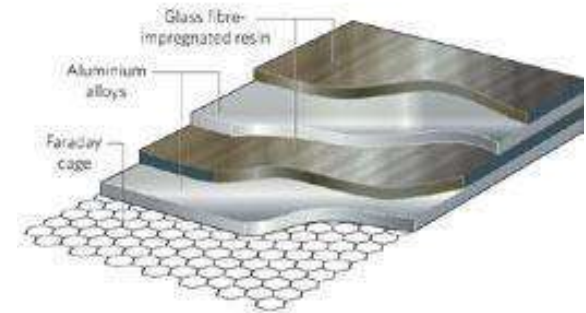


- No More Sharp Line Angels

An advice..... Don't get
impressed by big names like
TITANIC,
CHALLENGER and COMET....
Look for the science behind the name
How about BOEING's dream?

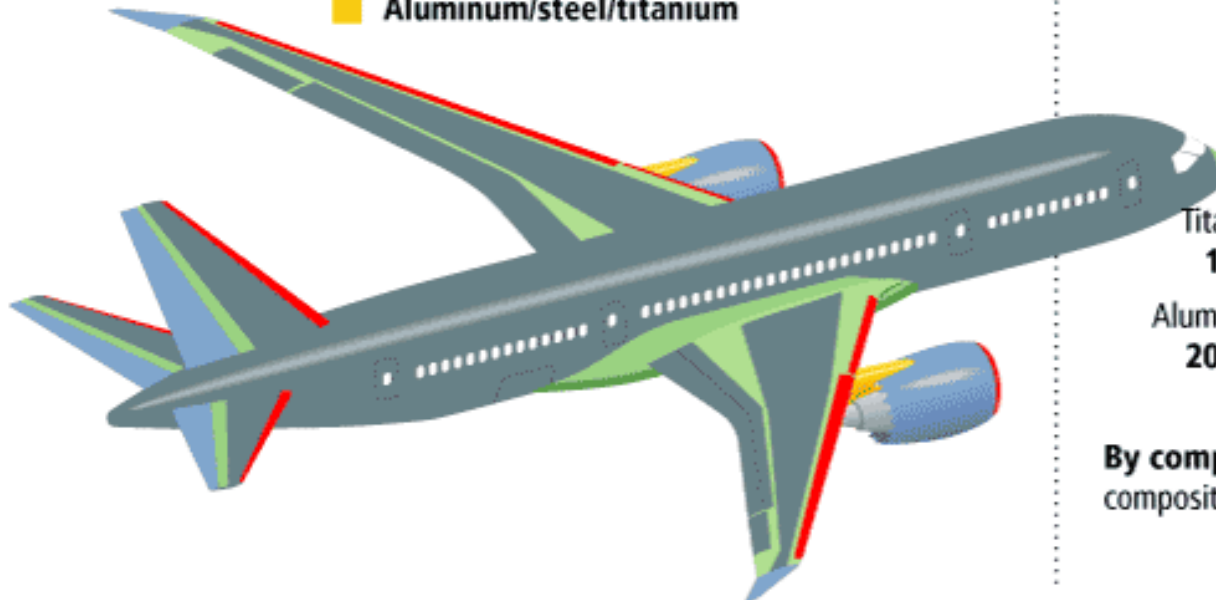


...By the way, it is 50% made of COMPOSITE and there is a lot of science behind that..

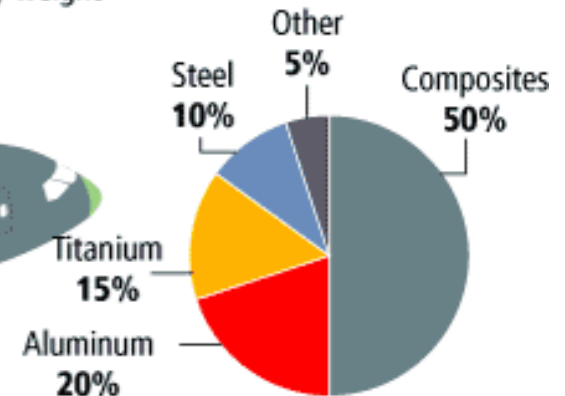


Materials used in 787 body

- Fiberglass
- Aluminum
- Carbon laminate composite
- Carbon sandwich composite
- Aluminum/steel/titanium



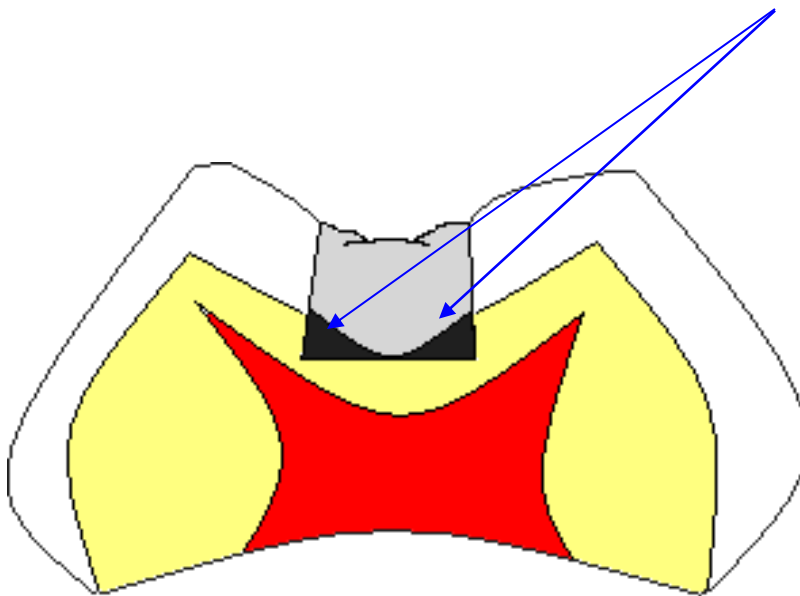
Total materials used By weight



By comparison, the 777 uses 12 percent composites and 50 percent aluminum.

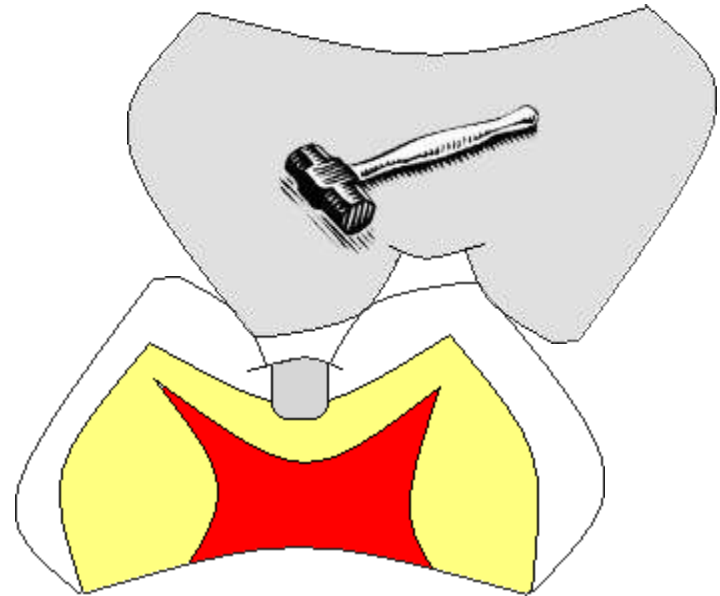
Another reason for rounding

VOIDS !



Sorry Black's Principles it's time for change

- Conservative
- Shallow Cavity.
- No **Extension** for Prevention.
- No Extension for Retention.



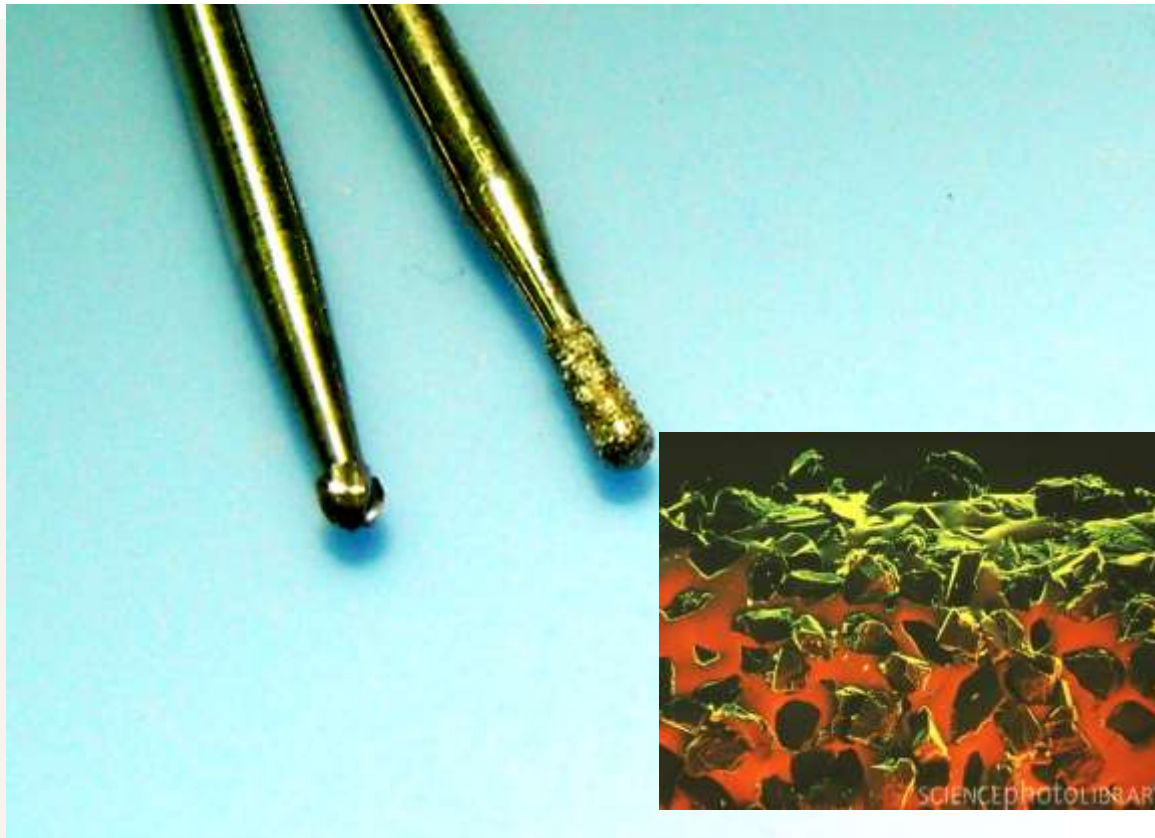
From now on, our cavities will be



- Fast
- Strong and Durable

- Conservative
- No extension for prevention
- Rounded line angels.

Bur selection, *diamond... or .. carbide...?*



SSC's in permanent molars indications

- Hypoplasia / hypomineralization
- Teeth with very large carious lesions and those requiring pulp therapy
- Patients with special needs where a SSC likely to be more durable than direct filling materials



Advantages

- Durable
- Relatively inexpensive
- Single step extra-coronal restoration
- Full coronal coverage
- Reduces sensitivity from exposed dentine
- ↑s occlusal vertical dimension

Steps for Chrome-Steel Crowns



Modifying crown edge



I do this only for permanent teeth

Disadvantages

- Poor aesthetics? (Metallic)
- Potential for nickel allergy (rare)
- May cause gingival or periodontal problems if retained for long periods

Hypoplastic teeth



Treatment of Hypoplastic anterior teeth

- Discrete hypoplastic white or yellow-brown spots can be improved by enamel microabrasion.
- Or by making shallow saucer-shaped preparations in enamel to remove the intensely colored tooth structure and then restoring the enamel with composite resin
- Composite resin or porcelain veneers provide a treatment option for patients who have moderate to severe staining of one or more teeth.

Restoring Traumatized Teeth



Charles Darwin Once Said...

“It is not the strongest of the species or the most intelligent that will survive,

It is the one most adaptable to change.”



Thank You

