A stylized illustration of a person sitting on the ground in a snowy landscape. The person is wearing a grey winter hat and jacket, looking towards the right. To their left is a large, dark red tree trunk with intricate, branching branches. In the air, a red apple with a lit fuse is falling. The ground is covered in snow with several dark circular spots. The background is a light blue-grey sky with falling snowflakes.

**Patients with seasonal bipolarity
require different treatment
from those with unipolar SAD**



SAD

Is seasonal affective disorder a bipolar variant?

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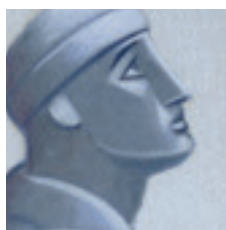
Ms. S, age 24, is referred to our team in early December by her primary care physician for “fatigue.” The patient describes going to bed and falling asleep before 9:30 these winter evenings, whereas in summer she went to bed at 11 PM. She craves bread, pasta, and sweets and reports increased appetite 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



SAD

Clinical Point

Cases do not qualify for a seasonal pattern specifier if a psychosocial stressor related to the mood change recurs on a seasonal basis

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

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.

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

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 Carroll¹⁰ 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 BD¹² and are implicated in the core pathology of BD¹³ (Box 2, page 46). In BD, life events that change social rhythms may disrupt circadian rhythms, triggering mood episodes.⁵

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

ONLINE ONLY

Discuss this article at <http://CurrentPsychiatry.blogspot.com>

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

of treatments that manipulate behavioral and circadian rhythms.

CASE CONTINUED

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 subscale¹⁴). 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.

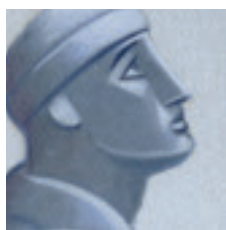
Assessment tools

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:

Clinical Point

In patients with SAD, screen for bipolarity (such as with the HIGH-SAD tool) to avoid triggering mania or hypomania during treatment



SAD

Clinical Point

Characterizing a seasonal mood pattern may allow you and your patient to predict episodes and treat proactively

Box 2

Proposed mechanisms for seasonal affective disorder

Etiological 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^h and SAD.ⁱ

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

- HIGH-SAD¹⁵
- the National Institutes of Health Life Chart Method to establish a recurrent pattern of mood episodes and track treatment efficacy¹⁶

• assessments that characterize sub-threshold bipolar symptoms, such as the Bipolar Spectrum Diagnostic Scale¹⁷ (see **Box 3** with this article at CurrentPsychiatry.com) and the Bipolarity Index.¹⁸

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

CASE CONTINUED

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 antidepressant 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)

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.

Table 2

Physiopathologic findings and clinical management for SAD vs BD

	SAD	BD
Differences	<ul style="list-style-type: none"> May be unipolar or bipolar Defined by seasonality Light therapy and antidepressants indicated 	<ul style="list-style-type: none"> Increased risk of psychosis and psychiatric hospitalization Most BD is not seasonal Mood stabilizers indicated Risk of switching states with light therapy and antidepressants
Similarities	<ul style="list-style-type: none"> Atypical depressive symptom presentation Highly recurrent Predictable season of recurrence allows proactive treatment Assess for mania and hypomania in both disorders Light therapy requires clinical supervision Psychotherapy may be beneficial 	
BD: bipolar disorder; SAD: seasonal affective disorder		

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/hypomania 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.²⁶

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).

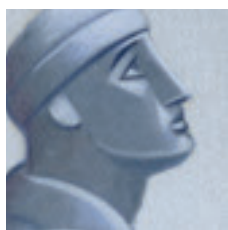
Pharmacotherapy. Pharmacologic treatments have not been studied for effectiveness in BD SP, and we hesitate to provide specific recommendations. Effective treatments may include those used for nonseasonal MDD, nonseasonal BD, and MDD SP. When using any medication for BD SP, weigh the risk of switching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

Clinical Point

For treating SAD, mood stabilizers with antidepressant effects, such as lamotrigine or lithium, are preferred for maintenance



SAD

Clinical Point

We do not taper antidepressants before daylight saving time, and we always consider stressors in our patients' lives

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

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 reuptake 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 chal-

lenges 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 maladaptive 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 treatment³⁰ 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.

CASE CONCLUSION

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 depres-

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.
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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	

Disclosures

Drs. Roecklein and Rohan report no financial relationship with any company whose products are mentioned in this article or with manufacturers of competing products.

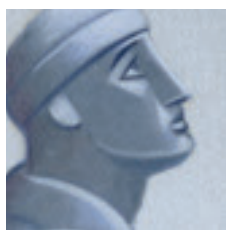
Dr. Postolache received an investigator-initiated award from The LiteBook Company (Vancouver, Canada) via the Society for Light Treatment and Biological Rhythms, as well as research support from Apollo Health (Salt Lake City, UT).

sive 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.

Clinical Point

Approximately one-half of patients who undergo CBT for SAD do not experience another episode the winter after treatment



SAD

Clinical Point

Antidepressant therapy is recommended if full response is not maintained with light therapy and CBT skills for SAD

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Bottom Line

Seasonal patterns of major depressive disorder (MDD SP) and bipolar disorder (BD SP) require different treatment strategies. Assess patients for bipolar symptoms before starting light therapy because of the risk of switching to mania or hypomania. Provide year-round mood stabilizers for bipolar I SP patients (and some bipolar II SP patients). Discontinue light therapy and antidepressants in spring after daylight saving time begins. Psychotherapy can be a useful adjunct.