Perinatal Oral Health or
How to Keep your Patient
and her Family Smiling

FROM NY OBSTETRICIAN QUERY TO FEDERAL
MATERNAL CHILD HEALTH POLICY

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CONFLICT OF INTEREST DISCLOSURE STATEMENT

I have/I don’t have financial interest or other relationships with the industry relative to the topics being discussed.
Objectives

• To describe the process of perinatal oral health guideline development in NYS to national consensus statement
• To discuss perinatal oral health research including the concept of the microbiome
• To summarize how the guidelines can be incorporated into your practice
“Because pain was so great she took ‘excessive doses’ (Tylenol) resulting in toxicity to her and her baby. At the time she was approximately 29 weeks pregnant. The baby died from liver toxicity. My patient suffered acute liver failure and was flown to Pittsburgh expecting a liver transplant.”
Periodontal Disease and Perinatal Outcomes 1996

• Offenbacher et al., published case-control study of 124 women Journal of Periodontology

• Cases: women with LBW infants and one or more of the following: GA< 37 weeks, PTL or PPROM

• Controls: normal birth weight ≥ 2500 grams

• Multivariate logistic regression models, controlling for other risk factors and co-variates, demonstrated that periodontal disease is a statistically significant risk factor for PLBW with adjusted OR of 7.5
Preterm is less than 37 completed weeks gestation.

“Oral health is essential to the general health and well-being of all Americans and... improved oral health can be achieved by all Americans... Great progress has been made in reducing the extent and severity of common oral diseases ...however, not everyone is experiencing the same degree of improvement.”
Why should pregnant women receive oral health care?

• Oral health care is important for overall health.

• Maximizing maternal oral health improves oral health of their children.

• Poor oral health has been associated with poor pregnancy outcomes.
There are over 6 million pregnancies each year in the United States in women between ages of 15-44.*

**Tooth Decay**
- Nearly 1 in 4 women of reproductive age have tooth decay.
- Tooth decay is the single most common disease of childhood. Affects 50% of low income children.

**Periodontal Disease**
- Can be detected in 37-46% of women of reproductive age and up to 30% of pregnant women.

* NCHS Data Brief, Number 136, December 2013; cdhp.org accessed 1/2/2016
** Oral Health Care during Pregnancy and Early Childhood Practice Guidelines, NY State Dept. of Health, August 2006
What is the evidence?

- Mothers/primary caregivers are the main source of the bacteria responsible for causing caries.
- If colonization is delayed until after two years of age, then children have less dental decay.
- Addressing oral health in pregnancy is the upstream approach to preventing childhood disease.

How are the bacteria transmitted?

- Via saliva contact such as tasting food, licking spoons or pacifiers.
- The more active the disease in mother’s mouth, the more likely the child is to acquire the bacteria early – high frequency sugar intake, high levels of decay, poor oral hygiene.
Tooth Decay Process: A Bacterial Infection

Bacteria $+$ Refined Carbohydrates $=$ Acid

Acid $+$ Time (20 min) $=$ Enamel Demineralization & Risk for Decay

Untreated Decay $\rightarrow$ Infection, Abscess, Loss of Tooth
Periodontal disease

- Chronic inflammation of the gums/supporting structures including bone
- Pathogenic bacterial biofilm develops on tooth root surface
- Deep pockets are a favorable environment for proliferation of these bacteria
- Facilitate entry of bacteria and its products into the bloodstream of otherwise apparently healthy patients via ulcerated and inflamed tissue
• This patient may have routine dental evaluation and care, including but not limited to:
  – Oral health examination
  – Dental x-ray with abdominal and neck lead shield
  – Dental prophylaxis
  – Local anesthetic with epinephrine
  – Scaling and root planing
  – Root canal
  – Extraction
  – Restorations (amalgam or composite) filling cavities

• Patient may have: (Check all that apply)
  ☐ Acetaminophen with codeine for pain control
  ☐ Alternative pain control medication: (Specify)
  ☐ Antibiotics
  ☐ Erythromycin (Not estolate form)
Does Treatment of Periodontal Disease Prevent Adverse Pregnancy Outcomes?
• Obstetrics & periodontal therapy OPT Michalowicz 2006 (n=823)
  – Intervention before 21 weeks or after delivery
  – Gestational age at delivery

• Maternal oral therapy to reduce obstetric risk MOTOR Offenbacher 2008 (n=1760)
  – Intervention 3 to 6 months or after delivery
  – Birth at less than 37 weeks

• Periodontal infection and prematurity study PIPS Macones 2010 (n=756)
  – Intervention 6 - 20 weeks gestation or after delivery
  – Birth at less than 35 weeks
## Summary % Preterm Delivery RCT

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<td>823</td>
<td>1760</td>
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<td><strong>Treatment</strong></td>
<td>12.0%</td>
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<td>0.70</td>
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Results of Randomized Clinical Trials

All studies reported that routine non-surgical periodontal therapy, dental care, or use of topical or local anesthesia have NOT been associated with adverse pregnancy outcomes. Diagnosis and treatment is SAFE during the entire pregnancy.

Periodontal treatment during pregnancy did not significantly decrease rate of premature delivery.
Practice Guidelines & Consensus Statement

2006

2012
What Do The Guidelines Say?

✓ Periodontal disease is associated with poor birth outcomes

✓ Maximizing maternal oral health reduces caries transmission from mother to baby

✓ Diagnosis and treatment is SAFE
Why during prenatal care?

YOU...

- Have regular, consistent contact with patients.
- Already doing prevention & chronic disease management for rest of body and referring to appropriate specialists.
- Already doing an exam.
  - Can impact two people’s oral health
Why during prenatal care?

PATIENTS...

• Are unaware of the importance and safety

• Are receptive to (oral) health messages during pregnancy

• Look to you as one of her most trusted sources of information & reassurance.

• Women of reproductive age: \( \frac{1}{4} \) tooth decay and \( \frac{3}{10} \) periodontitis

What can I do? (ALDAR)

- Ask
- Look
- Decide
- Act
- Reassess
What can I do?

ASK

• Last dental visit?
• Pain, swelling, bleeding?
• Hygiene habits?
• Reflux/Vomiting?
• Dietary habits?
What can I do?

- Examine the teeth and Gums
- HEENT vs. HEENOT

Healthy

Gingivitis
What can I do?

ACT

- Health Education – verbal/written
- Rx
- Dental Referral
Start Motherhood With a Healthy Mouth

• **Tooth decay is caused by germs** that are easily transmitted from mom to infant through saliva by sharing food or utensils.

• **Get any active decay treated before baby’s birth.** Fewer bacteria will be transmitted to baby and baby will be at less risk for cavities.

• **Taking good care of mom’s teeth and eating healthy foods will help prevent tooth problems for the child.**

• **Brush twice daily with a fluoridated toothpaste,** especially before bedtime, **floss daily,** **drink fluoridated water**
Start Motherhood With a Healthy Mouth

- **Promote Healthy Eating**
  - Limit sweet and high-carbohydrate snacks, such as soda, candy, crackers and chips
  - Eat small amounts of nutritious snacks during the day
  - Discuss food cravings and tips

**Protect Teeth After Vomiting**

- Rinse mouth with mix of 1 teaspoon of baking soda in a cup of water. Spit after rinsing.
- Do not brush right after vomiting; this can damage the surface of your teeth
PIOHQL: Perinatal and infant oral health quality improvement initiative

Supported through 3 separate funding opportunities:

1. 2013-17 PIOHQL Pilot Grant Program
   - 3 grantees: Connecticut, New York, West Virginia

2. 2014-17 PIOHQL National Learning Network Cooperative Agreement
   - Children’s Dental Health Project

3. 2015-19 PIOHQL Expansion Grant Program
   - 11 grantees: CA, CO, CT, MD, ME, NM, NY, RI, VA, WI, WV
PIOHQUAL: Perinatal and infant oral health quality improvement initiative

• Reduce the prevalence of oral disease in pregnant women and infants, ultimately reducing dental caries throughout early childhood.

• Increase pregnant women’s utilization of preventive oral health care.

• Increase the percentage of children who have dental homes by age 1.

• Reduce oral health care expenditures.
PIOHQL: Perinatal and infant oral health quality improvement initiative

- Expand access to oral health services.
- Increase implementation of oral health care best practices.
- Increase the number of primary care health professionals who incorporate oral health core clinical competencies into their practice.
- Share state data with common oral health metrics.
- Support sustainable oral health care delivery systems, and support state policies and legislation that promote adequate reimbursement for oral health care.
Term Stillbirth Caused by Oral *Fusobacterium nucleatum*

Yiping W. Han\(^1,2,*\), Yann Fardini\(^2\), Casey Chen\(^3\), Karla G. Iacampo\(^4\), Victoria A. Peraino\(^5\), Jaime M. Shamonki\(^5\), and Raymond W. Redline\(^1\)

Abstract

Background—Intrauterine infection is a recognized cause of adverse pregnancy outcome but the source of infection is often undetermined. We report a case of stillbirth caused by *Fusobacterium nucleatum* that originated in the mother’s mouth.

Case—A woman with pregnancy-associated gingivitis experienced an upper respiratory tract infection at term, followed by stillbirth a few days later. *Fusobacterium nucleatum* was isolated from the placenta and the infant. Examination of different microbial flora from the mother identified the same clone in her subgingival plaque, but not in the supragingival plaque, vagina, or rectum.

Conclusion—*F. nucleatum* may have translocated from the mother’s mouth to the uterus when the immune system was weakened during the respiratory infection. This case sheds light on patient management for those with pregnancy-associated gingivitis.
$1.58 million to study link between oral bacteria and preterm birth July 2013

• Yiping Han: Professor of Periodontics 2014 at Columbia
• Identified the link between Fusobacterium & preterm birth.
• Detected Fusobacterium in the amniotic fluid of women who went into preterm labor. Many of the women had tested negative for infection by the hospital lab, which did not use the DNA technique.
• “I think it’s becoming more and more obvious that the bacteria in the mouth don’t just stay in the oral cavity. Even bacteria that are harmless can become dangerous pathogens in other parts of the body.”
Researchers in the HMP are sampling and analyzing the genome of microbes from five sites on the human body: nasal passages, oral cavities, skin, gastrointestinal tract, and urogenital tract.

Kyrsta Aagard MD MPH
The Placenta Harbors a Nonpathogenic Commensal Microbiome

Kyrsta Aagard MD MPH

Abundant Placental Species

individual subjects
(n 48 WGS placental samples)
Take home message

Oral health care is important for overall health. Maximizing maternal oral health improves oral health of their children. Oral health care during pregnancy is safe and effective.

Dental care during pregnancy and early childhood should be as routine, and as fun, as ultrasound.
OUR MISSION:
To improve the health trajectory of every woman, fetus and child by engaging providers to deliver comprehensive and essential preventive oral health services during pregnancy.
Resources

• Smiles for Life Curriculum: Oral Health and the Pregnant Patient Module 5
  www.smilesforlifeoralhealth.org/default.aspx?tut=555&pagekey=62948&s1=2298818

• Washington Dental Service Foundation: www.deltadentalwa.com/Guest/Public/AboutUs/WDS%20Foundation/Initiatives/Prenatal.aspx

Resources

- Children’s dental health project https://www.cdhp.org/
- New York State Department of Health – Oral Health Care During Pregnancy and Early Childhood Guidelines
- CA Dental Association Foundation 2010 Evidence-Based Guidelines for Health Professionals: Oral Health During Pregnancy and Early Childhood
https://www.youtube.com/watch?v=wxMrtK-kynE