



The Impact of Trauma and Early Adversity During Pregnancy

A past trauma history compounded by current life stressors can cause a multi-dimensional deleterious layering effect on the physical, mental, and emotional health of the pregnant mother and consequently the unborn child.



CONTENTS

INTRODUCTION.....	1
TRAUMA DEFINED	1
Adverse Childhood Experiences, Toxic Stress, and Complex Trauma	2
The ACE Study	2
Types of Stress.....	2
Complex Trauma.....	3
Stress and the Fetus.....	3
SCREENING	3
AVOIDANCE OF RE-TRAUMATIZATION ...	4
THREE PRACTICES TO IMPLEMENT	5
CONCLUSION.....	5
REFERENCES AND RESOURCES	5

INTRODUCTION

Pregnancy can be an exciting time for many women. It can also be a period of great concern, fear, and anxiety. Physical, mental, and emotional changes occur within a woman's body, oftentimes precipitated by hormonal fluctuations. For many women, the news of pregnancy is stressful. Studies now clearly reveal that the prevalence of traumatic abuse and neglect experienced by women is high, thus requiring that obstetricians consider how these experiences may impact a woman throughout the course of her pregnancy.

A past trauma history compounded by current life stressors can cause a multi-dimensional deleterious layering effect on the physical, mental, and emotional health of the pregnant mother and consequently the unborn child. For the obstetrician, understanding the significance of these prior events, the role of current stressors, the importance of screening for trauma, and the potential for unforeseen re-traumatization will allow for a healthier pregnancy and improved birthing experience for the mother and child.

TRAUMA DEFINED

Trauma is an event that is unpredictable, produces feelings of helplessness, and overwhelms a person's capacity to cope. Trauma can be a single event, connected series of traumatic events, or chronic lasting stress.¹ Trauma has also been defined as the experience of violence and victimization including sexual abuse, physical abuse, severe neglect, loss, domestic violence and/or the witnessing of violence, terrorism, or natural disasters.² Other examples include an illness/medical procedure; serious accident or hospitalization; traumatic grief or separation; political violence and war; or family disruption (moves, loss of job, illness, death, divorce, or incarceration).

Critical to the complete understanding of a traumatic episode is that it can be a direct personal experience that involves actual or threatened death, serious injury or threat to a person's physical integrity OR learning about an unexpected or violent death; serious harm; or threat of death or injury experienced by a close contact.³ The obstetrician should be aware of this expanded definition and realize that it will in some way encompass a large segment of their patient

Trauma is an event that is unpredictable, produces feelings of helplessness, and overwhelms a person's capacity to cope. Trauma can be a single event, connected series of traumatic events, or chronic lasting stress.



population, regardless of demographics or socioeconomic status. The prevalence of traumatic experiences was clearly demonstrated in the Adverse Childhood Experiences Study.

Adverse Childhood Experiences, Toxic Stress, and Complex Trauma

Adverse childhood experiences (ACE)s are negative and damaging experiences in childhood. Extensive research links an accumulation of ACEs to poor outcome later in life (poor school achievement, substance abuse, physical and mental health issues, as well as chronic disease, disability, and early death). Toxic stress is the body's biological response to ACEs and other stressful situations that may occur outside of the family (extreme poverty, community violence, or neighborhood chaos).

The ACE Study

The Adverse Childhood Experiences Study was a groundbreaking study conducted jointly by the Centers for Disease Control and Prevention and the Kaiser Permanente in San Diego. It included over 17,000 middle class subjects who were interviewed about experiences that occurred between the ages of birth and 18 years of age. Included were questions about:

1. Physical abuse
2. Emotional abuse
3. Sexual abuse
4. Substance use disorder
5. Incarceration of a family member
6. Domestic violence
7. Mental illness or mental health disorder
8. Parental separation or divorce
9. Emotional neglect
10. Physical neglect

The ACE score is a simple and widely accepted way of assessing exposure to complex trauma. These ten categories of adverse experiences are associated with a wide range of poor outcomes across multiple domains of life.

In the original 1998 ACE study, 52% reported having one or more adverse childhood experiences; almost 13.1% had three or more and 6.2% had four or more. The 2009 study, which contained three additional ACE items (#8, #9, #10) found even higher rates of ACEs: with 21.6%

having three or more, and 12.1% having four or more.⁴ The study established a causal relationship between these adverse childhood events and future long-term mental and physical health conditions. The existence of four or more ACEs caused a graded increase in chronic health and mental health conditions. It increased the likelihood of future health disease, obesity, suicidality, etc. The ACE study describes experiences that occurred between the ages of birth and 18 years of age. For the adult woman, these are considered “remote,” but very real stressors that can be triggered at any time.

Types of Stress

Stress is a biological and physiological response experienced in the body when someone encounters a threat that cannot be easily tolerated. A stressor is the stimulus or threat that causes the stress. A conceptual taxonomy of stress responses was originally developed about young children, but is relevant for adults as well. There are three distinct types of stress responses.⁵

Positive Stress is a response that is mild to moderate in severity and does not persist for a lengthy period of time (e.g., doctor's appointment, being pulled over for speeding). The stressor elicits a brief increase in heart rate and breathing, decrease in digestive activity, and mild elevations in stress hormone levels. Once the stressful event is over, the heart rate returns to normal and the stress response system returns to baseline. This type of stress is considered “positive” in that it offers a growth promoting opportunity to practice healthy adaptive responses to mildly stressful experiences.

Tolerable Stress is a greater magnitude of adversity or threat that activates a heightened response from the stress response system (e.g., death of a family member, a serious illness, or a contentious divorce). This form of stress response is made tolerable by the extent of the individual's coping skills and/or their utilization of a support network to facilitate coping and a sense of control, thereby reducing the physiologic stress response and promoting a return to baseline.

Toxic Stress results from strong, frequent, or prolonged activation of the body's stress response systems in the absence of support. Pregnant women may be exposed to toxic levels of stress through intimate partner violence, chaotic or violent neighborhoods, impoverished living conditions/homelessness, or financial hardship—in the



absence of a supportive partner, friends, or family. The stress response may be further exacerbated from the cumulative layering effect of multiple stressors such as those identified in the ACE study (abuse, neglect, substance abuse, mental health issues) along with other current stressors. With toxic stress, the body's metabolic and other stress response systems stay chronically activated, which may result in anatomic changes or physiologic dysregulations. This is particularly toxic in young children and can disrupt brain circuitry during sensitive developmental periods.

Research has also shown that the stress hormone cortisol in pregnant mothers may cross the placenta to directly affect fetal development. Stress has been associated with a “markedly increased risk” of developing low birth weight and preterm infants. Just how extreme stress exerts its effects of pregnancy is not clear yet. Severe or chronic stress may constrict pregnant women's blood vessels, reducing the amount of oxygen and nutrients delivered to the fetus, or it may affect the functioning of the placenta in some other fashion. Women who have robust social support, especially from a number of different sources—friends, family, coworkers, neighbors—tend to have babies with higher birth weights.⁶

Complex Trauma

Toxic stress helps to explain why ACEs can be so detrimental to long-term outcomes. Complex trauma refers

SCREENING

The obstetrician is responsible for screening the mother and infant for numerous physical conditions throughout the pregnancy. Included are screening questions for intimate partner violence, other immediate threats (stressors) to the mother's safety, as well as those for mental health or substance use disorders.

Less obvious, may be the need to screen the pregnant mother for the early adverse childhood experiences, or trauma, especially when she appears to be functioning well. These prior events may not appear to play a direct role in the current pregnancy; however, lacking an awareness of past experiences may trigger previous traumas inadvertently. In light of the fact that one in five women

to the ACEs, the chronic exposure to serious traumatic events, most often within a child's caregiving system, and the multidimensional impact of that exposure.

Stress and the Fetus

The Maternal-Fetal Unit is a delicate ecosystem during pregnancy. As such, stress experienced physiologically by the pregnant mother can gravely impact the developing fetus. Stress in the mother impacts both the pregnancy and the neurological and endocrinological development of the fetus.⁷ It can alter the architecture of the fetal brain circuits and sections of the brain which influence emotional and behavioral regulation as well as executive function. Fetal development actively adapts to the physical state and health of the mother.⁸ During periods of extreme stress and deprivation, internal resources accommodate to prioritize the needs of the mother over the fetus. The adjustment to toxic maternal stress alters brain architecture such that the fetal brain is “re-wired” to be more reactive, impulsive and in active survival mode.⁹ As described by the Fetal Programming Theory, adverse maternal conditions during the prenatal period have also been directly associated with lower birth weight infants and an increased frequency of cardiovascular, endocrine, and metabolic diseases later into adult life.¹⁰ See companion document Brief #2: *Fetal Programming: How Maternal Stress Impacts the Fetus* for more detailed information.

reportedly have experienced childhood sexual abuse, the presence of this risk factor during pregnancy cannot be understated.¹¹ For the obstetrician, an awareness of both the remote adverse childhood experiences stressors and current stressors are all important.

Although few screening tools directly address the pregnant patient within the OB practice, the following tools may be utilized:

- The ACE Questionnaire (Felitti, et al)¹²
- The Primary Care PTSD Screen
- The SPAN as a means to assess PTSD symptoms (Acronym for symptoms of Startle, Physiologic Arousal, Anger and Emotional Numbness)¹³

Less obvious, may be the need to screen the pregnant mother for remote adverse childhood experiences, especially when she appears to be functioning well.



When a pregnant mother discloses past abuse or other adversity, there are some generally acceptable responses and actions that the obstetrician can provide:

- Supportive messages that recognize the courage required to reveal and withstand these past experiences.
- Attentive, focused and non-distracted listening.
- A non-judgmental attitude.
- Questions about prior disclosure to other professionals.
- Offer of a mental health referral.
- Renewed sensitivity when performing future pelvic and breast examinations.¹⁴
- A willingness to narrate the procedural steps before and during an exam or procedure. (Next, I am going to insert a speculum; this may cause a brief period of discomfort).

Some obstetricians may be uncomfortable delving into a past history of sexual abuse and trauma; unsure of the response of the pregnant mother; and whether a mental health referral is available, or will be accepted.¹⁵ Ideally physicians should identify referral resources before they begin the screening process in order to ensure the necessary treatment and support for the expectant mother. The care coordination section of the Managed Medical Assistance health plan may be able to assist with locating providers in their provider network. Even if the pregnant mother refuses a mental health referral for the disclosure of past toxic stress, this offers an opportunity to discuss her comfort level with the process of pregnancy, birth, and delivery. This conversation can help expectant mothers identify triggers that could lead to potential re-traumatization.

AVOIDANCE OF RE-TRAUMATIZATION

Re-traumatization can be defined as strong physical or psychological stress reactions, responses, and symptoms that occur consequent to traumatic events. These responses can occur in the context of repeated multiple exposures within one category of events (e.g., child sexual assault and adult sexual assault) or multiple exposures across different events (e.g., childhood physical abuse and involvement in a serious motor vehicle collision during adulthood). Multiple exposures may increase the duration, frequency, and intensity of distress reactions.¹⁶ In addition to these responses, other events or circumstances that echo the violation and lack of control experienced in an earlier trauma can be re-traumatizing. Reactions to trauma vary widely. It is not so much the traumatic event itself, but the individual's response which determines the intensity and impact. The extent to which a traumatic event has lasting adverse effects is determined by the individual's biological response mediated by both genetic dispositions and availability of supportive relationships to moderate the stress.

For a pregnant woman, the process of pregnancy, labor, and delivery may evoke memories of early sexual abuse and inadvertently re-traumatize. Studies reveal that women with a past history of sexual abuse were 12 times more likely to perceive their childbirth experiences as psychologically traumatic when compared to women who had not experienced sexual abuse.¹⁷ Additionally, the prevalence of post-traumatic stress disorder is higher among pregnant women (6-8%) than non-pregnant women (4-5%).¹⁸ As each woman with a sexual abuse history has an individual set of experiences, she will also most likely have triggers and responses that are equally unique. Her trigger will be any event, sensation, sound, smell, etc., which reminds the woman of the past abuse. In general, there are four categories of post-traumatic stress symptoms that may arise due to these triggers:

1. Recurrent and intrusive memories.
2. Avoidance of thoughts, activities and other reminders of the traumatic event.
3. Heightened irritability and other manifestations of autonomic arousal.
4. Negative changes in mood and cognition.¹⁹

Studies reveal that women with a past history of sexual abuse were 12 times more likely to perceive their childbirth experiences as psychologically traumatic when compared to women who had not experienced sexual abuse.¹⁶



Experiences that may trigger a post-traumatic stress response during pregnancy and labor/delivery include:

- Fetal movement
- Bodily changes
- Routine procedures such as speculum and breast examinations during the course of the pregnancy
- Stressors of labor and delivery
- Physical positions of powerlessness (e.g., partially exposed and supine on the exam table)
- Intrusive touching
- Loss of control of bodily functions ²⁰

The risks to the mother and fetus/newborn infant are significant when a sexual abuse screening does not occur; triggers are missed and post-traumatic stress symptoms ensue unrecognized. One study documents greater levels of mental dissociation during labor for childhood abuse survivors than for women who did not experience abuse. Notably, these women with higher dissociation scores were also at higher risk for post-partum depression and impaired bonding.²¹ This

can then have long term psychological and social consequences for the child.²²

Although the obstetrician cannot mitigate all triggers, with a heightened awareness of a pregnant mother's past experiences and a plan in place to address those triggers, the occurrence of re-traumatization can be reduced. The partnership that can be established between the mother as a trauma survivor, and the obstetrician, can be very beneficial in addressing the reduction of triggers and the development of a "tool chest" of techniques to deal with unavoidable stressors.

Ongoing communication throughout an office visit, which allows the mother to express her discomfort at any stage of any procedure/ exam, gives the mother a necessary sense of control. A simple act such as taking a seat, as opposed to standing over a partially-dressed mother during an exam can lessen her fear and anxiety. Avoidance of loud directives "Push!", "Relax!" can create a more calming birthing atmosphere. Minimizing genital exposure, especially in the company of people present in the delivery room, may lessen the feelings of re-victimization.²³

THREE PRACTICES TO IMPLEMENT

- 1** Conduct screening and follow up assessment for all major sources of stress. The ACEs can be assessed along with brief, validated tools for detecting substance abuse, depression, and interpersonal violence.
- 2** Work with the woman to identify the child birth experiences that may trigger a post-traumatic stress response.
- 3** Refer women for treatment and / or help her to mobilize supports and resources to address any alterable risk factors.

CONCLUSION

Obstetric providers can work with a pregnant mother who has experienced all types of trauma, especially sexual abuse, to minimize current stressors, to identify

unexpected triggers and to empower the woman with knowledge and control so as to avoid re-traumatization and an unpleasant birth experience.

REFERENCES AND RESOURCES

- 1 Zero to Six Collaborative Group, National Child Traumatic Stress Network. (2010). *Early childhood trauma*. Los Angeles, CA & Durham, NC: National Center for Child Traumatic Stress.
- 2 Hodas, G. R. (2006). Responding to childhood trauma: the promise and practice of trauma informed care. National Association of State Mental Health Program Directors. Retrieved from <http://www.nasmhpd.org/docs/publications/docs/2006/Responding%20to%20Childhood%20Trauma%20-%20Hodas.pdf>.



- 3 Hodas, G. R. (2006). Responding to childhood trauma: the promise and practice of trauma informed care. National Association of State Mental Health Program Directors. Retrieved from <http://www.nasmhpd.org/docs/publications/docs/2006/Responding%20to%20Childhood%20Trauma%20-%20Hodas.pdf>.
- 4 Anda, R. F., Dong, M., Brown, D. W., Felitti, V. J., Giles, W. H., Perry, G. S., Valerie, E. J., Dube, S. R. (2009). The relationship of adverse childhood experiences to a history of premature death of family members. *BioMed Central Public Health*, 106(9). doi: 10.1186/1471-2458-9-106
- 5 Shonkoff, J. P., Garner, A. S., The Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, and Section on Developmental and Behavioral Pediatrics. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics*, 129(1), 232-246.
- 6 Paul, A. M. (2011). *Origins: How the nine months before birth shape the rest of our lives*. New York, NY: Free Press.
- 7 Shonkoff, J. P., Garner, A. S., The Committee of Psychosocial Aspects of Child and Family Health. (2012). The Lifelong Effects of Early Childhood Adversity and Toxic Stress. *Pediatrics*, 129, 232-246. doi:10.1542/peds.2011-2663
- 8 Gluckman, P. D., Hanson, M. A., Cooper, C., Thornberg, K. L. (2008). Effect of in utero and early-life conditions on adult health and disease. *New England Journal of Medicine*, 359(1), 61–73.
- 9 Shonkoff, J. P., Boyce, W. T., McEwen, B. S. (2009). Neuroscience, molecular biology, and the childhood roots of health disparities: Building a new framework for health promotion and disease prevention. *Journal of the American Medical Association*, 301(21), 2252–2259.
- 10 Ellison, P. T. (2010). Fetal programming and fetal psychology. *Infant and Child Development*, 19(1), 6-20. doi: 10.1002/icd.649
- 11 White, A. (2014). Responding to prenatal disclosure of past sexual abuse. *Obstetrics & Gynecology*, 123(6), 1344–7.
- 12 Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M.P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine*, 14(4), 245-258.
- 13 Meltzer-Brody, S., Hartmann, K., Miller, W. C., Scott, J., Garrett, J., Davidson, J. (2004). A brief screening instrument to detect post-traumatic stress disorder in outpatient gynecology. *Obstetrics and Gynecology*, 104(4), 770-776. doi: 10.1097/01.AOG.0000140683.43272.85
- 14 White, A. (2014). Responding to prenatal disclosure of past sexual abuse. *Obstetrics & Gynecology*, 123(6), 1344–7.
- 15 White, A. (2014). Responding to prenatal disclosure of past sexual abuse. *Obstetrics & Gynecology*, 123(6), 1344–7.
- 16 Duckworth, M. P., Follette, V. M. (Eds.). (2011). *Re-traumatization: Assessment, treatment, and prevention*. New York, NY: Routledge.
- 17 Soet, J. E., Brack, G. A., Dilorio, C. (2003). Prevalence and predictors of women's experience of psychological trauma during childbirth. *Birth*, 30(1), 36-46.
- 18 Seng, J. S., Low, L. K., Sperlich, M., Ronis, D. L., Muzik, M., Liberzon, I. (2009). Prevalence, trauma history, and risk for post-traumatic stress disorder among nulliparous women in maternity care. *Obstetrics & Gynecology*, 114(4), 839-847. doi: 10.1097/AOG.0b013e3181b8f8a2
- 19 White, A. (2014). Responding to prenatal disclosure of past sexual abuse. *Obstetrics & Gynecology*, 123(6), 1344–7.
- 20 White, A. (2014). Responding to prenatal disclosure of past sexual abuse. *Obstetrics & Gynecology*, 123(6), 1344–7.
- 21 Seng, J. S., Sperlich, M., Low, L. K., Ronis, D. L., Muzik, M., Liberzon, I. (2013). Childhood abuse history, post-traumatic stress, postpartum mental health, and bonding: a prospective cohort study. *Journal of Midwifery Women's Health*, 58(1), 57-68. doi: 10.1111/j.1542-2011.2012.00237.x
- 22 White, A. (2014). Responding to prenatal disclosure of past sexual abuse. *Obstetrics & Gynecology*, 123(6), 1344–7.
- 23 White, A. (2014). Responding to prenatal disclosure of past sexual abuse. *Obstetrics & Gynecology*, 123(6), 1344–7.

