Pregnancy and Oral Health

Jayanth Kumar, DDS, MPH
Director, Oral Health Surveillance & Research
Bureau of Dental Health, NYS Dept. of Health

Renee Samelson MD, MPH
Clinical Associate Professor
Albany Medical College
“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.”
How to influence health outcomes

- Biological factors
- Health System
- Individual & Family
- Community & Environment
Objectives

• Importance of oral health in women
• Transmission of caries causing bacteria
• Periodontal disease and LBW/PTB
• Impact of pregnancy on oral health
• Role of prenatal care providers
Pregnancy Related Oral Health Problems

• Pregnancy Gingivitis
• Pregnancy Epulis
• Increased Tooth Mobility
• Dental Caries
• Erosion
• Dental Problems in relation to Labor and Delivery
Dental Problems in Relation to Labor and Delivery

• Restorations/prosthesis that are present in the mouth may cause complications during the delivery procedure
Dental Care in Pregnancy

• Concerns:
  • Potential harm from x-rays
  • Use of materials such as mercury
  • Use of medication
  • Perception of patient discomfort
Dental Care in Pregnancy

• 1\textsuperscript{st} Trimester - limited because of morning sickness
• 2\textsuperscript{nd} Trimester – safest and most comfortable
• 3\textsuperscript{rd} Trimester - may be difficult because of increased physical discomfort.
Early Childhood Caries

- *Streptococcus mutans*
- 2900 hospitalizations
- Can affect
  - weight gain
  - school attendance
  - learning
- Is preventable
Oral flora: How does the infection occur?

- Transmitted mainly from mother or primary caregiver to infant

- Window of infectivity is first 2 years of life

- Earlier the child is colonized, the higher the risk of caries
Periodontal disease and adverse pregnancy outcomes
Low birth weight/preterm babies are expensive!

- Medical care in US: >$5B
Definitions

Premature birth
< 37 weeks gestation
• Low birth weight
< 2500 grams (5.5 lbs)
• Very low birth weight
< 1500 grams (3.3 lbs)
• All premature births are not low birth weight.
• All low birth weight are not premature.
Burden of PLBW $5.5 Billion

- Premature births - 60-80% of all neonatal deaths (excluding congenital malformations)
- Ongoing problems - neurodevelopment, pulmonary...
- Rate of PTD increased over the last 20 years from 9% in 1980 to 12% in 2002
- Double in African Americans
- VLBW has increased: 1.15% to 1.46%
Proposed Biological Model

Microbial Challenge
- Gram-negative bacteria
  - Endotoxins

Host Response
- PGE2
- TNF-alpha
  - (Cytokines & lipid mediators)

Critical levels

Premature labor

Fetal-placental unit

Oral

Systemic

Source: Oral Care Report
Critical pathway model of pathogenesis

1. Poor oral hygiene
   → Normal flora
   → Exogenous infection

2. Pathogenic flora
   → Pocketing and bone loss
   → Inflammation and tissue destruction
   → Cytokines & inflammatory mediators
   → Monocyte lymphocyte axis
   → Initial periodontitis

3. Neutrophil clearance
   → Antibody response
   → Gingivitis and limited disease
   → Systemic exposure

4. Bacterial penetration

Infection-induced Preterm Birth

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

Case Control Studies

- Outcomes - delivery < 37 weeks and/or weight < 2500 grams
- Exposures - evaluation of periodontal disease during or post partum (48 hours)
- Assessment of microbiology, immunomodulators, immunoglobulins
- 7 showed association
- Davenport – No association
Risk of Preterm/ Low Birth Weight Babies and Periodontal Disease (Odds Ratio)

- Offenbacher 1996
- Dasanayake 1998
- Davenport 2002
- Devine 2004
6 Cohort Studies

- **Exposure** - exam to assess periodontal status during pregnancy
- **Outcomes** - delivery < 37 weeks and/or weight < 2500 grams
- **2 Interventions**
Odds ratios for preterm birth
Jeffcoat 2001
[Nested Case-Control]

<table>
<thead>
<tr>
<th></th>
<th>&lt;37 Weeks</th>
<th>&lt;35 Weeks</th>
<th>&lt;32 Weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odds Ratio</td>
<td>4.45</td>
<td>5.28</td>
<td>7.07</td>
</tr>
<tr>
<td>Weeks</td>
<td>&lt;37</td>
<td>&lt;35</td>
<td>&lt;32</td>
</tr>
</tbody>
</table>
Prevalence of preterm birth (<28 weeks)
Offenbacher 2001

![Graph showing prevalence of preterm birth by periodontal disease severity.]

- **Healthy**: 1.1%
- **Mild**: 3.5%
- **Mod- Severe**: 11.1%
Preterm Low Birthweight (%) by PD Parameters - Rajapakse, 2005
Non-smoking Sri Lankan Women

Plaque score
Bleeding Score
Pocket Depth
All 3 scores

Low
High
3 Intervention Studies

- 2 in progress

- Intervention
  - Periodontal treatment
  - Antibiotics

- Outcomes - delivery < 37 weeks and/or weight < 2500 grams
Intervention study

• 366 women with periodontitis, 21-25 wks

• 3 arms: dental prophylaxis + placebo
  SRP + placebo
  SRP + placebo
  SRP + antibiotic

Untreated reference group

Jeffcoat MK 2003
Results: % Preterm Births by Treatment Group

Jeffcoat et al August 2003
RCT – Lopez 2002
Incidence of Preterm Low Birth Weight
Microbial - Host Interactions: Determinant of Health & Disease

• Infection - dolor, rubor, calor, tumor
• Microbial component
• Host response
  – hyper-responders vs hypo-responders

Optimal Response

• Measured and proportionate inflammatory response

• Could deal with changes in the vaginal ecosystem without adverse pregnancy outcome

• Little data - studies measuring IL 6
Hyper vs Hypo Responders

- Hyper - excessive local or systemic inflammatory response leading to tissue damage - SIRS
- Hypo - inability to generate an adequate response predisposes to overwhelming infection
The Connection

- Hyper responders more likely to have periodontal disease (Kornman 1997)
- Hypo responsive moms predisposed to ascending infection and clinical chorioamnionitis
- Hyper responsive moms predisposed to vaginitis and PTD
Bacterial Vaginosis: Preterm Birth

• 18 reports: gestational age less than 37 weeks, all intact membranes
• Outcomes: preterm delivery
• BV - OR 2.19 (1.54-3.12)
• Greatest at less than 16 wks 7.55 (1.8-32)
  less than 20 wks 4.2  (2.1-8.4)

TNF α

- Proinflammatory cytokine produced by monocytes in response to microbial products
- Patients admitted to ICU with high levels are more likely to die
- Eschenbach reported that nonpregnant patients with history of PTB had more TNF α
Case Control: TNF and Bacterial Vaginosis

- African American: 77%
- Cases (125) - delivered before 37 weeks
- Controls (250) - delivered after 37 weeks
- Excluded those previous PTB
- Collected information on BV and other risk factors

# Case Control: TNF and Bacterial Vaginosis

<table>
<thead>
<tr>
<th>Variable</th>
<th>% OR of PTB</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American race</td>
<td>0.9 (0.4-2.1)</td>
</tr>
<tr>
<td>Bacterial vaginosis</td>
<td>1.3 (0.5-2.9)</td>
</tr>
<tr>
<td>TNF-2 carriage</td>
<td>1.6 (0.9-2.8)</td>
</tr>
<tr>
<td>BV-TNF-2 interaction</td>
<td>6.0 (1.6-22.7)</td>
</tr>
</tbody>
</table>
Gene Environment Interaction

• Exists when the risk of disease among individuals with a specific genotype exposed to an environmental factor is greater (or lower) than that predicted from the presence of either the genotype or the exposure.
Obstetrics for Dentists

- Time line of pregnancy
- Harmful maternal behaviors
- Medical conditions of pregnancy
Timeline

- Trimesters are 14 weeks each based on 42 week pregnancy
- Embryonic period 2 thru 8 weeks
- Fetal period 8 weeks till delivery
<table>
<thead>
<tr>
<th>DAYS</th>
<th>WEEKS</th>
<th>TIMELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>First day of last menstrual period (LMP)  First trimester begins</td>
</tr>
<tr>
<td>14</td>
<td>2</td>
<td>Conception; fertilization</td>
</tr>
<tr>
<td>28</td>
<td>4</td>
<td>First missed period;  Embryonic period starts;  organogenesis</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>End embryonic period</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Start fetal period</td>
</tr>
<tr>
<td>6 to 10</td>
<td></td>
<td>First prenatal visit with dental screen</td>
</tr>
<tr>
<td>Weeks</td>
<td>Timeline</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>14th</td>
<td>Second trimester begins</td>
<td></td>
</tr>
<tr>
<td>14 to 20</td>
<td>Ideal time for dental work</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Uterus at umbilicus</td>
<td></td>
</tr>
<tr>
<td>24 to 28</td>
<td>Screen for diabetes</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Third trimester begins</td>
<td></td>
</tr>
<tr>
<td>40 (280 days)</td>
<td>Estimated date of delivery (EDD)</td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>Some women deliver after EDD</td>
<td></td>
</tr>
</tbody>
</table>
Timeline of pregnancy

- 40 weeks
  - LMP to EDD
- Trimesters
  - 3 months
  - 14 wks
  - 42 wks
- Ultrasound
First Trimester

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

• Safest time to perform procedures: 14 to 20 weeks
• Pregnancy below umbilicus
Third Trimester

- Hypotension

Aspiration - delayed gastric emptying, incompetent esophageal valve
Harmful maternal behaviors

• Tobacco

• Alcohol

• Recreational drugs
Tobacco

• 20% of women smoke in USA
• 9% of women smoke in resource poor countries
• 11% of pregnant women
• 50 to 75% of women who stop during pregnancy are smoking by the time the baby is 6 months old
Tobacco

- Slows fetal growth
- Increases risk of preterm delivery
- Dose dependent
- Doubles risk of placental problems
- Increases risk of PROM
- Newborn – withdrawal like symptoms
- SIDS – 3X as likely
Alcohol

• 40,000 babies affected each year
• No level of alcohol is safe
• 13% of pregnant women use alcohol
• 3% of pregnant women binge (5 or more drinks per sitting) or drink frequently (7 or more per wk)
• Alcohol level of fetal blood may be higher than mothers and can remain higher longer
• Miscarriage, LBW, and stillbirth
Fetal alcohol spectrum disorder

- Fetal alcohol syndrome most severe
- Only cause of MR preventable
- Small at birth and do not catch up
- Characteristic facies
- Heart may be abnormal
- Small brain
- Mental disability – short attention span
- Poor coordination
- Emotional and behavioral problems
Fetal alcohol effects

- More difficult to diagnose
- FAE 3 times as common as FAS
- Lesser degrees of physical (ARBD) and mental birth defects (ARND)
Illicit drug use

• 3% pregnant women use MJ, cocaine, ecstasy, amphetamines, heroin
• 1/10 by some blinded screening
• Tobacco and alcohol also
• Different drugs can have different effects
Medical Conditions of Pregnancy

• Hypertension
• Diabetes
• Heparin use
• Aspiration
Hypertensive disorders of pregnancy - 12 to 22%

- 140/90 vs. 180/110
- Chronic hypertension
- Preeclampsia - 5 to 8%
- Eclampsia
- Adverse pregnancy outcomes
Hypertensive disorders: adverse outcomes

- Premature birth
- Intrauterine growth restriction
- Fetal demise
- Placental abruption
- Cesarean delivery
Peridontal Disease and Preeclampsia

• Severe periodontal disease increased the odds for preeclampsia
  OR = 2.4 (95% CI 1.1 - 5.5)
  Boggess 2003

• Periodontal disease increased the odds for preeclampsia
  OR = 3.47 (1.07 - 11.95)
  Canakci 2004
Diabetes

• Gestational type III - 2 to 5%
• Type II diabetes - insulin resistance
• Type I diabetes
• Importance of control
• Importance of oral health
Use of heparin

• Thrombosis

• Adverse pregnancy outcome - pregnancy loss and/or FGR

• Thrombophilia

• Invasive dental care (SRP)
FDA drug classification for pregnancy

- Combines risk statements including congenital anomalies, fetal effects, perinatal risks, and therapeutic risk-benefit ratio
- Untreated disease or condition may pose more serious risks to both mother and fetus than any theoretical risks from the medication
- Category A thru D and X
FDA classification

• A - controlled studies in humans have demonstrated no fetal risks -
  – very few such drugs - prenatal vitamins
• B - animal studies indicate no fetal risks but no human studies OR adverse effects in animals but no well controlled human studies -
  – PCN, cephalosporins, metronidazole, acetaminophen, morphine, merperidine
FDA Classification

• C - no adequate studies either human or animal OR adverse fetal effects in animals but no human data
  – many drugs - codeine beta blockers, heparin, acyclovir

• D - evidence of fetal risk but benefits outweigh risks - phenobarbital, phenytoin, valproic acid, lithium

• X - proven fetal risks too great - isotretinoin and thalidomide
Prophylactic antibiotics

• Pregnancy is not an indication for prophylactic antibiotics
• Transient bacteremia
• Subacute bacterial endocarditis same criteria
What do you expect from a prenatal care provider?

• Ask
• Assess
• Advise
• Arrange
• Assist
Role of prenatal care providers

- Ask and advise
  - Do you have bleeding gums, toothache, cavities, loose teeth or other problems in your mouth?
  - Have you had a dental visit in the last 6 months?
Do you have bleeding gums, toothache, cavities, loose teeth or other problems in your mouth?

YES

- Refer to a dentist
- Stress the importance of timely visit
- Inquire if the pregnant woman needs help in accessing dental care
Do you have bleeding gums, toothache, cavities, loose teeth or other problems in your mouth?

**NO**

- Ask the next question:
  Have you had a dental visit in the last 6 months?

**YES**

- Encourage the pregnant woman to keep the next appointment
- Reassure that dental care during pregnancy is effective and safe

**NO**

- Encourage the pregnant woman to make a dental appointment as soon as possible
Recommendations

• Encourage all women to schedule an oral health examination.

• Encourage patients to adhere to the recommendations regarding appropriate follow-up.

• Document in the prenatal care plan.

• Facilitate treatment by providing written medical clearance.
MEDICAL CLEARANCE FOR PREGNANT WOMAN
TO RECEIVE ORAL HEALTH CARE

Estimated date of delivery: ____________________________________________
Weeks gestation today            __________________________________________

KNOWN ALLERGIES:

Is obstetrically cleared for 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 lidocaine and epinephrine
- Restorative dentistry (amalgam or composite)
- Scaling and root planing (deep teeth cleaning)
- Root canal
- Extraction

If needed, patient may have Tylenol #3 pain control, unless allergic.
If needed, patient may have penicillin or cephalosporins.

DENTIST’S REPORT (for the Prenatal Care Provider)

NAME: __________________________DATE: ________Phone: ________________
(Signature)

Diagnosis: ___________________________________________________________
____________________________________________________________________
____________________________________________________________________

Treatment Plan: ______________________________________________________
____________________________________________________________________
____________________________________________________________________
Education - Include Dental Care:

• Dental care is safe and effective

• First trimester diagnosis and treatment can be undertaken safely

• Delay in treatment could result in adverse effects
Advise women that the following actions will improve their health:

• Brush twice daily with a fluoride toothpaste and floss

• Eat foods containing sugar at mealtimes only, and limit the amount

• Avoid carbonated beverages

• Choose fruit rather than fruit juice
Recommendations

Suggest the following to reduce tooth decay in women with nausea and vomiting:

• Eat small amount of nutritious yet noncariogenic foods throughout the day

• Use a teaspoon of baking soda (sodium bicarbonate) in a cup of water and rinse after vomiting to neutralize acid

• Chew sugarless or xylitol gum after eating

• Use gentle tooth brushing to prevent damage to demineralized tooth surfaces
Advise women that the following actions may reduce the risk of caries in children:

- Wipe an infant’s teeth after feeding
- Supervise children’s brushing and use a small (size of child’s pinky nail) amount of toothpaste
- 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
- Avoid saliva-sharing activities between adults and child (i.e. tasting baby food)
- Alter saliva sharing activities between children via toys, pacifiers etc.
- Visit the oral health professional with the new child between 6 months and first birthday
Questions that a dentist may ask

- Can I take x-rays?
- Can I inject local anesthesia with epinephrine?
- Can I administer 30% nitrous oxide for analgesia?
- What medications can I prescribe?
- Are topical agents safe?
- When should restorations and other necessary be performed?
- Can I use mercury restorations?
Is it safe to take x-rays?

- “No single diagnostic procedure results in a radiation dose significant enough to threaten the well-being of the developing embryo and fetus.”
  American College of Radiology

- “Undergoing a single…X-ray…does not result in radiation exposure adequate to threaten the well-being of the developing preembryo, embryo or fetus and is not an indication for an abortion.”
  American College of Ob-Gyn
Precautions

- Use abdominal and thyroid shields
  - Use health history and clinical judgment
  - Limit the number of x-rays
Antepartum Dental Radiography and Infant Low Birth Weight

Philippe P. Hujoel, PhD  
Anne-Marie Bollen, PhD  
Carolyn J. Noonan, MS  
Michael A. del Aguila, PhD  

Context  Both high- and low-dose radiation exposures in women have been associated with low-birth-weight offspring. It is unclear if radiation affects the hypothalamic-pituitary-thyroid axis and thereby indirectly birth weight, or if the radiation directly affects the reproductive organs.

Objective  To investigate whether antepartum dental radiography is associated with low-birth-weight offspring.

Design  A population-based case-control study.

Participants and Setting  Enrollees of a dental insurance plan with live singleton births in Washington State between January 1993 and December 2000. Cases were 1,117 women with low-birth-weight infants (<2500 g), of whom 336 were term low-birth-weight infants (1501-2499 g and gestation ≥37 weeks). Four control pregnancies resulting in normal-birth-weight infants (≥2500 g) were randomly selected for each case (n=4468).

Main Outcome Measures  Odds of low birth weight and term low birth weight by dental radiographic dose during gestation.

Results  An exposure higher than 0.4 milligray (mGy) during gestation occurred in 21 (1.9%) mothers of low-birth-weight infants and, when compared with women who had no known dental radiography, was associated with an adjusted odds ratio (OR) for a low-birth-weight infant of 2.27 (95% confidence interval [CI], 1.11-4.66, P=.03). Exposure higher than 0.4 mGy occurred in 10 (3%) term low-birth-weight pregnancies and was associated with an adjusted OR for a term low-birth-weight infant of 3.61 (95% CI, 1.46-8.92, P=.005).

Conclusion  Dental radiography during pregnancy is associated with low birth weight, specifically with term low birth weight.

Odds Ratios and 95% Confidence Intervals for LBW and TLBW associated with Ionizing Radiation during gestation and the Impact of controlling over the risk factors.

<table>
<thead>
<tr>
<th></th>
<th>&gt; 0.4 mGy</th>
<th></th>
<th>0.1 – 0.4 mGy</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unadjusted</td>
<td>Adjusted</td>
<td>Unadjusted</td>
<td>Adjusted</td>
</tr>
<tr>
<td><strong>LBW</strong></td>
<td>1.80</td>
<td>2.27 (1.11 – 4.66)</td>
<td>1.09</td>
<td>1.20 (0.88 – 1.63) *</td>
</tr>
<tr>
<td></td>
<td>(1.09 – 2.97)</td>
<td></td>
<td>(0.87 – 1.36)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.54</td>
<td>2.54 (1.23 – 5.21) **</td>
<td></td>
<td>1.29 (0.95 – 1.76) **</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TLBW</strong></td>
<td>3.05</td>
<td>3.61 (1.46 – 8.92) *</td>
<td>1.30</td>
<td>1.66 (1.09 – 2.53) *</td>
</tr>
<tr>
<td></td>
<td>(1.53 – 6.08)</td>
<td></td>
<td>(0.92 – 1.85)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.54</td>
<td>3.54 (1.40 – 8.96) **</td>
<td></td>
<td>1.66 (1.08 – 2.56) **</td>
</tr>
</tbody>
</table>

* Adjusted for Smoking, chronic hypertension, preeclampsia, alcohol use, marital status, diabetes: Indicator variables. Duration of dental insurance eligibility, weight gain, pre-pregnancy weight: Continuous var.

** Adjusted for above variables + dental procedures (preventive, restorative, endodontic, periodontal, fixed and removable prosthodontic, oral surgery and orthodontic).
Editorial comments

• JAMA - Reiman, Duke; Lockhart, Dickson Institute for Health Studies, Charlotte

• JADA - Moore and Preece, University of Texas at San Antonio

• Journal of Radiological Protection - Boice, Vanderbilt and International Epidemiology Institute, Stovall, MD Anderson, Green, Roswell Park Cancer Institute
## Guidelines For Prescribing Dental Radiographs

<table>
<thead>
<tr>
<th>Patient Category (Adult)</th>
<th>Dentulous</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New Patient</strong></td>
<td>Post. bite-wings &amp; selected periapicals</td>
</tr>
<tr>
<td></td>
<td>Full mouth intraorals (if clinical evidence of generalized disease/extensive R)</td>
</tr>
<tr>
<td><strong>Recall Patient</strong></td>
<td>Post. bite-wings, 12-18 month interval</td>
</tr>
<tr>
<td><strong>No clinical caries/High risk factors for caries</strong></td>
<td>Post. bite-wings, 24-36 month interval</td>
</tr>
<tr>
<td><strong>Periodontal Disease/History of periodontal treatment</strong></td>
<td>Selected periapical &amp;/ bite-wings for areas where periodontal disease is clinically demonstrated</td>
</tr>
</tbody>
</table>

Is it safe to inject local anesthetic?

• Yes.
  • Lidocaine 2% category B
  • Mepivicaine 3% category C
  • Epinephrine
Is it safe to administer nitrous oxide?

- Should be used only when local anesthesia is not adequate
- Concerns
  - Occupational hazard
  - Aspiration
  - Hypoxia
  - Hypotension
  - Second trimester procedures
## Antibiotics

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penicillin</td>
<td>Tetracycline</td>
</tr>
<tr>
<td>Amoxicillin</td>
<td>Erythromycin estolate</td>
</tr>
<tr>
<td>Cephalosporins</td>
<td>Quinolones</td>
</tr>
<tr>
<td>Clindamycin</td>
<td>Clarithromycin</td>
</tr>
<tr>
<td>Erythromycin (except estolate form)</td>
<td></td>
</tr>
</tbody>
</table>
### Analgesics

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Acetaminophen</td>
<td>Aspirin</td>
</tr>
<tr>
<td>• Codeine</td>
<td></td>
</tr>
<tr>
<td>• After 1\textsuperscript{st} trimester</td>
<td></td>
</tr>
<tr>
<td>• NSAID</td>
<td></td>
</tr>
<tr>
<td>- Ibuprofen</td>
<td></td>
</tr>
<tr>
<td>- Naprosyn (for 24 to 72 hours only)</td>
<td></td>
</tr>
</tbody>
</table>
When should restorations/necessary work be performed?

• Needed treatment should be provided any time

• Second trimester - early 14 to 20 weeks is preferred

• Pre-anesthesia evaluation may require addressing loose teeth and restorations prior to time of delivery
Is it safe to use mercury restorations?

- No evidence of harmful effect (FDA 1997; LSRO 2004)
- Benefits outweigh risks
- Canada, Germany, and New Zealand have some restrictions
Are topical agents safe?

- Fluoride
  - Toothpaste & mouthrinse
- Xylitol chewing gum
- Chlorhexidine (11% alcohol)
- No over the counter mouthrinses with alcohol (Listerine 20% alcohol)
How should the pregnant woman be positioned?

- Flat position may cause hypotension and hypoxia.
- Place a small pillow under right hip - left lateral displacement.
- Head above feet.
Your role in improving maternal-child health

• Educate providers and patients
  • Oral health is part of overall health
  • Dispel myths and misconceptions
  • Incorporate oral health care into routine prenatal care

• Partner with prenatal providers

• Provide treatment when needed