

*Surgeon General's
Conference on the
Prevention of Preterm Birth*



Biomedical Research Workgroup

- Etiology of preterm birth
- Physiologic and pathologic mechanisms of parturition
- Animal models
- *In vitro* systems
- Gene environment interactions
- Genetics
- Epigenetics
- Biological targets and markers
- Fertility treatments
- Multiple gestations
- Diagnosis and treatment of preterm birth

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- I. Measurement (better define the problem of preterm birth with improved data)
 - I-1. Promote the collection of improved Perinatal database
 - I-2. Encourage use of ultrasound early in pregnancy to establish gestational age
 - I-3. Develop indicators of maturational age
 - Better sub-classification (spontaneous, pPROM, indicated)

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- II. Causes of Preterm Birth
 - II-1. Investigate the Etiologies of preterm birth
 - II-2. Study multiple risk factors to facilitate the modeling of the complex interactions associated with preterm birth
 - II-3. Expand research into the causes and methods for the prevention of the racial-ethnic and socioeconomic disparities in the rates of preterm birth
 - II-4. Investigate the causes of and consequences for preterm births that occur because of fertility treatments
 - II-5. Study infertility treatments and institute guidelines to reduce the number of multiple gestations
 - More attention to indicated preterm birth

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- III. Diagnosis and Treatment of Preterm Labor
 - III-1. Improve methods for the identification and treatment of women at increased risk of preterm delivery
 - Improve methods to differentiate false from true labor

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- Medical and Pregnancy Conditions Associated with Preterm Birth
 - Obesity
 - Medical conditions
 - Obstetrical complications (preeclampsia, IUGR, pPROM, placenta, multiples)
 - Infertility

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- Biological Pathways Leading to Preterm Birth
 - Spontaneous preterm labor
 - Uterine distention
 - Placental abnormalities
 - Infection/inflammation
 - Uterine abnormalities
 - pPROM

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- Barriers to Clinical Research on Preterm Birth and Outcomes of Preterm Infants
 - Dearth of clinician-scientists and mentors
 - Funding
 - Ethical issues
 - Liability
 - Multidisciplinary/Bioinformatics (mine)

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■ Post-IOM Report

- Outcome of very early preterm birth
Tyson et al. N Engl J Med 2008;358:1672-81
- Cervical length (progesterone, cerclage)
Fonseca et al. 2007;357:462-9
- Fetal programming
Hovi et al. N Engl J Med 2007;356:2053-63
- Individualized growth potential
Bukowski et al. Obstet Gynecol 2008;111:1065-76
- Magnesium neuroprotection
Rouse et al. Am J Obstet Gynecol 2007;197:S2
- Infection and neurologic damage
- Folic acid and prematurity
Bukowski et al. Am J Obstet Gynecol 2007;197:S3