

## 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, heboglobin 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**