

This Week's Citation Classic®

Rosenthal N E, Sack D A, Gillin J C, Lewy A J, Goodwin F K, Davenport Y, Mueller P S, Newsome D A & Wehr T A. Seasonal affective disorder: a description of the syndrome and preliminary findings with light therapy. *Arch. Gen. Psychiatr.* 41:72-80, 1984. [Clinical Psychobiology Branch, Natl. Inst. Health and Natl. Inst. Mental Health, Bethesda, MD; Dept. Psychiatry, Univ. California, San Diego, CA; Depts. Psychiatry, Pharmacology, and Ophthalmology, Oregon Health Science Univ., Portland, OR; Ctr. Retinal Degeneration, Dept. Ophthalmology, Johns Hopkins Hosp. and Univ., Wilmer Inst., Baltimore, MD; and private practice, Princeton, NJ]

We described 29 patients with recurrent fall-winter depressions, and treated 11 patients with enhanced environmental lighting in a controlled crossover study. We called the syndrome seasonal affective disorder (SAD) and outlined future research directions. [The SSC[®] and the SC[®] indicate that this paper has been cited in more than 385 publications.]

A Decade of SAD and Light Therapy

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It is no coincidence that I should have been involved in the modern description and rediscovery of seasonal affective disorder (SAD) as I am rather seasonal myself—much more productive and energetic in summer than in winter. This became apparent when I emigrated from the mild climate of Johannesburg, South Africa, just south of the Tropic of Capricorn, to the northeastern US where the long summer days were a source of endless delight and the short, dark winter days brought a dreariness of spirit that was alien and mysterious.¹

Herbert E. Kern was a 63-year-old engineer who had observed in himself regular seasonal emotional cycles, which he believed might be related to seasonal variations in environmental light. He learned of the finding by Alfred J. Lewy and colleagues at the National Institute of Mental Health that nocturnal secretion of melatonin by the pineal gland in humans could be suppressed by bright environmental light.² The group had also pioneered the role of biological rhythms in cyclical mood disorders under the aegis of Thomas A. Wehr and then-Branch Chief Frederick K. Goodwin.

In the winter of 1980-1981, we admitted Kern to our unit and treated his depression with bright light. It worked. It was one of those rare

moments in clinical research. And, it was our follow-up study to confirm our success that led to this *Classic*^{*} paper.

The existence of SAD has been recognized at many centers around the world.³ A version of our original criteria was included in DSM-III-R, the standard US manual of psychiatric diagnoses. The basic clinical profile of SAD remains essentially unchanged: depressions are characterized mainly by overeating, oversleeping, and weight gain, as well as more typical depressive symptoms. Women comprise 59 percent to 94 percent of clinical samples.³ The prevalence of SAD in the adult US population has been estimated at between 1.4 percent (in Florida) and 9.7 percent (in New Hampshire).⁴ The milder, subsyndromal SAD, which also responds to light therapy, is even more widespread.

Studies have been directed towards improving the efficacy and convenience of light delivery and understanding the importance of intensity, timing, spectrum, and route of administration to the antidepressant effect.⁵ A Society for Light Therapy and Biological Rhythms has been established. The scope of light treatment is expanding to encompass problems of circadian rhythms, such as jet lag and certain sleep disorders, and possibly other psychiatric disorders as well.⁵

When we began our work over 10 years ago, many of our colleagues considered it strange and eccentric. It has been gratifying to see it enter the scientific and clinical mainstream, a realization made concrete this past year by an award from the Anna-Monika Foundation for depression research to Wehr and myself. An equally important acknowledgment comes in the form of the many reports from individuals who have benefited from having their SAD diagnosed and successfully treated. Despite the accomplishments of the field, we still do not understand the fundamental biological abnormalities in SAD or how light works.⁶ Perhaps the next decade of research will provide answers to these questions.

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3. Oren D A & Rosenthal N E. Seasonal affective disorders. (Paykel E S, ed.) *Handbook of affective disorders.* Edinburgh, Scotland: Churchill Livingstone, 1992. p. 551-67.
4. Rosen L N, Targum S D, Ternun M, Bryant M J, Hoffman H, Kasper S F, Hamovit J R, Docherty J P, Welch B & Rosenthal N E. Prevalence of seasonal affective disorder at four latitudes. *Psychiatr. Res.* 31:131-44, 1990.
5. Terman M & Terman J S. *Light therapy for winter depression: report to the depression guidelines panel.* P.H.S. Agency for Health Care Policy and Research, 1990. p. 1-26
6. Rosenthal N E & Wehr T A. Towards understanding the mechanism of action of light in seasonal affective disorder. *Pharmacopsychiatry* 25:56-60, 1992.

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