

Hormones: How Do They Affect Anxiety in Women?

It is well known that, compared to men, women are more prone to develop anxiety disorders and depression. One factor that may contribute to the increased risk of anxiety in women is biology, particularly the constant fluctuations in reproductive hormones that women experience until after menopause.

What is known about hormones and how they can impact a woman's life? Understanding the effects of hormones on anxiety disorders can help women have a more informed discussion of treatment and care with their health care providers.

Do monthly changes throughout the menstrual cycle affect anxiety disorders?

Research suggests that obsessive-compulsive disorder (OCD) seems to worsen premenstrually, but panic disorder does not. Not enough is known about the effects of the menstrual cycle on social anxiety, posttraumatic stress disorder (PTSD), phobias or generalized anxiety to suggest a relationship. Women with premenstrual mood disorder (PMD) may experience complete relief of anxiety symptoms during the first two weeks after onset of menses.

Will the symptoms related to my anxiety disorder be affected by pregnancy?

During pregnancy, levels of many hormones rise steadily. Unfortunately, little is known about how these hormone changes during pregnancy affect women with anxiety disorders. There is evidence that many women with panic-type anxiety have a reduction in panic symptoms during pregnancy. This may occur because progesterone—which rises greatly during pregnancy—has breakdown products that have effects similar to benzodiazepine medications like clonazepam and diazepam.

The hormones oxytocin and prolactin have been shown to have anti-anxiety effects in animals. These hormones may help reduce panic anxiety during pregnancy. However, other hormonal changes during pregnancy, e.g., possible increases in androgen hormones, may contribute to a worsening of

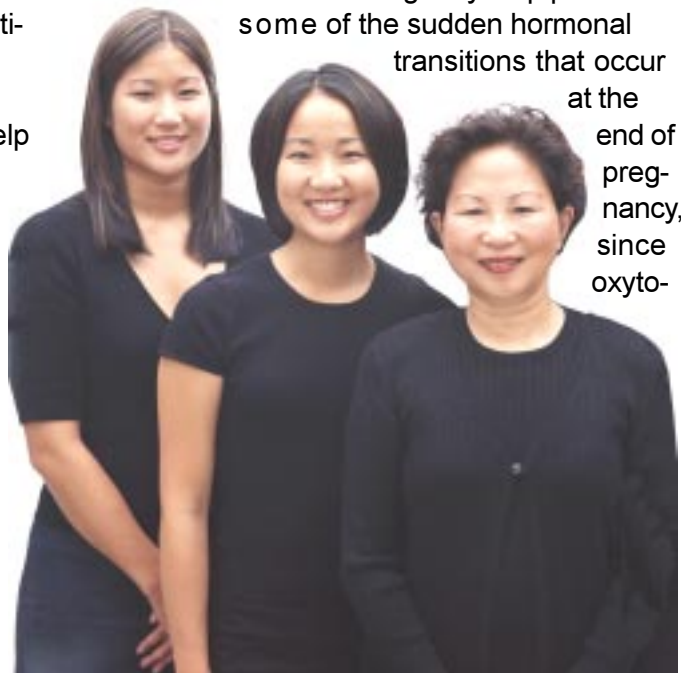
OCD symptoms that some women experience.

Although these hormone changes occur gradually during pregnancy, they reverse very suddenly after delivery. This abrupt drop likely contributes to postpartum worsening of anxiety and depression in some. Although pregnancy may provide some relief of panic-type anxiety, the risk of panic seems to increase after delivery.

Women who continue to experience symptoms of anxiety during pregnancy should talk to their OB/GYN about treatments.

Will breastfeeding have beneficial effects on anxiety?

Breastfeeding may help prevent some of the sudden hormonal transitions that occur at the end of pregnancy, since oxyto-



cin and prolactin continue to be released. If the frequency of breastfeeding decreases gradually over time, the drop in oxytocin and prolactin for the mother will also be more gradual.

Studies have shown that women who breastfeed have reduced hormonal and nervous system reactions to acute stress. There have also been reports that breastfeeding may reduce anxiety symptoms for some women, but clearly other women continue to have anxiety. High levels of anxiety postpartum can make breastfeeding difficult because anxiety and stress suppress the release of oxytocin, a hormone needed for milk release.

How does menopause affect anxiety disorders?
After age 50, women are no longer at the same two-fold increased risk of developing an anxiety disorder. However, there has been little study of the effects of menopause on anxiety or why women might experience this reduced risk.

There seems to be variations among individuals in how perimenopause and menopause affect anxiety symptoms. During perimenopause, the three to seven year transition period between regular menstrual cycling and the last menstrual period, hormone levels can be very erratic, sometimes reaching levels much higher than those experienced before this period. This

makes it difficult to figure out the role of hormones in any symptom changes during perimenopause.

Women who do experience greater anxiety symptoms should talk with their health care provider.

Do hormonal medications affect anxiety disorders?

Symptoms related to anxiety disorders do not appear to improve or worsen with any type of hormonal contraception, e.g., birth control pills. Estrogen replacement after menopause has been shown to reduce hormonal and nervous system responses to stress. In addition, estrogen therapy has been shown to reduce symptoms of perimenopausal depression.

These studies suggest that estrogen treatment may be helpful for anxiety during perimenopause or menopause, but no studies have examined the effect of estrogen or progesterone replacement on anxiety disorder symptoms.

What other hormones can affect anxiety disorders?

High levels of thyroid hormones can cause panic attacks, tremors, insomnia, palpitations, and other symptoms of anxiety. Overactivity of the thyroid gland, or hyperthyroidism, is a well-known cause of anxiety. Women are at greater risk of thyroid illness than men, partly because 10 to 20 percent of women have "anti-thyroid" antibodies circulating in their bloodstream that have the potential to cause hyperthyroidism. Usually, these antibodies do not cause a problem. However, if women do have

anti-thyroid antibodies, postpartum is a time of increased risk for autoimmune hyperthyroidism. Women with thyroid conditions who have an anxiety disorder or exhibit symptoms of anxiety should discuss these with their doctor.

Although the details are still unclear on how hormones affect anxiety disorders in women, the early evidence does indicate that connections do exist. Further study in this area of anxiety disorders research will yield more answers over time. Until then, women at every stage of life should discuss their concerns with their OB/GYN and other health care providers to ensure proper treatment.

For more information on women and anxiety, visit the ADAA Women's Initiative at www.adaa.org.

This article, written by Margaret Altemus, M.D., Weill Medical College, Cornell University, New York, is reprinted from the Anxiety Disorders Association's bimonthly newsletter, the *Reporter*. If you would like to subscribe, please visit our website at www.adaa.org, click on "ADAA Membership" and go to "Consumer Membership," or call ADAA at 240-485-1001.

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