MYTH BUSTERS:
DO WE REALLY NEED TO RESTORE PRIMARY TEETH?

Elizabeth Shick, DDS, MPH
Assistant Professor in Pediatric Dentistry
Director of Admissions and Global Health
CU School of Dental Medicine

NNOHA
Denver, CO
November 8, 2016

Yes!!
I have no relevant financial relationships with any commercial interests.
GOALS AND OBJECTIVES

- Understand contemporary pediatric dental treatment standards of care
- Dispel any myths of pediatric dentistry
We know history repeats itself.....

Cars

THEN

NOW
MOVIES

THEN

NOW
REALLY COOL SUNGLASSES ON REALLY COOL CELEBRITIES

THEN

NOW
BUT......CAVITIES ???

MOM

CHILD
DENTAL CARIES

- Most common chronic childhood illness worldwide, surpassing asthma and allergies
- 5x more common than asthma
- 80% of all dental disease in US children occurs in low-income Medicaid eligible children
- 4th most expensive disease to treat
ORAL HEALTH QUALITY OF LIFE

- Impacts quality of life
- Pain, infection and cellulitis
- High morbidity, low mortality
- Painful and costly dental care
- Problems eating
- Problems sleeping
- Poor school performance
QUALITY OF LIFE OUTCOMES

Gherunpong S, Tsakos G, Sheiham A. The prevalence and severity of oral impacts on daily performances in Thai primary school children. Health and Quality of Life Outcomes 2004:2; 57-64.

- Cross-sectional study of 1126 children 11-12 years old
- Instrument: Child-Oral Impacts on Daily Performances (Child-OIDP)
- 8 impacts: Eating, Speaking, Cleaning teeth, Relaxing/Sleeping, Smiling/Laughing, Emotional wellbeing, Contact with others.
- Clinical dental exam
QUALITY OF LIFE OUTCOMES


- 85% children had 1-4 impacts out of 8
- 73% had eating as impact
- Eating and Smiling impact was high severity
- Most common cause of impact was 53% dental pain/sensitivity
SCHOOL PERFORMANCE

Research shows that students with oral health problems have lower school performance and more missed school days.


DENTAL EMERGENCIES

- Children seen by the ER for dental problems:
  - 51% trauma
  - 40% cavities/infection
  - 9% other

- Some children’s hospitals report approximately 2,500 patients seen for dental emergencies in a 6 month period
  = approx 415/month
DENTAL EMERGENCIES

Deamonte Driver
12 years old
Prince Georges County, Maryland
Died February 27, 2007

Does anyone recognize him?

Cause of death: complications from dental infection
Our #1 goal is to prevent children 0-3 years old from getting cavities.

- Restorative is often painful, difficult, costly.
- Pre-cooperative age group.

**LET'S START AT THE VERY BEGINNING…**

**Age 1 dental visit**

(or when first teeth erupt)
LET’S START EARLIER THAN THAT…

Myth:
You should not touch a pregnant woman during pregnancy.

Truth:
These guidelines have changed a lot and the new guidelines include comprehensive care during pregnancy.
Goal for treating pregnant women is to eradicate dental disease prior to delivery

- ADA

……don’t believe me????
On the other hand, thanks to an evolving body of evidence that dental care is not only safe during pregnancy but can also prevent long-term health problems for both the mother and child, many dentists and health organizations are actively promoting the importance of oral health care during pregnancy.

The Connecticut State Dental Association is one group at the forefront of these efforts. “Dental care is safe for pregnant patients and can prevent future health problems for mothers and their babies,” said Dr. Carolyn Malon, CSDA president.

In collaboration with a number of health organizations, the CSDA is spearheading a campaign to help dentists ensure that pregnant women receive care. CSDA recently produced “Considerations for the Dental Treatment of Pregnant Women,” a four-page resource that aims to help dentists understand the importance of providing
The highlights:

1. Can treat pregnant women in any trimester, but weeks 14-20 ideal
2. Can use Lidocaine with Epinephrine
3. Can take diagnostic x-rays such as BWX and PAs
4. Restore all carious teeth prior to delivery
5. Maintain all recalls and preventive routines like normal
Myth:

Training toothpaste with no Fluoride is recommended for kids under 3 years old.

Truth:

Children should begin using toothpaste with Fluoride as soon as the first tooth erupts. Training toothpastes typically do not contain Fluoride.
FLUORIDE

Myth:
Toothpaste for children is different than adult toothpaste.

Truth:
Children’s toothpaste has the same Fluoride content as adult toothpaste, the main difference is the flavor.
FLUORIDE

Safe to swallow
RESTORING PRIMARY TEETH

Myth:
If your DA/DH brings your overlapped BWX they must have been impossible to get.

Truth:
Don’t settle! If you get a decent BWX at all then you should be able to open the contacts. Train your DA/DH to take retakes as it’s crucial to proper diagnosis.
RETAKES, RETAKES, RETAKES!

BWX #1 look at #J mesial
Would you restore this???

BWX #2 look at #J mesial
Yes, restore this for sure
RESTORING PRIMARY TEETH

Myth:
If decay looks in the pulp on the x-ray then it’s in the pulp.

Truth:
Be optimistic and explain both options of IPC/Composite and Pulpotomy/SSC when you see deep lesions. Many of these will not be in the pulp.
Present both options to caregiver and even provide estimate for both procedures
Indirect Pulp Cap (IPC) on primary teeth very successful

Farooq NS, Coll JA, Kuwabara A, Shelton P.
Success rates of formocresol pulpotomy and indirect pulp therapy in the treatment of deep dentinal caries in primary teeth.
Pediatric Dentistry 2000;22(4):278-86.
Conclusions

1. Indirect pulp therapy has a statistically significant higher success rate (93% vs. 74%) when compared to a single visit formocresol pulpotomy for the treatment of a deep carious lesion in primary molars followed 2 to 7 years.
2. A primary tooth presenting with signs and symptoms of pain compatible with a diagnosis of reversible pulpitis can be as successfully treated with indirect pulp therapy as with a formocresol pulpotomy.
3. Formocresol pulpotomy significantly hastens the exfoliation of treated primary molars and indirect pulp therapy does not.
4. Based on clinical and radiographic evidence, performing indirect pulp therapy in a one-step procedure (i.e., decay is left near the pulp and no attempt is made to remove it later), does not result in caries progression.
5. The type of immediate restoration influences the pulp therapy results. A formocresol pulpotomy restored with an immediate steel crown has a statistically significant higher success rate 50/61 (82%) than FP's restored with IRM temporary restorations 5/13 (38%).

The authors thank Dr. Norman Timanoff, Chairman, Department of Pediatric Dentistry, at the University of Maryland Dental School for his reviews and contributions to the manuscript. Dr. Farooq is supported by an NIDCR Grant #5K08-DE00404-02.
Myth:
Most Class II lesions in primary teeth can be monitored, not treated, and won’t progress during lifetime of the tooth.

Truth:
Just look what happens in one year....
Would not restore based on initial BWX
Would restore based on initial BWX
RESTORING PRIMARY TEETH

Myth:
Formocresol is carcinogenic.

Truth:
Well yes… but it still one of the pulpotomy agents of choice and supported by research. Ferric Sulfate found equally effective in research.
Conclusions

Based on available information at present, this evidence-based assessment concludes that, in human carious primary molars with reversible coronal pulpitis, a pulpotomy performed with either ferric sulphate or formocresol is likely to have a similar clinical and radiographic success.
Myth:
You can place a composite over a pulpotomy.

Truth:
This is not standard of care, Stainless Steel Crowns are recommended, more durable, less leakage and lower rates of recurrent decay and infection.
THIS IS HOW THOSE END...
INDICATIONS FOR SSC


1. After pulp therapy
2. For restoration of multi-surface caries
3. For high risk patients
4. Primary teeth with developmental defects
5. Where a filling is likely to fail, proximal box extends beyond the line angles of the tooth
6. Fractured teeth
7. Teeth with extensive wear
8. Abutment tooth for space maintainer
WHILE WE’RE TALKING EXTRACTIONS

Myth:

You can’t get an infected tooth numb.

Truth:

Most times you can, I prefer to remove the source of infection immediately with children especially in the case of any facial swelling.
FACIAL SWELLING

- Facial swelling accompanied by pain, limited opening and deviation on opening.

- Evaluate if swelling is into orbit or will obstruct airway and refer to ER or OMFS immediately for IV antibiotics and Incision/Drainage.
FACIAL SWELLING

Antibiotics

- Oral:
  - Amoxicillin 20-40mg/kg/day in divided doses every 8 hours
  - If penicillin allergic:
    Clindamycin 8-20mg/kg/day in 3-4 divided doses

- IV
  - Unasyn 100-400 mg/kg/day in divided doses every 6 hours
  - Clindamycin 20-40 mg/kg/day in 3-4 divided doses
Myth: You must prescribe antibiotics in the presence of draining fistula or abscess.

Truth: This does not require the use of antibiotics, but rather RCT or EXT.
If there is no external facial swelling then antibiotics aren’t necessary.
PRIMARY TOOTH TRAUMA

Myth:
Extract the coronal fragment when you see root fracture post trauma.

Truth:
These do not have to be extracted and can be monitored for symptoms and infection.
A Clinical Report on Partial Pulpotomy and Capping with Calcium Hydroxide in Permanent Incisors with Complicated Crown Fracture

Mitroir Czek, DMD, PhD, Stockholm

The exposed pulps of 60 permanent incisors with a complicated crown fracture were treated with partial pulpotomy and calcium hydroxide dressing. The interval between accident and treatment varied from one to 1,107 hours and the age of the pulpal exposure ranged from 0.5 to 42.0 weeks. Of the teeth, 28 had immature and 32 had mature roots. The treatment was successful in 55 teeth, and 29 had normal, no changes except radiographically, observed intracoronal or periapical radiographic findings. In an immature root, the changes included a periapical radiolucent lesion, a periapical radiopaque lesion, and a periapical radiolucency. The follow-up examination, varied from 14 to 60 months, with an average of 31 months.


An exposed pulp in young crown-fractured teeth is usually treated with either capping or pulpotomy, depending on the degree of pulp exposure, the interval between accident and examination, and the stage of root development. Calcium hydroxide is regarded as the preferred dressing.

Capping of the pulp is recommended when the exposure is small and when it can be treated shortly after the accident. These indications apply to only a limited number of teeth, and, in the majority of cases, pulpotomy is therefore performed.

Pulpotomy involves removing the exposed portion of the pulp, with the incision placed at the level of or near the external opening of the root canal. Because of objections of a histologic as well as a psychological nature, the treatment has been criticized by some as unnecessary and unnecessary by others.

Partial pulpotomy, that is, removal of only part of the exposed pulp, is recommended for those cases classified as pulpitis or pulp necrosis. Calcium hydroxide is used in the treatment of exposed and nonvital pulps in young patients. It has been used to treat teeth with an exposed pulp in young patients, and the results have been reported to be excellent. Calcium hydroxide is used to seal the pulp in the treatment of young patients with an exposed pulp in young patients.

Clinical observations during the treatment of young patients with an exposed pulp in young patients have shown that the pulp responds with a decrease in the number of inflammatory cells in the pulp and an increase in the number of fibroblasts. The results of the treatment have been excellent in young patients with an exposed pulp in young patients. Calcium hydroxide is used to seal the pulp in the treatment of young patients.
This is not a myth, it just works!!  This procedure has high success rates and is easy to perform. Know it like the back of your hand…..

1. Anesthetize, isolate, remove 1-2mm pulp tissue with diamond bur high speed with water
2. Ensure that pulp is healthy and there is no heme
3. Place GIC over pulp and completely seal
4. Re-bond tooth fragment or composite build-up
AVULSION

- Results in complete loss of tooth
- Primary teeth are not replanted
- Permanent teeth should be replanted into socket site ASAP
- Prognosis of tooth depends on time outside the mouth
- The faster the tooth is re-implanted, the better prognosis
AVULSION

- Replant on the spot if possible

- Transport tooth in Save-A-Tooth, milk or saliva

- DO NOT store in water
McIntyre JD, Lee JY, Trope M, Vann WF. Permanent tooth replantation following avulsion: using a decision tree to achieve best outcomes. Pediatric Dentistry 2009;31(2):137-44.
PERMANENT TOOTH AVULSION: OPEN APEX

Management of an Avulsed Permanent Incisor with an Open Apex (Apex ≥ 1 mm)

1. Immediately replanted at the accident site.
2. Externally dry stored for 20 minutes and tooth was transported in Hank’s Balanced Salt Solution (HBSS) or milk for 20 minutes to 6 hours.
3. If tooth was kept moist in water, saline or other nonphysiologic media, for 20 to 60 minutes.
4. If tooth was kept moist in water, saline or other nonphysiologic media, for 20 to 60 minutes.
5. >60 minutes externally dry time/storage.
6.Chelsea with soft paraffin prophylactic paste, gentle scaling/root planing, or 3% citric acid for 3 minutes, and rinse well to remove periodontal ligament.
7. Place in 1.23% sodium fluoride (e.g., acidulated phosphate fluoride) for 5 to 20 minutes.

- Replant and/or reposition.
- Obtain periapical radiographs to verify position.
- Place flexible splint for approximately 2 weeks; 4 weeks for dry time >60 minutes.
- Rx: Antibiotics (e.g., doxycycline or penicillin V potassium for non-allergic patient) for 7 days; Chlorhexidine rinse for 1 week.
- Assess tetanus vaccination; if needed, get booster within 48 hours.
- Provide postoperative instructions; inform of prognosis.
- Follow-up in 7 to 10 days.

- Monitor every 4 weeks, pulp test, and radiographs.
- Ideal outcome: revascularisation and/or apicogenesis occurs over the next 12 to 18 months.
- Alternative outcome:
  - Initiates specific with mineral trioxide aggregate (MTA) or calcium hydroxide or root canal therapy if clinical and/or radiographic pathology present.
  - Consider decoronation procedure when clinical infarction of the tooth appears and/or clinical and radiographic findings of ankylosis manifest.
- Follow-up: 1 week, 1 month, 3 months, 6 months, 12 months, and annually for 5 years.
PERMANENT TOOTH AVULSION: CLOSED APEX

Management of an Avulsed Permanent Incisor with an Closed Apex (Apex <1 mm)

1. Assess medical history and rule out any neurologic and occlusal injuries.
   Diagnostic tests:
   - Rule out alveolar fracture.
   - 3 radiographs angled differently to rule out root fractures.
   - Pulp vitality test maxillary and mandibular anteriors.

2. OR1: Immediately replanted at the accident site.
   - Extracted dry storage time was <20 minutes and tooth was transported in Hank’s Balanced Salt Solution (HBSS) or milk for 20 minutes to 6 hours.

3. OR2: If tooth was kept moist (in water, saliva or other non-physiologic media) for 20 to 60 minutes.
   - 20 to 60 minutes extrarural dry time/moisture.
   - Dehydrate with soft pumice prophylaxis, gain, gentle scaling/root planing, or 3% citric acid for 3 minutes, and rinse well to remove periodontal ligament.

4. OR3: OR4: OR5:
   - OR3: >60 minutes extrarural dry time/moisture.
   - Place in 1.23% sodium fluoride (eg, acidulated phosphate fluoride) for 3 to 20 minutes.
   - Change transport to HBSS. If HBSS is not available, place in cold milk.
   - Replace and/or reposition.

5. OR6: Obtain periapical radiographs to verify positions.
   - Place flexible splint for approximately 2 weeks; 4 weeks for dry time >60 minutes.

6. Re: Antibiotics (eg, metronidazole or penicillin V potassium for non-allergic patients) for 7 days. Chlorhexidine rinse for 1 week.
   - Assess temporary 3-3 crown—must be tried within 48 hours.
   - Provide post-operative instructions informing of prognosis.
   - Follow up in 7 to 10 days.
   - Initiate pulpectomy/pulpotomy on all teeth within 7 to 10 days.

7. OR7: If root canal therapy was initiated complete within 1 month.

OR: If patient does not present until >2 weeks after trauma and/or if radiographic resorption is present:
   - Pulpectomy/pulpotomy as soon as possible.
   - Long-term calcium hydroxide therapy/crown and change every 3 months.
   - Complete root canal therapy when periodontal ligament/mucosa data is observed/healthy.

Follow-ups: 1 week, 1 month, 3 months, 6 months, 12 months, and annually for 5 years.
ECTOPIC ERUPTION OF 1ST MOLARS

Myth:

Ectopic 1st molars require a referral to an orthodontist to manage.

Truth:

There are two easy and orthodontist approved ways of managing these.
ECTOPIC ERUPTION OF 1ST MOLARS

Place separator and replace until molar erupts

Brass wire
ECTOPIC ERUPTION OF 1ST MOLARS

Extract #J then place Band/Loop when #14 is more erupted
Manage space loss later during orthodontic treatment
OTHER OPTIONS

Halterman Distalization appliance

Don’t try this at home....

Inman Power Component (IPC)
WHEN GOOD CANINES GO BAD


Early treatment of palatally erupting maxillary canines by extraction of the primary canines.

Ericson S, Kurol J.
WHEN GOOD CANINES GO BAD

A randomized clinical study of two interceptive approaches to palatally displaced canines

Tiziano Baccetti, Maria Leonardi and Pamela Armi
Department of Orthodontics, University of Florence, Italy

Figure 1  Inclination of the upper canine to the midline (α) and distance to the upper occlusal plane (d).
Conclusions

The findings of the present randomized clinical study of two interceptive treatment approaches to PDC can be summarized as follows:

1. Extraction of the primary canine only is an effective procedure to increase the rate of normal eruption of maxillary PDC (was more twice than as that in the untreated controls); the use of cervical-pull headgear in addition to the extraction of the primary canine is able to significantly increase the rate of successful eruption of the permanent canine (almost three times more than that in the untreated controls).

2. In PDC subjects treated with the additional use of headgear, physiological mesial movement of the upper first molars (2.5 mm) is prevented.
WHEN GOOD CANINES GO BAD

Referring this to Ortho/OMFS
SPACE MAINTAINERS

Myth:
After extraction of any primary tooth, you must place a space maintainer.

Truth:
There is no space loss after extraction of anterior teeth, only place a space maintainer after extraction of permanent teeth.
SPACE MAINTAINERS

- Unilateral: Band and Loop

- Bilateral: Lower Lingual Holding Arch (LLHA) or Trans Palatal Arch (TPA) or Nance

For unilateral 2 tooth space must use bilateral appliance because of cantilever effect
SUMMARY

- Stay up to date on current standard of care for treating pediatric patients
- Always refer if you are unsure or uncomfortable
- Get to know the pediatric dentists in your area