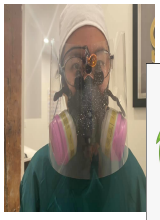
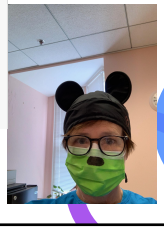
School Based Health Care
Oral Health Promotion
and Disease Prevention

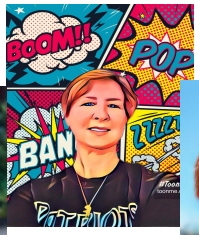
Dr. Diana Capobianco

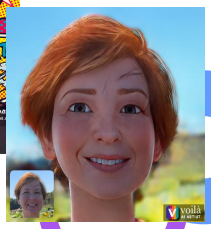
Who I Am

Diana Capobianco









Objectives

At the conclusion of this course the participant will be able to:

#1. Describe common pediatric dental problems and their impact on pediatric populations

#2. Discuss oral health interventions appropriate for school based settings

#3. Identify resources for promoting oral health and preventing disease

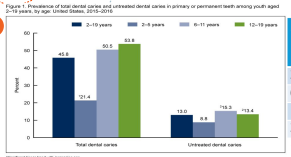
Why is oral health care necessary?

National Focus on Oral Health

- Oral Health in America: A Report of the Surgeon General (2000)
- Advancing Oral Health in America, IOM (2011)
- Integration of Oral Health and Primary Care Practice (2014)

Facts on Dental Health

Figure 1. Prevalence of total dental caries and untreated dental caries in primary or permanent teeth among youth aged 2–19 years, by age: United States, 2013–2016



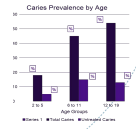
*Significant linear trend with increasing age.
†Significantly different from youth aged 2–5 years.
NOTE: Total dental caries includes untreated and treated caries. Access data table for Figure 1 at: https://www.cdc.gov/nchs/data/databriefs/db307_table.pdf#1.
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2013–2016.

Age of Child	Total Caries	Untreated Caries
2 – 5	18%	5%
6 – 11	45%	15%
12 – 19	54%	13%
2 – 19	43%	13%

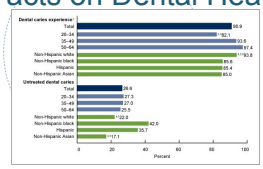
Source: Data Brief No 307, National Center for Health Statistics, 2019.

Over 50 percent of 5- to 9-year-old children have at least one cavity or filling, and that proportion increases to 78 percent among 17-year-olds.

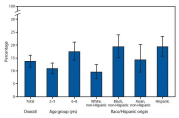
https://www.ncbi.nlm.nih.gov/books/NBK47470/table/surggenoralintroduc.Table 2/?report=objectonly

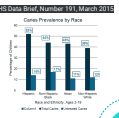


Facts on Dental Health



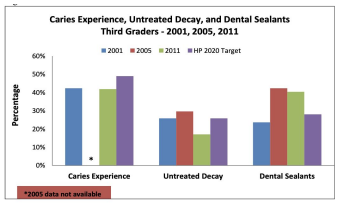
NCHS Data Brief, Number 191, March 2015





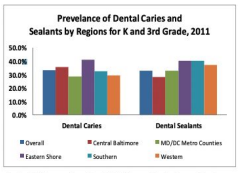
QuickStats: Prevalence of Untreated Dental Caries in Primary Teeth Among Children Aged 2–8 Years, by Age Group and Race/Hispanic Origin

How is Maryland Doing?



Source: https://health.maryland.gov/phpa/oralhealth/Documents/SurveillanceDigest.pdf

How is Maryland Doing?



Central Baltimore – Anne Arundel, Baltimore City, Baltimore County, Harford

MD/DC Metro Counties – Howard, Montgomery, Prince George's

Eastern Shore – Caroline, Cecil, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico

Southern – Calvert, Charles, St. Mary's

Western – Allegany, Carroll, Frederick, Garrett, Washington

Source: https://health.maryland.gov/phpa/oralhealth/Documents/SurveillanceDigest.pdf

How is Maryland Doing?

Maryland School Children Exceed Key HP2020 National Targets

% of Children with:	Maryland	HP 2020 Target
Caries Experience	41.3%	49%
Untreated Decay	13.8%	26%
Dental Sealants	41.4%	28%

Source: https://health.maryland.gov/phpa/oralhealth/Documents/SurveillanceDigest.pdf

Oral Disease is associated with:

- Pain
- Life-threatening infection
- Altered function
- Chewing difficulty
- Malnutrition
- Delayed or insufficient growth
- Diminished quality of life
- Inability to concentrate
- Decreased learning
- Poor speech articulation
- Poor sleep habits
- Low self-esteem
- Social ostracism
- Poor school performance

ORAL HEALTH DELIVERY IN SCHOOLS

ORAL HEALTH EDUCATION

ORAL HEALTH SCREENINGS

FLUORIDE VARNISH APPLICATION

SEALANT PROGRAMS

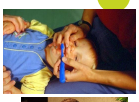
Action Steps for Oral Hygiene Education

- In-service for teachers, athletic coaches
  - Personal Oral Health
- Nutrition education
  - Healthy options for all
- Behavioral change
- Cessation efforts among school personnel using tobacco and electronic cigarettes
- For all staff promote safety and prevent unintentional facial and mouth injuries

Oral Hygiene: Brushing and Flossing

Guidelines

- Brush twice daily starting with first tooth emergence
- Caregiver should brush child's teeth until age 8 or 9
- Child should spit, but not rinse, after brushing to maximize toothpaste topical fluoride exposure
- Floss once daily between teeth that touch



Photos: Joanna Douglass, BDS, DDS

Lift the Lip

Brush behind Teeth

- Lift the lip and brush all tooth surfaces, especially along the gum line
- Brush using small backward and forward movements or small circles
- Do not rinse mouth after brushing
- Do not eat or drink after brushing
- Be sure to use a fluoridated toothpaste in an appropriate amount

Photos: Joanna Douglass, BDS, DDS

Action Steps for OH Education

February Dental Health month
OH Screening forms (to be discussed shortly)
OH Books (list attached)
Discuss nutrition and impact on OH and overall health
Address systemic connection (age appropriately)

Educational Opportunities

Education of school health care providers
Education of staff members
Education of faculty
Education of Students
Education of Caregivers
Education of extended family and friends
Education of Community as a whole

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FLUORIDE VARNISH APPLICATION

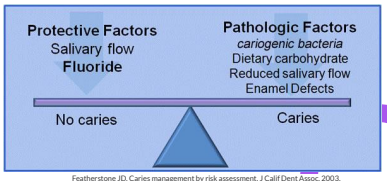
SEALANT PROGRAMS

Assessment- ASK
Examination- LOOK
Intervention- ACT
Referral- MANAGE

Ongoing Balance

enhancing protective factors

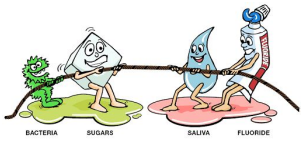
reducing pathologic factors

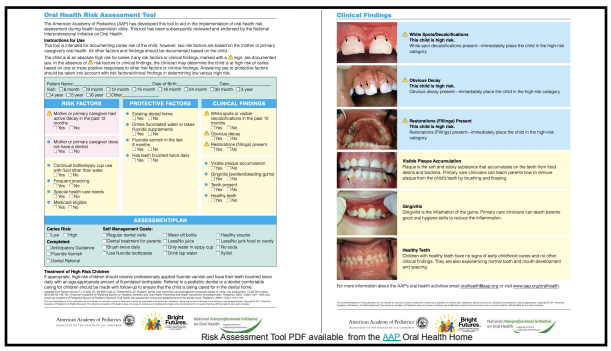


Featherstone JD. Caries management by risk assessment. J Calif Dent Assoc. 2003.

What Contributes to Risk

- Medical History
- Dental History
- Oral Self Care
- Dietary Habits
- Fluoride Exposure
- Heredity





Oral Health Risk Assessment Tool

Clinical Findings

Risk Assessment Tool PDF available from the AAP Oral Health Home

Bright Futures
ORAL HEALTH
Pocket Guide

OHRC
National Maternal and Child Oral Health Resource Center

Introduction | Components | Supervision | Risk Assessment | Appendices | Feedback | Print Page | Print Guide

Welcome
Introduction
Components of Oral Health Supervision
Oral Health Supervision
- Pregnancy and Postpartum
- Infancy
- Early Childhood
- Middle Childhood
- Adolescence

Risk Assessment
- Risk Assessment Tables
- Caries Risk Assessment Tools

MIDDLE CHILDHOOD • 5 – 10 YEARS

Health professionals should select the information in this section that is most appropriate, using clinical judgment to decide what is timely and relevant for each individual child and family.

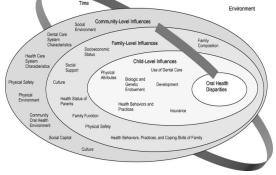
Family Preparation

To help prepare families for oral health supervision visits, health professionals can provide parents with a list of topics to discuss at the next visit. Topics may include the following:

- Changes in the teeth and the mouth
- Oral hygiene practices (frequency, problems)
- Use of fluoridated water for drinking or cooking
- Fluoride use (fluoridated toothpaste fluoridated mouthrinse, fluoride supplements)
- Dental sealant use
- Eating practices
- Nonnutritive sucking (pacifier, thumb, finger)
- Illnesses or infections
- Medications
- Physical activity and sports participation
- Injuries to the teeth or mouth
- Use of tobacco by parents or child

Interview Questions

https://www.mchoralhealth.org/pocket/5-midchild-01.php



Risk Factors

- ASK about oral health risk factors and symptoms of oral disease
- Mother, primary caregiver, or sibling have active decay
- Lack of adequate fluoride exposure
- Continual bottle/sippy cup use with fluid other than water
- Frequent snacking
- Special health care needs
- Socioeconomic status

Special Considerations

Children With Special Health Care Needs

- Decreased ability to take oral food & fluids
- Oral aversion
- Functional limitations in self-care
- Craniofacial anomalies
- Dental erosions
- Chronic medication usage

Pediatric Oral Inspection and Risk Assessment

- Examine the soft tissues –face, tongue, lips, gums, cheeks; look for inflammation, lesions
- Examine the hard tissues – front, back, sides of all teeth for plaque, white spots, cavities, restorations
- Palpate soft and hard tissues; swelling mobility
- Complete an Oral Health Assessment Form (in addition to the Oral Health Risk Form) if possible

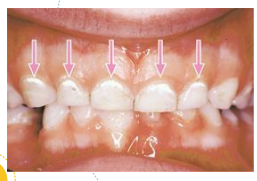
https://www.smilesforlifeoralhealth.org/courses/the-oral-examination/

What is Normal?

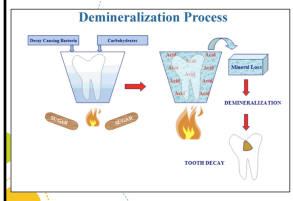
Healthy teeth appear creamy white with no signs of deviation in color, roughness, or other irregularities

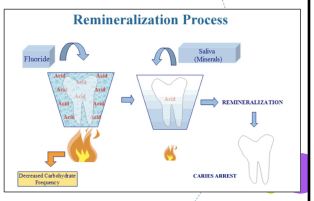
Photos: Joanna Douglass, BDS, DDS

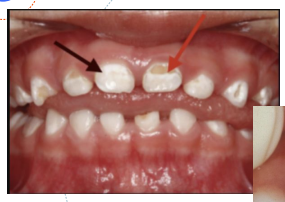
Lift the Lip



Constant Flux







What are we seeing?

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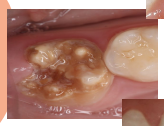
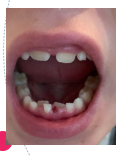
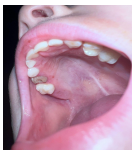


Severe Caries

Photos: Joanna Douglass, BDS, DDS

When a child presents with pain

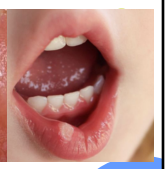




Space Maintainers

Soft Tissue Lesions

Underlying systemic disease
Local irritating factors
Bacterial infection
Viral infection
Fungal
Congenital



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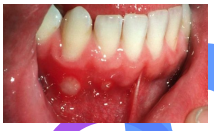


Distinguishing Lesions

Canker Sore
- Appear intra-orally
- Not contagious
- Very painful
- Take weeks to heal
- Caused by irritation

Cold Sore
- Appear around the mouth
- Contagious
- Usually painful
- Heals within 7-11 days
- Caused by virus

Abscess
- Appear on any "bound" tissue
- Not contagious
- Often painful
- May resolve, typically need ABX
- Caused by bacterial infection

Mucocele

Dental Abscess


Abscess


Useful Medications for Oral Conditions

American Academy of Pediatric Dentistry
Reference Manual 2021-2022
American Dental Association
Antibiotics for Dental Pain and Swelling Guideline (2019)

Amoxicillin Shortage: Antibiotic Options for Common Pediatric Conditions

Amoxicillin Shortage: Antibiotic Options for Common Pediatric Conditions

There is a national shortage of amoxicillin suspensions that is anticipated to last several months. See below for alternative therapies during the shortage.

- **Preferentially prescribe amoxicillin tablets, capsules, or chew tabs for children able to take these formulations. These have NOT been impacted by the shortage.**
- Amoxicillin tablet/capsule dosing is 1-3 TID (25-50 mg/kg/day) (50mg, 250mg, 500 mg, 875mg, or 1000 mg)
  - Products available:
    - Tablet (50mg, 875mg)
    - Capsule (250mg, 500mg)
    - Chewable (250 mg)
  - Tablets can be split/crushed to mix with any liquid or semisolid, like applesauce. They are fingerprint-safe for kids.
    - Capsules (either opened and mixed with any liquid or semisolid, like applesauce. They are fingerprint-safe) or by kids.
    - Chewables can be split.

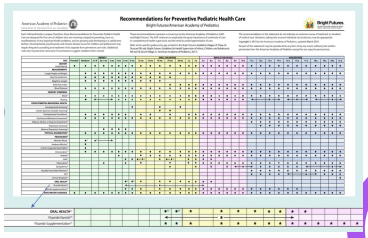
Proper Protocol

Oral Wounds- laceration vs puncture
Clean vs. Contaminated
Intra-oral swelling, pulpitis
draining sinus tract,
Facial swelling
Trauma
Viral

ORAL HEALTH DELIVERY IN SCHOOLS

ORAL HEALTH EDUCATION
ORAL HEALTH SCREENINGS
FLUORIDE VARNISH APPLICATION
SEALANT PROGRAMS

Action Steps for Integrating Oral Health Into Whole School, Community and Child



- Fluoride administration
- Oral Hygiene Instructions to Parents
  - Proper technique for brushing
  - Proper amounts of toothpaste
  - Flossing
- Dietary Counseling
- Active Surveillance

Food Facts

Lower Risk Snacks
- Fruit
- Veggies
- Cheese
- Nuts
- Plain milk
- Water
- Sugar free gum

Images: Photos.com

High Risk Snacks
- Fruit Roll-ups
- Gummy bears
- Cookies
- Cupcakes
- Donuts
- Granola bars
- Pop tarts
- Sugared Cereals
- Soda, Iced tea
- Sugary drinks
- Raisins

Images: Photos.com

Remember: Frequency of ingestion is important in whether foods cause tooth decay!

Fluoride Sources

Topical:
- Fluoride toothpastes
- Gels, foams, mouthwashes
- Fluoride varnish

Dietary:
- Water fluoridation
- Systemic fluoride supplements

Photos: Joanna Douglass, BDS, DDS

Child's Age	Water Fluoride Concentration		
	< 0.3 ppm	0.3 – 0.6 ppm	> 0.6 ppm
6 mos – 3 yrs	0.25 mg	None	None
3 yrs – 6 yrs	0.50 mg	0.25 mg	None
> 6 years	1.00 mg	0.50 mg	None

Dosages are in milligrams F/day

Guidelines

- Fluoride content of water should be determined before prescribing supplements
- Supplements are recommended starting at age six months
- All fluoride prescriptions should specify a sugar-free prescription

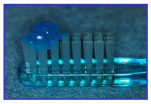
My Water's Fluoride
https://nccd.cdc.gov/DOH_MWF/Default/CountyList.aspx?state=Maryland&stateid=24&stateabbr=MD&reportLevel=1

Fluoridated toothpaste is recommended for all children

Small smear or "grain of rice":

Less than **3** years of age

Pea sized:



All children age **3** and older

- Most preschool children swallow toothpaste on the brush
- Encourage spitting, but small amounts safe to swallow
- Keep toothpaste tubes out of reach of small children

Photos: Rocio Quiñonez DMD, MPH

Fluoride Varnish

- Varnish is a professionally applied, sticky resin of highly concentrated fluoride (up to 22,600 ppm).

www.aap.org/oralhealth/pact

https://www.mchoralhealth.org/flvarnish/

https://www.smilesforlifeoralhealth.org/lessons/fluoride-varnish/

Silver Diamine Fluoride

- **Effectiveness**: Caries arrest ~70%
  - -Biannual application better than annual
- **Disadvantage**: Treated area of the tooth is permanently stained black

Photo by Rocio Quinonez, DMD

Before and After SDF

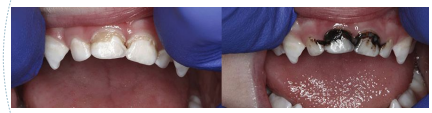


Photo Surfcitykidsdds.com

SDF vs Varnish

SDF Treatment Considerations

Table 2. FLUORIDE CONTENT IN SILVER DIAMINE FLUORIDE (SDF) AND FLUORIDE VARNISH (FV) COMMERCIAL UNIT DOSES*

Fluoride product	Unit dose (ml)	Concentration (ppm)	F ion mg/ml	F ion mg/dose
SDF 38%	1 drop (0.05)	44,800	44.8	2.24
FV 5% NaF	0.25	22,600	22.6	5.65
	0.4	22,600	22.6	9.04
	0.5	22,600	22.6	11.3

* Fluoride content equivalence (approximate): 2 drops SDF=small (.25 ml) FV.

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FLUORIDE VARNISH APPLICATION

SEALANT PROGRAMS

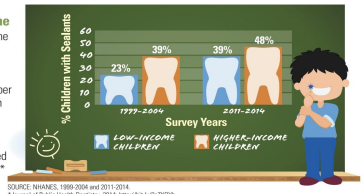
Sealants

- Sealants are effective in preventing and arresting pit-and-fissure occlusal caries lesions of primary and permanent molars in children and adolescents compared to the non-use of sealants or use of fluoride varnishes; and
- Sealants can minimize the progression of noncavitated occlusal caries lesions (also referred to as initial lesions) of the tooth that received the sealant.
- Systematic review 2016 ADA, AAPD, CSD

Sealant Use

Disparities are decreasing over time

The number of low-income children with sealants increased by about 70% from 1999-2004 to 2011-2014, and the number of higher-income children with sealants increased by 23%. The increase in sealants among low-income children prevented almost 1 million cavities.*



SOURCE: NHANES, 1999-2004 and 2011-2014.
*Journal of Public Health Dentistry, 2014. http://bit.ly/2cZXOYh

Maryland Mighty Tooth
School-Based Dental Sealant Training Program

https://www.mightytoothcurriculum.com/

School Based Health Care Providers may encounter children with any of the following:

- Pain
- Infection
- Trauma- accidental
- Trauma incidental
  - Suspected abuse
- Altered Function

Oral Injury

- Oral injuries are common in young children
  - > 30% of have had a school age children have had dental injury
- Causes of Injury
  - Injured with object
  - Falls from running and tripping
  - Fracture during eating
  - Sports and outdoor activities

https://publications.aap.org/pediatrics/article/133/2/e466/30896/Management-of-Dental-Trauma-in-a-Primary-Care?autologincheck=redirected

Injury Treatment

- Calm and reassure the child
- Overview medical and dental history
- Description of injury
- Neurologic assessment
- Control bleeding
- Stabilize neck, jaw, teeth
- Cleanse area if possible

https://publications.aap.org/pediatrics/article/133/2/e466/30896/Management-of-Dental-Trauma-in-a-Primary-Care?autologincheck=redirected
https://www.casbhc.org/oral-health

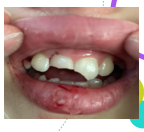
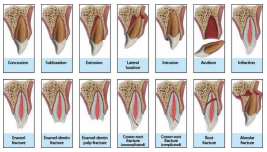


Image: Rocio Quiñonez, DMD

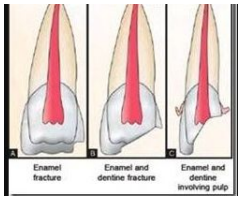
Tooth Displacement



Dental Trauma Guide: A source of evidence-based treatment guidelines for dental trauma

Jens Ove Andreasen,Eva Lauridsen,Thomas Alexander Gerds,Søren Steno Ahrensburg
First published: 20 September 2012 https://doi.org/10.1111/j.1600-9657.2011.01059_1.x

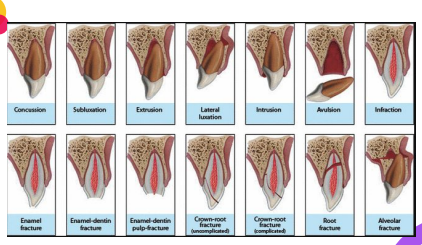
Crown Fracture



Enamel

Enamel and Dentin

Enamel and Dentin with Pulp Exposure



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Carefully hold by the crown and re-insert

Do not re-implant primary teeth

Injury Treatment

- Some oral emergencies are time-sensitive-especially the loss or fracture of a permanent tooth.
- Avulsed permanent teeth should be re-inserted into the socket.
  - If it is not possible to replace the tooth, place the tooth in a container of milk or saliva.
- Never attempt to reinsert a lost primary tooth.
- If a tooth is fractured or chipped, refer the child with the broken pieces to the dentist.

Specific emergency/Nurse visit guidelines
https://www.casbhc.org/oral-health

Injury Recognition: Child Abuse


Image: Shutterstock.com

- Craniofacial, head, face, and neck injuries occur in over ½ of child abuse case
- Oral cavity may be a focus of abuse due to its role in communication and nutrition

Injury Prevention

Specific emergency/Nurse visit guidelines
https://www.casbhc.org/oral-health

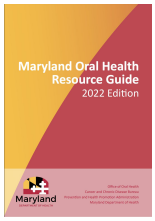
ORAL HEALTH CHAMPIONS IN YOUR AREA

Located in 4 Local Public Health Agencies
Regional Oral Health Specialists
Community Health Centers
Safety Net Providers
Community Programs

Where to Refer?

Maryland State Dental Association

Maryland Office of Oral Health



University of Maryland School of Dentistry

Maryland Academy of Pediatric Dentistry

Take Home Messages

- Caries is the most chronic disease in kids and affects every aspect of childhood
- Caries is preventable
- Oral health must be addressed at each well child visit
- Fluoride and sealants are valuable tools for preventing caries
- Establishment of a dental home by age 1
- Preventing oral injuries is part of parental and athletic coach counseling
- Child, family, school, and community all influence child oral health outcomes
- Preventing oral injuries is part of parental counseling

Much to Do We Still Have

AAP Section on Oral Health
https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Oral-Health/Pages/Oral-Health.aspx

Smiles for Life

- https://www.smilesforlifeoralhealth.org/

Campaign for Dental Health. Life is Better with Teeth

- https://ilikemyteeth.org/ohpp/

Many more resources listed in the companion files

Questions

THANK YOU!