

**Detrimental Effects
of
Abortion**

An Annotated Bibliography with Commentary

Third Edition

**Supplement # 2
2003**

Thomas W. Strahan

Supplement to Detrimental Effects of Abortion: An Annotated Bibliography With Commentary
Third Edition, Supplement #2

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An Invitation for New Editor(s)

It was the late editors desire and intent that *Detrimental Effects of Abortion* should continue to be updated as frequently as necessary after he was no longer able to do so. If you, or someone you know, would be willing to take up this task, please contact the publisher.

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In order to keep the information in *Detrimental Effects of Abortion* as current as possible, the publisher is making this supplement available in .PDF format on our web site at
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You are encouraged to use this supplement in conjunction with both the first supplement and the published third edition of *Detrimental Effects of Abortion* which contains over 1200 entries in 140 categories. Please ask your local public, college, and medical libraries to order the bound copy of this work for their collections. Permission is granted to print out this supplement as an addendum to printed copies of this work.

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The Publisher's Note on the Loss of a Hidden Giant

On November 13, 2003, God called home one of his champions, Tom Strahan. Tom died of a heart attack shortly after he and his wife, Carol, returned home from a fund-raising banquet for a pregnancy help center in Minneapolis. To the very end, Tom was helping others.

As a man, Tom Strahan was a humble, generous, and prayerful father, steward, and Christian. As a laborer, he was an attorney and scholar.

In my judgment, Tom was the world's single leading expert on the literature related to abortion complications. Others might know the details of one area or of a group of studies better, but no one was as well read in regard to the breadth of the literature. The breadth of this knowledge is captured in *Detrimental Effects of Abortion: An Annotated Bibliography with Commentary*.

How did a lawyer come to be an expert in the area of post-abortion complications? It began in prayer.

Tom had matured into his professional life during the late 50's and early 60's. He used his legal skills to serve the poor and disenfranchised and was active in civil rights litigation. I doubt he ever made a lot of money, but he knew he was helping people who needed help. He probably also got a lot of help from his wife, Carol, who encouraged and supported his efforts to serve rather than get.

I first met Tom in 1986. We were both attending the first meeting of the Association for Interdisciplinary Research on Values and Social Change to present papers on the negative effects of abortion on women. It was my first public presentation on the topic. My guess is that it was his first as well.

Tom went on to become the editor and chief author of the Association's publication Research Reports (www.abortioresearch.com). He became the first one I would ever turn to with questions about the literature. Every time, he was gracious and generous with his time, resources, and good advice.

Once, when we were discussing how we had gotten into "this business," Tom explained how he was reluctantly pulled into it. There had come a time, he said, when he had been at a loss as to where he should be putting his energies. So he knelt down in prayer. He prayed for an hour or more, repeatedly asking the Lord to show him what he should do. I guess it took him a couple of hours of prayer because this experienced civil rights lawyer kept hoping that if he prayed long enough God would show him some new way to help the poor. Instead, he felt God was insistently calling on him to defend the unborn. Not the abortion issue, he protested! How about something else? Surely there was something less divisive that he could help out with? No, he sensed in God's immovable answer, Tom was needed for the battle against abortion.

Without a lot of initial enthusiasm, but with an obedient spirit, Tom began to study the Supreme Court's abortion rulings with greater intensity. Like thousands of other Christian lawyers, he knew that the Supreme Court's reasoning, legal analysis, and historical interpretations were deeply flawed. But he also saw that the one area in the Court's reasoning that was most susceptible to being reversed by a demonstration in facts was the Court's conclusion that abortion is safe for women. So Tom carefully and

meticulously went about the job of gathering the facts necessary to prove that abortion is hurting women.

Becoming an expert in post-abortion literature wasn't ever Tom's plan. It simply happened as he walked in faith to follow God's plan. Nor was it ever my plan. But without Tom, much of what I have done in the field would either not have been possible or would have been much less well-developed.

I remember talking with Tom once about how God pulls us onto paths we would never have chosen to follow on our own initiative. While Tom had once hesitated to pursue the abortion issue, how thankful I am (and all of you should be) that God insisted and Tom submitted.

During this conversation -- and probably several afterward, as I tend to repeat myself a lot -- I told Tom my favorite joke: How do you make God laugh? Answer: Tell Him your plans. (Teenagers always stare blankly at me when I tell this to them, which gives me a second laugh! I expect this joke has a ten to thirty year gestation period when told to teens.)

I deeply miss Tom already, as both a colleague, confidant, and friend. His death reminds me, however, of how there is an economy of grace through which God has arranged that all of our efforts are intertwined, united, and magnified in countless ways. I'm often blessed to hear how the efforts of others have been aided or inspired by the Elliot Institute's own work. Rarely do they know, however, how our own work has been dependent on the labor and generosity of people like Tom Strahan and countless others who contribute their time, intellect, prayers and financial support to our efforts.

My guess is that only a few hundred people in the pro-life movement would immediately recognize Tom Strahan's name and associate it with the important contributions he has made to protecting women and their children. Fewer still would know what he has also done to help the poor and to defend the free speech and civil rights of all. But that also is a beautiful aspect of God's plan, that such important work is done in hidden ways, not for wealth or prestige, but because it needs to be done.

Tom left a living treasure to this world in the form of his four children and nine grandchildren, and a written treasure of research and case law that will continue to affect the course of national affairs for years to come. Bound to follow God's plans, not his own, he has left these treasures behind to embrace the treasures stored up in heaven for those who do God's will.

David C. Reardon
11/21/03

An Invitation for New Editor(s)

It was Tom's desire and intent that *Detrimental Effects of Abortion* should continue to be updated as frequently as necessary after he was no longer able to do so. If you, or someone you know, would be willing to take up this task, please contact the publisher.

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Detrimental Effects of Abortion

Supplement #2

1.2 Informed Consent

- 1.2.30 "Abortion, Information and the Law: What Every Doctor Needs to Know," *Issues in Law & Medicine* 16(3):283-284, 2001

It has not been proved that pregnancy and delivery are more dangerous than abortion.

- 1.2.31 "Long-Term Physical and Psychological Health Consequences of Induced Abortion: Review of the Evidence," JM Thorp et al, *Obstetrical & Gynecological Survey* 58(1):67-79, 2003

Informed consent before induced abortion should include information about the subsequent risk of preterm delivery and depression. Although it remains uncertain whether elective abortion increases subsequent breast cancer, it is clear that a decision to abort and delay having a baby results in a loss of protection with the net effect being an increased risk.

2.4 Pregnancy Reactions/Unwanted Pregnancy

- 2.4.23 "The intendedness of pregnancy: a concept in transition," LV Klerman, *Maternal and Child Health Journal* 4(3):155-162, 2000

The terms, "intended," "unintended," "mistimed," "wanted," "unwanted," and "planned," are often used without significant attention being paid to their meaning or how they were derived from survey questions. There is a particular need to distinguish between terms that define attitudes and those that define behaviors.

- 2.4.24 "Unintended pregnancy in a commercially insured population," DC Green et al, *Maternal and Child Health Journal* 6(3):181-187, 2002.

Women who reported that the partner did not want the pregnancy were 7.4 times more likely than women whose partner wanted the pregnancy to regard the pregnancy as unintended. Only 40% of the women with an unintended birth used birth control, and 64% of those used less effective methods such as condoms and diaphragms.

- 2.4.75 "Cultural practices and social support of pregnant women in a northern New Mexico community," EW Domian, *J Nursing Scholarship* 33(4):331-336, 2001

Among Hispanic mothers in this community, pregnancy outcomes were positive because of a socialization process that helped mothers and family members to adapt to support the pregnancy. This mutual sharing helped reinforce the family structure, integrate cultural beliefs, define roles for mother and family members, and define the nature of mother-child and family-child relationships.

3.5 Grief and Loss Following Abortion

- 3.5.10 "Short-term grief after an elective abortion," GB Williams, *J Obstet Gynecol Neonatal Nursing* 30(2): 174-183, 2001.

A study of short-term grief responses using the Grief Experience Inventory compared women with an elective abortion within the past one month to 48 months to women who never had an elective abortion. Women with a history of elective abortion experienced grief in terms of loss of control, death anxiety, and dependency. There was an overall trend toward higher grief intensity in the abortion group. The presence of living children, perceived pressure to have the abortion, and the number of abortions appeared to affect the intensity of the grief response.

3.7 Abortion Related Guilt/Regret/Violation of Conscience or Belief

- 3.7.9 "Women's Experiences of and Reactions to Antiabortion Counseling," C Cozzarelli et al, *Basic and Applied Social Psychology* 22(4): 265-275, 2000.

Women who encountered abortion protestors when they were about to enter an abortion facility responded with considerable guilt and shame as well as anger. Women who were personally conflicted about abortion were more likely to experience guilt but not anger. Emotional responses of women also included feeling sad, afraid, confused, and wrong.

3.12 Dissociation

- 3.12.6 "Attachment Style and Broken Attachments: Violence, Pregnancy, and Abortion," S Allanson and J Astbury, *Australian Journal of Psychology* 53(3):146, 2001

Maladaptive interpersonal relationships, irrational repetition, and ambivalence may be linked to a person having developed contradictory models of the same aspect of reality. Multiple working models may direct attention and memory to exclude information about the self, important others, and relationships to the point where primitive defenses of dissociation, splitting and self-deception may lead to a dissociated self. (Analysis within a traumatic stress-attachment framework where anxious and avoidant attachments were identified among women seeking a first trimester abortion).

3.15 Self-Punishment (Masochism) or Punishment of Others (Sadism)

- 3.15.6 "Unplanned pregnancies and abortion counseling. Some thoughts on unconscious motivations," B Loader, *Psychodyn Couns.* 1(3):363-376, 1995 (Abstract)

Many unwanted pregnancies result from unresolved conflicts carried over from the woman's early relationship with her mother. If the mother-child relationship failed to establish an internal representation of a caretaking function, the child will lack the capacity for self-care and may seek abortion as a deliberate mechanism for self-harm.

3.22 Short Term Depressive Reactions

- 3.22.15 "Women's Experiences of and Reactions to Antiabortion Picketing," C Cozzarelli et al, *Basic and Applied Social Psychology* 22(4):265, 2000.

In a study of 442 women entering one of three abortion clinics in the Buffalo, New York area in 1993, 87% saw abortion demonstrators. At a two year follow-up, 24.5% of the women were clinically depressed. On average, women were significantly less depressed immediately after their abortion than they were two years later.

3.23 Long Term Depressive Reactions (5 Years or More Since Abortion)

see also Long Term Effects from Abortion

- 3.23.7 "Depression associated with abortion and childbirth: A long-term analysis of the NLSY cohort," J Cogle et al, *Medical Science Monitor* 9: CR105-112, 2003.

A national sample of unintended pregnancies from the National Longitudinal Survey of Youth found that, compared to women whose first pregnancy was delivered, women whose first pregnancy ended in abortion were 65% more likely to score in the "high-risk" range for clinical depression. Differences between the abortion and birth groups were higher for white women (79% higher), married women (116% higher), and women whose first marriage did not end in divorce (119% higher).

3.24 Psychiatric or Psychological Hospitalization or Consultation

- 3.24.4 "Psychiatric admissions of low-income women following abortion and child birth," DC Reardon et al, *Canadian Medical Association Journal* 168:1253-1256, 2003.

A large scale study of low income California women who received medical assistance for abortion or childbirth in 1989, and had no psychiatric claims for one year prior to pregnancy

resolution, found that within 90 days after pregnancy resolution, the abortion group had 160% more total in-patient mental health claims than the birth group. Percentages equaled 120%, 90%, 110%, 60%, and 50% for the first 180 days, one year, two years, three years, and four years, respectively.

Across the four years, the abortion group had 70% more in-patient mental health claims than the birth group. Percentages equaled 90%, 110%, and 200% for depressive psychosis, single episode depressive psychosis, recurrent episode depressive psychosis, and bipolar disorder, respectively.

3.25 Suicide/Attempted Suicide

- 3.25.15 "Mental health may deteriorate as a direct effect of induced abortion," C Morgan et al, *British Medical Journal* 314:902, 1997

British researchers studied the frequency of admissions for attempted suicide by pregnancy event in women aged 15-49 in South Glamorgan Health Authority from 1991-1995. The overall frequency of admissions before induced abortion was 5.0 per 1000 and after induced abortion was 8.1 per 1000. The overall frequency of admissions before delivery was 2.9 per 1000 and after delivery was 1.9 per 1000. The authors concluded that, "the increased risk of suicide after an induced abortion may be a consequence of the procedure itself (and) data suggest that a deterioration in mental health may be a consequential side effect of induced abortion."

3.27 Repeat Abortions

- 3.27.47 "Repeated requests for termination of pregnancy. Some socio-cultural and psychological aspects," B Mattauer et al, *Contracept Fertil Sex (Paris)* 12(4) 573-580, 1984 (English Abstract)

A French study found that women with defective parental images had three times the risk of repeat abortion. Previous difficulties of pregnancy or delivery were associated with a higher risk of repeat abortion. Religious practice was associated with a reduced risk of repeat abortion.

- 3.27.48 "Repeat abortion: a qualitative study," M Tornbom, A Moller, *J. Psychosom Obstet Gynaecol* 20(1):21-30, 1999

"In-depth interviews of Swedish women seeking a repeat abortion found that most of the women seemed to have a psychological vulnerability with many current and previous problems, as well as problems regarding sexuality. The authors concluded that the main reason for an unplanned pregnancy is not a lack of information or even a lack of knowledge, but rather a failure to integrate the knowledge with situational, intrapsychic, and social factors.

3.30 Substance Abuse and Induced Abortion

- 3.30.28 "History of induced abortion in relation to substance abuse during subsequent pregnancies carried to term," PK Coleman et al, *Am J Obstet Gynecol* 187: 1673-1678, 2002.

A nationally representative sample of women using data from the National Pregnancy and Health Survey found that, compared to women who had given birth, women who had had an induced abortion were significantly more likely to use marijuana (OR 10.29, 95%CI, 3.47-30.56), various illicit drugs (OR 5.60, 95%CI, 2.39-13.10), and alcohol (OR 2.22, 95%CI, 1.31-3.76) during their next pregnancy. An average of 5 years had elapsed since a prior abortion; an average of 3.42 years had elapsed since a prior birth.

3.31 Smoking

- 3.31.34 "Nicotine Dependence and Major Depression," N Breslau et al, *Arch Gen Psychiatry* 50:31-35, 1993

A history of major depression increased the risk for progression to nicotine dependence or more severe levels of dependence (OR 2.06, 95%CI, 1.21-3.49). Persons with a history of nicotine dependence had a higher rate of first instance major depression (7.5% v. 3.2%) during a 14 month follow-up period than persons with no history of nicotine dependence (OR 2.45, 95%CI, 1.17-5.15).

- 3.31.35 "Smoking and Major Depression," KS Kendler et al, *Arch Gen Psychiatry* 50:36-43, 1993

Average levels of cigarette consumption were strongly related with the lifetime prevalence rate for major depression.

4.5 Abortion and Race or Poverty

- 4.5.36 "Underreporting Sensitive Behaviors: The Case of Young Women's Willingness to Report Abortion," LB Smith et al, *Health Psychology* 18(1):37-43, 1999.

White and Asian-American young women aged 14-21 were more likely to be honest about having had an abortion than African-American and Latina participants.

4.6 Abortion and Religion

- 4.6.21 "Repeated requests for termination of pregnancy. Some sociocultural and psychological aspects," B Mattauer et al, *Contracept Fertil Sex (Paris)* 12(4): 573-580, 1984 (English Abstract).

A French study found that religious practice was associated with a reduced risk of repeat abortion.

4.8 Abortion and Sexual Promiscuity/Dysfunction

- 4.8.1 *National Study of Family Growth-1995, Cycle V*, U.S. Department of Health and Human

Services, National Center for Health Statistics, 1997

A national U.S. study of ever pregnant women over age 35 found that women with no history of abortion had fewer sex partners before marriage (3.4 v. 9.2), and fewer lifetime sex partners (4.4 v. 12.7) compared to women with a history of abortion. Excluding women who had no sex partners before marriage, women with two or more abortions were likely to have more sex partners after marriage (5.0), compared to women with a single abortion (2.0), or women with no history of abortion (2.0).

- 4.8.2 *Forbidden Grief: The Unspoken Pain of Abortion*, Theresa Burke with David Reardon, Springfield, IL: Acorn Books, 2002.

In an Elliot Institute survey of 260 women who were involved in faith-based post-abortion counseling or advocacy groups, 42.7% said they became promiscuous within one month following their abortion; 51.6% said they became promiscuous within 6 months following their abortion; 46.6% said they developed an aversion to sex or became sexually unresponsive within one month, and 38.5% said they developed an aversion to sex or became sexually unresponsive within 6 months following their abortion.

- 4.8.3 "Psychosocial Sequelae of Therapeutic Abortion in Young Unmarried Women," Judith Wallerstein et al, *Arch Gen Psychiatry* 27:828, 1972.

In-depth interviews of 22 women under 22 years of age who had an abortion at a Planned Parenthood facility in northern California in 1969-1970 at 5-7 months postabortion; 9 reported a newly begun promiscuous pattern in relationships with men following their abortion.

- 4.8.4 "Physical and Psychological Injury in Women Following Abortion: Akron Pregnancy Services Survey," L Gsellman, *Association for Interdisciplinary Research in Values and Social Change Newsletter* 5(4) 1-8, 1993.

In a self-reported questionnaire survey of 344 postabortion women with a mean age of approximately 18 years at the time of their abortion and who were receiving general pregnancy related services (including 28% who had presented for post-abortion counseling), 9% of the women reported sexual promiscuity, 14% reported frigidity, and 23% reported a desire to get pregnant again as postabortion psychological complaints.

- 4.8.5 *Psycho-Social Stress Following Abortion*, Anne Speckhard, Kansas City: Sheed & Ward, 1987.

A study of 30 women who reported long term stress from abortion; 31% reported sexual promiscuity, 35% reported feelings of sexual anxiety, 35% reported a deterioration of their sexual relationships, and 69% reported feelings of sexual inhibition.

- 4.8.6 "Health issues associated with increasing "crack" use among female sex workers," in London, H Ward et al, *Sex Transm Infect* 76(4):292,

Thirty-four percent of female sex workers reported using “crack” cocaine in 1995-1996. Crack cocaine use was associated with abortion and hepatitis C infection.

- 4.8.7 “What have we learned from adolescent prostitutes in the Caribbean that adult prostitutes did not tell us?” M Alegria et al, *Int Conf AIDS*, June, 1993; 9(1)89 (Abstract No. WS-CO8-2).

Prostitution for adolescents begins with family or academic problems leading to early sexual experience with a boyfriend followed by pregnancy and abortion, which leads to economic/emotional despair followed by prostitution and then drug use.

- 4.8.8 “HIV risk relevant behaviors of Japanese adolescents,” T Munkata and K Fujisawa, *Int Conf AIDS* 11(1) 385, July, 1996 (Abstract No. Tu.D.27012)

A mail survey to 10,000 Japanese adolescents age 13-24 in 1995 found that casual sex experiences were significantly influenced by self- or partners’ abortion experience. Casual sex included having “first time” sex where partners were “sexually excited without love”, “curiosity”, “can’t say No”, or “nothing in particular”.

- 4.8.9 “Pregnancy outcome after ecstasy use; 43 cases followed by the Teratology Information Service of the National Institute for Public Health and Environment,” MM van-Tonninger-van Driel et al, *Ned Tijdschr Geneesk* 2;143(1): 27-31, 1999 (English Abstract)

A Dutch study of 43 women who used ecstasy during pregnancy reported that pregnancies were often unplanned and previous pregnancies had often been terminated. Besides ecstasy, mothers frequently also used other substances potentially harmful to the pregnancy and child.

- 4.8.10 “Repeat Abortion: Blaming the Victims,” B Howe et al, *Am J Public Health* 69(12):70, 1979.

Women who repeated abortion were found to be more sexually active compared to women with first abortions even though they used contraception more than women with one abortion.

- 4.8.11 “Repeat Abortion: Is It a Problem?” C Berger et al, *Family Planning Perspectives* 16(2): 70, 1984.

A Canadian study found that women who repeated abortion had more frequent intercourse, less satisfying relations with their partner, had more difficulty sleeping, and were less likely to live with their partner compared to women with a single abortion.

5.24 HIV/AIDS

- 5.24.17 “Post-abortion endometritis-myometritis and HIV infection,” P Okong et al, *Int’l J. STD & AIDS* 13:729-732, 2002.

A 1997 study of women in an urban hospital in Kampala, Uganda found that HIV-1

seroprevalence was 32.7%-36.5% among post-abortion women compared to 14.6% among antenatal women in the same hospital.

5.25 Hepatitis

- 5.25.4 "Hepatitis C virus, hepatitis B virus and human immune infection in pregnant women in North-East Italy: a case-control study," V Baldo et al, *Eur J Epidemiol* 16(1):87-91, 2000

A history of a previous abortion significantly increased the likelihood of Hepatitis C infection in pregnant women (OR 2.8, 95% CI , 1.4-5.5).

5.30 Hypertension (High Blood Pressure)/Preeclampsia

- 5.30.6 "Pregnancy-Related Mortality from Preeclampsia and Eclampsia," AP MacKay et al, *Obstet Gynecol* 97 (4): 533, 2001.

Based upon data from the Centers for Disease Control for 1979-1992, the mortality ratio (deaths from preeclampsia or eclampsia at 20 weeks or more gestational age per 100,000 births) was 1.4 for U.S. women with a first live birth, .07 for women with a second live birth, 0.7 for women with a third live birth, 0.9 for women with a fourth live birth, and 1.7 for women with a fifth live birth or higher. Women who gave birth at 28 weeks or less had a mortality ratio of 12.5 compared to women who gave birth at 29-32 gestational weeks (11.2), at 33-36 gestational weeks (3.3), or at 37 gestational weeks or more (0.5). Mortality ratios were higher for black women compared to white women, and were higher for older women compared to younger women.

- 5.30.7 "History of abortion, preterm, term birth, and risk of preeclampsia: A population based study," Xu Xiong et al, *Am J Obstet Gynecol* 187:1013, 2002.

A large population-based study of Canadian women who delivered in 49 hospitals in Northern and Central Alberta between 1993 and 1999 found no significant difference in the incidence of preeclampsia among women with a previous abortion (2.6%) as compared to women without a previous abortion (2.9%); Adjusted Odds Ratio 0.89 (0.78-1.01; P=0.05). The adjusted odds ratio of women with one, two, three, and four or more previous term pregnancies was 0.32 (95%CI, 0.28-0.36) , 0.27 (95%CI, 0.22-0.34), 0.22 (95%CI, 0.15-0.33), and 0.21 (95%CI, 0.12-0.35) respectively. The researchers also found that the protective effect from preeclampsia was not as great where women had previous preterm births compared to previous term births. It was concluded that a history of a term pregnancy, i.e. 37 weeks or more, confers a substantial protection against preeclampsia in the subsequent pregnancy.

- 5.30.8 "Risk Factors for Pregnancy-Induced Hypertension in Women at High-Risk for the Condition," F Parazzini et al, *Epidemiology* 7:306-308, 1996.

A study of 765 Italian women enrolled in a study of aspirin in pregnancy found that a total of 132 developed pregnancy-induced hypertension (PIH) during the study. The women who developed PIH were then compared to those who did not develop PIH. Compared to nulliparous women (1.0), women at parity one had a significant protective effect (OR 0.7, 95% CI, 0.4-1.0), while women at parity two had a further protective effect (OR 0.5, 95% CI, 0.3-0.9). Compared to women with no induced abortions (1.0), women with one or more induced abortions had no significant effect (OR 1.2, 95% CI, 0.6-2.5) on the incidence of PIH.

- 5.30.9 "Abortion, changed paternity, and risk of preeclampsia in nulliparous women," AF Saftlas et al, *Am J Epidemiology* 157(12): 1108-1114, 2003.

In a U.S. Calcium for Prevention Trial during 1992-1995, researchers examined whether or not nulliparous women with a prior abortion who changed partners lost the protective effect of the prior pregnancy. Compared to women without a history of abortion, women with a history of abortion who conceived again with the same partner had a reduced risk of preeclampsia (OR 0.54, 95% CI, 0.31-0.97). In contrast, women with an abortion history who conceived with a new partner had the same risk of preeclampsia as women without a history of abortion (OR 1.03, 95% CI, 0.72-1.47). Women who had a prior induced abortion were more likely to conceive again with a new partner (59%) compared to women with a prior spontaneous loss (41%).

- 5.30.10 "Change in paternity: a risk factor for preeclampsia in multiparous women?," P Tubbergen et al, *J Reprod Immunol.* 45(1):81-88, 1999.

A Dutch study found that multiparous patients with diastolic blood pressure of 100 mmHg or greater had a significantly higher risk for hypertension with a new partner compared to a control group with normotensive pregnancies without hypertension (OR 8.6, 95% CI, 3.1-23.5).

- 5.30.11 "Preeclampsia in the parous woman: who is at risk?," D Mostello et al, *Am J Obstet Gynecol* 187(2): 425-429, 2002.

A Missouri study to identify risk factors for preeclampsia in second pregnancies found that the same paternity for the first and second pregnancies was protective against preeclampsia in the second pregnancy.

- 5.30.12 "Preeclampsia Associated with Chronic Hypertension Among African-American and White Women," AR Samadi et al, *Ethn Dis.* 11:192-200, 2001.

Preeclampsia was more than eleven times more likely among women with chronic hypertension compared to normotensive women for both African-American women (OR 12.4, 95% CI, 10.2-15.2) and white women (OR 11.3, 95% CI, 9.7-13.2).

- 5.30.13 "The Effect of Cigarette Smoking on the Risk of Preeclampsia and Gestational Hypertension," S Marcoux et al, *Am J Epidemiology* 130(5):950-957, 1989.

A case-control study of primiparous women without a history of high blood pressure who gave birth in Quebec City or Montreal Hospitals between 1984-1986, found that women who were smokers at the onset of pregnancy had a reduced risk of preeclampsia (OR 0.51, 95%CI, 0.34-0.77), and a reduced risk of gestational hypertension (OR 0.78, 95%CI, 0.54-1.12) compared to women who never smoked.

5.31 Ectopic Pregnancy

5.31.24 "Risk factors for ectopic pregnancy: a comprehensive analysis based on a large case-control, population-based study in France." J Bouyer et al, *Am J Epidemiol* 157(3): 185-194, 2003.

Prior medical induced abortion was associated with an increased of ectopic pregnancy (OR 2.8, 95%CI, 1.1-7.2). No significant association was observed for surgical abortion (OR 1.1, 95% CI, 0.8-1.6). Other main risk factors were infectious history, previous pelvic infectious disease, and smoking. [Ed. Note: The unadjusted association between ectopic pregnancy and prior surgical abortion was statistically significant (OR 1.4, 95%CI, 1.1-1.8). However, by adjusting for pelvic infectious disease and smoking, the actual risk of surgical abortion would be understated.]

5.32 Placenta Previa/Abruptio Placentae/Retained Placenta

5.32.10 "Induced abortion and placenta complications in the subsequent pregnancy," W Zhou et al, *Acta Obstet Gynecol Scand* 80(12): 1115-1120, 2001.

A Danish record linkage study from 1980-1982 found that there was an increased risk for retained placenta (OR 1.17, 95%CI, 1.02-1.35) for women with one previous induced abortion, and an increased risk for retained placenta for women with two or more previous induced abortions (OR 1.68, 95%CI, 1.23-2.30) compared with a control cohort with similar gravidity who did not terminate a pregnancy with an induced abortion. No significant association with placenta previa was found.

5.33 Subsequent Miscarriage, Premature Birth or Low Birth Weight

5.33.30 "Induced Abortion and Risk of Later Premature Births," B Rooney and BC Calhoun, *Journal of American Physicians and Surgeons* 8(2):46-49, 2003.

This study summarizes 49 studies which have demonstrated a statistically significant risk in premature births among women with prior induced abortions.

5.35 Intraamniotic Infection/Intrapartum Infection/Premature Rupture of Membranes/Prolonged Third Stage of Labor

5.35.9 "Prolonged Third Stage of Labor: Morbidity and Risk Factors," C Combs and RK Laros, *Obstet*

Gynecol 77:863, 1991

A study of 12, 979 singleton vaginal deliveries over an 11-year period at the University of California, San Francisco, using logistic regression analysis, found that nulliparous women were more likely to have a prolonged third stage of labor compared to parous women (OR 1.47, 95%CI, 1.15-1.89). Women with any previous abortions were significantly more likely to have a prolonged third stage of labor compared to women with no previous abortions. (OR 1.32, 95%CI,1.06-1.66).

5.38 Protective Effect of Early Childbirth/ Breastfeeding

5.38.13 "National Survey of Family Growth-1995, U.S. Department of Health and Human Services," Nat'l Center for Health Statistics, 1997.

In a national sample of ever-pregnant U.S. women age 35 or more, 14.9% of the women with a history of abortion never had a live birth.

5.40 Cervical Cancer

5.40.23 "Determinants of cervical human papillomavirus infection: differences between high and low oncogenic risk types," PK Chang et al, *J Infect Dis* 185(1):28, 2002.

A survey of Hong Kong women who participated in cervical cancer screening found that the overall prevalence of human papillomavirus infection (HPV) was 7.3%. Previous induced abortion was an 87% statistically significant increased risk for HPV for women at high risk for HPV, a 51% statistically significant increased risk for women with any HPV, and a 97% statistically significant increased risk for women with unknown risk for HPV. Other risk factors for HPV included lifetime number of sexual partners, smoking, and having smokers in the family.

5.41 Ovarian Cancer

5.41.16 "Factors related to inflammation of the ovarian epithelium and the risk of ovarian cancer," RB Ness et al, *Epidemiology* 11(2):111, 2000.

A population based case-control study by researchers at the University of Pennsylvania found that factors that suppress ovulation, such as gravidity, breast feeding, and oral contraception, reduced the risk of ovarian cancer.

5.41.17 "Univariate and Multivariate analysis of risk factors for ovarian cancer. case- control study, Mexico City," A Bernal et al, *Arch Med Res.* 26(3):245, 1995 (Abstract).

Ovarian cancer risk decreased as parity increased. An elevated risk for ovarian cancer was associated with an increased number of abortions, with an increased relative risk for women with

four fetal losses (OR 3.66, 95 %CI, 1.02-13.45). Logistic regression analysis found that the number of abortions and a high estimated number of ovulatory cycles increased the risk of ovarian cancer.

- 5.41.18 "Menstrual and reproductive factors in relation to ovarian cancer risk," L Titus- Ernstoff et al, *Br J Cancer* 84(5): 714-721, 2001.

A population based case-control study of ovarian cancer risk among Massachusetts and New Hampshire women using regression analysis found that ovarian cancer risk was reduced among parous women relative to nulliparous women (OR 0.4, 95%CI, 0.3-0.6). Among parous women, higher parity, increased age at first birth, time since last birth, and breast feeding were associated with reduced risk. Among women who reported abortion, there was a non-significant increase in risk compared to women with no abortion history (OR 1.1, 95%CI ,0.7-1.6). Among women who reported miscarriage, there was no significant increase in risk compared to women with no history of miscarriage (OR 1.0, 95%CI, 0.7-1.3).

- 5.41.19 "Risk Factors for Invasive Epithelial Ovarian Cancer: Results from a Swedish Case-Control Study," T Riman et al, *Am J Epidemiology* 156:363-373, 2002.

Compared to nulliparous women, the risk of ovarian cancer was reduced for women of parity one (OR 0.61, 95%CI, 0.46-0.81), parity two (OR 0.55, 95% CI, 0.43-0.70), parity three (OR 0.44, 95%CI, 0.33-0.58), parity four (OR 0.35 95% CI, 0.23-0.53), and parity five or more (OR 0.32, 95%CI, 0.18-0.56). Compared to women reporting no spontaneous abortion, women reporting one spontaneous or induced abortion had a reduced risk of ovarian cancer (OR 0.76 95%CI, 0.59-0.98), and women reporting two or more spontaneous or induced abortions had a non-significant reduced risk of ovarian cancer (OR 0.70, 95% CI, 0.44- 1.12).

5.45 Endometrial Cancer

- 5.42.10 "Childbearing and mortality from cancer of the corpus uteri," M-L Lochen and E Lund, *Acta Obstet Gynecol Scand* 76:373-377, 1997

A large cohort of Norwegian married women aged 45-74 years at the time of the 1970 census compared the risk of death from cancer of the corpus uteri and found that the age-adjusted risk reduction in mortality was 9.2% (95% CI, 5.2-13.0) for each child.

- 5.42.11 "Reproductive Factors and Risk of Endometrial Cancer," CP McPherson et al, *Am J Epidemiology* 143 (12): 1195, 1996.

A cohort study of 24,848 postmenopausal Iowa women age 55-69 who were cancer free in 1986 and had not had a hysterectomy were followed for 5 years. During the five years, 167 endometrial cancer cases were documented. The mean gravidity of cases (2.6) was significantly lower than for non-cases (3.5). A history of ever having had an induced abortion compared to never having had an induced abortion significantly increased the risk of endometrial cancer (RR 2.5, 95%CI,

1.1-5.7). Among non-cases of endometrial cancer among women who had a previous abortion, 48.3% went on to have their last pregnancy end in a live birth compared to only 16.7% of the cases of endometrial cancer among women with a previous abortion. The authors concluded that the findings supported the “unopposed” estrogen hypothesis of endometrial cancer. [Ed. Note: The unopposed estrogen hypothesis is based on the finding that lack of discharge of ovum during the ovulation cycle and progesterone deficiencies increase the risk of endometrial cancer.]

- 5.42.12 “Risk Factors among young women with endometrial cancer: A Danish case-control study,” M Parslov et al, *Am J Obstet Gynecol* 182:23, 2000.

This study included all Danish women less than 50 years old who had endometrial cancer during 1987-1994. A reduced risk was found for women who had one or more live births (0.3) as well for women who had one or more induced abortions (0.5). The authors calculated the protective impacts of various exposures compared to a situation without the particular exposure. These were: oral contraceptive use for one year or more (-45%), 2 term pregnancies (-88%), age 30 or more when giving birth for the first time (-38%), and a history of incomplete pregnancy (-16%).

5.45 Other Cancers

- 5.45.2 “Birth characteristics, maternal reproductive history, hormone use during pregnancy, and risk of childhood acute lymphocytic leukemia by immunophenotype (United States),” XO Shu et al, *Cancer Causes and Control* 13:15-25, 2002.

A case-control study of 1,842 cases of acute lymphocytic leukemia (ALL) compared to individually matched controls found that children whose mothers had an induced abortion prior to the child’s birth were at significantly higher risk for ALL compared to children of women who never had an induced abortion (OR 1.2, 95%CI, 1.0-1.4).

7.10 Differential Psychosocial Impact on Adolescents

- 7.10.20 “Mental health may deteriorate as a direct effect of induced abortion,” C Morgan et al, *British Medical Journal* 314:902, 1997.

The frequency of admission for attempted suicide in women aged 15-19 in South Glamorgan Health Authority from 1991-1995 was 3.6 per 1000 before induced abortion and 10.8 per 1000 after induced abortion compared to 14.0 per 1000 before delivery and 2.6 per 1000 after delivery.

- 7.10.21 “Psychiatric admissions of low income women following abortion and childbirth,” DC Reardon et al, *Canadian Medical Association Journal* 168(10); 1253 2003.

The frequency of psychiatric admission rates for women age 13-19 for a 4 year period following their pregnancy outcome was 915.4 per 100,000 following abortion compared to 517 per 100,000 following delivery (OR 1.8, 95%CI, 1.1-2.9).

7.14 Differential Physical Complications of Adolescent Abortion

- 7.14.5 "Pelvic inflammatory disease in adolescents," V Igra, *AIDS Patient Care STDS* 12(2): 109-124, 1998 (Abstract).

One in five cases of pelvic inflammatory disease (PID) occurs among younger women less than 19 years of age. The risk of developing PID for a 15-year-old sexually active girl is estimated to be 10 times that of a 24 year old woman. The higher risk of PID for younger women has been attributed to their greater biologic vulnerability and their behavioral and cognitive risk factors.

7.15 Adolescent Breast Cancer Risk

- 7.15.7 "Adolescent Reproductive Events and Subsequent Breast Cancer Risk," PM Marcus et al, *American Journal Public Health* 89(8):1244, 1999

Among parous premenopausal women who were breast-feeding before 20 years of age compared to controls with no history of breast-feeding, there was a substantial risk reduction in breast cancer (OR 0.2,95%CI, 0.1-0.6).

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