

Abstracts on Bulimia

Lam RW, Lee SK, Tam EM, Grewal A, Yatham LN.

An open trial of light therapy for women with seasonal affective disorder and comorbid bulimia nervosa. *J Clin Psychiatry.* 2001 Mar;62(3):164-8.

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OBJECTIVE: Many patients with seasonal affective disorder (SAD) have dysfunctional eating behaviors. Conversely, many women with bulimia nervosa have marked winter worsening of mood and bulimic symptoms. Controlled studies of light therapy in SAD and in bulimia nervosa have shown beneficial effects on mood and binge/purge symptoms. We explored the clinical use of light therapy in women with SAD who also had comorbid bulimia nervosa. **METHOD:** Twenty-two female patients diagnosed using DSM-IV criteria with both bulimia nervosa and major depressive disorder with a seasonal (winter) pattern were treated with an open design, 4-week trial of light therapy (10,000 lux fluorescent light box with an ultraviolet filter, 30 to 60 minutes per day in the early morning). Patients were assessed before and after treatment with depression scales and with binge/purge diaries. **RESULTS:** Light therapy resulted in significant improvement in mood, with a mean 56% reduction in 29-item Hamilton Rating Scale for Depression scores following treatment ($p < .001$). The frequency of binges and purges per week also significantly decreased ($p < .001$) from baseline by a mean of 46% and 36%, respectively. Two (9%) of 22 patients became abstinent of binge/purge episodes, compared with 10 (45%) of 22 patients who met criteria for remission of depressive symptoms. The light therapy was well tolerated by patients. **CONCLUSION:** These results suggest that therapeutic effects of light therapy on mood and bulimic symptoms in patients with SAD and comorbid bulimia nervosa are sustained over at least 4 weeks. However, the low abstinence rate in bulimic symptoms indicates that light therapy may be most effectively used as an adjunctive treatment to medications and/or psychotherapy for bulimia nervosa.

Braun DL, Sunday SR, Fornari VM, Halmi KA.

Bright light therapy decreases winter binge frequency in women with bulimia nervosa: a double-blind, placebo-controlled study. *Compr Psychiatry.* 1999 Nov-Dec;40(6):442-8

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The study objective was to determine the effect of winter bright light therapy on binge and purge frequencies and depressive symptoms in subjects with bulimia nervosa. Thirty-four female bulimic outpatients were treated with either 10,000 lux bright white light or 50 lux dim red light (placebo control) during the winter months. In this double-blind study, the placebo group ($n = 18$) and the bright light group ($n = 16$) were matched for age, degree of seasonality (measured by the Seasonal Patterns Assessment Questionnaire [SPAQ]), and concurrent depression (measured by Structured Clinical Interview for DSM-IV [SCID]). Three weeks of baseline data collection were followed by 3 weeks of half-hour daily morning light treatment and 2 weeks of follow-up evaluation. There was a significant light-treatment by time interaction (Wilks' $\lambda = .81$, $F(2,28) = 3.31$, $P = .05$). The mean binge frequency decreased significantly more from baseline to the end of treatment for the bright light group ($F(1,29) = 6.41$, $P = .017$) than for the placebo group. The level of depression (measured by daily Beck Depression Inventory [BDI] scores) did not significantly differ between the groups during any phase, and neither depression nor seasonality affected the response to light treatment. In this double-blind study, bulimic women who received 3 weeks of winter bright light treatment reported a reduced binge frequency between baseline and the active treatment period in comparison to subjects receiving dim red light.

Ash JB, Piazza E, Anderson JL.

Light therapy in the clinical management of an eating-disordered adolescent with winter exacerbation. *Int J Eat Disord.* 1998 Jan;23(1):93-7.

Department of Clinical Psychology, Boston University, MA 02115, USA.

A 17-year-old female followed for atypical eating disorder characterized by restriction was noted to worsen medically during winter months in each of 2 consecutive years. A trial of bright light therapy was initiated during the second admission. Within days of light treatment, the patient showed signs of clinical improvement in mood and eating. Within 1 month of light treatment, the patient's depression ratings decreased from a Beck Depression Inventory (BDI) score of 37 (severe) to 17 (mild/moderate). In addition, her eating improved moderately as revealed both by a slight decrease in Eating Attitudes Test (EAT) score (78 to 64) and by significant improvements in dietary intake and medical status. The present report suggests that light therapy may be a useful adjunct in the clinical management of eating-disordered youth who present with seasonal patterns of exacerbation. Controlled studies of light treatment in younger eating disorder populations are warranted.

Blouin AG, Blouin JH, Iversen H, Carter J, Goldstein C, Goldfield G, Perez E.

Light therapy in bulimia nervosa: a double-blind, placebo-controlled study. *Psychiatry Res.* 1996 Feb 28;60(1):1-9.

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The effects of light therapy on food intake and affective symptoms of bulimia nervosa (BN) were examined in a double-blind study. Eighteen women who met DSM-III-R criteria for BN were randomly assigned to receive either 2500 lux of bright light (experimental condition) or < 500 lux of dim light (placebo condition) daily in the early evening for a 1-week period. The Structured Interview Guide for the Hamilton Depression Rating Scale-Seasonal Affective Disorder Version (SIGH-SAD), the Beck Depression Inventory (BDI), and the Bulimic Symptoms Checklist were administered to subjects before light exposure, after 1 week of light exposure, and after 7 days of withdrawal of light exposure. Throughout the study, the Profile of Mood States and the Daily Binge Record were completed daily. Compared with subjects in the dim light condition, subjects in the bright light condition showed a significant improvement in depressed mood during light exposure, as measured by both the BDI and the SIGH-SAD. There was a return to pretreatment levels of depression after withdrawal of light exposure. No changes in depression were noted in the placebo group. No effect of light therapy was found on the frequency, size, or content of binge-eating episodes. The results are discussed in terms of the physiological processes associated with light therapy and seasonal affective disorder that may underlie the affective and food intake symptoms of BN.

Gruber NP, Dilsaver SC.

Bulimia and anorexia nervosa in winter depression: lifetime rates in a clinical sample. *J Psychiatry Neurosci.* 1996 Jan;21(1):9-12.

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Symptoms of an eating disorder (hyperphagia, carbohydrate craving, and weight gain) are characteristic of wintertime depression. Recent findings suggest that the severity of bulimia nervosa peaks during fall and winter months, and that persons with this disorder respond to treatment with bright artificial light. However, the rates of eating disorders among patients presenting for the treatment of winter depression are unknown. This study was undertaken to determine these rates among 47 patients meeting the DSM-III-R criteria for major depression with a seasonal pattern. All were evaluated using standard clinical interviews and the Structured Clinical Interview for DSM-III-R. Twelve (25.5%) patients met the DSM-III-R criteria for an eating disorder. Eleven patients had onset of mood disorder during childhood or adolescence. The eating disorder followed the onset of the mood disorder. Clinicians should inquire about current and past symptoms of eating disorders when evaluating patients with winter depression.

Lam RW, Goldner EM, Solyom L, Remick RA.

A controlled study of light therapy for bulimia nervosa. *Am J Psychiatry.* 1994 May;151(5):744-50.

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OBJECTIVE: Winter worsening of mood and eating symptoms, similar to that of seasonal affective disorder, has recently been reported in patients with bulimia nervosa. To assess the effectiveness of light therapy for treatment of bulimia nervosa, the authors conducted a study of light therapy during winter comparing an active (bright white light) condition to a control (dim red light) condition in bulimic patients who were not selected for a seasonal pattern of bulimia. **METHOD:** After a 2-week baseline assessment, 17 female patients with a DSM-III-R diagnosis of bulimia nervosa underwent early morning light treatment with 2 weeks of bright white light exposure (10,000 lux for 30 min/day) and 2 weeks of dim red light exposure (500 lux for 30 min/day) in a counterbalanced, crossover design. Outcome measures included daily binge/purge diaries, objective and subjective measures of mood, and the Eating Attitudes Test. Expectation of response for each condition was also assessed before treatment. **RESULTS:** Although pretreatment expectation ratings were similar for each condition, the bright white light condition was superior to the dim red light condition for all mood and eating outcome measures. Patients with "seasonal" bulimia (N = 7) had significantly greater improvement after the bright white light treatment than patients with nonseasonal bulimia (N = 10). No significant order effects were noted, nor differential effects for patients taking concurrent antidepressant medications (N = 4). **CONCLUSIONS:** These data suggest that bright white light therapy is an effective short-term treatment for both mood and eating disturbances associated with bulimia nervosa, although the therapeutic effect may be greater in those patients with a seasonal pattern.

Blouin A, Blouin J, Aubin P, Carter J, Goldstein C, Boyer H, Perez E.

Seasonal patterns of bulimia nervosa. Am J Psychiatry. 1992 Jan;149(1):73-81.

Department of Psychiatry, Ottawa Civic Hospital, Ont., Canada.

OBJECTIVE: The aim of this research was to determine whether a seasonal pattern to symptoms of bulimia nervosa could be identified. **METHOD:** In study 1, seasonal patterns of binge-purge frequency and mood were compared between 31 patients with bulimia nervosa and 31 age-matched normal comparison subjects, using a modified (to include binge and purge items) version of the Seasonal Pattern Assessment Questionnaire. Study 2 involved a cross-sectional examination of binge and purge frequency and of depressive symptoms in 197 patients with bulimia nervosa assessed at various months of the year over a 4-year period. **RESULTS:** In both the retrospective and cross-sectional studies, binge behavior was found to be highly associated with photoperiod. According to the modified Seasonal Pattern Assessment Questionnaire, purging behavior and mood also varied seasonally among patients with bulimia nervosa. However, purging behavior and severity of depression did not appear to be related to photoperiod in the cross-sectional study. The rate of seasonal affective disorder (syndromal and subsyndromal) defined by the Seasonal Pattern Assessment Questionnaire was higher among the bulimic group than the comparison subjects, but not as high as has been reported for depression in bulimia nervosa. **CONCLUSIONS:** The results strongly support the interpretation that symptoms of bulimia nervosa primarily associated with food intake patterns are influenced by seasonal variation, and this effect may be mediated by light availability.

Eastman CI; Boulos Z; Terman M; Campbell SS; Dijk DJ; Lewy AJ.

Light treatment for sleep disorders: consensus report. VI. Shift work. J Biol Rhythms, 1995 Jun, 10:2, 157-64.

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The unhealthy symptoms and many deleterious consequences of shift work can be explained by a mismatch between the work-sleep schedule and the circadian rhythms. This mismatch occurs because the 24-h zeitgebers, such as the natural light-dark cycle, keep the circadian rhythms from phase shifting to align with the night-work, day sleep schedule. This is a review of studies in which the sleep schedule is shifted several hours, as in shift work, and bright light is used to try to phase shift circadian rhythms. Phase shifts can be produced in laboratory studies, when subjects are kept indoors, and faster phase shifting occurs with appropriately timed bright light than with ordinary indoor (dim) light. Bright light field studies, in which subjects live at home, show that the use of artificial nocturnal bright light combined with enforced daytime dark (sleep) periods can phase shift circadian rhythms despite exposure to the conflicting 24-h zeitgebers. So far, the only studies on the use of bright light for real shift workers have been conducted at National Aeronautical and Space Administration (NASA). In general, the bright light studies support the idea that the control of light and dark can be used to overcome many of the problems of shift work. However, despite ongoing practical applications (such as NASA), much basic research is still needed.

Horowitz TS, Cade BE, Wolfe JM, Czeisler CA.

Efficacy of bright light and sleep/darkness scheduling in alleviating circadian maladaptation to night work. Am J Physiol Endocrinol Metab 2001;281(2):E384-91.

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We tested the hypothesis that circadian adaptation to night work is best achieved by combining bright light during the night shift and scheduled sleep in darkness. Fifty-four subjects participated in a shift work simulation of 4 day and 3 night shifts followed by a 38-h constant routine (CR). Subjects received 2,500 lux (Bright Light) or 150 lux (Room Light) during night shifts and were scheduled to sleep (at home in darkened bedrooms) from 0800 to 1600 (Fixed Sleep) or ad libitum (Free Sleep). Dim light melatonin onset (DLMO) was measured before and after the night shifts. Both Fixed Sleep and Bright Light conditions significantly phase delayed DLMO. Treatments combined additively, with light leading to larger phase shifts. Free Sleep subjects who spontaneously adopted consistent sleep schedules adapted better than those who did not. Neither properly timed bright light nor fixed sleep schedules were consistently sufficient to shift the melatonin rhythm completely into the sleep episode.

Scheduling of sleep/darkness should play a major role in prescriptions for overcoming shift work-related phase misalignment.
