**Resilient Generation**

**Washington Families 2030 Project**

**Toxic Stress Exposure – Evidence Base for Birth Timing as Primary Prevention**

This evidence base underscores the potential to improve early brain development and lifelong health trajectory by enabling parents to optimize preconception health and birth timing.  Being able to choose the timing of births is a form of primary prevention. It allows prospective parents the opportunity to gather or develop personal resources, and maintain their own health, providing a foundation for their future child's health and development.

Although important, prenatal care is not the most effective way to address toxic stress exposure in pregnancy as it appears to begin too late to provide optimal windows of treatment -- particularly for those most at risk -- and cannot provide the means to most effectively and safely address many causes of toxic stress (Adverse Childhood Events or ACEs and other significant stressors).

Whenever possible and in keeping with patient’s wishes, substance dependency treatment and treatment for depression should take place before pregnancy, and this can only take place if women have access to the means to delay or prevent pregnancy — effective contraception.

Below is key research and policy guidance on and maternal and paternal exposure to toxic stress, highlighting the potential preventive power of pregnancy timing:  the ability to delay and/or space the birth of a child to optimize women’s health and child health and development outcomes.  Pregnancy-intention screening and access to effective contraception together create a preconception opportunity to reduce multi-generational cycles of toxic stress exposure.

Anda and Felitti — leaders of the work on ACEs — note that [the relationship between adolescent pregnancy and high ACE scores](https://www.ncbi.nlm.nih.gov/pubmed/14754944/) is "strong and graded."  Their research puts the role of unintended pregnancy right at the crux of this toxic stress/ACEs-based cycle: those exposed to significant toxic stressors are more likely to, unintentionally, become parents in very vulnerable circumstances, with few resources.  These factors increase the likelihood that their children themselves will be exposed to ACEs during infancy and early childhood.

New research from Brown University Medical School's Department of Pediatrics shows an association between exposure to [maternal depression and anxiety in utero and poorer infant brain health](https://www.ncbi.nlm.nih.gov/pubmed/24135662):

**“This work supports the fetal programming hypothesis and suggests that fetal adjustments to cues from the intrauterine environment-that could be-in this case an environment characterized by increased exposure to maternal cortisol-- may lead to poor neurodevelopmental outcomes.”**

A [2012 study of preconception mental health](https://www.ncbi.nlm.nih.gov/pubmed/22124801) concludes:

**“Women's preconception mental health is a modifiable risk factor that stands to reduce the incidence of adverse pregnancy complications and birth outcomes.”**

A [2016 meta-analysis](https://www.ncbi.nlm.nih.gov/pubmed/26707348) shows that post-partum depression is more prevalent when pregnancies were unintended. The authors suggest integrating family planning and behavioral health services:

**“The prevalence of perinatal depression is two-fold in women with unintended pregnancy. Perinatal care settings may screen pregnancy intention and depression of women backed by integrating family planning and mental health services.”**

ACOG describes [the difficulties and risks of treating depression during pregnancy](http://www.acog.org/About-ACOG/News-Room/News-Releases/2009/Depression-During-Pregnancy) yet we are not screening for pregnancy intention routinely and offering the option to delay pregnancy when we screen for depression or for substance abuse, domestic violence, alcohol or tobacco use; all, along with poverty, are well-acknowledged toxic stressors.

The Center for the Developing Child at The Chan (Harvard) School of Public Health -- another leader in the fight to protect infants and young children from toxic stress exposure -- states in its [Best Practices to Breakthrough Impacts](http://developingchild.harvard.edu/resources/from-best-practices-to-breakthrough-impacts/) "Key Findings" summary:

**“The foundations of brain architecture are constructed early in life. The neural connections that comprise the structure of the developing brain are formed through an ongoing process that begins before birth, continues into adulthood, and establishes either a sturdy or weak foundation for all the health, learning, and behavior that follow.”**

Page 5 of the April 2016 report [Best Practices to Breakthrough Impacts](http://developingchild.harvard.edu/resources/from-best-practices-to-breakthrough-impacts/), citing influences on the "life prospects" of young children in the United States, states:

**“Delaying the birth of a first child has been shown to contribute to greater economic opportunity, yet women in poverty have less access to effective means of planning pregnancies and disproportionately higher rates of unanticipated pregnancies than women with higher income.** “

This [CDC 2017 Grand Rounds cites family planning as primary prevention to decrease Neonatal Abstinence Syndrome (NAS)](https://www.cdc.gov/mmwr/volumes/66/wr/mm6609a2.htm?s_cid=mm6609a2_w) noting the extraordinarily high rate of unintended pregnancy among opioid dependent women (86%):

**“Another primary prevention strategy that might reduce the incidence of NAS is ensuring access to family planning and preconception care for women who use opioids. Among women who abuse opioids, 86% of pregnancies are unintended (*10*). CDC and the Office of Population Affairs of the U.S. Department of Health and Human Services recommend that health care providers support family planning services, which include preconception services, pregnancy intention screening, and contraceptive counseling to prevent unintended pregnancy by increasing access to the full range of contraceptive methods, including long-acting reversible contraception (e.g., intrauterine devices and implants) (*11*).”**

The [2011 study cited by CDC stresses](https://www.ncbi.nlm.nih.gov/pubmed/21036512) that:

**“Interventions are sorely needed to address the extremely high rate of unintended pregnancy among opioid-abusing women. Drug treatment programs are likely to be an important setting for such interventions.”**

The [Guttmacher Institute 2013 policy recommendations](https://www.guttmacher.org/report/social-and-economic-benefits-womens-ability-determine-whether-and-when-have-children), grounded in a solid evidence base, further support the potential preventive power of access to effective contraception so women (and men) can delay or prevent pregnancy as desired.

**Other relevant literature:**

**Adverse Birth Outcomes in Colorado: Assessing the Impact of a Statewide Initiative to Prevent Unintended Pregnancy.**

[Goldthwaite LM](http://www.ncbi.nlm.nih.gov/pubmed/?term=Goldthwaite%20LM%5BAuthor%5D&cauthor=true&cauthor_uid=26180990), [Duca L](http://www.ncbi.nlm.nih.gov/pubmed/?term=Duca%20L%5BAuthor%5D&cauthor=true&cauthor_uid=26180990), [Johnson RK](http://www.ncbi.nlm.nih.gov/pubmed/?term=Johnson%20RK%5BAuthor%5D&cauthor=true&cauthor_uid=26180990), [Ostendorf D,](http://www.ncbi.nlm.nih.gov/pubmed/?term=Ostendorf%20D%5BAuthor%5D&cauthor=true&cauthor_uid=26180990) [Sheeder J](http://www.ncbi.nlm.nih.gov/pubmed/?term=Sheeder%20J%5BAuthor%5D&cauthor=true&cauthor_uid=26180990)., Am J Public Health. 2015 Sep;105(9):e60-6 <https://www.ncbi.nlm.nih.gov/pubmed/26180990>

**Consequences for children of their birth planning status.**

Baydar N. Fam Plann Perspect. 1995 Nov-Dec;27(6):228-34, 245 <https://www.ncbi.nlm.nih.gov/pubmed/8666086>

**How experience gets under the skin to create gradients in developmental health.**

Hertzman C, Boyce T. Annu Rev Public Health. 2010;31:329-47 <https://www.ncbi.nlm.nih.gov/pubmed/20070189>

**The Contraceptive CHOICE Project: Reducing Barriers to Long-Acting Reversible Contraception.**
Gina M. Secura, PhD, MPH, Jenifer E. Allsworth, PhD, [...], and Jeffrey F. Peipert, MD, PhD. AJOG, 2010

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2910826/>

**Contraception Drives Decline in Teen Pregnancy—and Expanded Access to LARC Methods Could Accelerate this Trend.**
 Guttmacher Institute <https://www.guttmacher.org/article/2014/10/contraception-drives-decline-teen-pregnancy-and-expanded-access-larc-methods-could>

**Abused boys, battered mothers, and male involvement in teen pregnancy.**
Pediatrics. 2001 Feb;107(2):E19.Anda RF, [Felitti VJ](https://www.ncbi.nlm.nih.gov/pubmed/?term=Felitti%20VJ%5BAuthor%5D&cauthor=true&cauthor_uid=11158493), [Chapman DP](https://www.ncbi.nlm.nih.gov/pubmed/?term=Chapman%20DP%5BAuthor%5D&cauthor=true&cauthor_uid=11158493), [Croft JB](https://www.ncbi.nlm.nih.gov/pubmed/?term=Croft%20JB%5BAuthor%5D&cauthor=true&cauthor_uid=11158493), [Williamson DF](https://www.ncbi.nlm.nih.gov/pubmed/?term=Williamson%20DF%5BAuthor%5D&cauthor=true&cauthor_uid=11158493), [Santelli](https://www.ncbi.nlm.nih.gov/pubmed/?term=Santelli%20J%5BAuthor%5D&cauthor=true&cauthor_uid=11158493), Dietz PM, Marks JS. <https://www.ncbi.nlm.nih.gov/pubmed/11158493>

**Adverse childhood experiences and risk of paternity in teen pregnancy.**
Obstet Gynecol. 2002 Jul;100(1):37-45.Anda RF, [Chapman DP](https://www.ncbi.nlm.nih.gov/pubmed/?term=Chapman%20DP%5BAuthor%5D&cauthor=true&cauthor_uid=12100801), [Felitti VJ](https://www.ncbi.nlm.nih.gov/pubmed/?term=Felitti%20VJ%5BAuthor%5D&cauthor=true&cauthor_uid=12100801), [Edwards V](https://www.ncbi.nlm.nih.gov/pubmed/?term=Edwards%20V%5BAuthor%5D&cauthor=true&cauthor_uid=12100801), [Williamson DF](https://www.ncbi.nlm.nih.gov/pubmed/?term=Williamson%20DF%5BAuthor%5D&cauthor=true&cauthor_uid=12100801), [Croft JB](https://www.ncbi.nlm.nih.gov/pubmed/?term=Croft%20JB%5BAuthor%5D&cauthor=true&cauthor_uid=12100801), [Giles WH](https://www.ncbi.nlm.nih.gov/pubmed/?term=Giles%20WH%5BAuthor%5D&cauthor=true&cauthor_uid=12100801). <https://www.ncbi.nlm.nih.gov/pubmed/12100801>

**CDC Contraceptive Action Plan (CAP):** <https://www.cdc.gov/teenpregnancy/projects-initiatives/contraceptive-action-plan-project.html>

**American Academy of Family Physicians, Preconception Care Position Paper**, Dec 2015: <http://www.aafp.org/about/policies/all/preconception-care.html>

**ACOG Long Acting Reversible Contraception*:*** [*http://www.acog.org/About-ACOG/ACOG-Departments/Long-Acting-Reversible-Contraception*](http://www.acog.org/About-ACOG/ACOG-Departments/Long-Acting-Reversible-Contraception)

# ACOG Committee Opinion No. 654, Feb 2016 (Committee on health Care for Underserved Women): <https://www.acog.org/-/media/Committee-Opinions/Committee-on-Health-Care-for-Underserved-Women/co654.pdf?dmc=1&ts=20160202T0904511965>

# ACOG Committee Opinion No. 670 Summary: Immediate Postpartum Long-Acting Reversible Contraception, Obstetrics & Gynecology: [August 2016 - Volume 128 - Issue 2 - p 422–423](http://journals.lww.com/greenjournal/toc/2016/08000) <http://journals.lww.com/greenjournal/Fulltext/2016/08000/Committee_Opinion_No__670_Summary___Immediate.52.aspx>

# ACOG Committee Opinion, Number 678, November 2016 (Committee on Adolescent Care): <http://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Adolescent-Health-Care/Comprehensive-Sexuality-Education>

# ACOG Committee Opinion, Number 642, October 2015, Increasing Access to Contraceptive Implants and Intrauterine Devices to Reduce Unintended Pregnancy: <http://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Gynecologic-Practice/Increasing-Access-to-Contraceptive-Implants-and-Intrauterine-Devices-to-Reduce-Unintended-Pregnancy>

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