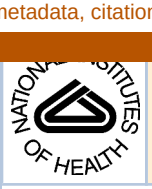



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# Is seasonal affective disorder a bipolar variant?

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Ms. S, age 24, is referred to our team in early December by her primary care physician for "fatigue." The patient describes going to bed and falling asleep before 9:30 these winter evenings, whereas in summer she went to bed at 11 PM. She craves bread, pasta, and sweets and reports increased appetite in winter compared with summer. Her mood is low, and she misses warm-weather activities of gardening and walking. Fatigue and difficulty concentrating are causing her problems at work and school.

Her history reveals mood elevation in spring as days become longer, with a clear change at approximately March 10 to 20. She reports "spring fever" and feeling "great" last year as soon as daylight saving time began. She slept only 3 hours a night and had a burst of ideas to expand her small business. She threw herself into her work, feeling she was making up for lost time and productivity. She also admits to making a large, misguided business investment during that time.

Upon questioning, she recalls that the previous spring she argued with her father and threw a cup of hot tea at him. When interviewed, Ms. S's mother describes her daughter at that time as having "a very short fuse," speaking loud and fast, staying up late at night, and looking as though she was not herself.

Seasonal affective disorder (SAD) is an umbrella term for mood disorders that follow a seasonal pattern of recurrence. Bipolar I disorder (BD I) or bipolar II disorder (BD II) with seasonal pattern (BD SP) is the DSM-IV-TR diagnosis for persons with depressive episodes in the fall or winter and mania (BD I) or hypomania (BD II) in spring or summer (Table 1, page 44**).**[1]

This article compares BD SP with major depressive disorder with seasonal pattern (MDD SP), in which depressive episodes usually occur in fall or winter and fully remit in spring or summer. [1] Rather than being categorically distinct from each other, BD SP and MDD SP may represent extreme variants on a seasonal depression continuum from unipolar to bipolar.

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## Overlap of MDD SP and BD SP

The seasonal pattern specifier can be applied to a diagnosis of MDD, BD I, or BD II.[1] Seasonality-focused assessments, described below, can help characterize seasonal patterns that do not meet full SP criteria but may deserve clinical attention.

### Symptom presentation

MDD SP and BD SP share similar atypical depressive symptom presentations and seasonal recurrence patterns (Box 1). Hypersomnia, hyperphagia, and psychomotor retardation are more prevalent in major depressive episodes of bipolar disorders and SAD than in unipolar or nonseasonal mood disorders.[2–4] Individuals with SAD also report fatigue and decreased physical activity,[3] both of which are characteristic of bipolar depressive episodes.[5]

**Box 1**

**Seasonal affective disorder: A depression continuum from unipolar to bipolar?**

Seasonality refers to the degree of seasonal changes in behavior and mood within an individual. Seasonality scores are normally distributed,[a] suggesting that seasonality may be continuous in the general population–with some individuals meeting criteria for a seasonal mood disorder:

- A seasonal pattern is reported by approximately 10% to 20% of depressed outpatients with recurrent mood disorders and an estimated 15% to 22% of individuals with bipolar disorder (BD).[b]
- Persons with BD–seasonal or not–report greater seasonality compared with those with major depressive disorder (MDD).[c]

Among individuals with seasonal affective disorder, the course is bipolar in an estimated 12% to 22% and unipolar in 78% to 88%.[d] These estimates may reflect underdiagnosis of BD with seasonal pattern because hypomania is difficult to diagnose retrospectively.[e]

**The bipolar-unipolar continuum** includes (in order): BD I, BD II, bipolar disorder not otherwise specified, cyclothymia, bipolar spectrum disorder, and MDD.[f] In examining the validity of the bipolar spectrum model, Phelps et al[g] noted:

- At least 3 studies found that all symptoms reported by individuals with unipolar and bipolar diagnoses approach a normal distribution, rather than a bimodal distribution separating unipolar from bipolar symptom profiles.
- Data from 2 population-based studies indicate that subthreshold hypomanic symptoms are more common than and cause as much impairment as symptoms meeting criteria for BD II or I.

Some individuals who meet criteria for MDD with seasonal pattern have summertime periods of transient hypomania and hyperthymia (hypomanic-like periods without clinically significant impairment).[h] This suggests that the bipolar continuum also may exist among individuals with seasonal pattern mood disorders.

**Source:**For reference citations, see this article at CurrentPsychiatry.com

Although psychosis and psychiatric hospitalizations are more common in BD I than unipolar disorders,[6] individuals with BD SP are less likely to report psychosis than those with nonseasonal BD.[7] Another study found that BD SP patients reported a higher rate of psychiatric hospitalizations than MDD SP patients (28% vs 9.4%).[6]

### Recurrence pattern

Major depressive episodes are highly recurrent in both MDD and BD, with or without a seasonal pattern. Approximately 75% of individuals with MDD experience ≥1 recurrence (mean, 10.8 episodes);[8] MDD SP patients report a mean of 13.4 episodes.[9] The mean lifetime episodes in BD SP is 20.74, compared with 11.67 in nonseasonal BD.[7]

Cassidy and Carroll[10] measured the frequency of mood episodes in 304 BD patients not assessed for seasonality. Manic episodes peaked in early spring, mixed episodes peaked in late summer or fall, and depressive episodes peaked in fall-winter.

### Irregular rhythm

Both BD and MDD SP involve irregularities in daily or circadian rhythms, such as changes in the timing of sleep, melatonin release, and body temperature.[3,5,11] Circadian phase delays—in which internal rhythms lag behind the sleep cycle—are correlated with symptom severity in BD[12] and are implicated in the core pathology of BD[13] (Box 2, ***page 46)***. In BD, life events that change social rhythms may disrupt circadian rhythms, triggering mood episodes.[5]

**Box 2**

**Proposed mechanisms for seasonal affective disorder**

Etiologic hypotheses of seasonal affective disorder (SAD) include:

- *photoperiodic hypothesis* (shorter winter days cause SAD,[a] perhaps mediated by a summer vs winter difference in duration of nightly melatonin release)[b]
- *phase shift hypothesis* (less available light in winter may lead to an inability to synchronize circadian rhythms with sleep/wake rhythms).[c]

Some case studies of rapid-cycling bipolar disorder (BD) suggest that mood is correlated with daily hours of sunshine and light therapy is antidepressant. Rapid-cycling patients may be hypersensitive to day-to-day changes in photoperiod, analogous to mood changes in response to changes in photoperiod across the seasons in SAD.[d]

**Circadian phase delays**–in which internal rhythms lag behind the sleep cycle–are correlated with symptom severity in BD[e] and are implicated in the core pathology of BD.[f] Phase delays also are present in some individuals with SAD and are associated with severity and treatment response.[g] Preliminary evidence suggests that variation in circadian clock genes is related to both BD[f,h] and SAD.[i]

**Source:** For reference citations, see this article at CurrentPsychiatry.com

Etiologic hypotheses for both BD and SAD propose that an external event (life stress in BD; decreased photoperiod in SAD) leads to circadian dysregulation and, in turn, mood episodes. Circadian-related hypotheses for SAD and BD are supported by evidence showing efficacy of treatments that manipulate behavioral and circadian rhythms.

**Seasonal pattern revealed—**Ms. S was aware that she is vulnerable to depressive episodes in fall and winter but unaware of a pattern of hypomanic/manic episodes in spring and summer. Her family psychiatric history includes a sister diagnosed with BD I (with no seasonal specifier), and a maternal aunt who has attempted suicide several times.

Ms. S agrees to an assessment plan including a diagnostic interview, interviews measuring symptom severity and pattern of recurrence, routine laboratory examination, and self-report

questionnaires. These show that she meets DSM-IV-TR criteria for BD I, depressed, moderate, with seasonal pattern.

Her assessment scores are 28 on the Structured Interview Guide for HDRS-seasonal affective disorder version (SIGH-SAD), 17 on the Hamilton Depression Rating Scale (HDRS), and 11 on the atypical subscale. The HDRS and atypical subscale are components of the SIGH-SAD reflecting typical (eg, insomnia, loss of appetite, etc.) and atypical (eg, hypersomnia, increased appetite, etc.) depression symptoms, respectively. Ms. S's scores exceed the threshold scores defining a BD SP episode (>20 SIGH-SAD + >10 HDRS + >5 atypical sub-scale[14]). Data from self-report questionnaires corroborate this assessment.

We plan to administer the Hypomania Interview Guide (including Hyperthymia) for Seasonal Affective Disorder (HIGH-SAD) during treatment and the following spring to monitor prospectively for hypomanic symptoms.

## Assessment tools

After complete assessment for mood episodes and mood disorders based on DSM-IV-TR, an additional assessment for bipolarity and seasonality may be helpful.[1]

**Screen for bipolarity in patients with SAD** to avoid triggering mania or hypomania during treatment. Useful tools include:

- HIGH-SAD[15]
- the National Institutes of Health Life Chart Method to establish a recurrent pattern of mood episodes and track treatment efficacy[16]
- assessments that characterize subthreshold bipolar symptoms, such as the Bipolar Spectrum Diagnostic Scale[17] (see Box 3 with this article at CurrentPsychiatry.com) and the Bipolarity Index.[18]

**Box 3**

### Bipolar Spectrum Diagnostic Scale

**INSTRUCTIONS: Please read through the entire passage below before filling in any blanks.**

Some individuals notice that their mood and/or energy levels shift drastically from time to time_____. These individuals notice that, at times, their mood and/or energy level is very low, and at other times, very high_____. During their "low" phases, these individuals often feel a lack of energy; a need to stay in bed or get extra sleep; and little or no motivation to do things they need to do_____. They often put on weight during these periods_____. During their low phases, these individuals often feel "blue," sad all the time, or depressed_____. Sometimes, during these low phases, they feel hopeless or even suicidal_____. Their ability to function at work or socially is impaired_____. Typically, these low phases last for a few weeks, but sometimes they last only a few days_____. Individuals with this type of pattern may experience a period of "normal" mood in between mood swings, during which their mood and energy level feels "right" and their ability to function is not disturbed_____. They may then notice a marked shift or "switch" in the way they feel_____. Their energy increases above what is normal for them, and they often get many things done they would not ordinarily be able to do_____. Sometimes, during these "high" periods, these individuals feel as if they have too much energy or feel "hyper"_____. Some individuals, during these high periods, may feel irritable, "on edge," or aggressive_____. Some individuals, during these high periods, take on too many

activities at once_____. During these high periods, some individuals may spend money in ways that cause them trouble_____. They may be more talkative, outgoing, or sexual during these periods_____. Sometimes, their behavior during these high periods seems strange or annoying to others_____. Sometimes, these individuals get into difficulty with coworkers or the police during these high periods_____. Sometimes, they increase their alcohol or non-prescription drug use during these high periods_____.

**Now that you have read the passage, please check 1 of the following 4 boxes:**

- ❑ This story fits me very well, or almost perfectly
- ❑ This story fits me fairly well
- ❑ This story fits me to some degree, but not in most respects
- ❑ This story doesn't really describe me at all

**Now please go back and put a check (✓) after each sentence that definitely describes you.**

**For the clinician**

**SCORING:** Each sentence checked is worth 1 point. Add 6 points for "fits me very well," 4 points for "fits me fairly well," and 2 points for "fits me to some degree."

| Score | Likelihood of bipolar disorder |
|---|---|
| 0–6 | Highly Unlikely |
| 7–12 | Low Probability |
| 13–19 | Moderate Probability |
| 20–25 | High Probability |
| Optimum threshold for positive diagnosis: score of 13 or above | |

**Source:** Reprinted from Ghaemi SN, Miller CJ, Berv DA, et al. Sensitivity and specificity of a new Bipolar Spectrum Diagnostic Scale. J Affect Disord. 2005;84:273-277, with permission from Elsevier

Also obtain collateral reports from significant others, review patient records, and use the same mania and hypomania scales for prospective assessment as the next spring approaches.[6]

**Assess seasonality in patients with BD** to improve diagnosis and treatment. Characterizing a seasonal pattern may allow you and your patient to predict episodes and treat proactively. Commonly used assessments include the SIGH-SAD and the Structured Clinical Interview for DSM Disorders (SCID) seasonal pattern specifier module.[19]

The SIGH-SAD measures symptom severity and provides recovery criteria based on changes in scores during treatment. Response is defined as a 50% reduction in symptoms; remission is >50% improvement in SIGH-SAD + HDRS <7 + atypical <7 or HDRS <2 + atypical <10.[14]

## Treatment begins

Considering Ms. S's diagnosis of BD I SP and the risk of precipitating mania with light treatment, we recommend starting treatment with a mood stabilizer. We narrow our options to those that have a direct antide-pressant effect, with the hope that this may reduce the need for future antidepressant medications. For patients diagnosed with BD II SP, we could consider a regimen without mood stabilizers.

We offer Ms. S lithium, a first-line mood stabilizer with evidence of usefulness in treatment before chronotherapeutic interventions and in preventing suicidal behavior. However, Ms. S prefers our second option, lamotrigine, because she is concerned about lithium's side effects and required blood draws to check drug levels as well as thyroid and kidney status.

Despite causing some initial drowsiness, her lamotrigine dosage is successfully titrated after 2 weeks of treatment to 300 mg/d, without side effects. Only then do we initiate light treatment, which Ms. S wishes to try before antidepressant medications. She also begins sessions with a therapist trained in cognitive-behavioral therapy (CBT) for SAD. (For details of this comprehensive treatment, see the online-only Box 4 in this article at CurrentPsychiatry.com)

**Box 4**

### Light therapy and CBT for bipolar disorder with seasonal pattern

Bright light therapy is effective in treating major depressive disorder with seasonal pattern (MDD SP), and initial reports indicate that light also can improve depressive symptoms in bipolar disorder with seasonal pattern (BD SP).[a] In an early case report,[b] a patient with BD II SP achieved remission of a depressive episode with a 4-day open trial of 2,000 lux of fluorescent light given daily between 6 and 9 AM and 4 and 7 PM.

An open trial[c] compared the effects of 10,000 lux of fluorescent light for 30 minutes in early morning on 21 patients with BD SP and 170 patients with MDD SP. The BD SP participants were more depressed at baseline, but improved significantly as measured by the Structured Interview Guide for HDRS-seasonal affective disorder version (SIGH-SAD). Response rates were similar, and the BD SP patients tolerated light therapy well.

A third open study of 74 unipolar and 18 bipolar participants initially administered 2,500 lux of light for 2 hours in the morning. After 2 years of the study, subsequent participants received 10,000 lux for 30 minutes in the morning or evening (crossover design). Response rates for both light paradigms were 73% among those with MDD SP vs 50% among those with bipolar disorder, although the small number of bipolar participants limits the ability to draw conclusions.[d]

**Risk of switching.** Light therapy may increase the risk of switching to mania/hypomania in patients with BD SP. Clinical supervision is imperative, therefore, even for patients thought to have MDD SP because of the risk of undiagnosed BD.

**CASE REPORT**

#### Light therapy plus CBT

Because of Ms. S's diagnosis of BD I, depressed, moderate, with seasonal pattern, we start therapy with the mood stabilizer lamotrigine, titrated across 2 weeks to 300 mg/d without side effects. Then, to treat her depressive symptoms, Ms. S prefers to try light therapy instead of an antidepressant.

We start Ms. S's therapy with a light box in the office for 10 minutes at midday. A low dose and midday administration reduce the potential for a mood switch in BD I patients. We assess Ms. S's mood, rate of speech and thinking, and side effects after the session. Afterwards, she purchases a light box for home use, at first for 5 to 10 minutes each morning then titrated within 7 days to 20 minutes in the morning. Her husband is educated to watch for signs of hypomania. A nurse phones Ms. S twice the first week to assess for side effects and possible signs of hypomania/mania. Phone monitoring includes sleep onset, sleep offset, duration of sleep, and rate of speech.

Ms. S returns after 2 weeks for assessment. We administer the HIGH-SAD for symptoms of hypomania and SIGH-SAD for response to light therapy. Ms. S reports increased energy

and improved mood. She agrees to continue light therapy 20 minutes each morning and to come back for additional assessment in 4 weeks.

We also refer Ms. S for 6 weeks of twice-weekly sessions of cognitive-behavioral therapy (CBT) for SAD. The therapist focuses on cognitive restructuring, behavioral activation, and relapse prevention. Ms. S has always thought "I'm no use in the winter." Through therapy, she discovers she can be moderately productive in winter if she paces herself, and her mood improves when she is productive.

Behavioral activation strategies include modifying Ms. S's summer-specific activities for winter (such as walking in the mall and volunteering at the botanical gardens). Ms. S's consistency in engaging in these activities proves to be key in maintaining a euthymic mood in winter.

Considering Ms. S's BD I diagnosis, the therapist emphasizes keeping regular daily schedules, especially at times of stress and increased work or academic tasks.

**Encouraging compliance.** Patients often complain about lack of time for light therapy as recommended. We suggest that they use therapy time to read, pay bills, or return phone calls. Light treatment can be viewed as increasing productivity and quality of life, instead of taking away 30 minutes or more.

We also find better compliance and outcomes when the duration and timing of light treatment is flexible and frequently changes, compared with a fixed duration changed every 2 weeks or so. A flexible schedule takes into account clinical response, potential shifting in sleepiness and alertness, and side effects.

### References


a. Golden RN, Gaynes BN, Ekstrom RD, et al. The efficacy of light therapy in the treatment of mood disorders: a review and meta-analysis of the evidence. Am J Psychiatry 2005;162(4):656–662. [PubMed: 15800134]

b. Lewy AJ, Kern HA, Rosenthal NE, et al. Bright artificial light treatment of a manic-depressive patient with a seasonal mood cycle. Am J Psychiatry 1982;139(11):1496–1498. [PubMed: 7137404]

c. Sohn CH, Lam RW. Treatment of seasonal affective disorder: unipolar versus bipolar differences. Curr Psychiatry Rep 2004;6(6):478–485. [PubMed: 15538998]

d. Terman M, Amira L, Terman JS, et al. Predictors of response and nonresponse to light treatment for winter depression. Am J Psychiatry 1996;153:1423–1429. [PubMed: 8890675]


## Treating bipolar variant of SAD

Significant differences exist in the clinical management of BD SP and MDD SP, despite their commonalities (Table 2). BD SP treatment remains distinct because of the risk of switching with the use of light therapy or antidepressants and the importance of mood stabilizers, especially in BD I.

Consensus guidelines for treating SAD recommend mood stabilizers and close monitoring during light therapy for patients with BD SP (Table 3, page 48).[2] Therapeutic sleep deprivation can quickly reverse depression during hospitalization but is not used often or recommended for outpatient treatment.[20]

### Light therapy

A small body of evidence suggests that depressive symptoms in BD SP improve with bright light therapy, a treatment with demonstrated efficacy in MDD SP.[21] No differences in response have been reported between light therapy for winter depressive episodes among individuals

with BD SP or MDD SP.[22–24] Light therapy may increase the risk of switching to mania/hypo mania in patients with BD SP, however. Clinical supervision is imperative, even for patients thought to have MDD SP, because of the risk of undiagnosed BD.

Regular monitoring by a physician is indicated for individuals taking medications or remedies with photosensitizing effects (such as lithium, thioridazine, or St. John's wort). An ophthalmologist consultation and monitoring is necessary for patients with preexisting eye problems, those taking photosensitizing medications, and those who develop eye problems during light treatment.[2,6]

The recommended starting dose for light therapy in MDD SP is 30 minutes daily in the early morning, but this dose may be too high for individuals with BD SP.[25] To minimize the risk of switching, begin light therapy at 5 to 10 minutes daily and slowly increase while monitoring the clinical effect (see ***Related Resources, page 53***, for more information about light therapy for affective disorders).

## Pharmacotherapy

Pharmacologic treatments have not been studied for effectiveness in BD SP, and we hesitate to provide specific recommendations. Effective treatments may include those used for nonseasonal MDD, nonseasonal BD, and MDD SP. When using any medication for BD SP, weigh the risk of switching states against the potential beneficial effects.[2]

Year-round mood-stabilizer treatment is indicated to minimize the risk of mood episodes in BD SP, especially in patients with BD I. When treating SAD, mood stabilizers with antidepressant effects—such as lamotrigine or lithium (for maintenance), and quetiapine or aripiprazole (for acute treatment)—are preferable to agents without an antidepressant effect in monotherapy. More-sedating mood stabilizers (such as valproate or carbamazepine) likely would not be as beneficial as less-sedating agents, considering that patients with SAD frequently experience fatigue.

Because of the lack of adequate clinical trials of treatments for BD SP, we suggest that clinicians choose medications and follow algorithms relevant to BD without a seasonal specifier. Use similar schedules and dosages, with individual tailoring.[5,26]

Antidepressants that have shown efficacy in MDD SP include fluoxetine, bupropion, citalopram, and sertraline.[6,9,27–29] For patients with BD SP, we initiate antidepressants when:

- light treatment fails
- the patient is unable to travel to the south
- light treatment is not available (often because patients cannot afford the cost, which is not covered by insurance)
- patient lacks time for light treatment.

An additional important consideration is history of response (such as a patient who did not respond well to light therapy in the past but responded very well to a particular antidepressant).

No studies have compared antidepressant classes or individual medications for MDD SP. Clinical wisdom is to base the antidepressant choice, dosages, decision points of when to switch, and schedule of switching (cross-tapering) on individual patients' symptom clusters and comorbid conditions as well as the medication's side effects.

Prophylactic treatment with bupropion would seem an appropriate initial choice for a prototypical SAD patient, considering this medication's more activating effects and FDA

approval for SAD treatment.[9] For the minority of patients with SAD who present with agitation and increased sleepiness, a slightly sedating selective serotonin reup-take inhibitor such as citalopram would make more sense as a first-line treatment. Finally, we would recommend sertraline for patients with marked anxiety—especially panic attacks or obsessive-compulsive symptoms—but without insomnia.

For specific dosages, rely on the literature of treating nonseasonal depression (unipolar or bipolar). It is important to define decision-making points for dosage increases, augmentation, switching to another antidepressant, and cross-tapering, similar to how you would address a nonseasonal depression, typical or atypical.

In our view, treating a patient with BD I SP with an antidepressant alone—without a mood stabilizer—is almost always wrong. For BD II SP we leave it to the clinician to decide, based on individual patients, clinical experience, and ideally in consultation with a peer.

## Seasonal dosages

You may wish to seasonally vary medications and dosages for patients with BD SP. Although no strong evidence exists, we recommend 2 options:

- Consider increasing mood-stabilizing medication in spring and summer, with a reduction (but no tapering for BD I) in fall and winter.
- Consider a complete antidepressant taper 2 weeks after daylight saving time begins in spring; taper under increased observation and not faster than 6 weeks, with close attention to emerging symptoms of depression or antidepressant withdrawal.

We do not taper antidepressants before daylight saving time, and we always consider additional stressors, losses, and challenges in our patients' lives before tapering antidepressants in spring or summer. We also assess and monitor compliance.

## Psychotherapy

Referral can be made to clinicians trained in CBT for patients with a seasonal pattern and interpersonal and social rhythm therapy (IPSRT) for BD. Integrative models for SAD and BD propose that psychological and biologic vulnerability factors interact with environmental events (such as winter season or disruption of daily routine) to trigger mood episodes.

CBT adapted for SAD targets mal-adaptive thinking and behavioral disengagement through cognitive therapy and behavioral activation to counteract SAD symptoms.[30,31] Preliminary trials by our group suggest that CBT for MDD SP is an effective acute treatment[30] and may prevent future episodes.[32] IPSRT is an adaptation of interpersonal psychotherapy that aims to stabilize social relationships and rhythms in BD.[33]

IPSRT posits that irregularity in daily routines leads to circadian dysregulation, precipitating mood episodes in persons vulnerable to BD.[34] The degree of regularity in social rhythms achieved in IPSRT is associated with reduced likelihood of recurrence post-treatment.[34] If stabilizing social rhythms has a similar effect of regulating circadian rhythms in SAD, IPSRT may be effective in treating BD SP.

## Ongoing treatment required

After several months of light therapy, Ms. S begins to feel better and reports having more energy. We taper her light therapy to 10 minutes daily in the morning from late February until 1 week after daylight saving time begins in mid-March. Weekly phone calls during this transition screen for signs of hypomania or mania. Lamotrigine is effective in preventing switches in spring.

Future plans include monitoring for hypomania through summer and possibly reinitiating light therapy in fall or winter. Because approximately one-half of individuals who undergo CBT for SAD do not experience another episode the winter after treatment, light therapy will be initiated only if depressive symptoms emerge. A booster session is scheduled with Ms. S's CBT therapist in early fall to reinforce relapse prevention skills.

Antidepressant therapy will be recommended if full treatment response is not maintained with light therapy and continued use of CBT skills for SAD. During sessions, we emphasize compliance with lamotrigine. On several occasions Ms. S questions the need for ongoing therapy, but with education about the potential effects of mania she agrees to continue treatment as indicated.

## Related Resources

### Seasonality screening tools

- Seasonal Pattern module of the Structured Clinical Interview for DSM Disorders (SCID). www.scid4.org/faq/clinician_version.html.
- Hypomania Interview Guide for Seasonal Affective Disorder (HIGH-SAD). www.chronotherapeutics.org/Tools_ENG.html.
- National Institutes of Health Life Chart Method. www.bipolarnews.org/Clinician%20Life%20Charting.htm.
- Structured Interview Guide for the Hamilton Depression Rating Scale—Seasonal Affective Disorder Version (SIGH-SAD). www.chronotherapeutics.org/Tools_ENG.html.

### Bipolarity screening tools

- Bipolar Spectrum Diagnostic Scale. Available for download with this article at CurrentPsychiatry.com.
- Bipolarity Index. http://psycheducation.org/depression/STEPBipolarityIndex.htm.

### Light therapy

- Wirz-Justice A, Benedetti F, Terman M. Chronotherapeutics for affective disorders: a clinician's manual for light and wake therapy. Basel, Switzerland: S. Karger AG; 2009.
- Wirz-Justice A, Benedetti F, Berger M, et al. Chronotherapeutics (light and wake therapy) in affective disorders. Psychol Med. 2005;35(7):939–944.

### Psychotherapy

- Rohan KJ. Coping with the seasons: a cognitive-behavioral approach to seasonal affective disorder (therapist guide). New York, NY: Oxford University Press; 2008.
- Frank E. Treating bipolar disorder: a clinician's guide to interpersonal and social rhythm therapy. New York, NY: Guilford Press, Inc.; 2005.

### Drug Brand Names

| | |
|---|---|
| Aripiprazole • Abilify | Lithium • Eskalith, Lithobid |
| Bupropion • Wellbutrin XL | Quetiapine • Seroquel |
| Carbamazepine • Tegretol | Sertraline • Zoloft |
| Citalopram • Celexa | Thioridazine • Mellaril |

Fluoxetine • Prozac Valproate • Depakote

Lamotrigine • Lamictal

## References


1. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4. Washington, DC: American Psychiatric Association; 2000. text rev
2. Lam, RW.; Levitt, AJ., editors. Clinical guidelines for the treatment of seasonal affective disorder. Vancouver, BC: Clinical and Academic Publishing; 1999.
3. Rosenthal NE, Sack DA, Gillin JC, et al. Seasonal affective disorder. A description of the syndrome and preliminary findings with light therapy. Arch Gen Psychiatry 1984;41(1):72–80. [PubMed: 6581756]
4. Michalak EE, Wilkinson C, Hood K, et al. Seasonal and nonseasonal depression: how do they differ? Symptom profile, clinical and family history in a general population sample. J Affect Disord 2002;69 (1–3):185–192. [PubMed: 12103465]
5. Goodwin, FK.; Jamison, KR. Manic-depressive illness: bipolar disorders and recurrent depression. 2. New York, NY: Oxford University Press; 2007.
6. Sohn CH, Lam RW. Treatment of seasonal affective disorder: unipolar versus bipolar differences. Curr Psychiatry Rep 2004;6(6):478–485. [PubMed: 15538998]
7. Goikolea JM, Colom F, Martinez-Aran A, et al. Clinical and prognostic implications of seasonal pattern in bipolar disorder: a 10-year follow-up of 302 patients. Psychol Med 2007;37:1595–1599. [PubMed: 17537285]
8. Kessler RC, Zhao S, Blazer DG, et al. Prevalence, correlates, and course of minor depression and major depression in the National Comorbidity Survey. J Affect Disord 1997;45(1–2):19–30. [PubMed: 9268772]
9. Modell JG, Rosenthal NE, Harriett AE, et al. Seasonal affective disorder and its prevention by anticipatory treatment with bupropion XL. Biol Psychiatry 2005;58:658–667. [PubMed: 16271314]
10. Cassidy F, Carroll BJ. Seasonal variation of mixed and pure episodes of bipolar disorder. J Affect Disord 2002;68:25–31. [PubMed: 11869779]
11. Shin K, Schaffer A, Levitt AJ, et al. Seasonality in a community sample of bipolar, unipolar and control subjects. J Affect Disord 2005;86:19–25. [PubMed: 15820267]
12. Wood J, Birmaher B, Axelson D, et al. Replicable differences in preferred circadian phase between bipolar disorder patients and control individuals. Psychiatry Res 2009;166(2–3):201–209. [PubMed: 19278733]
13. Soreca I, Frank E, Kupfer DJ. The phenomenology of bipolar disorder: what drives the high rate of medical burden and determines long-term prognosis? Depress Anxiety 2009;26(1):73–82. [PubMed: 18828143]
14. Terman M, Terman J, Rafferty B. Experimental design and measures of success in the treatment of winter depression by bright light. Psychopharmacol Bull 1990;26(4):505–510. [PubMed: 2087543]
15. Goel N, Terman M, Terman JS, et al. Summer mood in winter depressives: validation of a structured interview. Depress Anxiety 1999;9:83–91. [PubMed: 10207664]
16. Denicoff KD, Leverich GS, Nolen WA, et al. Validation of the prospective NIMH-Life-Chart Method (NIMH-LCM-p) for longitudinal assessment of bipolar illness. Psychol Med 2000;30:1391–1397. [PubMed: 11097079]
17. Ghaemi SN, Miller CJ, Berv DA, et al. Sensitivity and specificity of a new Bipolar Spectrum Diagnostic Scale. J Affect Disord 2005;84:273–277. [PubMed: 15708426]
18. Phelps J, Angst J, Katzow J, et al. Validity and utility of bipolar spectrum models. Bipolar Disord 2008;10:179–193. [PubMed: 18199236]
19. Williams, JB.; Link, MJ.; Rosenthal, NE., et al. Structured Interview Guide for the Hamilton Depression Rating Scale - Seasonal Affective Disorder Version (SIGH-SAD). New York, NY: New York State Psychiatric Institute; 1992.

20. Wu JC, Kelsoe JR, Schachat C, et al. Rapid and sustained antidepressant response with sleep deprivation and chronotherapy in bipolar disorder. Biol Psychiatry 2009;66(3):298–301. [PubMed: 19358978]
21. Golden RN, Gaynes BN, Ekstrom RD, et al. The efficacy of light therapy in the treatment of mood disorders: a review and meta-analysis of the evidence. Am J Psychiatry 2005;162(4):656–662. [PubMed: 15800134]
22. Terman M, Terman JS, Ross DC. A controlled trial of timed bright light and negative air ionization for treatment of winter depression. Arch Gen Psychiatry 1998;55(10):875–882. [PubMed: 9783557]
23. Eastman CI, Young MA, Fogg LF, et al. Bright light treatment of winter depression: a placebo-controlled trial. Arch Gen Psychiatry 1998;55(10):883–889. [PubMed: 9783558]
24. Lewy AJ, Bauer VK, Cutler NL, et al. Morning vs evening light treatment of patients with winter depression. Arch Gen Psychiatry 1998;55(10):890–896. [PubMed: 9783559]
25. Sit D, Wisner KL, Hanusa BH, et al. Light therapy for bipolar disorder: a case series in women. Bipolar Disord 2007;9:918–927. [PubMed: 18076544]
26. Goodwin GM. Evidence-based guidelines for treating bipolar disorder: revised second edition—recommendations from the British Association for Psychopharmacology. J Psychopharmacol 2009;23(4):346–388. [PubMed: 19329543]
27. Lam RW, Levitt AJ, Levitan RD, et al. The Can-SAD study: a randomized controlled trial of the effectiveness of light therapy and fluoxetine in patients with winter seasonal affective disorder. Am J Psychiatry 2006;163:805–812. [PubMed: 16648320]
28. Pjrek E, Konstantinidis A, Assem-Hilger E, et al. Therapeutic effects of escitalopram and reboxetine in seasonal affective disorder: a pooled analysis. J Psychiatr Res 2009;43(8):792–797. [PubMed: 19230909]
29. Moscovitch A, Blashko CA, Eagles JM, et al. A placebo-controlled study of sertraline in the treatment of outpatients with seasonal affective disorder. Psychopharmacology (Berl) 2004;171(4):390–397. [PubMed: 14504682]
30. Rohan KJ, Roecklein KA, Tierney Lindsey K, et al. A randomized controlled trial of cognitive-behavioral therapy, light therapy, and their combination for seasonal affective disorder. J Consult Clin Psychol 2007;75(3):489–500. [PubMed: 17563165]
31. Rohan, KJ. Therapist guide. New York, NY: Oxford University Press; 2008. Coping with the seasons: a cognitive-behavioral approach to seasonal affective disorder.
32. Rohan KJ, Roecklein KA, Lacy TJ, et al. Winter depression recurrence one year after cognitive-behavioral therapy, light therapy, or combination treatment. Behav Ther 2009;40(3):225–238. [PubMed: 19647524]
33. Frank E, Kupfer DJ, Ehlers CL, et al. Interpersonal and social rhythm therapy for bipolar disorder: integrating interpersonal and behavioral approaches. Behavior Therapist 1994;17:143–149.
34. Frank E, Kupfer DJ, Thase ME, et al. Two-year outcomes for interpersonal and social rhythm therapy in individuals with bipolar I disorder. Arch Gen Psychiatry 2005;62(9):996–1004. [PubMed: 16143731]

## Table 1

DSM-IV-TR criteria for seasonal pattern specifier*

| | |
|---|---|
| **A** | A regular pattern of major depressive episodes (MDEs) at a particular time of year (such as fall and/or winter) |
| **B** | Full remission or change to mania or hypomania at a particular time of year (such as spring or summer) |
| **C** | 2 seasonal MDEs that followed the pattern described in (A) and (B) occurred in the past 2 years (and no nonseasonal MDEs) |
| **D** | Seasonal MDEs substantially outnumber nonseasonal MDEs across the lifespan |

Cases do not meet criteria if:

- seasonal episodes have not been present in the past 2 consecutive winters because individuals have been successfully treated or have lived or traveled in southern locations, despite the expectation that continuing treatment is needed and/or a return to northern locales would precipitate another seasonal episode
- an obvious psychosocial stressor related to the mood change recurs on a seasonal basis (such as regular winter unemployment, holiday depression, anniversary reactions)

* Can be applied to a pattern of major depressive episodes in bipolar I disorder, bipolar II disorder, or major depressive disorder

**Source:** Adapted from reference [1]

## Table 2

Physiopathologic findings and clinical management for SAD vs BD

| | SAD | BD |
|---|---|---|
| **Differences** | May be unipolar or bipolar<br>Defined by seasonality<br>Light therapy and antidepressants indicated | Increased risk of psychosis and psychiatric hospitalization<br>Most BD is not seasonal<br>Mood stabilizers indicated<br>Risk of switching states with light therapy and antidepressants |
| **Similarities** | Atypical depressive symptom presentation<br>Highly recurrent<br>Predictable season of recurrence allows proactive treatment<br>Assess for mania and hypomania in both disorders<br>Light therapy requires clinical supervision<br>Psychotherapy may be beneficial | |

BD: bipolar disorder; SAD: seasonal affective disorder

## Table 3

Recommended treatment for bipolar disorder with seasonal pattern

| Treatment | Recommendation |
|---|---|
| **Mood-stabilizing medications** | Maintain year-round, especially in patients with BP I |
| **Antidepressants** | Consider those with efficacy in unipolar SAD or nonseasonal bipolar depression |
| **Light therapy** | Initiate for 5 to 10 min/day for bipolar depressive episodes in patients receiving mood stabilizers or atypical antipsychotics; slowly increase duration while monitoring mood, sleep, and side effects to manage risk of hypomanic or manic switch |
| **Psychotherapy** | Consider CBT or interpersonal and social rhythm therapy to help manage symptoms and reduce episode recurrence |

BP I: bipolar disorder type I; CBT: cognitive-behavioral therapy; SAD: seasonal affective disorder