

**Preconception Care:
New Guidelines, New
Opportunities**

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**PRECONCEPTION CARE:
Promoting the Health of California's
Families**

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**Why
Preconception Care?**

Why Preconception Care?

- ❑ Early prenatal care is too late.

**Early Prenatal Care Is Too Late
To Prevent Some Birth Defects**

- ❑ The heart begins to beat at **22** days after conception
- ❑ The neural tube closes by **28** days after conception
- ❑ The palate fuses at **56** days after conception
- ❑ Critical period of teratogenesis – **Day 17 to Day 56**

**Early Prenatal Care Is Too Late
To Prevent Implantation Errors**

The diagram illustrates the process of implantation and early pregnancy survival. It shows an embryo with inner cell mass and outer cell mass. Key components and processes labeled include: LIF signaling, EGF signaling, Growth factors and cytokines, Macrophil on syncytiotrophoblast, Periosteal, Regulation of changes in surface epithelium, Endometrial stroma, Endometrial glands, Endometrial capillaries, Hormones (estrogens, progesterone), and Regulation of progesterone production. The diagram also shows the endometrial epithelium and the process of implantation.

Norwitz ER, Schust DJ, Fisher SJ. Implantation and the survival of early pregnancy. N Engl J Med. 2001 Nov 8;345(19):1400-8.

Early Prenatal Care Is Too Late To Restore Allostasis

□ **Allostasis:** Maintain stability through change

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Stress Response


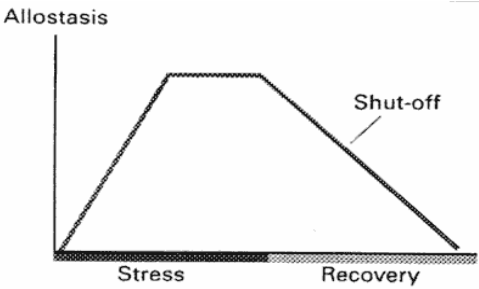


Photo: <http://www.lam.mus.ca.us/cats/encyclo/smilodon/>

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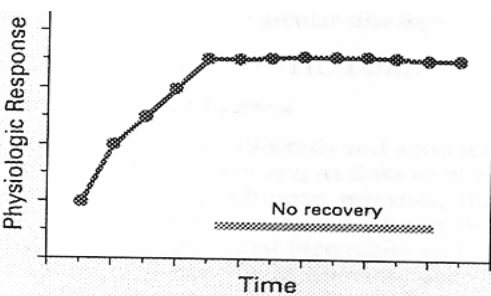
Allostasis



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McEwen BS. Protective and damaging effects of stress mediators. N Eng J Med. 1998;338:171-9.

Allostatic Load: Wear and Tear from Chronic Stress



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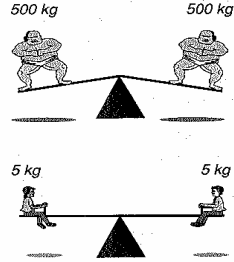
McEwen BS. Protective and damaging effects of stress mediators. N Eng J Med. 1998;338:171-9.

Stressed vs. Stressed Out

<p>□ Stressed</p> <ul style="list-style-type: none"> ▪ Increased cardiac output ▪ Increased available glucose ▪ Enhanced immune functions ▪ Growth of neurons in hippocampus & prefrontal cortex 	<p>□ Stressed Out</p> <ul style="list-style-type: none"> ▪ Hypertension & cardiovascular diseases ▪ Glucose intolerance & insulin resistance ▪ Infection & inflammation ▪ Atrophy & death of neurons in hippocampus & prefrontal cortex
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Allostasis vs. Allostatic Load



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McEwen BS, Lasley EN. The end of stress: As we know it. Washington DC: John Henry Press. 2002

**Preterm Birth:
A Life Course Perspective**



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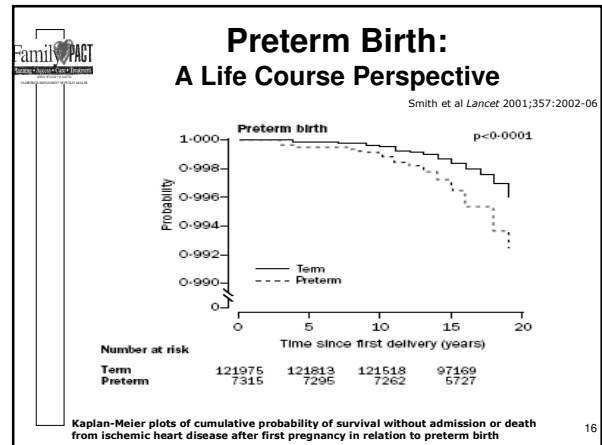
**Preterm Birth:
A Life Course Perspective**

- Vulnerability to preterm delivery may be traced to not only exposure to stress & infection during pregnancy, but host response to stress & infection (e.g. stress reactivity & inflammatory dysregulation) patterned over the life course

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- An important objective of preconception care is to restore allostasis to women's health before pregnancy

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**Why Preconception Care?
Summary**

- Early Prenatal Care Is Too Late
 - To prevent some birth defects
 - To prevent implantation errors
 - To restore allostasis

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**What Is
Preconception Care?**

Family PACT Preconception Care Webcast

Family PACT **What is Preconception Care?**

- A set of interventions that aim to identify and modify biomedical, behavioral, and social risks to a woman's health or pregnancy outcome through prevention and management.

Johnson K, Posner SF, Biermann J, Cordero JF, Atrash HK, Parker CS, Boulet S, Curtis MG. CDC/ATSDR Preconception Care Work Group; Select Panel on Preconception Care. Recommendations to improve preconception health and health care—United States. A report of the CDC/ATSDR Preconception Care Work Group and the Select Panel on Preconception Care. MMWR Recomm Rep. 2006 Apr 21;55(RR-6):1-23.

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Family PACT **Definition of Preconception Care**

- Preconception care is comprised of interventions that aim to identify and modify *biomedical, behavioral, and social risks* to a woman's health or pregnancy outcome through prevention and management
- It is more than a single visit and less than all well-woman care. It includes care before a first pregnancy or between pregnancies (interconception care)

CDC, MMWR 2006;55(No. RR-6): 1-23

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CDC **MMWR**
Recommendations and Reports
April 21, 2006 / 55(RR06):1-23

Recommendations to Improve Preconception Health and Health Care—United States

A Report of the CDC/ATSDR Preconception Care Work Group and the Select Panel on Preconception Care

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CDC Department of Health and Human Services
Centers for Disease Control and Prevention

Preconception Care

Second National Summit on Preconception Health and Health Care. Advancing the Health of Women and Infants Before, Between and Beyond Pregnancy.

The Summit will be held October 29-31 in Oakland, California.

Preconception care is recognized as a critical component of health care for women of reproductive age. The main goal of preconception care is to provide health promotion, screening and interventions for women of reproductive age to reduce risk factors that might affect future pregnancies. Through a two-year collaborative effort, CDC has successfully aligned the efforts of a number of its external partners and internal programs to develop a set of 10 recommendations for improving preconception health and care. These recommendations serve as a strategic plan for improving the health of women, their children, and their families.

Topic Contents

- » [Topic Home](#)
- » [What is preconception care?](#)
- » [Why is Preconception Care a public health concern?](#)
- » [What is CDC doing to promote Preconception Care?](#)
- » [FAQs for General Public](#)
- » [FAQs for Professionals](#)
- » [Next Steps](#)

Quick Links

PREGNANCY Information

Preconception Resources

- [Birth Defects](#)
- [Folic Acid](#)
- [Fetal Alcohol Syndrome](#)
- [Genomics and Disease Prevention](#)

Family PACT **ACOG Committee Opinion**
Committee on Gynecologic Practice

This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed.

The Committee wishes to thank the ACOG Preconception Care Work Group co-chairs, Michele G. Curtis, MD, and Paul J. Adams Hillard.

Number 313, September 2005

The Importance of Preconception Care in the Continuum of Women's Health Care

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Family PACT **Content of Preconception Care**

- Risk Assessment
- Health Promotion
- Medical and Psychosocial Interventions

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Content of Preconception Care Risk Assessment

- Reproductive Life Plan
 - A set of personal goals about having (or not having) children based on personal values and resources
 - A plan to achieve those goals

<http://www.cdc.gov/ncbddd/preconception/QandA.htm#5>

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Example of a Reproductive Life Plan

1. **Do you hope to have any (more) children?**
2. **How many children do you hope to have?**
3. **How long do you plan to wait until you (next) become pregnant?**
4. **How much space do you plan to have between your pregnancies:**
5. **What do you plan to do until you are ready to become pregnant?**
6. **What can I do today to help you achieve your plan?**

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Content of Preconception Care Risk Assessment

- Past Pregnancy History
 - Review old records
 - Determine cause of prior adverse outcome
 - Address ongoing biobehavioral risks to prevent recurrence

<http://www.cdc.gov/ncbddd/preconception/QandA.htm#5>

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Content of Preconception Care Risk Assessment

- Medical Assessment
 - Ongoing medical conditions
 - e.g. hypertension, diabetes, hypothyroidism, cardiac diseases, thrombophilia
 - Medications
 - e.g. Accutane, Warfarin, ACE inhibitors

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Content of Preconception Care Risk Assessment

Category A	Adequate and well-controlled studies have failed to demonstrate a risk to the fetus in the first trimester of pregnancy (and there is no evidence of risk in later trimesters).
Category B	Animal reproduction studies have failed to demonstrate a risk to the fetus and there are no adequate and well-controlled studies in pregnant women OR Animal studies have shown an adverse effect, but adequate and well-controlled studies in pregnant women have failed to demonstrate a risk to the fetus in any trimester.
Category C	Animal reproduction studies have shown an adverse effect on the fetus and there are no adequate and well-controlled studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks.
Category D	There is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience or studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks.
Category X	Studies in animals or humans have demonstrated fetal abnormalities and/or there is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience, and the risks involved in use of the drug in pregnant women clearly outweigh potential benefits.


Food and Drug Administration

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Content of Preconception Care Risk Assessment


- Medical Assessment
 - Infections
 - RTI
 - UTI
 - STI
 - Periodontal disease
 - Immunizations
 - Tdap
 - Hepatitis B
 - Influenza
 - Measles, Mumps and Rubella
 - Varicella
 - HPV

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 **Content of Preconception Care**
Risk Assessment


- **Family history and genetic risks**
 - Family history
 - Age
 - Ethnic background
 - “Ashkenazi Jewish Panel”
 - Gaucher disease Type 1,
 - Tay-Sachs,
 - Cystic fibrosis,
 - Familial dysautonomia (Riley-Day syndrome),
 - Canavan disease,
 - Niemann-Pick disease,
 - Fanconi anemia group C,
 - Bloom syndrome
 - Mucopolidosis IV
 - Known genetic disorder (e.g. PKU)

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 **Content of Preconception Care**
Risk Assessment


- **Social Assessment**
 - Family violence, partner support
 - Home, occupational, environmental exposures
 - e.g. metals, pesticides, solvents, endocrine disruptors
 - Social, financial, psychological stressors

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 **Content of Preconception Care**
Risk Assessment


- **Behavior**
 - Smoking
 - Alcohol
 - Drugs
- **Nutrition**
 - Anthropometry
 - Biochemical
 - Clinical
 - Dietary

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 **Content of Preconception Care**
Risk Assessment

- **Assessment of Mental Health**
 - Depression
 - Anxiety
 - Stress & Support

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 **Content of Preconception Care**
Health Promotion

- Family planning
- Nutritional preparedness
- Stress resilience
- Immune allostasis
- Healthy environment

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**Family planning &
preconception care**

What Can Family Planning Do?

Family planning services are necessary for the widespread adoption of preconception care for two reasons. First, preconception care is more likely if pregnancies are planned, and family planning services encourage pregnancy planning. Second, family planning services usually include counseling, and counseling provides an opportunity to discuss the advantages of preconception care.

Klerman LV. Family Planning Services: An Essential Component of Preconception Care. Matern Child Health J. 2006 Jul 1

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What Can Family Planning Do?
You already do some preconception care already

- **Risk Assessment**
 - Reproductive life plan
 - Past pregnancy history
 - Past medical & surgical history
 - Medications & allergies
 - Family & genetic history
 - Social history
 - Behavioral & nutritional assessment
 - Mental health
 - Laboratory testing
- **Health Promotion**
 - Family planning
 - Stress resilience
 - Nutritional preparedness
 - Immune allostasis
 - Healthy environment
- **Medical & Psychosocial Interventions**
 - Individualized for identified risks
 - Preventive services and primary care

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Barriers to Preconception Care

- **Services already provided by FP programs**
 - Reimbursement issues
 - Budget constraints
- **Services not provided by FP programs**
 - Categorical funding
 - Provider training
 - Lack of referral services
 - Lack of systems integration

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Interconception Care

- **Risk Assessment**
 - Family violence
 - Infections/immunizations
 - Nutrition
 - Depression
 - Stress
- **Health Promotion**
 - Breastfeeding
 - Back-to-sleep
 - Exercise
 - Exposures
 - Folate
 - Family planning
- **Medical & Psychosocial Interventions**
 - Individualized for identified risks
 - Preventive services and primary care
 - Enhanced contents

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□ The definition of insanity is doing the same thing over and over and expecting different results

Benjamin Franklin

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□ "We must become the change we want to see."

- MAHATMA GANDHI

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Preconception care provides an opportunity to promote family health

- ❑ Broaden family planning's mission to promote family health
- ❑ Leverage additional resources to promote family health
- ❑ Enable service integration in women's health care

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**PRECONCEPTION CARE:
Family Planning Perspective**

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June 30, 2008

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Is A Pre-Pregnancy Visit Necessary?

- ❑ Pro argument
 - A dedicated visit for physical assessment, risk screening, vaccinations, and counseling
- ❑ Con argument
 - No studies of impact on pregnancy outcomes
 - Can be duplicative of the first prenatal visit
 - Should be done at all reproductive/ well woman health encounters

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Is A Pre-Pregnancy Visit Necessary?

- ❑ Can I bill for it?
 - Family PACT
 - Office visit: E/M or E&C code
 - Use S50 as primary diagnosis code
 - No lab tests, unless necessary for covered clinical indications
 - Other payers
 - Best ICD-9 diagnosis code : V26.49
 - "Other procreative management counseling and advice"

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Clinical Interventions

- ❑ Initiate folic acid
- ❑ Ensure that vaccinations are up to date
- ❑ Offer screening for conditions that will impact pregnancy decisions and management
- ❑ Switch to medications that are safe in pregnancy
- ❑ Control blood glucose in diabetics before pregnancy

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Clinical: Folic Acid

- ❑ Folic acid supplementation reduces occurrence of neural tube defects by two thirds
- ❑ *Recommendations*
 - All women of childbearing age should be encouraged to take a folic acid-containing multivitamin supplement
 - All women should ingest 0.4 mg (400 mcg) of folic acid daily, obtained from folate-rich food, fortified foods and/or supplements
 - Start at least 3 months before conception

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Clinical: Vaccinations

- ❑ Rubella
 - Prevention of congenital rubella syndrome
- ❑ Hepatitis B
 - Prevention of vertical transmission of HBV
 - Target men and women at risk of HBV infection
- ❑ Varicella-zoster
 - Prevention of in-utero varicella exposure
- ❑ Influenza vaccine
 - All pregnant women in flu season; all trimesters
- ❑ Also advised: Tdap, HPV vaccines

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Screening for Maternal Conditions

- ❑ HIV infection
 - Once for all adults, then based on personal risks
- ❑ Type 2 diabetes
 - Obesity, PCOS, stillbirth, baby >9 lbs
- ❑ Periodontal disease
 - ? Increased risk of preterm labor
- ❑ Genetic conditions
 - Personal+family history, age, ethnic background

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Clinical: Drugs to Avoid

Agent	Comments
ACE inhibitors, ARBs	Kidney abnl if exposed in 2 nd or 3 rd tri
Lipid-lowering agents	Abnormalities if exposure 4–9 th week
Testosterone	Masculinization of female fetus
Carbamazepine	Fetal death, mental retardation, malformations of heart, genitals; cleft palate and arteries
Coumadin derivatives (warfarin)	Risk of bone+ cartilage deformities, mental retardation, vision problems
Lithium	Increased risk of CV anomalies
Phenytoin	Risk of fetal hydantoin syndrome
Valproic acid	Use in 3-4 divided doses; not with carbamazepine + phenobarbital
Isotretinoin	Elevated risk of SAB and anomalies

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Clinical: Seizure Disorders

- ❑ All women with a history of seizures should be counseled about the risks of seizures during pregnancy and the risks of medications used to control them
- ❑ Consider a trial without medication for women who have not had a seizure in several years and who have a normal EEG

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Clinical: Seizure Disorders

- ❑ If anticonvulsants are needed, the least toxic anticonvulsant medication should be initiated before pregnancy and the medication adjusted frequently to keep serum levels in the lowest effective range
- ❑ For women taking antiepileptic drugs who are considering a pregnancy, folic acid supplementation 5 mg/day is recommended for 1 month prior to conception and until the end of the 1st trimester

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Blood Glucose Control in Diabetics

- ❑ All women with diabetes should be counseled about diabetes control before considering pregnancy
 - Optimal weight control
 - Maximize control with self-glucose monitoring
 - Regular exercise program
- ❑ Before pregnancy, a near-normal glycosylated hemoglobin should be achieved
- ❑ Those with poor control of their diabetes should be encouraged to use effective birth control

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Clinical: Maternal Conditions

- ❑ Hypothyroidism
 - Dosages of Levothyroxine® for treatment of hypothyroidism increase during early pregnancy
 - Adjust dosage for proper fetal neurologic development
- ❑ Phenylketonuria
 - Women with PKU as infants have an increased risk for delivering neonates/infants with mental retardation
 - Prevented by adherence to a low phenylalanine diet before conception and throughout pregnancy

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Behavior Change: Stop Smoking

- ❑ Preterm birth, low birthweight, and other adverse perinatal outcomes associated with maternal smoking in pregnancy can be prevented if women stop smoking before or during early pregnancy
- ❑ Because only 20% of women successfully control tobacco dependence during pregnancy, cessation of smoking is recommended before pregnancy

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Behavior Change: Stop Smoking

- ❑ Brief counseling (5-15 minutes) with self-help materials *offered by a clinician* can improve cessation rates by 30-70%
- ❑ Intervention works best for moderate (< 20 cigarettes per day) smokers
- ❑ A woman is more likely to quit smoking during pregnancy than at any other time in her life

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The 5 A's Approach to Smoking Cessation

1. Ask about tobacco use
2. Advise to quit
3. Assess willingness to make a quit attempt
4. Assist in quit attempt
5. Arrange follow-up

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Counseling Women to Stop Smoking

Review Risks

- ❑ “What have you heard about smoking during pregnancy?”
- ❑ Reiterate benefits for her baby and her other children
- ❑ A previous trouble-free pregnancy is no guarantee that this pregnancy will be the same

Review Rewards

- ❑ Your baby will get more oxygen after just 1 day
- ❑ Your clothes and hair will smell better
- ❑ You will have more money
- ❑ Food will taste better
- ❑ You will have more energy

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**Smoking Cessation:
Helpful Strategies**

- ❑ Set quit date within 30 days and sign a contract
- ❑ Develop approaches to manage withdrawal symptoms
- ❑ Remove all tobacco products from her home
- ❑ What to do in situations in which she usually smokes
- ❑ Follow up to monitor progress and provide support
- ❑ Encourage the patient
- ❑ Express willingness to help
- ❑ Ask about concerns or difficulties
- ❑ Invite her to talk about her success

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**Smoking Cessation:
Success Rates**

From least to most successful

- ❑ Individual attempts at cessation: “Cold Turkey”
- ❑ Group therapy smoking cessation: “Buddy System”
- ❑ Nicotine replacement therapy (NRT) alone
 - Nicotine gum, inhaler, nasal spray, and patch
- ❑ Group therapy + NRT
- ❑ Bupropion (Zyban) alone
- ❑ Group therapy + bupropion

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**Alcohol and Reproductive
Hazards**

BJOG, 2007 Mar;114(3):243-52

- ❑ Heavy drinking = 4-5 or greater drinks/day
- ❑ Poor/scant data on moderate-light drinking
 - Day, 2002: growth affected by < 1 drink per day
 - Sood, 2001: behavioral consequences of 1 drink per week
- ❑ EB Review 2007- *“No convincing evidence of adverse effects of prenatal alcohol exposure at low-moderate levels...however weaknesses in the evidence preclude the conclusion that drinking at these levels during pregnancy is safe”*

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**Behavior Change:
Achieve a Healthy Weight**

- ❑ Calculate BMI at least annually
- ❑ All women with a BMI ≥ 25 kg/m² should be counseled about the risks to their own health, the and the risks to future pregnancies, including infertility
- ❑ All women with a BMI ≥ 25 kg/m² should
 - Increase physical activity
 - Be offered specific strategies to reduce caloric intake
 - Be encouraged to consider enrolling in structured weight loss programs

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Pregnancy Intendedness

- ❑ *Recommendation:* Screen women for their intentions to become or not become pregnant in the short- and long-term and their risk of conceiving a pregnancy
- ❑ Educate patients about how the reproductive life plan impacts contraceptive and medical decision making
- ❑ Every woman should receive information and counseling about all forms of contraception and emergency contraception


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**Opportunities for
Preconception Care**

Pregnancy desired

- ❑ Infertility services
- ❑ Intrauterine contraceptives (or implant) removed in order to become pregnant
- ❑ Clinician recommendations
- ❑ Folate supplementation
- ❑ HIV serology for women at risk
- ❑ Glucose control in diabetics
- ❑ Switch use FDA category C, D drugs to category B, in consultation with PCP


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**Opportunities for Preconception Care**

Pregnancy test positive

- Immediate initiation of folate
- Cessation of alcohol use and cigarette smoking
- Offer HIV screening
- If continuing pregnancy, STI screening should be *deferred* until the initial OB visit


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**Opportunities for Preconception Care**

Pregnancy test negative


- If attempting to become pregnant, provide advice regarding folate supplementation and positive behavior change in advance of pregnancy
- If at risk for HIV infection, a preconception HIV serology should be offered

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**Opportunities for Preconception Care**


- Type I or Type II Diabetics, irrespective of pregnancy plans**
 - Counsel regarding importance of blood sugar control before pregnancy is attempted, even if not currently attempting pregnancy
 - Confirm that a relationship exists with a PCP who is involved in medical management their diabetes, and if not, refer for same

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**Summary**

- PCC is not just for the benefit of babies, but equally for the benefit of women; e.g., stop smoking
 - Reduce prematurity and asthma in baby
 - Reduce her risk of lung cancer and heart disease
- Many women make healthier decisions during pregnancy for the sake of their baby's health...they can make changes prior to becoming pregnant and live longer and healthier themselves
- For preconception care to be successful there must be a shift from delivering procedure-based, acute care to counseling-based, preventive care

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**Q & A**

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**Processing Forms**

Download Now:

- Evaluation Form
- Continuing Education Form
- Post Test

No Web Access Now:

- Call 1-877-FAMPACT for forms
- All participants that return an evaluation form will receive a Certificate of Participation
- Those requesting CE credit must return evaluation, Post Test and CE Form

Complete forms and fax to 213 368-4410

Thank you for your participation!

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