## **Ovarian Changes and Effect on Mood**

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Carolyn says, "I don't know whether I have PMS or not. Every month I get more depressed and angry. I am screaming at my family. I'm even depressed at work, and it's obvious. My husband thinks that I 'have it.' The last two months, before my period my memory just left me. I forget where I put things. While driving I forget where I'm going." She has been noticing weight gain, feeling bloated, and having breast tenderness just before she gets her period. "Food cravings are a problem in general for me, and before my period I just can't stay away from chocolate and desserts."

Dolores reports, "I never had problems with PMS before I had my son. It's been getting worse the past few years." She describes having a lot of anxiety, with occasional feelings of panic. She sometimes gets these panic attacks in grocery stores, crossing bridges, and being in open spaces—always when she is by herself. Her impulse is to run in order to get away from these feelings. The attacks are more frequent and more intense just before she gets her periods. She is easily distracted, and she tends to "take things personally" when things happen around her. During the past year she has had a number of hot flushes, for the first time, and her periods are not so regular as they used to be. "My friends tell me that I'm just not like myself any more. They tell me that I am not as outgoing as I have been, and they worry about me."

Harriett had her first child six weeks ago. The delivery was uneventful. She describes herself as being OK during pregnancy, with her moods being stable and positive. Since giving birth, however, she has been experiencing many crying spells and being fearful of hurting the baby or doing something wrong. She worries about whether she will be a good mother. She is not getting enough sleep, since she breast-feeds the child several times during the night. She says, "I feel like my world is caving in. I'm just not able to function. My husband is paying attention to the baby than he is to me. I don't want to go out of the house. I have always been a social person and upbeat. I don't understand what's happening to me."

These three vignettes show that during your ovarian life span there are three times when you are most vulnerable to experiencing difficulties with depression and anxiety. These occur in accordance with ovarian-related conditions—PMS, perimenopause, and postpartum. Two additional ovarian-related conditions—pregnancy and postmenopause—have significantly less chance of bringing on depression and anxiety. Postpartum depression or anxiety, however, is quite prevalent. This is a time when the ovarian hormones can fluctuate rapidly and erratically. The more your ovarian hormones

fluctuate the more you are likely to have depression and anxiety interfere with your normal activities.

During PMS, perimenopause, and postpartum, your levels of estrogen, progesterone, and testosterone change both in rate and level. These changes result in corresponding changes in your brain chemistry, affecting your mood, thinking, and behavior. During pregnancy your ovarian hormones are three times higher than normal for you, and during postmenopause they are the lowest, unless you are on hormone-replacement therapy. During both pregnancy and postmenopause your ovarian hormones are the most stable, consistently high or low, and they have the least likelihood of presenting you with mood alterations such as depression or anxiety.

With regard to PMS and perimenopause there are three patterns of experiencing depression or anxiety:

- Your depression and anxiety are not related directly to your menstrual cycle and are present almost all the time. This condition may require that you receive psychotherapeutic and medical treatment.
- The depression and anxiety symptoms occur in a rhythmic, recurrent fashion during the luteal phase of your cycle. This pattern can appear both during PMS and perimenopause.
- The mood disorder of depression or anxiety becomes exacerbated when the ovarian hormones fluctuate, such as they do in PMS and perimenopause.

The rhythms of the menstrual cycle have a marked connection to your emotional state. The risk for developing mood changes or a mood disorder that requires treatment intensifies as your cycle changes and your ovaries age. PMS symptoms commonly becomes more intensified in the late 30s to mid 40s, often accompanied by new onset of depression and anxiety. The link seems to be related to the instability of ovarian hormone production, which affects brain neurotransmitters, resulting in a destabilization of mood-regulating mechanisms. When the serotonin level lowers within your brain as a result of ovarian-hormone changes during your menstrual cycle, you are more vulnerable to developing depressive and anxiety symptoms. Declining estrogen during mid-life, corresponding to perimenopause, seems to be correlated with higher vulnerability to depression and anxiety disorders among women.

Your experiences during mid-life are likely to be the most stressful of any time in your development other than puberty. During puberty hormones emerge as a significant determiner of your sense of well being, without your having experiences with which to compare this new reality. The appearance of secondary sex characteristics brings excitement, embarrassment, and concerns about beginning womanhood while others may be relating to you as if you were still a child. Being propelled into sexuality, menstruation, and reproductive capability can generate an array of emotional reactions. During your mid 30s to mid 40s the factors that put pressure on you are decidedly

different. You may be struggling with teenagers or young children, wondering whether you really want to have children. You may be coping with changes in your relationship with a "significant other." You may be "topped out" in your career or are returning to work or school. It is not uncommon to reflect on your mortality since you are aware of no longer being "bulletproof." In addition, you may be self conscious about changes in your own body, such as wrinkles, sagging, weight gain, loss of stamina, and change in the "youthful look" to one of maturity. When you put this all together, you can see how your vulnerability to anxiety and depression is highest at this age.

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