

Public Lecture by Dr. Barbara L. Parry, M.D.
Hormonal Basis of Mood Disorders in Women
December 5, 2001 at 6:00 p.m. in the Garren Auditorium, Basic Science Building
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Women have twice the incidence of depression compared with men. They are prone to develop depressive episodes at times of reproductive hormonal change at puberty, with use of oral contraceptives, during the premenstrual phase of the menstrual cycle, during pregnancy or the postpartum period and during the peri-menopausal years. These effects may be mediated by the modulating effects of estrogen and progesterone on neurotransmitter (chemical), neuroendocrine (hormonal) or circadian (regulatory) systems. The focus of this presentation will be on the circadian system: In animals, estrogen advances circadian rhythms and increases their amplitude. Progesterone antagonizes these effects. The changing levels of these hormones during the reproductive cycle may destabilize the normal synchrony (timing) of biological rhythms and thereby result in mood disturbances.

In women with premenstrual dysphoric disorder, the nocturnal rhythm of melatonin, one of the best markers for the circadian system in humans, is blunted, and exhibits an abnormal response to light in both magnitude and direction compared with that of healthy control subjects. Sleep and light treatments, which help to resynchronize disturbances in the timing of underlying circadian rhythms, has the potential to improve mood in these patients.

In pregnancy or postpartum depression, the dramatic change of reproductive hormones during pregnancy or their precipitous decline after delivery may precipitate mood disorders in predisposed women. Sleep and light treatments may offer benefit particularly in those women who wish to avoid using medication because of unknown potential long-term adverse effects on the fetus (during pregnancy) or on the infant postpartum (if breast-feeding).

During the peri-menopausal years, the change in reproductive hormones also may precipitate mood disturbances in some women. Estrogen and/or progesterone replacement therapy can improve chemical, hormonal and biological rhythm function linked to mood, behavioral and sleep changes.

If left untreated these reproductively-related depressive symptoms may develop into major depressive episodes, which argues for their early recognition and treatment.