Redefining Postpartum Care

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Objectives

- At the conclusion of this presentation the participant should be able to:
- 1. Describe the essential elements relevant to postpartum counseling and education
- 2. Perform essential screening including for depression.
- 3. Discuss a reproductive life plan and long term health implications for this with pregnancy complications.

Redefining Postpartum Care

- Disclosures
  - none

“Origin of the Postpartum Visit?”

- When **Israelite** women gave birth, they were considered ceremonially unclean for a time. At the end of that time, a burnt offering as a cleansing sacrifice was to be presented. All were thus reminded that imperfect, sinful life had been passed on. The infant Jesus was perfect and holy. (Luke 1:35)

Postpartum Care

- ACOG recommends that all women should attend a postpartum visit 4-6 weeks following a birth.
  - As many as 40% of women do not have postpartum follow up
  - Attendance lower for women with limited resources

Postpartum Visit

- Ramification of lack of postpartum follow-up
  - Contributes to health disparities
    - Prematurity, infant mortality
  - Pregnancy spacing
  - Early breast feeding discontinuation
  - Undiagnosed postpartum depression and anxiety disorders

Postpartum Visit

- Postpartum Care (The Fourth Trimester)
  - A time of adaption (rapid hormone changes)
    - Physical
    - Social
    - Psychological
  - Challenges
    - Fatigues,
    - breast feeding
    - learning to care for a newborn
    - Navigating preexisting health conditions

Postpartum Visit

- Hospital discharge planning and care coordination and health care navigation
  - Critical for those with preexisting health conditions
    - Hypertension, diabetes, substance abuse

Why is contraception counseling at hospital discharge important!

- Many patients don't return for their postpartum visit
- Ideally counseling about methods occurs at the prenatal visit, but should be planned at the time of hospital discharge following delivery
- Ideal Pregnancy intervals
  - Recommendation to have 18 months before becoming pregnant after C-section and 12 months after vaginal delivery

Why is contraception important in the postpartum period?

- About 25% of women are having intercourse before their 6 week visit (By 7 weeks this jumps to 60%)
- Most first menstrual cycles are anovulatory, but not all are…
  - For Bottle Feeders average menses occurs in 8 weeks with average first ovulation ~ 10 weeks. With ovulation preceding 20% of 1st cycles but >90% 2nd cycles[1]
  - For breast feeding moms ovulation preceded menstrual cycle in 45%, but occurs later ~ 36 weeks

Howie et al *Clinical Endocrinology* 1982

Contraception High Risk Gravida

- Special Considerations
  - Chronic diseases
    - Hypertension, diabetes, obesity, heart disease
  - Contraindications to estrogen
    - Coagulation disorder, history of or high risk for thromboembolism
  - Age and Parity
    - Patient reliability (adolescence, substance abuse, homeless, pregnancy spacing)


BREASTFEEDING
It Rocks!

Breastfeeding

- Lactational Amenorrhea – prolactin inhibits pulsatile GnRH release
- Criteria for LAM
  - Less than 6 months
  - Exclusively breastfeeding
  - No period

Long Term Health Impact: Less Obesity

Li.R et al. Do infants fed from bottles lack self regulation of milk intake compared with directly breastfed infants? Pediatrics 2010. 125(6)

Long Term Health Impact: Diabetes

- 30% reduction in the incidence of Type 1 DM for infant exclusively BF for at least 3 months
- 40% reduction in the incidence of Type 2 DM
  - May reflect long term positive effect of breastfeeding on weight control & Self regulation

Breastfeeding Financial Benefits

- ~$578 million per year in federal funds is spent by the WIC programs to buy formula for babies who are not breastfeeding
- Every 10% increase in the breastfeeding rate among WIC recipients would save WIC $750,000 per year
- $3.6 to $7 billion excess is spent every year on conditions and diseases that are preventable by breastfeeding

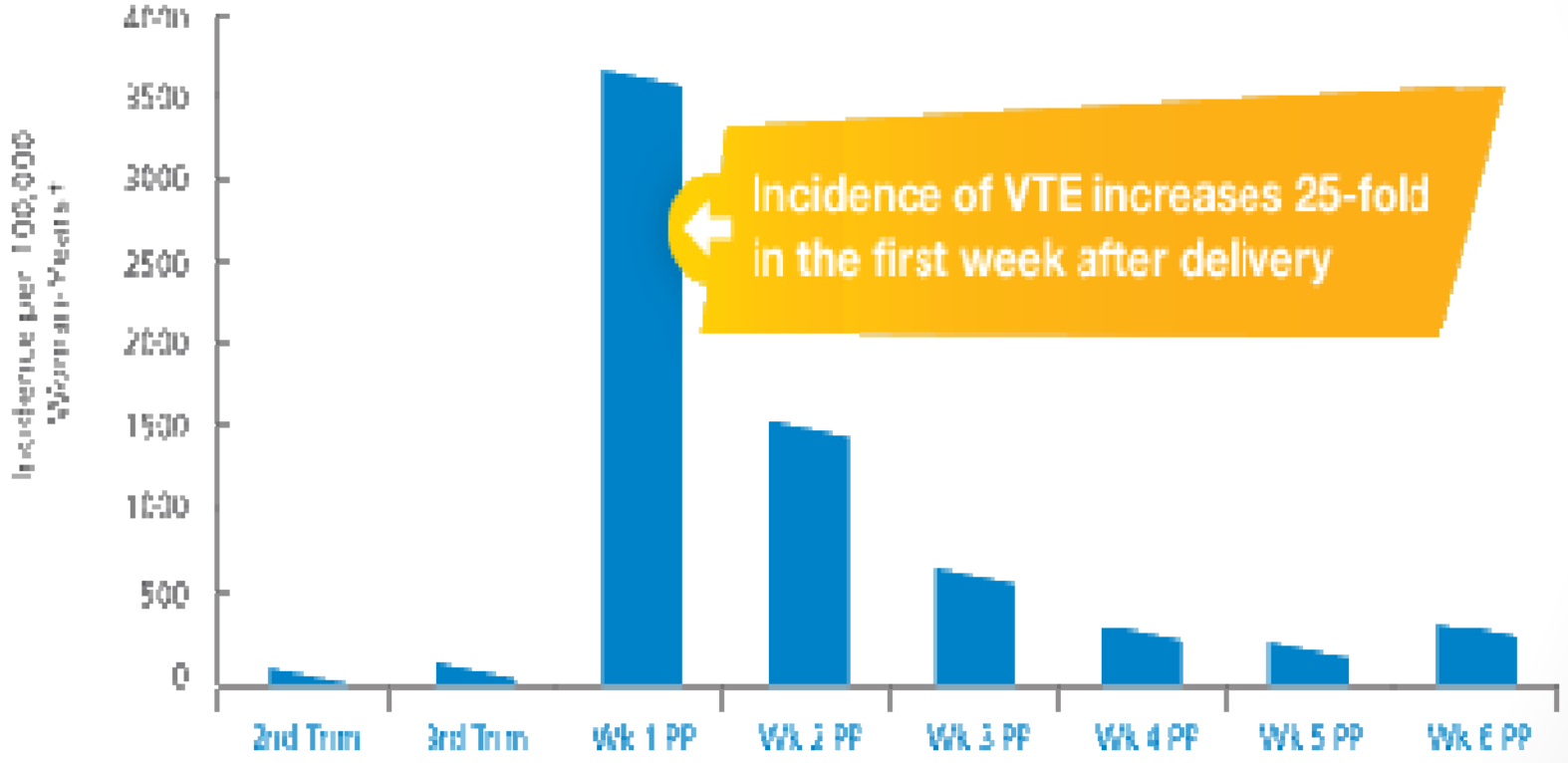
BF and Progesterone Methods

- No evidence that progesterone only methods decrease milk supply or quality and may even enhance milk production
- Theoretically the fall in progesterone levels triggers lactogenesis
- The CDC recommends that these methods can be used without restriction in the immediate postpartum period.

BF and estrogen containing Methods

- Mixed data on effects on milk supply.
- May suppress milk production in the early postpartum period
- CDC – recommends waiting 30 days if no increased VTE risk
- ACOG – 4 weeks, only if milk supply well established
- WHO – wait 6 months.

Risk of VTE


3500
3000
2500
2000
1500
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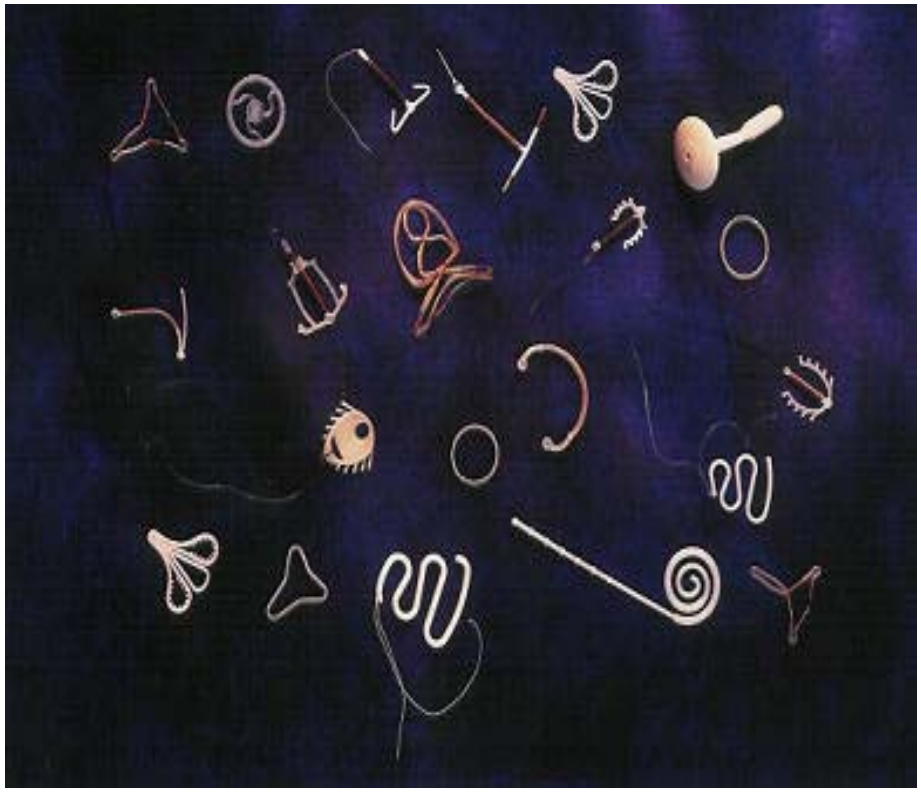
0
Incidence of VTE increases 25-fold
in the first week after delivery
2nd Trim
3rd Trim
Wk 1 PP
Wk 2 PP
Wk 3 PP
Wk 4 PP
Wk 5 PP
Wk 6 PP

Depo Provera

- Immediate postpartum then every 3 months
- Vaginal Dryness/Dyspareunia
  - Estrogen supplementation (vaginal cream, ring, tablets, systemic)
  - Lubricants
- Weight Gain
  - Advise on caloric intake and exercise
  - Change method

Intrauterine Contraception



IUD's

- Copper IUD (Paragard)
  - Effective for 10 yrs
  - Mechanisms
    - Spermicide (NOT abortifacient)
  - No hormones

- Levonorgestrel IUD (Mirena)
  - Effective for 5 yrs
  - Mechanisms
    - Thickens cervical mucus
    - Uterotubal fluid changes
    - Alteration of endometrium
    - Anovulatory effect
  - Releases 20 mcg/day

Postplacental IUD insertion

- Increased expulsion rate (24%) compared to 6-8 week postpartum (4.4%)
- One study showed that with immediate postplacental insertion (<10 minutes after placental delivery), expulsion rates lower (~11%)
- Expulsion rates decline precipitously after 4 weeks.

Nexplanon

- Implant injected under skin in arm
- Progesterone only method – MOST EFFECTIVE METHOD
- Immediate vs. 6 week delayed study ongoing at Duke
- Side effects: irregular bleeding, headaches, dizziness, weight gain, acne

Sterilization

- Immediate postpartum tubal ligation
- Tubal ligation at time of cesarean
- Interval BTL
- Essure
- Vasectomy

Risk Factors for Regret

- Performed in postpartum period
- Age < 30
- No partner at time of tubal
- Most common factor for regret is change in marital status
- 1-2% women seek reversal

Other Natural Methods

- Lactational Amenorrhea Method (LAM)
  - Breastfeeding exclusively day and night
  - Infant < 6 months
  - Amenorrheic
  - prolactin inhibits ovulation
  - Failure Rate - 0.5-2%

Redefining Postpartum Care

Depression

META-ANALYSIS

A Meta-analysis of Depression During Pregnancy and the Risk of Preterm Birth, Low Birth Weight, and Intrauterine Growth Restriction

Nancy K. Grote, PhD; Jeffrey A. Bridge, PhD; Amelia R. Gavin, PhD; Jennifer L. Melville, MD; Satish Iyengar, PhD; Wayne J. Katon, MD

- Included 29 prospective studies which reported data on antenatal depression and at least one adverse birth outcome
- Significant increased in relative risk of PTB by 29%, LBW by 29% and IUGR by 45%

Association of Depression and Pregnancy Related Health Behaviors

- Depression is associated with cigarette smoking, drug abuse, and concurrent medication use
- Depressive symptoms may lead to poor weight gain during pregnancy, poor prenatal care, self-neglect, and *suicide*

Screening for Depression

A Self-Care Screening Survey for Depression Awareness

A) During the past month have you **often** been bothered by:

1) **little interest or pleasure in doing things**

2) **feeling down, depressed, or hopeless?**

B) If you answered yes to either 1 or 2 above complete the questionnaire on the opposite side of this sheet.

Edinburgh Postpartum Depression Scale

- 10-item questionnaire
- Effective screening tool
- Can be completed in < 5 minutes
- Scores for each item 0-3

Edinburgh Postnatal Depression Scale

- Cut-off score of 9 or 10 recommended in the UK for first stage screening and is reliable indicator of postpartum depression
- 92.3% of those scoring above cut-off suffer a depressive illness

Postpartum Depression Male Perspective

- Ryden (2004), Cohen (2002)
  - Postnatal depression and mental illness ~ same for both sexes
  - Women's depression occurs in first 3 months and men's depression starts at ~3-9 months after birth
  - Men with depressed wives had increase risk of depression
  - Postpartum Depression symptoms in me
    - irritation, aggression, nonsocial behavior, drug abuse, low impulse control
    - Leads to jealousy toward child, feelings of alienation, change in sexual life, violence against partner

Postpartum Depression

- Husband's Experience
  - She became an alien
  - Loss of intimacy
  - He attempts to fix the problem
  - Altered relationship
  - He makes sacrifices
  - A real crisis
  - His world collapses
  - Loss of control

Meighan, MCN. 24:1999:202

Postpartum Depression

- Living with Postpartum Depression: A Father's Experience
  - Eight men interviewed
  - Conclusions
    - Design interventions that are more supportive and inclusion of men

Postpartum Depression

System Recommendation

- Ensure that all pregnant and postpartum women are screened at least once
- Optimize detection, referral and treatment
  - 2 weeks postpartum
- Educate providers on risk factors and screening tools
- Preconceptional discussion of impact of pregnancy for those with pre-existing mental disorders

Postpartum Depression

THE PEOPLE'S FORUM

The News & Observer welcomes letters from readers. Letters must include the writer's name, address and daytime phone number and must be signed (except those sent by e-mail). The length limit is 250 words. Letters selected for publication may be edited and may be republished in any format. All letters submitted become the property of The News & Observer. Questions? Please call 829-4517.

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The signers' lives

The July 5 article "Tribute offered for sacrifices" may have helped spread the e-mail urban legend that the signers of the Declaration of Independence lived lives of persecution and poverty.

Very few of the signers were persecuted during the Revolutionary War and they certainly weren't after the war, given that we won. Furthermore, only two or three the signers lived anywhere near poverty during and after the war and that was primarily because they didn't have much before the war. Further information on this is available at these Web sites:

http://www.colonialhall.com/biography.php

http://www.truthorfiction.com/rumors/p/patriots.htm

These facts are not to diminish the accomplishments of the signers, as they were a very impressive group, but when one exaggerates "facts" then the accomplishments tend to be lessened.

Help for real trouble

Everyone who pays attention to the news is aware of the latest "War of the Words" between Brooke Shields and Tom Cruise. Shields, a Princeton-educated actress, has written a memoir, "Down Came the Rain," about her experience with postpartum depression. In response, Cruise, an avowed Scientologist, has excoriated her for taking anti-depressant medications. Shields shot back by writing an Op-ed piece in The New York Times, speaking "for the hundreds of thousands of women who have suffered from postpartum depression."

One of those women was Mary Jo Codey, 49, a kindergarten teacher, and the wife of the current acting governor of New Jersey. Codey has openly discussed her struggles with postpartum depression and the ordeal that began when she was diagnosed 28 years ago. She told of driving to a pharmacy four towns away from her home to fill a prescription for antidepressants. She said she "wore dark sunglasses and prayed really hard to God that no one would see me."

Unfortunately, the remarks of Cruise only reinforce attitudes that add to such shame and stigma. For over 14 years, we, at the Duke Postpartum Support Program, have had a no-fee support group for distressed pregnant and postpartum women. People concerned about themselves or a loved one may call for more information at 919-681-6840.

William S. Meyer
Director, Duke Postpartum Support Program
Durham

Depression

Special Communication | USPSTF RECOMMENDATION STATEMENT

Screening for Depression in Adults
US Preventive Services Task Force Recommendation Statement

Albert L. Siu, MD, MSPH; and the US Preventive Services Task Force (USPSTF)

DESCRIPTION Update of the 2009 US Preventive Services Task Force (USPSTF) recommendation on screening for depression in adults.

METHODS The USPSTF reviewed the evidence on the benefits and harms of screening for depression in adult populations, including older adults and pregnant and postpartum women; the accuracy of depression screening instruments; and the benefits and harms of depression treatment in these populations.

POPULATION This recommendation applies to adults 18 years and older.

RECOMMENDATION The USPSTF recommends screening for depression in the general adult population, including pregnant and postpartum women. Screening should be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up. (B recommendation)

JAMA. 2016;315(4):380-387. doi:10.1001/jama.2015.18392

Editorial pages 349 and 351

Author Audio and Video Interviews and JAMA Report Video at jama.com

Related article page 388 and JAMA Patient Page page 428

CME Quiz at jamanetworkcme.com and CME Questions page 411

Related articles at jamapsychiatry.com, jamainternalmedicine.com, and jamaneurology.com

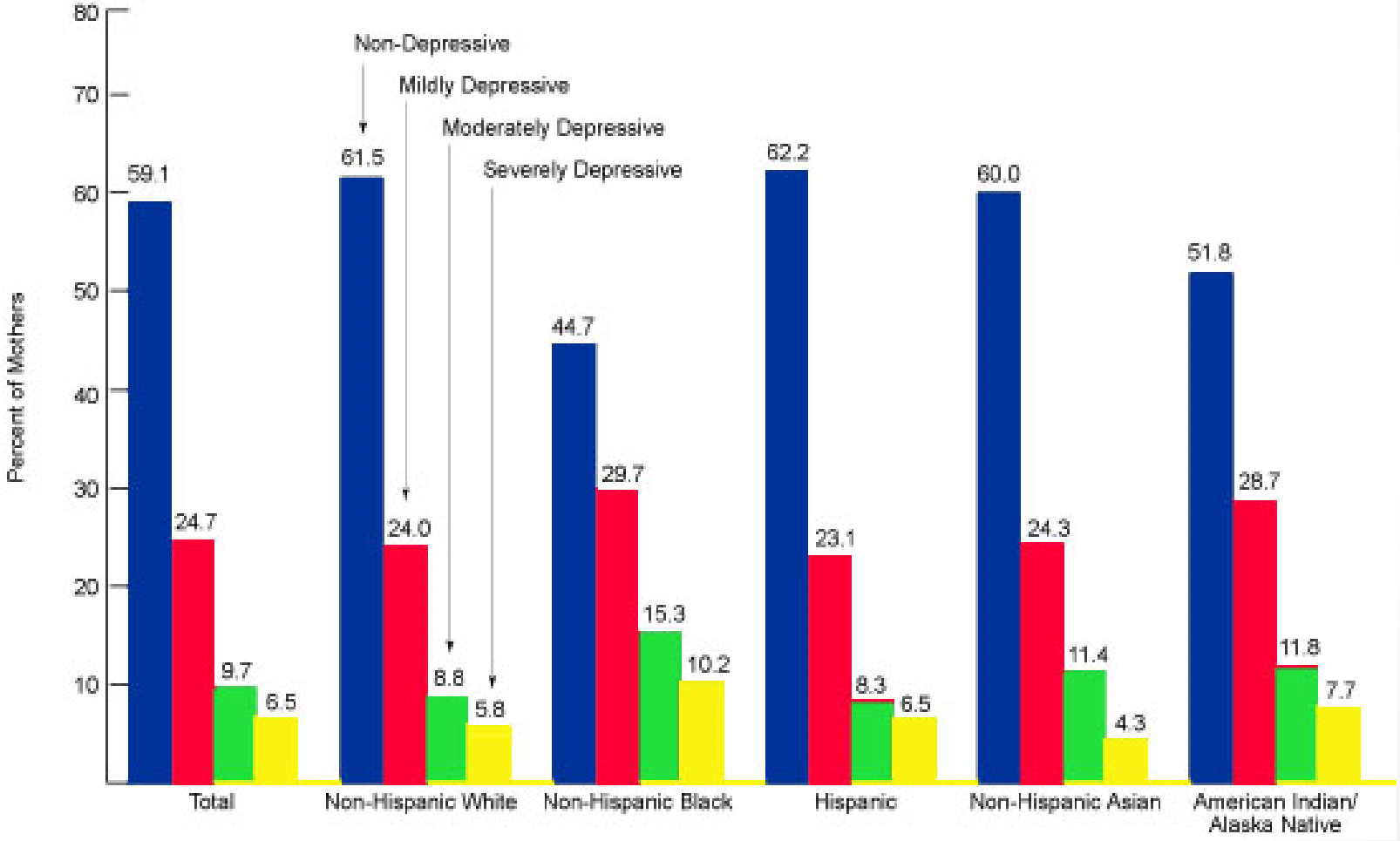
Author Affiliations: Author affiliations are listed at the end of this article.

Authors/Group Information: The USPSTF members are listed at the end of this article.

Corresponding Author: Albert L. Siu MD, MSPH (albert.siu@mssm.edu).

Depressive Symptom Levels Among Mothers with a Child Under 1 Year of Age, by Race/Ethnicity, 2001

Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Survey-Birth Cohort



Depression in Women

- Costly illness in terms of earnings lost and money spent on treatment
- Approximately 1 in 7 women afflicted with depression
- Gender gap for depression widens during and after pregnancy
- 10-15% of pregnant women suffer with depression
- Depressed women at greater risk for heart disease (long term health and follow up)

Sexuality

Perineal Pain

- Dyspareunia reported by 41% - 67% of women 2 – 3 months postpartum
  - Depends on severity of perineal trauma at delivery
- Perineal pain resolves by 3 months, while dyspareunia may take longer

Handa VL Semin Perinatol 2006; 30:253-256

Practical Recommendations: Counseling on Sexuality during Pregnancy and the Postpartum

- Engage in dialogue on emotional, marital and sexual expectations during pregnancy
- Acknowledge possible fears and guilt feelings
- Discuss normal variation/fluctuation and provide reassurance
- Give technical advice on range of sexual options:
  - Non-coital sexual activities
  - Alternative coital positions
- Provide anticipatory guidance on postpartum changes in sexual function
- Consider couple counseling/therapy postpartum

Von Sydow K. J Psychosom Rsch 1999; 47(1) 27-49

PREGNANCY and Long term WOMEN'S HEALTH

Obgyns as Women's Health Experts

So what if we could predict women at high risk, change behaviors and improve health…

The Pregnancy "Treadmill"

Pregnancy is the "physiologic stress test," and it is the OBGYN who has the information to facilitate changes

80-90% of women "take the test"

30-40% of women have one risk factor that can lead to long term health problems

20-30% carry a "predictor" of CVD risk!

American Heart Journal

Volume 159, Issue 2, February 2010, Pages 215–221.e6

Clinical Investigations

Parity and risk of later-life maternal cardiovascular disease

Nisha I. Parikh, MD, MPH[a], Sven Cnattingius, MD, PhD[b], Paul W. Dickman, PhD[c], Murray A. Mittleman, MD, DrPH[a], Jonas F. Ludvigsson, MD, PhD[b, d], Erik Ingelsson, MD, PhD[c]

Show more

DOI: 10.1016/j.ahj.2009.11.017

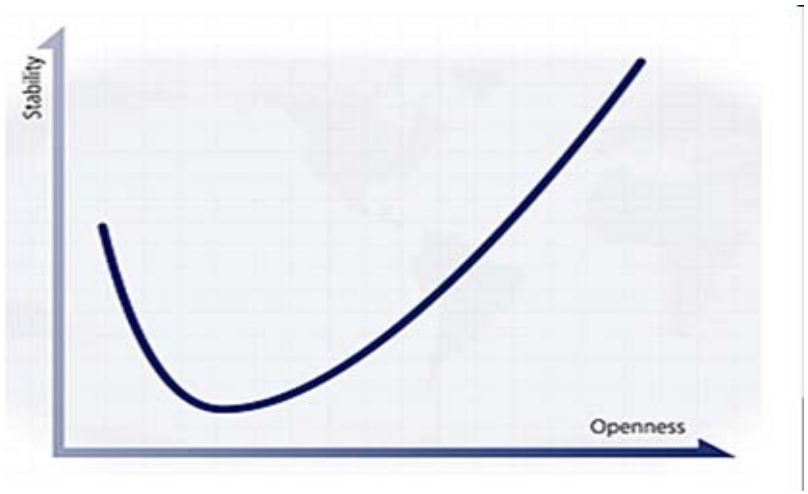
Background

Prior studies relating parity with maternal cardiovascular disease (CVD) have been performed in relatively small study samples without accounting for pregnancy-related complications associated with CVD.

Methods

CVD Risk is affected by parity

- "J-shaped" Curve, with two offspring serving as the nadir
- Parity exceeding five increases the CVD risk by almost 60%



Parikh NI, Cnattingius S, Dickman PW, et al. Parity and risk of later-life maternal cardiovascular disease. Am Heart J. 2010;159(2):215–221.

For the 8% of deliveries associated with low birth weight (<2500 g) there is a TWO-FOLD INCREASE in cardiovascular disease and death

Bonamy AK, Parikh NI, CNattingius S, et al. Birth characteristics and subsequent risks of maternal cardiovascular disease: effects of gestational age and fetal growth. Circulation. 2011;124(25):2839–2846.

Gestational Diabetes

Impacts between 5 and 10% of all pregnancies

Type 2 Diabetes

SEVEN-FOLD risk of Type 2 diabetes later in life

Circulation

Epidemiology and Prevention

Hypertension in Pregnancy and Later Cardiovascular Risk

Common Antecedents?

Pål R. Romundstad, PhD; Elisabeth B. Magnussen, MD;
George Davey Smith, MD, DSc; Lars J. Vatten, MD, PhD

+ Author Affiliations

Correspondence to Pål Richard Romundstad, Department of Public Health, NTNU, N–7489 Trondheim, Norway. E–mail paalr@ntnu.no

Abstract

Background— Preeclampsia and gestational hypertension are associated with increased risk for cardiovascular disease later in life. We have assessed whether the effect can be attributed to factors that operate in pregnancy or to

Hypertension Postpartum Follow up

Hypertensive diseases of pregnancy are common and predict cardiovascular disease

American Heart Journal

Cardiovascular Sequelae of Preeclampsia/Eclampsia: A Systematic Review and Meta-Analyses

Sarah D. McDonald, MD, MSc, Ann Malinowski, MSc, MD, Qi Zhou, PhD, Salim Yusuf, MD, PhD, Philip J. Devereaux, MD, PhD | Disclosures

Am Heart J. 2008;156(5):918-930.

Abstract
Background
Methods
Results
Discussion
References

Background

Preeclampsia is one of the most common complications of pregnancy, affecting 3% to 5% of gestations. It is defined as the onset of hypertension and proteinuria after 20 weeks gestation.[1] Eclampsia, the concomitant development of seizures, is a rare complication of preeclampsia in the developed world (with an incidence of 1 in 2,000 gestations[2]) but remains relatively common elsewhere (0.93%[3]). Preeclampsia/eclampsia is thought to originate from reduced uteroplacental perfusion that develops as a result of abnormal invasion of spiral arterioles.[4] Preeclampsia/eclampsia shares many of the same proposed etiologies as cardiovascular disease (CVD) including diseased arteries[5,6] inflammation, and hypercoagulability.[7] Preeclampsia and CVD also share many risk factors,[8] including obesity,[9] insulin resistance,[10] dyslipidemia, and endothelial dysfunction.[11,12]

Although preeclampsia/eclampsia has well-established cardiovascular (particularly cerebrovascular) risks at the time of the affected pregnancy, whether there are long-term cardiovascular consequences is debated.[13] Accurate understanding of the association between preeclampsia/eclampsia and long-term cardiovascular outcomes requires a systematic, comprehensive, and unbiased accumulation and summary of the available evidence. We undertook a systematic review of the literature to determine if women with a history of preeclampsia/eclampsia are at increased risk of cardiac disease, cerebrovascular disease, peripheral vascular disease, or cardiac mortality beyond 6 weeks postpartum compared to women without a history of preeclampsia/eclampsia.

Preeclampsia

Women with a history of preeclampsia have roughly 4-fold higher incidence of hypertension and 2-fold elevated risks of heart disease, stroke, and venous thromboembolism

McDonald SD, Malinowski A, Zhou Q, et al. Cardiovascular sequelae of preeclampsia/eclampsia: a systematic review and meta-analyses. Am Heart J. 2008;156(5):918–930.

ACOG Hypertension in Pregnancy

With recurrent pre-eclampsia, preterm delivery or fetal growth restriction

- the cardiovascular risk LATER in life is COMPARABLE to obesity or smoking
- ACOG recommends annual blood pressure, fasting glucose, lipids and BMI

American College of Obstetricians and Gynecologists Task force on Hypertension in Pregnancy Hypertension in Pregnancy. Copyright ACG 2013.

BIRTHWEIGHT

Circulation

Original Articles

Epidemiology and Prevention

Birth Characteristics and Subsequent Risks of Maternal Cardiovascular Disease

Effects of Gestational Age and Fetal Growth

Anna–Karin Edstedt Bonamy, MD, PhD; Nisha I. Parikh, MD, MPH; Sven Cnattingius, MD, PhD; Jonas F. Ludvigsson, MD, PhD; Erik Ingelsson, MD, PhD

Author Affiliations

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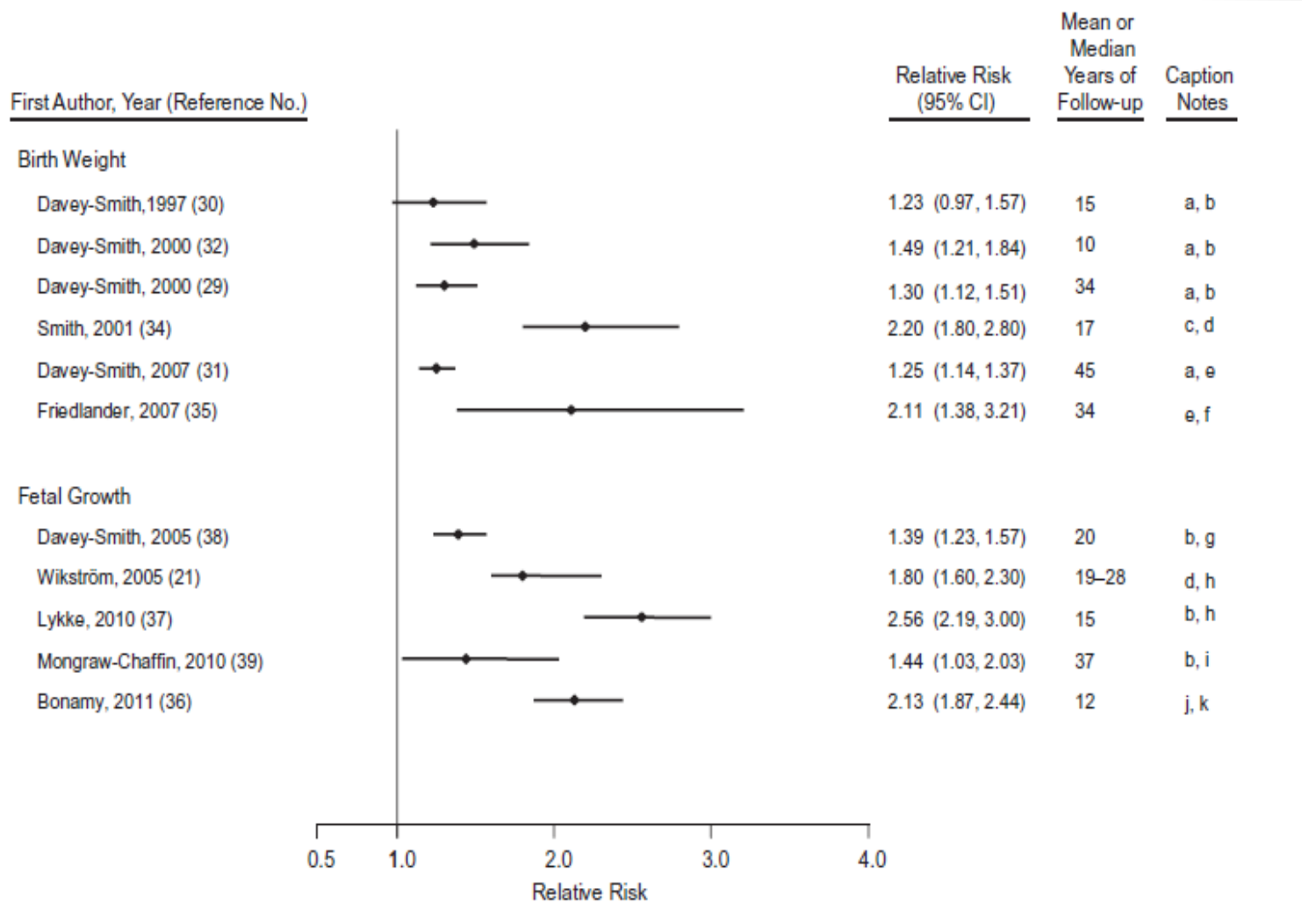
And so is birth weight!



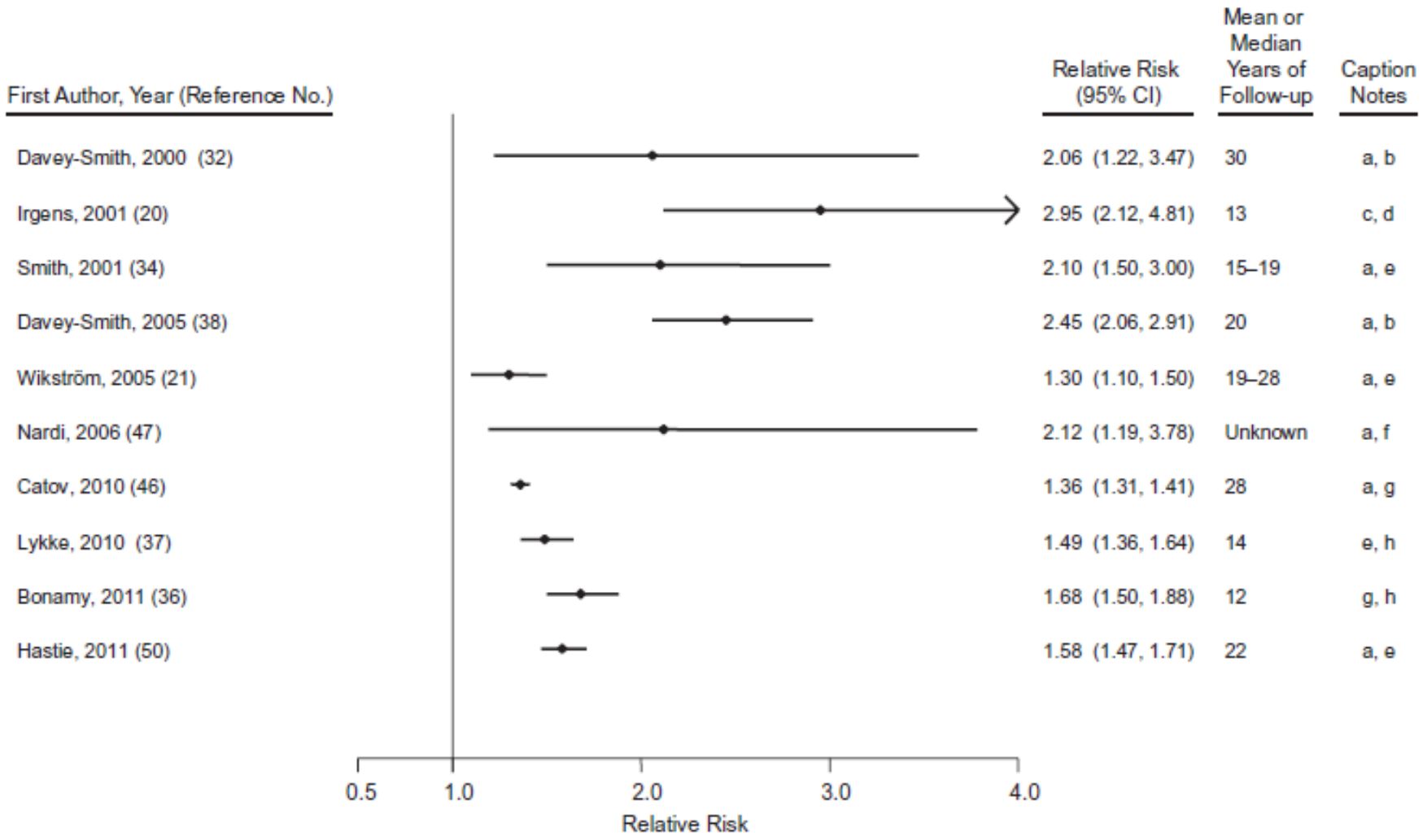
For the 8% of deliveries associated with low birth weight (<2500 g) there is a TWO-FOLD INCREASE in cardiovascular disease and death

Bonamy AK, Parikh NI, CNattingius S, et al. Birth characteristics and subsequent risks of maternal cardiovascular disease: effects of gestational age and fetal growth. Circulation. 2011;124(25):2839–2846.

PRETERM DELIVERY

Preterm Birth

Between 6-12% of deliveries happen before 37 weeks


First Author, Year (Reference No.)
Relative Risk (95% CI)
Mean or Median Years of Follow-up
Caption Notes
Davey-Smith, 2000 (32)
2.06 (1.22, 3.47)
30
a, b
Irgens, 2001 (20)
2.95 (2.12, 4.81)
13
c, d
Smith, 2001 (34)
2.10 (1.50, 3.00)
15–19
a, e
Davey-Smith, 2005 (38)
2.45 (2.06, 2.91)
20
a, b
Wikström, 2005 (21)
1.30 (1.10, 1.50)
19–28
a, e
Nardi, 2006 (47)
2.12 (1.19, 3.78)
Unknown
a, f
Catov, 2010 (46)
1.36 (1.31, 1.41)
28
a, g
Lykke, 2010 (37)
1.49 (1.36, 1.64)
14
e, h
Bonamy, 2011 (36)
1.68 (1.50, 1.88)
12
g, h
Hastie, 2011 (50)
1.58 (1.47, 1.71)
22
a, e
0.5
1.0
2.0
3.0
4.0
Relative Risk

The intrauterine environment

Maternal intrauterine environment and health determine the risk of preterm delivery

GESTATIONAL DIABETES

Gestational diabetes

Impacts between 5 and 10% of all pregnancies

Type 2 diabetes

SEVEN-FOLD risk of Type 2 diabetes later in life

(Bellamy 2009)

Type 2 DM

- It is estimated that up to 70% of women with GDM will develop diabetes within 22–28 years after pregnancy (England 2009, O'Sullivan 1982, Kim 2002).
- Progression to type 2 diabetes may be influenced by race/ethnicity and the incidence of obesity.
- 60% of Latin-American women with GDM may develop type 2 diabetes by 5 years after the index pregnancy (Kjos 1995).

American Diabetes Association. Diabetes Care

Increased Risk of Cardiovascular Disease in Young Women Following Gestational Diabetes Mellitus

Baiju R. Shah, MD, PHD[1,2], Ravi Retnakaran, MD, MSC[1] and Gillian L. Booth, MD, MSC[1,2]

+ Author Affiliations

Corresponding author: Baiju Shah, baiju.shah@ices.on.ca

Abstract

OBJECTIVE—To determine whether women with gestational diabetes mellitus (GDM) have an increased risk of cardiovascular disease (CVD) following pregnancy.

RESEARCH DESIGN AND METHODS—All women aged 20–49 years with live births between April 1994 and March 1997 in Ontario, Canada, were identified. Women with GDM were matched with 10 women without GDM and were followed for CVD.

RESULTS—The matched cohorts included 8,191 women with GDM and 81,262 women

Long term health

Large population based study in Ontario, Canada looked at long term health outcomes after gestational diabetes

- acute myocardial infarction,
- coronary bypass
- coronary angioplasty
- stroke
- carotid endarterectomy

Shah BR, Retnakaran R, Booth GL. Increased risk of cardiovascular disease in young women following gestational diabete mellitus. Diabetes Care. 2008;31(8):1668–1669.

Gestational Diabetes Postpartum follow up

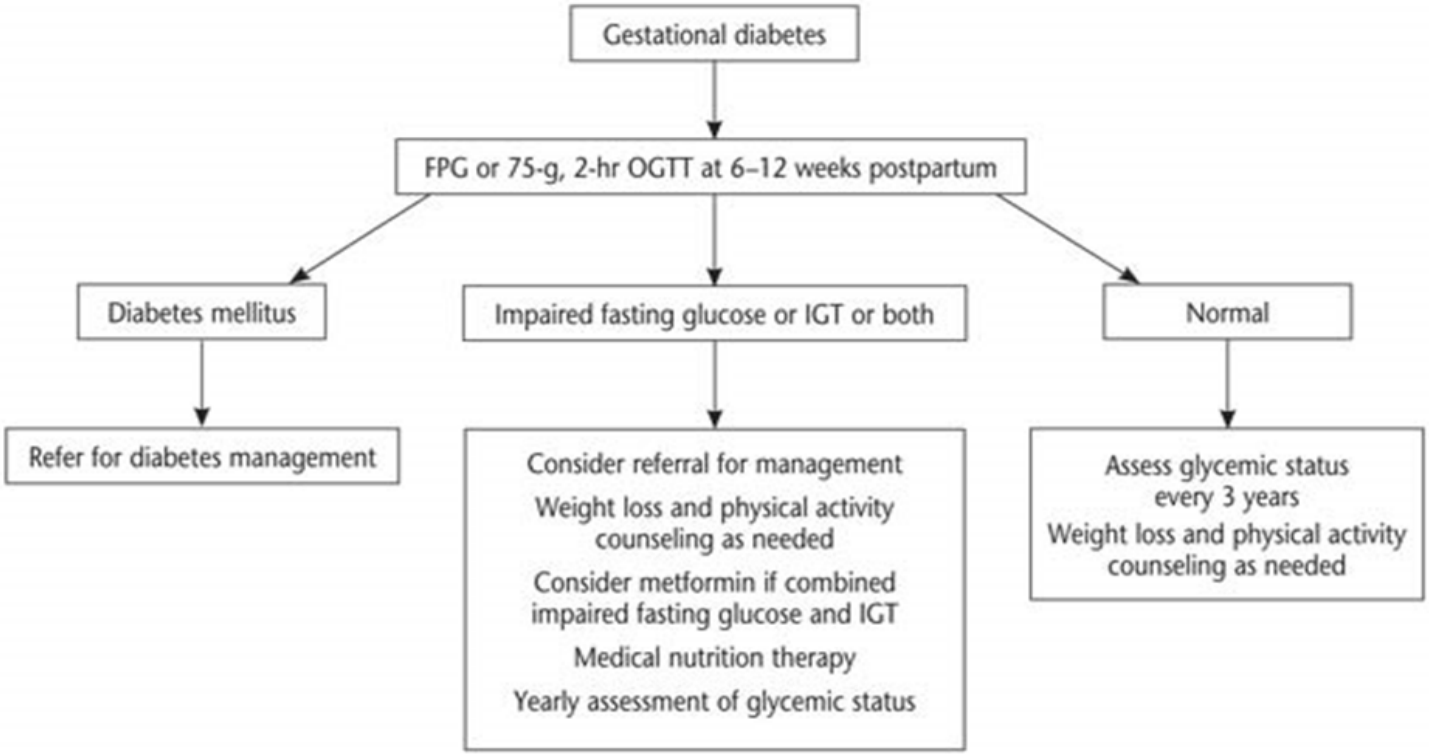


Fig. 1. Management of postpartum screening results.

Abbreviations: FPG, fasting plasma glucose; OGTT, oral glucose tolerance test; IGT, impaired glucose tolerance.

Postpartum screening for abnormal glucose tolerance in women who had gestational diabetes mellitus. ACOG Committee Opinion No. 435. American College of Obstetricians and Gynecologists.

Obesity

Between 50-65% of women gain IN EXCESS of recommended weight

Obesity and Pregnancy

- Seventy five percent of obese women gained more than the amount of weight recommended
- The MORE they gain the HARDER it is to lose
- On average, women retain forty percent of their pregnancy weight gain at 6 months

Obesity and Breast Feeding Duration

- Overweight and obese women more likely to discontinue breastfeeding before 6 months than normal weight women
- Prepregnancy BMI is associated with reduced breastfeeding duration
- Overweight and obese mothers breastfeed for a shorter duration

  - Hazel et. J. Pediatrics 2006:149:185-91

Associations of excess weight gain during pregnancy with long-term maternal overweight and obesity: evidence from 21 y postpartum follow-up[1,2,3,4]

Abdullah A Mamun, Mansey Kinarivala, Michael J O'Callaghan, Gail M Williams, Jake M Najman, and Leonie K Callaway

+ Author Affiliations

+ Author Notes

Abstract

Background: The contribution of gestational weight gain (GWG) to the development of obesity may have important implications for mothers in their later lives. However, whether GWG is a strong predictor of body mass index (BMI) 2 decades after the index pregnancy is unknown.

Objective: We examined the long-term effect of GWG by using a community-based birth cohort study.

Design: We followed a subsample of 2055 women from an original cohort of 7223 women who gave birth in Brisbane, Australia, between 1981 and 1983. Multivariable regression and multinomial regression were used to examine the independent associations of GWG per gestational week and Institute of Medicine (IOM) categories of combined prepregnancy BMI and GWG with BMI and its categories 21 y after the index pregnancy.

Results: In analyses using GWG per week as a continuous exposure variable

Long term impact!

2055 women in cohort of 7000 women examined 21 years after the pregnancy

- **Women who gained excess weight during pregnancy were at 2 to 4 times higher risk of being overweight or obese**

A Mamun, M Kinarivala, MOCallaghan, GWIlliams,Jnajman, Lcallaway. Associations of excess weight gain during pregnancy with long-term maternal overweight and obesity: evidence from 21 y postpartum follow-up. *Am J Clin Nutr May 2010 vol. 91 no. 5 1336-1341*

Weight Gain Associations

- Increased risk of hyperlipidemia, diabetes, hypertension, cardiovascular disease and mortality
- Increased risk of cancer
- The concerns of a “J-curve” not born out

C Solomon and J Hanson. Obesity and mortality: a review of the epidemiologic data. *Am J Cliii Nutr* 1997;66(suppl):1044S-50S

Weight and Weight Gain

Postpartum/Interconception Period

- Counseling on achieving a healthier weight between pregnancies

Obesity and mortality: a review of the epidemiologic data[1–3]

Caren G Solomon and JoAnn E Manson

ABSTRACT At least one-third of Americans are obese, as defined by body mass indexes corresponding to body weight ≥ 120% of ideal body weight, and this figure is rising steadily. Women and nonwhites have particularly high rates of obesity. Obesity greatly increases risks for many serious and morbid conditions, including diabetes mellitus, hypertension, dyslipidemia, coronary artery disease, and some cancers. Obesity is clearly associated with increased risk for mortality, but there has been controversy regarding optimal weight with respect to mortality risk. We review the literature concerning obesity and mortality, with reference to body fat distribution and weight gain, and consider potential effects of sex, age, and race on this relation. We conclude that when appropriate adjustments are made for effects of smoking and underlying disease, optimal weights are below average in both men and women; this appears to be true throughout the adult life span. Central obesity, most commonly approximated by the waist-to-hip ratio, may be particularly detrimental, although this requires further study. Weight gain in adulthood is also associated with increased mortality. These observations support public health measures to reduce obesity and weight gain, including recent recommendations to limit weight gain in the adult years to 4.5 kg (10 lb). *Am J Clin Nutr* 1997;66(suppl):1044S–50S.

KEY WORDS Body weight, ideal body weight, mortality rate, smoking, central obesity, lifestyle, coronary artery disease, stroke, body mass index

overweight and mortality has been argued, with some investigators reporting a protective effect of modest obesity (5, 6) and others noting optimal longevity at weights below average (7–11). We review the literature on obesity and mortality, with reference to body fat distribution and potential effects of sex, age, and race on this relation.

OVERVIEW OF THE EPIDEMIOLOGIC DATA

Methodologic considerations

Before reviewing the literature, it is important to emphasize that there are several possible explanations for discrepant findings in the relation between body weight and mortality. Possibly, there is some adverse effect of leanness or beneficial effect of excess body weight on overall survival (12). Another explanation is that weight or BMI may be inadequate surrogates for adiposity. For example, weight or BMI may be relatively low in an elderly deconditioned person who has little lean body mass relative to adipose tissue. Reported correlations between BMI and more direct measures of adiposity (eg, underwater weighing) are between 0.6 and 0.8 (13, 14). Likewise, reported correlations between waist-to-hip ratio (WHR), a frequently used marker of central adiposity, and visceral adipose tissue volume as measured by computed tomography are imperfect (15). In addition, such measurements are subject to error. The correlation between self-reported and measured WHR in a

Conclusions
What's Needed

- Re-design the Post Partum Visit
- Look at a six month "visit" for all women with complications: Video, telephone, health promotion
- IOM and ACOG guidelines on weight gain and weight loss need to be followed
- Recreate the Guidelines of our colleagues in Internal Medicine, Cardiology, Family Practice to recognize pregnancy risk factors
- Include pregnancy risk factors in PMH

Conclusions
Postpartum Care

- Components of the postpartum plan
  - The visit
    - Timing and date and location
    - First follow up visit at 2-4 weeks
  - Infant feeding plan
  - Reproductive life plan
  - Pregnancy complications
  - Mental health
  - Postpartum problems
  - Chronic health conditions

Conclusions

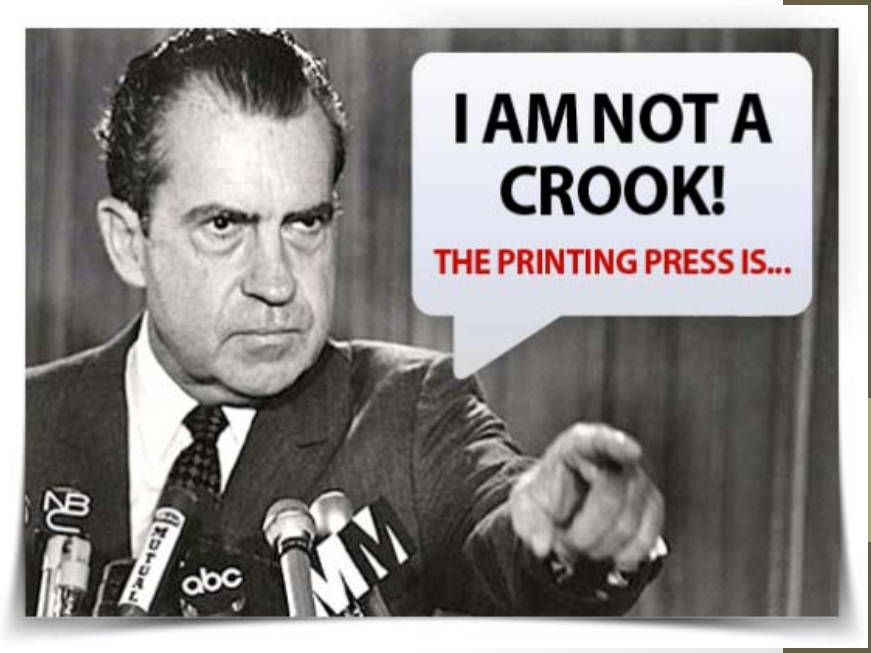
- Candidates for early postpartum follow up
  - Hypertensive disorder
    - No later than 7-10 days
  - Those at risk for postpartum depression
    - Screen no later than 2 weeks
  - Cesarean delivery
  - Lactation challenges
  - Perineal wound injury and complications
  - Chronic conditions
    - Seizures, heart disease, rheumatoid disorders

Conclusions

- Surveillance of maternal postpartum health status is important to provide sound foundation for health care policies
  - PRAMS (pregnancy risk assessment and monitoring system CDC monitors maternal behaviors during the traditional postpartum period
  - “Listening to mothers” (Declercq 2002)
    - Survey of postpartum physical and mental well-being (n=1550)
    - Difficult to generalize to underserved population

Advocacy
Contraception and Pregnancy Spacing

- **America Used to Agree on Public Funding for Family Planning. What Happened?**
- The Title X Family Planning program was enacted in 1970 as Title X of the Public Health Service Act



Strategies for Postpartum Care

Preconception and Interconception Care

- Education on healthy lifestyles
  - Achieving healthy weight prior to and between pregnancy
  - Risk assessment
  - Folic acid prior to pregnancy for prevention of birth defects

Preventive Health Care

- Promote routine preventive periodic screening including Pap, mammography, colon

Summary
Redefining postpartum care

- Currently, there are no national strategies, plans, or policies to encourage new mothers to obtain postpartum care
- Time for a change in postpartum care model to engage on long term health