

# Healthy Pregnancy

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## Preconception Care

- Risk Assessment
  - Social
  - Behavioral
  - Environmental
  - biomedical
- Risk reduction
  - Congenital disorders/fetal growth abnormalities/pregnancy complications
- Goals
  - Educate
  - intervene

## **Preconception Evaluation**

- **Intervention prior to conception MORE important than PRENATAL intervention**
  - **30% start PNC in the second trimester**
  - **Maximal organogenesis between 3-10 weeks**
  - **50% of pregnancies in US are “unintended”**
- **Any women’s health provider should be able to initiate preconception evaluation**
  - **Referral to pregnancy specialist**
  - **Referral to other “specialists” if appropriate**
  - **Coordination of care**

## **Preconception Care**

- **Checklist (resources)**
- **CDC**
- **March of Dimes**
- **Perinatal Foundation**
- **ACOG**

# Age

- **Maternal age**
  - **Fertility**
  - **Aneuploidy**
  - **Miscarriage**
  - **Pregnancy related complications**
- **Paternal Age**

# Medical history

- **Chronic diseases**
- **Medications**
- **Gynecologic history**
- **Substance abuse**
- **Vaccinations**
- **Nutrition/supplementation**
- **Environmental hazards**
- **Genetics/heritage**

# Resources

- **Potential teratogens**
  - **National Library of Medicine**
  - **Reprotox**
  - **Pregnancy Exposure Registries**
  - **Many others**

## Preconception labs

- **Consider STI screen**
- **Discuss genetic history/genetic carrier testing**
- **Immunity status and consideration to vaccination if appropriate to patient planning**

**Medical conditions to consider additional preconception evaluation**

**Diabetes**

**TB assessment**

**Social/Environmental considerations**

**Toxo, CMV, Lead levels**

# Primary Interventions

- **Folic Acid supplementation**
  - **Supplementation AFTER +UPT is too late for NTD**
  - **NT closes 18-26d after conception**
- **Disease optimization**
- **Abstinence from drugs/etoh**
- **Smoking cessation**
- **Vaccinations**
- **Weight loss/gain**
- **MEDICATION changes/discontinuation**
- **Behavioral changes (based on risk factors)**

# Disease Optimization

- **Hypertension**
  - **Appropriate medications**
- **Diabetes**
  - **Glycemic control**
- **Thyroid disorders**
- **Asthma**
- **Seizure disorders**
  - **Appropriate medications, extra folic acid supplementation**
- **Cardiovascular disease**
- **Autoimmune disorders**
- **Thrombophilias**
- **Psychosocial evaluation**

## **Healthy Pregnancy: Prenatal Care**

- **Risk Assessment/rediscussion**
- **Estimate gestational age**
- **Patient education**

## **Initiation of Care**

- **Ideally preconception assessment**
- **Pregnancy evaluation and “dating” by 10 weeks**
- **Physical examination**
- **Routine laboratory testing**
- **Patient education**
- **Patient care PROVIDER**
  - **Decide early**
    - **Physician (ob or fp), CNM**

## Due Date

- Calculated by LMP (last menstrual period)
  - Interval of menstrual cycle is 28d
  - Naegele's rule
    - (LMP +7days)-3 months
- Dating is crucial to interventions and fetal growth assessment
- Ultrasound dating assessment
  - Uncertain LMP
  - Conception with contraception
  - Irregular menses

## Physical Assessment

- Baselines:
  - Blood pressure
  - Weight/height
- Uterine size
- Fetal cardiac activity

# Routine Labs

- Blood type and antibody screening
- Hematocrit/MCV
- Pap (standard guidelines)
- Immunity to varicella, rubella/other viruses based on risk
- Urine assessment
- Syphilis
- Hepatitis B
- HIV
- STI testing
- INHERITED disorders (if appropriate)
- Consider: thyroid function, diabetes testing, other immunities/viral exposures

# Useful tests

- Ultrasound examination
- Fetal aneuploidy screening
- Consideration to screening for inherited disorders
  - CF
  - Fragile X
  - SMA (spinal muscular atrophy), PKU
  - Hemoglobinopathies
    - B-thal, alpha-thal, hemoglobin S, C, E
  - Eastern European heritage
    - Tay Sachs, other
      - Pennsylvania Dutch
      - Southern Louisiana Cajun
      - Eastern Quebec French Canadian



## **Aneuploidy screening**

- **Down's syndrome is the MOST common chromosomal abnormality among LIVE BORN infants**
- **Screening should be offered to ALL patient's regardless of RISK**
  - **First trimester screen**
    - **NEWER: cffDNA**
  - **Second trimester screening**

## **Patient education**

- **Routine practice issues**
- **Nutrition/weight gain/PNV**
- **Exercise**
- **Safe medications**
  - **List/call**
- **Common pregnancy symptoms (normal)**
- **Signs/symptoms of pregnancy complications**

# **Sonography**

- **Establish EDD**
- **Evaluate for birth defects**
  - **Prevalence about 4% among ALL LIVE BIRTHS**
- **Evaluate for aneuploidy**
- **NOT PERFECT**

# **Nutrition/exercise**

- **Weight gain INDIVIDUAL**
- **Prenatal vitamin: folic acid, iron**
  - **Avoid excessive Vitamin A**
- **DHA supplements (?)**
- **Limit caffeine**
- **Avoid large fish**
- **Avoid hot tubs/sauna in the first trimester**
  
- **Exercise**
  - **Continue program**

# Symptoms

- **Common**
  - Nausea and vomiting
  - Constipation, diarrhea
  - GERD
  - Problems sleeping
  - Varicose veins
- **Urgent**
  - Bleeding
  - Pain and or bleeding
  - Vomiting for over 24h

# Practice Issues

- **Contact numbers**
- **Physicians**
- **Urgent issues/emergent issues**
- **Hospital coverage/delivery planning**

## **High Risk Pregnancy**

- **NO PRECISE DEFINITION**
- **Medical or surgical conditions**
- **Past obstetric complications**
- **Maternal age**
  
- **REFERRAL to perinatologist for recommendations**
  
- **Additional care**
  - **No specific studies to show improved outcomes**

## **Periodic Assessment**

- **Based on GA additional evaluation is recommended**
  - **PNB (first visit)**
  - **Aneuploidy screening**
    - **Diagnostic assessments**
  - **Neural tube defects (15-24w)**
  - **Fetal anomalies/aneuploidy assessment (ultrasound)**
    - **?cervical length**
  - **Gestational diabetes (24-28weeks)**
  - **Antibody evaluation (if appropriate)**
  - **Hematocrit assessment**
  - **Tdap vaccination (influenza if appropriate)**
  - **STI screening**
  - **Group B beta-hemolytic strep testing (35-37weeks)**

## **Periodic Assessment**

- **EFW (third trimester)**
  - **Fetal position**
    - ?mode of delivery
  - **Ultrasound in “high risk” pregnancies for fetal weight**
  - **Basic physical assessment (fundal height) “low risk” pregnancies**
    - **Ultrasound if necessary**
- **Antenatal testing (high risk)**

## **Delivery**

- **Mode of Delivery**
  - **Vaginal delivery**
  - **C-Section**
- **Education**
  - **“birth plan”**
    - **support**
  - **Breast feeding**
  - **Pediatrician**