GETTING IN THE RHYTHM:
A Key to Practical Treatments of Mood Disorders

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What does the body’s clock have to do with moods and mood disorders?
The Rhythm of Life

The circadian clock affects the daily rhythms of many physiological processes. The diagram at the right depicts the circadian patterns typical of someone who rises early in the morning, eats lunch around noon and sleeps at night. Although circadian rhythms tend to be synchronized with cycles of light and dark, other factors—such as ambient temperature, meal times, stress and exercise—can influence the timing as well. —K.W.

The World Can Be Divided into Larks and Owls

- The tendency to Lark-ness or Owl-ness is probably genetically determined
- Thus, some people are more extreme in their morningness or eveningness than others
- Regardless of how extreme one is, knowing one’s type and organizing one’s life to suit it can help improve mood, energy and productivity
Circadian Rhythms and Mood Disorders

Body clocks are sensitive to time shifts

Makes it harder to stay on schedule
Pathways to Synchronize the Circadian System

RHT = retinohypothalamic tract
VLPO = ventrolateral preoptic nucleus
SCN = supra-chiasmatic nuclei
Pin = pineal gland
Pit = pituitary
ACTH = Adrenocorticotropic hormone
LC = locus ceruleus
A = Adrenal gland

Interpersonal and Social Rhythm Therapy: Theoretical Rationale
Social Zeitgeber Hypothesis

• Zeitgebers
  “Time keepers”
  Exogenous environmental factors that set the circadian clock
  Prototype = rising and setting of the sun

• Social zeitgebers
  Social cues that set the circadian clock
Schema for Social Zeitgeber Theory of Moods and Mood Episodes

Life Events

Change in Social Prompts

(Social Zeitgebers = Unobservable Variables)

Change in Stability of Social Rhythms

Change in Stability of Biological Rhythms

Change in Somatic Symptoms

Manic and Depressive Episodes = Pathological Entrainment of Biological Rhythms

Ehlers, Frank & Kupfer. Arch Gen Psychiatry 1988;45:948-952.
Life Events

Can provoke mood changes both through their psychological impact (life stress) and/or through disruption of an individual’s normal routines (social rhythm disruption).
Change in Social Prompts

Consider, for example:

• the loss of a beloved spouse
• the loss of a not-so-beloved dog
• a change in one’s office location with no change in one’s job
• a change in one’s office location along with a major promotion
Change in Stability of Social Rhythms

- Death of a beloved spouse leads to psychological loss AND a loss of regular daily routines (e.g. wake time, meal times, other daily routines, bedtime)

- Death of a not-so-beloved dog still involves a loss of regular daily routines
Change in Stability of Social Rhythms

- A move to a new office location without a change in responsibilities may still involve a major change in daily routines.

- A move to a new office location AND a change in responsibilities may involve psychological loss or disequilibrium AND a major change in daily routines.
Change in Stability of Biological Rhythms

- Changes in wake time, the time at which one first becomes physically active, the time at which one first goes outside, meal times, bedtime, etc. lead to changes in internal biological rhythms including:
  - sleep
  - appetite
  - alertness
  - core body temperature
  - hormones including melatonin, cortisol
Change in Somatic Symptoms

• Disequilibrium of our internal biological rhythms is experienced as somatic symptoms

• Jet lag and the transition to or from Daylight Savings Time are good models for this array of symptoms:
  • difficulty falling asleep at the ‘correct’ time
  • lack of appetite, nausea
  • lack of mental acuity, alertness
  • headache
  • irritability

• Most people recover from jet lag or the DST transition within a few days, but…
Mood Symptoms = Pathological Entrainment of Biological Rhythms

- Individuals who are vulnerable to mood disorders become ‘stuck’ in this state of pathological entrainment and continue to experience the array of symptoms we refer to as **major depression**

- We hypothesized that treatments that re-entrain biological rhythms can speed recovery from mood disorders and prevent their return
The Social Rhythm Metric (SRM): An Instrument to Quantify the Daily Rhythms of Life

Monk et al J. Nervous and Mental Disease, 178: 120-126, 1990
5-Item Social Rhythm Metric (SRM)

1. Out of bed

2. First contact (in person or by phone…maybe via text or social media…it depends) with another

3. Start work, school, housework, volunteer activities, child or family care

4. Have dinner

5. Go to bed
Social Rhythm Metric-II- Five-Item Version (SRM II – 5)

Directions:
Write the ideal target time you would like to do these daily activities.
Record the time you actually did the activity each day.
Record the people involved in the activity: 0 = Alone; 1 = Others present; 2 = Others actively involved; 3 = Others very stimulating

<table>
<thead>
<tr>
<th>Activity</th>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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<th>Saturday</th>
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<td>Start work/school/Volunteer/family care</td>
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<td>Dinner</td>
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<td>Rate MOOD each day from -5 to +5</td>
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<td>- 5 = very depressed</td>
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<td>+5 = very elated</td>
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Social Rhythm Disruption Is a Stronger Predictor of Bipolar Episode Onset than Psychological Stress

Essential Elements of Interpersonal and Social Rhythm Therapy (IPSRT)

- **Social rhythm therapy¹**
  Regularize daily routines
  Emphasizes the link between regular routines and moods
  Uses Social Rhythm Metric to monitor routines

- **Interpersonal psychotherapy²**
  Emphasizes link between mood and life events
  Focus on interpersonal problem area (grief, role transition, role disputes, interpersonal deficits)

## Maintenance Therapies in Bipolar Disorder: Study Design

### Acute Treatment: Variable Length

<table>
<thead>
<tr>
<th>Strategy #1</th>
<th>Strategy #2</th>
<th>Strategy #3</th>
<th>Strategy #4</th>
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<tbody>
<tr>
<td>IPSRT and protocol pharmacotherapy</td>
<td>Intensive clinical management and protocol pharmacotherapy</td>
<td>IPSRT and protocol pharmacotherapy</td>
<td>Intensive clinical management and protocol pharmacotherapy</td>
</tr>
</tbody>
</table>

## Maintenance Treatment: 2 yrs

| IPSRT and protocol pharmacotherapy | IPSRT and protocol pharmacotherapy |

175 acutely ill patients enter study and are randomly assigned.

IPSRT: Interpersonal and Social Rhythm Therapy
Maintenance Therapies in Bipolar Disorder: Key Outcomes

• Acute IPSRT was associated with significantly more rapid improvement in occupational functioning ($p < .05$) and...

• Significantly longer survival without a new mood episode in the maintenance phase, regardless of maintenance treatment assignment ($p = .01$)

• Participants in IPSRT had significantly higher regularity of daily routines ($p < .001$)

• Increased regularity of daily routines in the acute phase was associated with reduced risk of relapse in the maintenance phase ($p < .05$)

STEP-BD PSYCHOSOCIAL TREATMENT OF ACUTE DEPRESSION: STUDY DESIGN

- 293 acutely depressed patients with bipolar I or II disorder were randomly assigned to **intensive treatment** (up to 30 sessions of FFT, CBT, or IPSRT over 9 months) or a brief **control treatment** (CC).
- Each site provided two of the intensive treatments and CC.
- Only patients with family members were eligible for assignment to FFT.
- Primary outcome: time to “recovered” status ($\leq 2$ moderate symptoms for 8 weeks).
Remission 110 days earlier with intensive psychotherapy
STEP-BD TIME TO RECOVERED STATUS: IPSRT VS. CONTROL

Miklowitz et al, Archives of General Psychiatry, 2007

LogRank Chi-Square = 8.0227, P = 0.0455
Would maintaining regular social rhythms help all of us to feel better?
Greater Social Rhythm Regularity is Associated with Better Sleep Quality

Figure 1. Scattergram of SRM-17 vs. PSQI (n = 100).

QUESTIONS?

COMMENTS?