



**SCHOOL OF PUBLIC HEALTH**  
UNIVERSITY AT ALBANY State University of New York

**Women's Health Series**

**Oral Health During Pregnancy  
and Early Childhood**

**November 1, 2007**

**Oral Health During Pregnancy and Early  
Childhood - Speakers**

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- Funded by March of Dimes



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**EVALUATIONS**

Please fill out your evaluation  
and post-test online:

**[www.albany.edu/sph/coned/oralhealth.htm](http://www.albany.edu/sph/coned/oralhealth.htm)**

Nursing Contact Hours, CME, and CHES are available. This activity is also approved for Dentists and Dental Hygienists.

*Thank You!*



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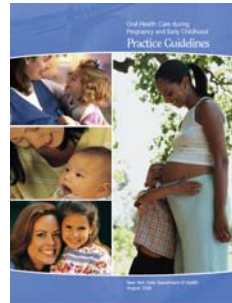
For more information please contact us  
or log on to our website.

**[coned@albany.edu](mailto:coned@albany.edu)**

**[www.albany.edu/sph/coned/oralhealth.htm](http://www.albany.edu/sph/coned/oralhealth.htm)**

## Objectives

- Recognize the importance of oral health during pregnancy and in early childhood (0 – 3 years)
- Describe the effect of maternal oral health on pregnancy outcomes and child's oral health
- Learn to incorporate oral health into prenatal care
- Learn to assess oral health as part of well child visits
- Practice Guidelines for Oral health Care During Pregnancy and Early Childhood



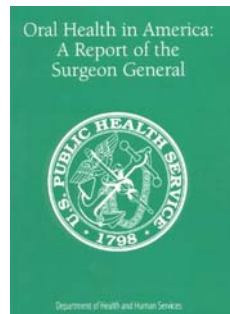
Three sections:

- 1) Prenatal Care Providers
- 2) Oral Health Professionals
- 3) Child Health Professionals

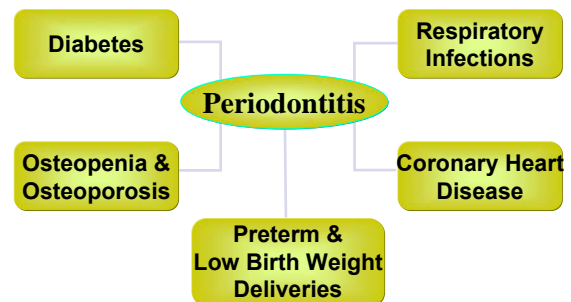
[www.health.state.ny.us/prevention/dental/oral\\_health\\_care\\_pregnancy\\_early\\_childhood.htm](http://www.health.state.ny.us/prevention/dental/oral_health_care_pregnancy_early_childhood.htm)

## The Surgeon General's Report Provided the Nation with an Alert

- 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.



## Association Between Oral Infections and Systemic Conditions



## Importance of Oral Health

- Oral health is integral to general health
- Children acquire cavity causing bacteria from mothers and other caregivers
- Periodontal disease may lead to adverse pregnancy outcomes

## Prevalence

- Periodontal disease in pregnant women was 75.2% (Offenbacher et al. 2001).
- National survey findings among 20-34 year old persons (NHANES 1999-2004).
  - Untreated caries 28%
  - Periodontal disease 4%

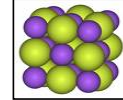
### Early Childhood Caries (ECC): An Extreme Form of Caries

- Prevalence in 2-5 year old is 28%
- Mean dfs =2.4
- Of children aged 1-5 years old enrolled in the EPSDT, only 16% received any preventive service
- In New York, over 2900 children (<6 years) visit a hospital for dental caries



### ECC Risk Factors

- Early infection with cariogenic bacteria, typically from the mother
- High frequency carbohydrate ingestion
- Lack of exposure to fluorides



### ECC Consequences

**Dentition:** Predicts future cavities for life

**Child:** Pain, infection, dysfunction, mood

**Family:** Lost work, cost, stress

**Community:** Lost work performance and productivity; educational & social services costs

**Society:** Cumulatively costly

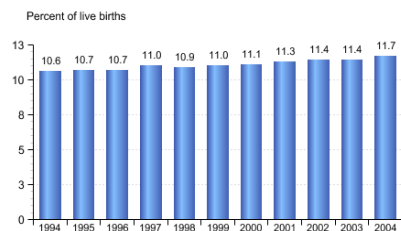
### Burden of Premature/Low Birth Weight (PLBW) \$26.2 Billion

- Premature births - 60-80% of all neonatal deaths (excluding congenital malformations)
- Ongoing problems - neurodevelopment, pulmonary system, vision, gastrointestinal, etc.
- Rate of PTD increased over the last 20 years from 9% in 1980 to 12% in 2004

Source – Peristats, March of Dimes

### Preterm birth

New York, 1994-2004

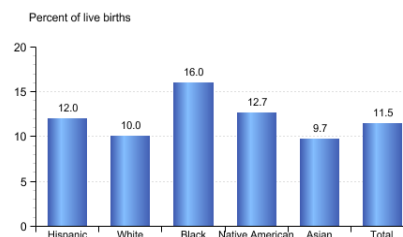


© 2006 March of Dimes Foundation  
Preterm is less than 37 completed weeks gestation.  
Source: National Center for Health Statistics, final natality data. Retrieved October 22, 2007, from www.marchofdimes.com/peristats.



### Preterm by race/ethnicity

New York, 2002-2004 Average



© 2006 March of Dimes Foundation  
All race categories exclude Hispanic births. Preterm is less than 37 completed weeks gestation. Categories do not sum to total since missing ethnicity data are not shown.  
Source: National Center for Health Statistics, final natality data. Retrieved October 22, 2007, from www.marchofdimes.com/peristats.



## Infection-induced Preterm Birth

- Sub-clinical infection
- Caused by anaerobes and mycoplasmas
- Ascending or hematogenous
- Account for up to 50% of preterm births
- Greater percent of VLBW

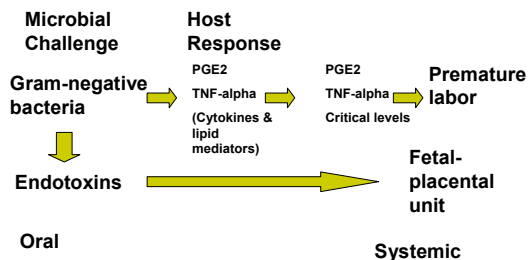
Klein L & Gibbs R(2004)Use of microbial cultures and antibiotics..." *AJOG*. 190,1493-502.



Periodontal disease is a chronic bacterial infection in the gums and supporting structures (bones)

Source: Douglass AB, Gonsalves W, Maier R, Silk H, Stevens N, Tysinger JW, Wrightson AS. Smiles for Life: A National Oral Health Curriculum for Family Medicine. Society of Teachers of Family Medicine. 2005.

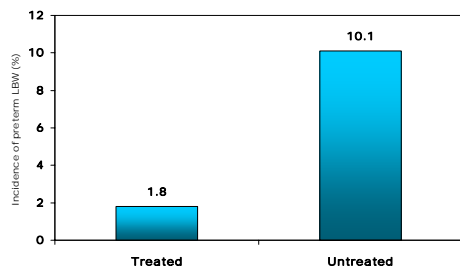
## Proposed Biological Model



## Observational Studies of Periodontal Disease and PLBW

- Meta analysis of 17 studies (Vergnes JN, Sixou M. *Am J Obstet Gynecol.* 2007;196(2):93-4).
- Overall odds ratio – 2.83 (95% CI 1.95-4.10)

## Incidence of Preterm Low Birth Weight (Santiago, Chile Study)



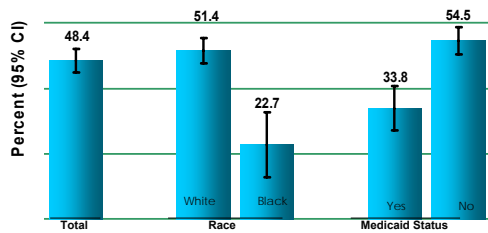
Lopez NJ, Smith P, Gutierrez J. *J Periodontol* 2002

## Obstetrics and Periodontal Therapy (OPT) RCT in US

- Pregnant women 13 to 21 weeks
- SRP prior to 21 weeks vs post partum
- Preterm delivery 12.0% vs. 12.8%
- Periodontal treatment *is* safe and effective

Michalowicz BS et al. Treatment of periodontal disease and the risk of preterm birth. *N England J Med* 2006;355:1885-94.

### Dental Visit (%) During Pregnancy By Race and Participation in Medicaid



Source: PRAMS, 2002

### Role of Prenatal Care Providers

- Ask and advise
  - Have you had a dental visit in the last 6 months?
  - Do you have:
    - Bleeding gums
    - Toothache
    - Cavities
    - Loose teeth
    - Other problems in your mouth
- Arrange and Assist

#### APPENDIX A Consultation Form for Pregnant Women to Receive Oral Health Care

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) \_\_\_\_\_
- Penicillin
- Amoxicillin
- Clindamycin
- Cephalosporins
- Erythromycin (Not estolate form)

### Education - Include Dental Care:

- Encourage all women to schedule an oral health exam during pregnancy
- Dental care is safe and effective
- First trimester diagnosis and treatment can be undertaken safely
- Delay in treatment could result in adverse effects for the mother and child

### Advice to Pregnant Women

- Brush at least twice daily with a fluoride toothpaste and floss
- Limit eating sugary foods; eat only at mealtime; brush after eating
- Avoid carbonated beverages and drinks
- Choose fruit rather than fruit juice

### Nausea and Vomiting Recommendations

- Eat small amount of nutritious yet noncariogenic foods throughout the day
- Rinse mouth using 1 teaspoon of baking soda (sodium bicarbonate) in 1 cup water
- Chew sugarless or xylitol gum after eating
- Brush teeth frequently with a gentle tooth brush prevent damage to demineralized tooth surfaces

### Dental Care : Myths or Concerns

- Erroneous perception of effect of dental x-rays
- Use of materials such as silver mercury fillings
- Use of medication
- Perception of patient discomfort

### Dental X-rays During Pregnancy

- Use abdominal and thyroid shields
  - Use health history and clinical judgment
  - Limit the number of x-rays

### Use of Medications During Pregnancy

The guideline provides recommendations for the use of

- Local anesthetics
- Antibiotics
- Pain medication

### Guidelines for Oral Health Care During Pregnancy

Medical concerns during pregnancy:

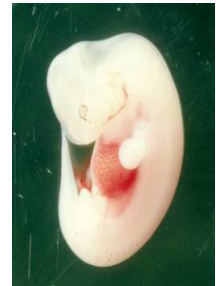
- Nausea & vomiting
- Hypertension (high blood pressure)
- Gestational diabetes
- Hypoxia
- Aspiration (choking)
- Heparin use for Thrombophilia
- Restrictions on medications

### Obstetrics for Dentists

- Time line of pregnancy
- Medical conditions of pregnancy
- Discourage use of harmful substances:
  - Tobacco
  - Alcohol
  - Recreational drug use

### First Trimester

- Embryo up to 9 weeks
- Teratogenicity up to 10 weeks
- Malformations 3-4%
- Loss 10-15%



### Role of Child Health Professionals

- Educate pregnant women and new parents about their oral health
- Assess children for the risk for oral diseases beginning at 6 months of age
- Advise women to take actions
- Evaluate and refer when necessary
- Assist in establishing a dental home

### Recommendations for Dental Care in Young Children

- Wipe an infant's teeth after feeding
- Supervise children's brushing and use a small amount of toothpaste (size of child's pinky nail)
- Avoid putting the child to bed with a nursing bottle or "sippy cup" containing sugary liquids
- Feed foods containing sugar at mealtimes only, and limit the amount

### Oral Health Care Advice for Families

- Avoid saliva-sharing activities between adults and child (i.e. tasting baby food)
- Avoid saliva sharing activities between children via toys, pacifiers etc.
- Visit the oral health professional with the new child between 6 months and first birthday

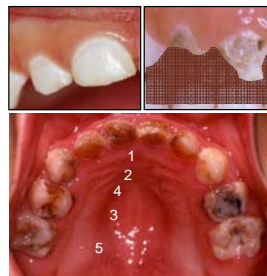
### First Signs - Caries



- Visible plaque in children under 12 months of age
- White, chalky appearing "decalcification" at gingival margin

### Caries is Progressive

- Unless the caries process is arrested, it will continue to create cavities
  - Within teeth
  - Among teeth

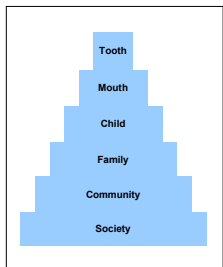


### Early Onset



- Overt cavities can be present as early as 12 months
- Typical age of clinical presentation to the dentist is 22-26 months

### Interventions



- Tooth:** Fluoride varnish
- Mouth:** Delay infection & bacterial suppression
- Child:** Delay transmission, 1 yo dental visit
- Family:** Dietary, hygiene/ fluoride mgt
- Community:** Education, water fluoridation by OB, peds, dentists, WIC, HS...
- Society:** Public policies

### Disease Management Approach



- Suppress cariogenic flora with topical fluoride
- Manage diet as behavioral intervention (analogous to Type I diabetes diet control)
- Monitor flora levels
- Excavate and repair as necessary post caries arrest

### Oral Health Messages

- Oral health and dental treatment during pregnancy and early childhood is important
  - Oral health should be incorporated into prenatal care and well child visits
- Oral diseases may adversely affect pregnancy

### Recommendations for Oral Health Care During Pregnancy

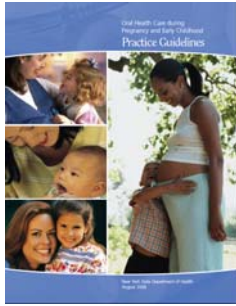
- Dental treatment strategies:**
- Welcome pregnant women to your dental practice
  - Keep patients comfortable in chair
    - Keep head HIGHER than feet
  - Limit use of x-rays and use appropriately
  - Discuss risks and benefits of restorative materials
  - Follow recommendations for medication

Dental care during pregnancy and early childhood should be as routine as an ultrasound.



### Public Health Messages

- Oral health is an integral component of overall health
- We need systematic public policy fixes that improve access to care for all
- Start dental care education early – even as early as pregnancy
- Support partnerships among health care professionals (prenatal, family medicine, pediatrics, dental)
- *An ounce of prevention is better than a pound of care*



Oral Health Care during Pregnancy and Early Childhood  
[www.health.state.ny.us/prevention/dental/oral\\_health\\_care\\_pregnancy\\_early\\_childhood.htm](http://www.health.state.ny.us/prevention/dental/oral_health_care_pregnancy_early_childhood.htm)

### Oral Health in America - US Surgeon General Report



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## Resources

- Oral Health Care during Pregnancy and Early Childhood [www.health.state.ny.us/prevention/dental/oral\\_health\\_care\\_pregnancy\\_early\\_childhood.htm](http://www.health.state.ny.us/prevention/dental/oral_health_care_pregnancy_early_childhood.htm)
- March of Dimes <http://www.marchofdimes.com/>
- National Maternal and Child Oral Health Resource Center [www.mchoralhealth.org/](http://www.mchoralhealth.org/)
- American Academy of Periodontology <http://www.perio.org/resources-products/pdf/44-pregnancy.pdf>
- Children's Dental Health Project <http://www.cdhp.org/>
- American Academy of Pediatrics [www.aap.org/commpeds/dochs/oralhealth/screening.cfm](http://www.aap.org/commpeds/dochs/oralhealth/screening.cfm)



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