

Light Treatment and Biological Rhythms

Bulletin of the Society for Light Treatment and Biological Rhythms



Volume 2, Number 4

April 1990

SCHEDULE SET FOR ANNUAL MEETING

The Second Annual Meeting, co-sponsored by Columbia University's Psychiatry Department, Centers for Continuing Education [College of Physicians & Surgeons (for M.D.'s) and Teachers College (for psychologists)], and New York State Psychiatric Institute, takes place on 13-14 May at Columbia's Health Sciences Campus. It includes a rich set of research presentations, a consensus-building symposium on controversial clinical issues, an open committee forum (with workshops) on federal/industrial relations, and a tutorial symposium for mental health practitioners. Please plan to participate. If you have not yet registered, please submit the enclosed registration form *no later than 1 May*. You will receive travel instructions in confirmation.

Sunday, 13 May

- 08:00-09:00 Registration, coffee hour, exhibits, bookstore
- 09:00-12:00 Tutorial Symposium, exhibits, bookstore
- 10:20-10:40 Coffee, exhibits, bookstore
- 12:00-14:00 Poster Session I, luncheon buffet
- 14:30-17:30 Paper Session I
- 15:50-16:10 Refreshments, exhibits, bookstore
- 18:30-21:00 Banquet*

Monday, 14 May

- 08:30-09:00 Coffee hour, exhibits, bookstore
- 09:00-12:00 Paper Session II

- 10:20-10:40 Coffee, exhibits, bookstore
- 12:00-13:45 Poster Session II, luncheon buffet
- 14:00-15:30 Consensus Building symposium
- 15:30-15:45 Refreshments, exhibits, bookstore
- 15:45-17:45 Federal/Industrial Relations forum
- 16:15-17:15 Members' work groups*
- 16:15-17:15 Continuing Education discussion period
- 17:45-18:15 Business meeting, exhibits, bookstore

In This Issue

- Annual Meeting program 1
- George Brainard, Morris Waxler*
on Federal & Industrial Relations.....4
- Leslie Powers*
on Insurance Reimbursement.....6
- Public Information Brochure*
still in the works.....7
- Richard Wurtman*
on Jogging and Light Therapy.....7
- John Hallonquist*
on *Seasonal Affective Disorder*.....8
- Margaret Moline*
on *The Light Book*.....10
- Bulletin Board 11
- Response forms
- Annual meeting Work Groups*
- Conference Registration*
- Banquet Reservation*

Light Treatment and Biological Rhythms
Bulletin of the Society for Light Treatment and Biological Rhythms



Editor

Michael Terman, Ph.D.

Managing Editor

Martha Link

Editorial Board

Charmaine I. Eastman, Ph.D.
 Alfred J. Lewy, M.D., Ph.D.
 Norman E. Rosenthal, M.D.
 Anna Wirz-Justice, Ph.D.

Unsolicited manuscripts, letters to the editor, and Bulletin Board announcements should be submitted to Dr. Michael Terman, Editor, 722 West 168th Street, Box 50, New York NY 10032. Please submit one double-spaced hard copy and a diskette file (DOS: text or WordPerfect; Macintosh: text, Word, MacWrite, or WordPerfect). MCI Mail and BITNET files can also be received, by arrangement. Manuscripts and diskettes will not be returned.

Copyright © 1990, Society for Light Treatment and Biological Rhythms, Inc., 722 West 168th Street, Box 50, New York NY 10032. All rights reserved.

Tutorial Symposium

Lewy: Basic principles of chronobiology and their application to clinical disorders.

Sack: Chronobiological lessons from the blind

Rosenthal: Caveats and clinical pearls in the treatment of SAD.

Kripke: Treatment of major depression with bright light.

Poster Session I**

Gaddy: Variability of retinal light exposure during phototherapy.

Gerbaldo et al.: A questionnaire for light intensity preference and related behaviors in psychoses: detection of increased thresholds of discomfort to bright light in schizophrenia.

Jacobsen: Buspirone reverses winter worsening and potentiates antidepressant response.

Kasper et al.: Experience with an outpatient clinic for SAD and phototherapy.

Lilie et al.: The relation of personality to clinical outcome in SAD.

McIntyre et al.: Melatonin suppression to a dim light challenge in SAD.

Muscettola et al.: Seasonality of mood in "sunny" Italy.

Pollak et al.: Initial attempts to entrain free-running rhythms with a skeleton photoperiod.

Seggie et al.: Responses of the retinal pigmented epithelium to light and dark in depression.

Takahashi et al.: Multicenter study of SAD in Japan: a preliminary report.

Wirz-Justice et al.: A short walk can do wonders: natural light therapy of SAD.

Wurtman et al.: Seasonal weight change among overweight Boston women.

Paper Session I

T. Wehr, Chair

Bright Light Treatment of SAD

Moul et al.: Treating SAD with a light visor: a multicenter study.

Avery et al.: Is dawn simulation effective in treating winter depression?

Lahmeyer et al.: Morning light treatment of SAD.

Rafferty et al.: Does morning light prevent evening light effect? A statistical model for morning/evening crossover studies.

Phase Shifts of the Circadian System

Köhler et al.: Bright light therapy is an effective zeitgeber for the disturbed core temperature rhythm in SAD patients.

Dahl et al.: Temperature, melatonin, and TSH in SAD during a constant routine.

Eastman et al.: Bright light in the middle of the night.

Lewy et al.: Circadian phase shifting of blind and sighted people with exogenous melatonin administration: evidence for a phase response curve.

Paper Session II*D. Kripke*, Chair**Potential Mechanisms for the Etiology of SAD***Oren et al.*: Effects of L-dopa, carbidopa, and placebo on mood and eye function in SAD.*Teicher et al.*: Phototherapy, spectral EEG, and ambulatory activity rhythms in SAD.*Thompson et al.*: SAD is associated with a seasonal dysregulation of sensitivity of melatonin to suppression by light.*Remé et al.*: Ocular safety and potential hazards of light therapy.**Bright Light Effects in Non-SAD Populations***Okawa et al.*: Sleep-wake rhythm disorders and their phototherapy in aged patients with dementia.*Holsboer-Trachsler et al.*: Bright light and sleep deprivation improve cognitive psychomotor performance in major depression.*Brainard et al.*: Effects of bright illumination on plasma cortisol in normal volunteers during sustained performance.*Wehr*: Summer depression update.**Poster Session II*****Anderson et al.*: Characterizing endogenous circadian phase and amplitude before and after phototherapy in a patient with nonseasonal major depression.*Benenson*: SAD bright light treatment and concomitant radiation therapy.*Gallin et al.*: Ophthalmological evaluation of SAD patients pre- and post-light therapy.*Lam et al.*: Retinal subsensitivity to light in SAD?*Lebegue*: Seasonal aggressive mania in Australian prisoners.*Lynch et al.*: Psoralen induced melatonin secretion.*Moline et al.*: Effects of age on mood and alertness following an acute phase advance.*Norden et al.*: Serotonin and thermoregulation in SAD.*Schlager et al.*: Seasonal variation in current symptomatology among 1,870 white collar workers at 41° N latitude.*Steiner et al.*: A genetic animal model for studies of depression and disturbed circadian rhythms.*Stewart et al.*: Comparison of equal photon densities of white and green light for treatment of seasonal depression.*Young et al.*: The temporal onset of symptoms in winter depression.**Consensus Building Symposium***M. Blehar*, Chair*W. Brown, J. Stewart*, Discussants*Eastman, Terman*: Experimental controls and placebos.*Avery, Wirz-Justice*: Efficacy and treatment time of day.**Forum on Federal/Industrial Relations***G. Brainard, M. Waxler*, Chairs**Members' Work Groups**Efficacy of light therapy for SAD and S-SAD: *A. Wirz-Justice*, Chair; *D. Oren*, RecorderEfficacy of light therapy for non-SAD conditions: *D. Kripke*, Chair; *J. Gaddy*, RecorderSafety of light therapy devices: *M. Waxler*, Chair; *R. Cole*, Recorder**Continuing Education Discussion Period***R. Sack, M. Terman*, Chairs**Exhibitors**

Ambulatory Monitoring, Apollo, Medic-Light, SML Lichttechnik, Spectrum, SunBox

SLTBR welcomes the active participation of its Corporate Members in presenting technology they have developed for the market. SLTBR, however, does not endorse or specifically recommend any particular lighting product for clinical, research, or general purpose use. Furthermore, SLTBR maintains no responsibility for implicit or explicit claims for efficacy, or instructions for use, that may be contained in literature written and distributed by its Corporate Members.

Discount Bookstore (tentative selections)

Binkley, *The Clockwork Sparrow: Time, Clocks, and Calendars in Biological Organisms*; Borbély, *Secrets of Sleep*; Cohen, *Statistical Power Analysis for the Behavioral Sciences*; Daan & Gwinner, Eds., *Biological Clocks and Environmental Time*; Hyman, *The Light Book*; Kupfer, Monk, & Barchas, Eds., *Biological Rhythms and Mental Disorders*; Montplaisir & Godbout, Eds., *Sleep and Biological Rhythms*; Moore-Ede, Sulzman, & Fuller, *The Clocks That Time Us*; Moreines & McGuire, *Light Up Your Blues*; Rosenthal, *Seasons of the Mind*; Rosenthal & Blehar, Eds., *Seasonal Affective Disorders and Phototherapy*; Terman, Ed., *SLTBR 1988-90: The Complete Works*; Thompson & Silverstone, Eds., *Seasonal Affective Disorder*; Whybrow et al., *The Hibernation Response*; Wurtman & Wurtman, *Carbohydrates and Depression*; Wurtman, Baum, & Potts, Eds., *The Medical and Biological Effects of Light*.

PRESS INVITED TO ANNUAL MEETING

Members of the press are cordially invited to attend SLTBR paper sessions, symposia, and exhibits at n/c. At-cost fee for the luncheons, if desired, will be \$20/day. Please respond in advance, using letterhead, to Mr. Pat Dwyer, Center for Continuing Education, 630 West 168th Street, New York, NY 10032. Tel 212/305-3682.

*Requires separate advance registration [see forms attached].

**All posters will be mounted for viewing on both days. Presenters will be available for discussion at their posters on the day indicated.

Federal/Industrial Relations Session

The community of scientists, therapists and patients involved in light therapy for seasonal affective disorder (SAD) is facing a serious regulatory issue. According to the United States Food and Drug Administration (FDA), all SAD light therapy devices currently being marketed and used for treatment of depression are in Class III. This classification means that manufacturers cannot sell or advertise this device without pre-market approval.

To date, no manufacturer of SAD light therapy devices has received marketing approval. Thus, these devices cannot be sold legally without an explicit investigational exemption from these requirements, or an implicit investigational exemption through approval of an Institutional Review Board.

There are important implications of the Class III status of this medical device for the future availability of this device to therapists, patients, and scientists. If there is no consensus within the expert scientific/medical community that light therapy devices are safe and effective, then the marketing of these devices must be restricted to investigational purposes. This implies that scientists, therapists, and patients (and other subjects, such as normals and subsyndromals) must be enrolled in a research protocol in order to obtain these devices. If there is consensus among the community of researchers within the SLTBR about the safety and efficacy of such apparatus, then the FDA may consider reclassification so that premarket approval is not necessary.

In no case is the FDA required to follow the suggestions of the Society. It is likely, however, that the FDA will be very interested in, and may be responsive to, a formal statement from our scientific perspective. If the device is re-classified it may then be marketed as safe and effective for the claims for which consensus has been reached. Marketing for other claims would remain investigational.

The Federal/Industrial Relations Committee will conduct a session on the FDA status of SAD light therapy devices at the annual 1990 SLTBR meeting in New York. The aim of this session is to determine if there is sufficient consensus, within the scientific and medical community, on the safety and effectiveness of such devices, to petition the FDA to re-classify them so that premarket approval is not necessary.

The session will begin with short plenary lectures in which George Brainard, Ph.D. and Morris Waxler, Ph.D. will introduce the leaders of the three work groups that will aim to form consensus on the following topics: efficacy of light therapy for SAD and S-SAD, efficacy of light therapy for non-SAD conditions, and safety of light therapy devices. Each group will meet for one hour to discuss the regulatory concerns of the FDA pertaining to the group's topic.

It is critical that individuals with proper expertise in light therapy volunteer to participate in these work groups. The session will conclude with a summary statement from each work group leader to the general audience. It is essential that the conclusions reached by each work group be based on documented evidence.

By 15 June 1990 each work group will draft a summary document for review by the Federal/Industrial Relations Committee and the SLTBR Board. The reviewed summary documents will be printed in the summer issue of *LTBR*. Final drafts from each work group will be integrated into a single document and submitted to the FDA.

Each work group will have a chairperson, a recorder, 12 panelists, and up to 20 observers. Panelists must be regular (voting) members of SLTBR, and have scientific and/or clinical experience. They shall discuss the specific questions outlined below and draft a document with scientific references directly addressing these issues. Work group observers will (also) be SLTBR members (any category).

Questions to be Addressed by Scientific and Clinical Work Groups:

Group 1, on *Efficacy of Light Therapy for SAD and S-SAD*:

1. How effective is light therapy for SAD?
2. What light exposure intensities, wavelengths, and durations are necessary for effective light therapy?
3. Under what circumstances is time of day an important variable in administering light therapy?
4. What psychiatric side-effects can result from light therapy for SAD?
5. What is the role of the therapist in administering light therapy, and why is the therapist necessary?
6. What are the contraindications for light therapy of SAD?
7. How do each of the above questions apply in the case of S-SAD?

Group 2, on *Efficacy of Light Therapy for Non-SAD Conditions*:

1. How effective is light therapy for non-SAD depression?
2. How effective is light therapy for premenstrual syndrome?
3. How effective is light therapy for circadian dysfunctions, such as jet lag and shift work problems?
4. What parameters of light therapy are necessary for effective treatment of each of these conditions?
5. What contraindications are known for light therapy for non-SAD conditions?
6. What side-effects occur with light therapy for these conditions?

Group 3, on *Safety of Light Therapy Devices*:

1. What are the safety concerns about damage to a patient's skin or eyes from visible light emitted by light therapy devices?
2. What are the concerns about thermal and blue light damage to the retinal pigment epithelium?
3. What are the ultraviolet radiation safety concerns for these devices?
4. How can we minimize acute and long-term ocular damage from SAD light therapy devices?
5. What are the concerns about interactions between light therapy and drugs?

If you wish to participate as a member or observer of one of the work groups, please fax the attached registration form to George Brainard as soon as possible (*deadline: 1 May 1990*). We stress the importance in having strong input from the experienced SLTBR members in addressing the questions outlined above. It is critical that individuals with expertise in light therapy volunteer to participate. The future availability of phototherapeutic devices will depend, in part, on a responsible consensus statement from SLTBR.

George C. Brainard, Ph.D., Dept. of Neurology, Jefferson Medical College, Philadelphia PA 19107. Tel 215/955-7644; fax 215/955-5515.

Morris Waxler, Ph.D., Center for Devices and Radiological Health, 12709TwinbrookPky., Rockville, MD 20857. Tel 301/443-7110; fax 301/443-7219.

THIRD PARTY APPARATUS REIMBURSEMENT

Initial results of the Insurance Liaison Committee's fact-finding survey [*see vol.1, no.2*] are both encouraging and informative. Questionnaires have been sent to a second group of light box purchasers and an update is expected to be ready within a few months.

Approximately 30% of the respondents had applied for reimbursement for their light box purchase from their insurance carrier. Of those, almost 40% have been reimbursed. Typically, the insurer paid 80% of the purchase price, although payments ranged from 50 to 100%. At the time of the survey, a number of claims were still pending. If approved, these claims could bring the number of claims satisfactorily resolved to over 50%.

It should be noted that in some cases claims were resolved only after appeals were filed. As a rule, the claims for which reimbursement was received in-

cluded a letter from the prescribing physician and/or a copy of the actual prescription, as well as supporting documents such as research reports or journal articles. The diagnoses on these claims included "depression," "seasonal depression," and "seasonal affective disorder."

Among the reasons for denial of benefits, the following were most frequently cited: "experimental treatment," "not considered necessary durable medical equipment," and "treatment not recognized effective by the FDA."

Considerable variability was noted in carriers' reimbursement practices, both between different states and within states. Companies with inconsistent policies included Blue Cross, CIGNA, Aetna and Travellers. Inconsistencies include honoring some claims while rejecting others, and awarding different amounts for similar claims, e.g., awarding 80% reimbursement to one claimant and 100% to another in the same state.

In summary, it seems well worth applying for reimbursement from one's insurance carrier. Successful resolution is most frequently, although not always, associated with good supporting documentation. For claims which were initially denied, the survey found a precedent for successful resolution upon appeal, although not in all cases.

Documentation should include a physician's note or prescription, one of the diagnoses cited above or a similar one, and other supporting materials.

SLTBR has prepared a packet to be submitted with claims, including applicable DSM-III-R diagnostic codes [*available for \$15 for first copy, \$3 for additional copies; send check or money order payable to SLTBR in US\$ to: SLTBR Publications, Box 50, 722 West 168th St., New York NY 10032*].

Leslie Powers, M.D., 15 West 75th St., New York NY 10023. Tel 212/724-5222.

PUBLIC INFORMATION BROCHURE STILL IN THE WORKS

[Please note that the draft of the brochure (vol. 2, no. 2) is not yet approved by the Society for general dissemination. Further input, such as follows, is solicited from membership prior to finalizing the brochure.]

Dr. Morris Waxler has provided a provocative critique of the proposed SLTBR public information brochure printed in draft form in the last issue of *LTBR* (vol. 2, no. 3, pp. 6-9). He raises questions pertinent both to the brochure itself and to SLTBR's role in disseminating information and in recommending light treatment. For example, should lighting apparatus be made commercially available without prescription (as it now already is)? Might the present draft text serve to encourage inappropriate, unsupervised treatment? Does it appear to endorse products that may be marketed with wide-ranging claims — not necessarily thoroughly researched — and with insufficient instructions for their use?

Waxler suggests that cautions should be voiced about self-diagnosis and self-treatment for "subsyndromal SAD." Despite positive evidence seen in initial NIMH studies, conclusive investigations of S-SAD are still pending. Under the circumstances, should SLTBR be seen, in the brochure, as recommending that subsyndromal sufferers purchase and use the apparatus without clinical supervision? An interacting issue is the present need for SLTBR to elucidate possible contraindications and risk factors.

Several aspects of "dosing" the light should be clarified, Waxler recommends. First, the various units available produce differing light output; how should this output be specified, and by whom? Furthermore, individual responses to light levels vary; how is the optimum level for an individual to be determined? Where does the responsibility lie for monitoring and altering treatment regimens in cases where a clinician may not be in charge — with the user? with the manufacturer? with SLTBR guidelines? Who as-

sumes responsibility in event of any untoward situations arising in connection with use of the lights? What response rate should we report for light treatment of SAD and S-SAD? Absence of such information leaves the impression that light will be helpful in all cases. We might provide a range of figures for treatment efficacy of both light therapy and alternative treatments, so that users can make informed decisions — whether on their own or in clinical consultation.

While the draft brochure states that the lights are available over the counter, Waxler feels SLTBR must go further in addressing "the ethical and legal quandary posed by [such] marketing." He recommends that SLTBR "use its expertise to establish standards for safe and effective treatment regimens," and consider establishing a certification program. While these concerns go beyond the immediate public-information objective, they are directly relevant to SLTBR's proper role if the Society appears to be offering treatment guidelines. Concerning the legal status of these devices, he states that "the light therapy apparatus has been automatically classified by the FDA as a Class III medical device." Manufacturers are therefore obligated to work within FDA guidelines and approval mechanisms, both when advertising and supplying apparatus. The situation as it stands "is inherently unstable," he observes.

--Martha Link.

LETTER TO THE EDITOR Jogging and Light Therapy

Buying a pair of running shoes can be an essential step in an individual's strategy for keeping his pants from becoming too tight. It can also be part of the medical treatment program designed to decrease morbidity and mortality in a patient with juvenile diabetes. In the latter case, the patient would do well to obtain his physician's approval before taking up jogging — and buying the shoes — lest this activity precipitate a myocardial infarction. In the former case the patient might still want first to consult with

his doctor: consultations with doctors, like God and motherhood, are probably intrinsically virtuous. However, it doesn't seem necessary that society intervene in the shoe-buying process, except perhaps to enforce the requirements of truth-in-advertising. The advertising messages would be that this particular running shoe is orthopedically sound, and that people observe that jogging can be a useful adjunct in weight maintenance. The message is not that buying the shoes will prevent disease or extend life.

So also with the present crop of light therapy units. They appear to have two sets of uses — as an adjunct to therapy, under a physician's care, in a serious psychiatric disease (SAD), and as a convenience for the individual who believes that exposing himself to supplemental light makes him feel or work better. SLTBR probably should have some say in the former use: psychiatrists should be informed about this use of light, and clinically-depressed patients should be strongly discouraged from "self-medicating" with light. But it's hard to see why SLTBR needs to get involved in the latter — save to require that the units emit the light that they say they do, and that they are not likely to harm people.

Now and then someone who shouldn't be jogging will buy running shoes, start to jog, and die. Now and then someone who should be under a doctor's care will, without consultation, buy himself a light therapy unit. But the risks seem small.

Richard J. Wurtman, M.D., M.I.T. Clinical Research Center, Room E25-604, Cambridge MA 02139. Tel 617/253-6731; fax 617/253-6882.

BOOK REVIEW

Seasonal Affective Disorder

By Chris Thompson and Trevor Silverstone (London: Clinical Neuroscience Publishers, 278 pp. Available in USA from Sheridan Medical Books, 145 Palisade St., Dobbs Ferry, NY 10522, for \$39.50 plus \$2.50 postage. Also available at SLTBR's Annual Meeting bookstore at 10% discount).

This is the second edited volume on SAD published in 1989. The other, *Seasonal Affective Disorders & Phototherapy* (N. Rosenthal and M. Blehar; New York: Guilford [reviewed in vol.1, no.3]), is intended for the same readership, i.e., clinicians, neuroscientists, epidemiologists and others interested in this fascinating, rapidly expanding area of research. Thompson and Silverstone claim in the preface that their book is the first truly comprehensive monograph on SAD, a statement I find a bit presumptuous as the other volume appeared earlier and could be considered equally thorough by some readers. Chapters on epidemiology (3), the SAD syndromes, light therapy, and mechanisms (5 each) follow in that order, with a thoughtful summary by the editors. Of the 11 chapters represented from the U.K., the U.S.A., Switzerland, Canada and Ireland, only 4 also contributed to the Rosenthal and Blehar volume.

The opening chapter by Thompson is a scholarly coverage of evidence for seasonality in mood disorders in general. The author draws the conclusion that dates of illness onset are most valid. He also notes that switches from winter to summer depressive subtypes (or vice versa) seen in some patients suggest that entrainment of a circannual cycle might be a mechanism basic to both variants. Although heavy going in places and thus not an ideal first article, included are valuable guidelines for interpreting data from various types of studies. The other chapters on epidemiology present admission data indicating that mania is more common in spring and summer (Carney et al.), and prospective data that identify infradian mood cycles in the general population but which are of greater amplitude in major depressives (Eastwood and Peter). However, it is not clear whether the latter cycles are at all related to SAD as usually defined.

U.K. experiences with winter SAD confirm in general the clinical picture as described by the U.S.A. and Swiss groups; tables facilitate comparisons. With data from both self- and physician-referrals, Thompson addresses issues of whether the syndrome is manufactured, criteria for periodicity, whether SAD

fits into diagnoses such as unipolar or bipolar II affective disorder, and whether summer hypomania really exists — points also raised in other chapters. For example, Winton and Checkley report that their self-referred SAD patients include fewer bipolars as well as a lower incidence of atypical symptoms compared to U.S.A. and Swiss studies. The Swiss and New York City (NYC) groups also note the variation in percentage of bipolar II diagnoses (i.e., presence of summer hypomania) in SAD patients at different centers, which Terman et al. suggest reflects differing thresholds for assignment of the diagnosis. Of particular interest is the latter group's independent validation of the concept of SAD using the Psychiatric Epidemiology Research Interview. The NYC group also suggests that the often reported high female/male ratio in SAD may be an artifact, based on their findings of no sex bias in seasonality in the general population or in symptom severity in SAD patients. Resolution of this issue is important as sex-ratio could suggest mechanisms contributing to susceptibility to the disorder. A chapter by Wirz-Justice et al. describes the range of seasonality in the Swiss-German population, including the subsyndromal "seasonal anergy syndrome." The U.K. and U.S.A. groups report similar ranges, agreeing that winter SAD represents the extreme on a spectrum of sensitivity to seasonal change. The chapter by Rosenthal et al. provides timely updates of the NIMH experience and variants of SAD, including those with other coexisting diagnoses. Most valuable, however, is the latter group's comprehensive discussion of instruments used to screen for seasonality, and to measure severity and change in symptomatology.

Although not selected by the editors, the obvious choice for the first chapter on light therapy would have been that by the NIMH group (Rosenthal et al.), which includes a historical perspective, review of seven studies on properties of light therapy necessary for efficacy, and clinical guidelines for its use. Optimal designs for light therapy studies are also discussed as are problems in evaluating differences between responses to active and control treatments. Although there is general consensus in this volume

that treatment with bright light is effective for winter depression, the NIMH and Swiss positions that the timing of the light is relatively unimportant remains controversial, despite Terman's recent meta-analysis. In their chapter on light therapy, Terman et al. report a study in which evening treatment was less effective than treatments which included morning exposure, for which there was a positive duration-response relationship. They also present evidence that evening light may exacerbate morning symptoms and fail to normalize sleep patterns. The timing issue is further complicated by Thompson and Isaacs who report that midday augmentation with bright light was more effective than photoperiod extension with the same intensity, which itself was no more effective than dim light extension of the photoperiod. These results argue against two mechanisms for successful light therapy, namely, melatonin suppression and total photon counting, but fail to effectively address the phase-shift hypothesis which predicts that effects of morning and evening light can offset each other. Wirz-Justice et al. include valuable graphical presentations of individual case histories, and confirm a seasonal rhythm of carbohydrate consumption in SAD, peaking in the winter and suppressed by light therapy. Based on such atypical symptoms and a controversial animal model, they speculate that SAD may reflect a functional medial hypothalamic lesion. Arendt et al. describe a study on effects of bright light on males in Antarctica, in which the peak of nocturnal plasma melatonin appeared earlier in response to both summer and a skeleton spring photoperiod in winter, despite no effects on behavior, temperature or mood variables. This may suggest that altered melatonin profiles do not necessarily result in mood changes, but whether the circadian rhythm was actually phase-delayed in winter and its phase normalized by the long photoperiod can only be determined with melatonin measured in light sufficiently dim to eliminate negative masking.

In contrast to relative agreement about SAD's existence and the efficacy of light therapy for the winter version, no consensus about mechanisms emerges in

this volume. Using dim-light onset of the melatonin rhythm as a circadian phase marker, Lewy et al. report studies of varying time of light therapy and/or sleep that support their phase-shift hypothesis, and explain their observation that patients preferentially respond to morning light. The current version is that the net antidepressant effect of bright light depends on a putative phase-response-curve which determines the direction (advance being corrective) and magnitude of a shift of circadian rhythms relative to sleep time, plus the magnitude of a direct energizing/placebo action which is independent of time of administration. This hypothesis is attractive and well formulated, but needs rigorous independent testing. In their chapter, Checkley et al. report finding that clinical efficacy in treating winter depression depends neither on photoperiod extension nor effects on melatonin secretion, but unfortunately a concurrent phase advance of the hormone's circadian rhythm may have been masked by its measurement in bright light. The same is true of the study by Murphy et al. in which no melatonin abnormalities were found in winter depressives, and photoperiod extension had no apparent effects on phase of melatonin secretion in normals or patients, despite antidepressant effects in the latter. In the only chapter devoted to animal work, Mason describes his fascinating findings that exposure of rats to constant illumination or an extended photoperiod results in enhanced CNS sensitivity to iontophoresis of serotonin and reduced sensitivity to that of noradrenaline. Because similar changes follow treatment with antidepressant drugs and electroconvulsive seizures, they could be at least part of the mechanism underlying light therapy. In the last chapter on mechanisms, Silverstone suggests that because dopamine, acetylcholine and GABA dysregulations have been implicated in mania, they may also be important in winter depression. However, this assumes that the latter fits a bipolar diagnosis. I find his arguments for the role of serotonin more persuasive. Finally, his statement that the efficacy of light therapy is no longer thought to be due to suppression of melatonin and a consequent phase shift reflects a confusion which still exists in

this field. Authors of more than one chapter fail to distinguish between direct melatonin suppression as a potential mechanism and that of altered circadian phase, for which the (unmasked) melatonin rhythm is merely a marker.

In summary, I think readers will find this book both informative and stimulating, and somewhat complementary to the Rosenthal and Blehar volume. While it is comforting to know that other groups agree with the U.S.A. and Swiss centers that SAD syndromes exist and that the winter version responds to light therapy, the reader is left with the profound impression that a great deal of rigorous research remains to be done on mechanisms. Much of the material in the book has already appeared in journals, but the presentation of data and different points of view in one place is valuable. Readability would have been enhanced by extension of topic divisions in the table of contents to the text, different ordering of some chapters, and enlargement of the odd figure. Some readers may find the comprehensiveness of the book compromised by the lack of material on animal models of SAD, but these are covered extensively in the Rosenthal and Blehar volume. I expect workers in the field will want both volumes on their shelves.

John D. Hallonquist, Ph.D., Department of Psychiatry, Mt. Sinai Hospital, Toronto, Ontario, Canada M5G 1X5. Tel 416/586-8306; fax 416/586-8654.

BOOK REVIEW

The Light Book: How Natural and Artificial Light Affect Our Health, Mood, and Behavior
by Jane W. Hyman (Los Angeles: Jeremy P. Tarcher, Inc., 227 pp. \$17.95; available at the SLTBR Annual Meeting bookstore at 10% discount).

This new book is written for a lay audience and describes the effects of light on health, mood and behavior. The book focuses on rhythmic aspects of fertility and childbirth, the sleep-wake cycle, eating and drinking behavior, mood, wellness and disease, and aging and death. In addition, the author includes

a chapter on the effects of light on skin and bones.

Jane W. Hyman appears to be a careful author who supports her material with references from the scientific literature. Much of the book is descriptive, and most of the information seems to be accurate. I especially liked the epilogue, where she quotes excerpts of discussions with experts in various fields, such as SAD, shift work, and aging, who contributed to the book.

I have one major criticism of this book. With the exception of the chapter on the effects of light on skin and bone metabolism, the rest of the book is really about seasonal and circadian rhythms and their importance to health and disease. The emphasis on light per se, even though it may be the premier source of time cues for the biological timing system, seems to me to be somewhat displaced. As research has shown, the timing of darkness is also an important part of the set of signals that keeps rhythms in synchrony. She should also be careful not to infer causality from association. For example, she suggests that "our bodies' use of food would be affected

by both the daily and the seasonal timing of light, perhaps by its intensity as well" (p. 74). To date, however, light has not been shown to alter metabolism by direct action on some physiological system outside of the control of the biological clock.

I think it might have been more helpful for her readers if Hyman had indicated the extent of controversy concerning some theoretical issues, and of the impact of rhythms—especially seasonal hormonal patterns—on normal functioning. This would have placed the research findings in perspective, and separated the statistically reliable from the clinically relevant. It was difficult to derive a take-home message from some sections of the book. Finally, I question the importance and emphasis of lunar cycles on rhythms in humans.

Overall, I found this book to be interesting and well written. Readers will come away with basic knowledge of light and its relationship to biological rhythms.

Margaret L. Moline, Ph.D., New York Hospital-Cornell Medical Center, White Plains, NY 10605. Tel 914/997-5863; fax 914/997-5958.

Bulletin Board

WELCOME TO NEW MEMBERS

The Board of Directors is pleased to welcome the following people who have become members of SLTBR since the last Bulletin, or who joined earlier but were not acknowledged here.

Regular Members:

Sonia Ancoli-Israel, C. Johan Beck-Friis, Timothy Brewerton, Trond Bratlid, Henner Geidke, Hani Iskandar, Bengt Kjellman, Christian Neudorfer, Joseph Schwitzer.

Associate Members:

Ralph Ballentine, Christine Cameron, Suzanne Cline, Anton Coenen, Hector Gerbaldo, Steven Hauser, Mark Muehlbach, Megan Murray, Andrzej Nikonow, Marvin Piburn, John Raasoch, Quentin Rege-

stein, Leon Rosenthal, Douglas Smith, Angela Smyth, Louisa Thompson, Michael Young, Jacob Zomer.

Corresponding Member:

Konstantin Danilenko

Student Members:

Alfreda Costa, Todd Hardin, Megan Jewett, Jane Rice, Julie Schulman.

NEW BOARD MEMBER

In March, the Board of Directors regrettably accepted the resignation of Carla Hellekson, M.D., who was among SLTBR's founders. We are pleased to announce the appointment of Charmane Eastman, Ph.D., who will fulfill Hellekson's term, join the Editorial Board, and continue to chair the Membership Committee.

