



# BRIGHT LIGHT THERAPY AND POSTPARTUM DEPRESSION

by Regina Patrick RPSGT

**M**any women experience an episode of postpartum depression that manifests within the first six months after delivering a baby. Often antidepressant drugs are used to counter symptoms which, if left untreated, can last as long as one year. However, a nursing mother may not be willing to take antidepressant drugs for fear of harming her infant. This can be problematic if the mother's depression impairs her ability to care for her infant. As a result, researchers have been searching for other options for treating postpartum depression (PPD). In various studies, the use of bright light therapy – typically used for seasonal affective disorder and major depression – has had encouraging results in alleviating symptoms and may offer mothers affected by PPD another treatment option.

**Bright light therapy for PPD may result from its ability to stabilize circadian rhythms**

Postpartum depression can be mild, moderate, or severe. The mild form of depression is commonly called "baby blues" and the

severe form is called postpartum psychosis.

An estimated 40% – 85% of women experience "baby blues." Symptoms of baby blues are rapidly fluctuating moods, tearfulness, irritability, or anxiety that lasts for several days. These symptoms peak on the fourth or fifth day after delivery but usually resolve by the second postpartum week. A mother suffering from baby blues is able to care for her child despite her symptoms.

About 10% and 20% of women experience the more moderate form of postpartum depression. The onset of symptoms is more insidious than that of baby blues but is usually apparent by the third postpartum month. Moderate symptoms of postpartum depression hinder a mother's ability to care for her infant. She may have a depressed mood; insomnia; fatigue; appetite changes; tearfulness; loss of interest in things formerly enjoyed; suicidal thoughts or recurrent thoughts of death; obsessive thoughts concerning her infant's health or well-being; guilt or shame about negative or ambivalent feelings toward her infant; or anxiety about her ability to care effectively for her child or herself.

Postpartum psychosis occurs rarely but is very serious when it does occur. It affects 0.1% to 0.2% of women. The onset of symptoms can appear as soon as the second postpartum day but usually appears within the first two postpartum weeks. A woman with postpartum psychosis may fluctuate rapidly between manic and depressed moods; be restless, irritable, or highly anxious; have disorganized behavior; have delusional beliefs concerning her infant such as the child being defective or Satan in disguise; or have audi-

tory hallucinations that instruct her to harm herself or her infant. If left untreated, a mother suffering postpartum psychosis is at high risk of committing suicide or infanticide.

Scientists are not sure why PPD occurs. Various etiological factors have been suggested as scientists endeavor to understand this disorder. A few factors are listed below.

### *Low levels of estrogen*

Various studies demonstrate that a woman recovers from PPD more quickly when she is treated with estradiol (a form of estrogen) than when she is treated with a placebo, suggesting that low levels of estrogen may somehow play a role in depression.

### *Low levels of the amino acid tryptophan*

People with major depression disorder are known to have lower-than-normal blood levels of tryptophan. Recently, scientists have found that women with PPD also have low tryptophan levels. Decreased amounts of tryptophan may set the stage for depression since it is a precursor of the neurotransmitter serotonin which plays a role in mood.

### *Low levels of serotonin*

Some studies have found that depressed postpartum women have 50% less platelet serotonin than non-depressed healthy women. Platelet serotonin and brain serotonin levels may be linked. In other words, reduced amounts of serotonin in the brain may occur when there are decreased amounts of serotonin in blood platelets. Since serotonin plays a role in mood, decreased amounts of serotonin available in the brain after childbirth may result in a person suffering from PPD.

### *Psychosocial stressors*

Psychosocial stressors may contribute to PPD by heightening emotional distress or by disrupting sleep. Some common psychosocial stressors are: 1) relationship problems such as a troubled marriage or lack of social support; 2) negative circumstances surrounding a child's conception such as an unwanted pregnancy; 3) unresolved feelings concerning a previous perinatal loss (e.g., miscarriage, stillbirth); 4) caring for a newborn with special health needs; or 5) a negative childbirth experience such as having to undergo a cesarean section or other unexpected painful procedure related to childbirth.

Treatment for PPD varies according to its severity. For women suffering from baby blues, no treatment is usually needed except for reassurance that it is normal and its duration is short. Treatment for women with more moderate symptoms may consist of psychotherapy; support group therapy; pharmacologi-

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cal treatment (e.g., antidepressants, anxiolytics); or electroconvulsive therapy (ECT, commonly called "shock therapy") for women who do not respond to these treatments. Women with postpartum psychosis usually require inpatient hospitalization. In that setting, a woman may be prescribed a mood stabilizer drug such as lithium (women with postpartum psychosis tend to be bipolar); antidepressant drugs; or ECT.

Antidepressant drugs can have adverse effects such as nausea, anxiety, insomnia, anorexia, weight loss, and tremors. An overdose of antidepressant drugs (e.g., tricyclic antidepressants [TCAs]) over-activates the serotonergic nervous system and results in various physiological responses. Mild toxicity is manifested by tachycardia (fast heart rate), shivering, sweating, dilated pupils, intermittent tremors or twitching, myoclonus, and overactive reflexes. Moderate toxicity may involve hyperactive bowel sounds; hypertension; high body temperature of 104° Fahrenheit or greater; overactive reflexes or clonus in the lower extremities; and mental status changes such as hypervigilance and agitation. Life-threatening toxicity may involve agitated delirium; muscular rigidity; body temperature greater than 106° Fahrenheit; metabolic acidosis, rhabdomyolysis (disintegration of muscle tissue); seizures; renal failure; and widespread intravascular coagulation.

Antidepressant medication ingested through breastmilk potentially puts an infant at risk of suffering these adverse effects. For this reason, researchers have investigated the safety and efficacy of alternative treatments for PPD. Bright light therapy is of special interest since it is a non-drug therapy that alleviates symptoms in people who have seasonal affective disorder (SAD)

or major depressive disorder (MDD). Bright light therapy involves being exposed to high intensity light emitted by specialized light bulbs in a light box. A person sits before the light box at a specific time during the day for a short period of time each day.

Various studies by Maria Corral of the University of British Columbia in Vancouver, Canada indicate that bright light therapy can relieve symptoms in PPD. In a 2000 case study, Corral used bright light therapy to treat two women with PPD who were breastfeeding and did not want to take antidepressant medications. The women were exposed to 10,000 lux (about twice the intensity of sunlight on a bright sunny day) for 30 minutes between 7:00 a.m. – 9:00 a.m. every day for several weeks. The severity of depression was measured on the 29-item Hamilton Rating Scale for Depression. At the outset, one woman had a score of 29; the other a score of 28. After 14 treatment days (for woman #1) and 10 treatment days (for woman #2), their scores fell to 18 and 10, respectively. After 4 weeks of treatment, their scores had further dropped to 11 and 12, respectively. Both women subjectively felt their mood had greatly improved.

A later Corral study reported at the 2002 World Congress of Psychiatry, was placebo-controlled. It involved 18 women with PPD who were treated by either 10,000 lux or 600 lux red light (i.e., control) for 8 weeks. Depression symptoms fell on average by 40% in both groups. At the time, Corral surmised that both groups improved equally either because of the placebo effect, or because red light itself has some ability to relieve depression, or simply because during the time the women sat before the light box was a guaranteed 30-minute period of quiet time free of responsibility which the women reported as therapeutic in itself. In 2007, Corral repeated the placebo-controlled study with 15 women and had similar results.

Many studies indicate that it is safe for a depressed nursing mother to take antidepressants since very low amounts are excreted in breastmilk. However, there are a few reports of infants suffering serotonin toxicity due to ingesting antidepressant medication from their mother's breastmilk. As a result, depressed postpartum nursing mothers may feel torn between either 1) taking the medication and risking harm to her infant; 2) doing without the medication – therefore struggling with depression – so that she can feel safe breastfeeding her infant; or 3) stopping breastfeeding so that she can take the medication. Bright light therapy avoids these conflicting choices since it is a non-drug therapy.

The therapeutic effects of bright light therapy for PPD may result from its ability to stabilize circadian rhythms that have become disrupted due to postpartum changes in the levels of reproductive hormones. (Some research indicates that improper levels of estrogen can result in an advanced-phase rhythm and improper levels of progesterone can result in a delayed-phase rhythm.) However, more information is needed to determine how best to use bright light therapy for PPD. A rare adverse effect of bright light therapy is nausea. Scientists are not sure why this occurs but note that decreasing the length of exposure can ameliorate this adverse effect. Research on the postpartum use of bright light therapy continues with the hope that it will soon offer mothers unable or unwilling to take antidepressant medications a treatment option that can spare them the agony of PPD.

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