

# Daily Diaries for the Assessment of Sleep and Rhythms



Martica Hall, PhD

Professor of Psychiatry, Psychology, and Clinical and Translational Science  
University of Pittsburgh School of Medicine

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# Outline:

1. **Why use a diary?**
  - **List slide with a number of reasons. Generate additional ones?**
2. **What can we measured by diary?**
  - **Animated slide with example dimensions**
3. **What do we need to include?**
  - **Obtain behavioral reports of...**
  - **Obtain subjective reports of...**
  - **Consensus Sleep Diary**
    - **Is anything missing?**
4. **Should we all use the same diary?**
  - **Advantages: normative data, validate against other modalities, comparisons across studies, combining studies**
  - **Disadvantages: doesn't account for population differences (kids vs adults, cultural sensitivity)**
5. **Example(s)**
6. **Modalities**
  - **Paper**
  - **Web-based**
  - **Phone-based**
7. **safs**



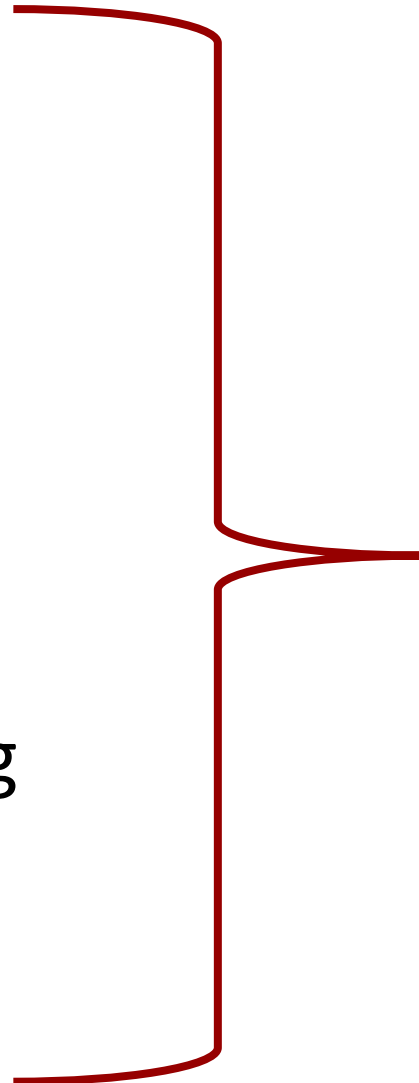
# Why use a diary to measure sleep and rhythms?

- ❖ Daily versus retrospective report
- ❖ Reliability
- ❖ Habitual Sleep
- ❖ Variability
- ❖ Compare/contrast to and verify other modalities
- ❖ Obtain subjective and behavioral reports
- ❖ Other reasons?



# Dimensions of Sleep & Rhythms: Which can be measured by diaries?

- ❖ Duration
- ❖ Continuity
- ❖ Timing
- ❖ Sleep Debt
- ❖ Regularity
- ❖ Social Jet Lag
- ❖ Architecture
- ❖ Sleep Disordered Breathing
- ❖ Satisfaction
- ❖ Daytime Alertness
- ❖ What else???



How?  
When?  
Subjective?, Behavior?, Both?

# Examples



# Pittsburgh Sleep Diary: Standard (August, 2003)

## DIARY

ID \_\_\_\_\_

Date     /     /      
          m m    d d    y y

Please keep this booklet by your bed, and fill it out last thing at night and first thing in the morning. There are 14 sheets in the booklet, one sheet for each night of sleep. Please fill out the left half of the sheet last thing at night, the right half first thing the following morning. ***The first page in this packet is an example of what a page should look like when it is completed. Your actual answers will be different than this example.***

It may be hard to know the exact answers to some questions, such as how long it took you to fall asleep, or how many times you awakened. That's OK. We are only asking for your best guess, not exact answers. Just do the best you can, but ***please answer every question.***

For the last five questions, the line is like a thermometer of ***your own*** feelings, going from one extreme to the other. Place an "X" mark somewhere along each line to show your feelings when you wake up. Do not write any words; just use an "X." This kind of question lets you give a whole range of possible answers. For example, if you felt very alert when you woke up one morning, you might answer like this:

My alertness when I finally woke up was:

Very sleepy \_\_\_\_\_ **X** Very alert

If you felt a little sleepy when you woke up another morning, you might answer like this:

My alertness when I finally woke up was:

Very sleepy \_\_\_\_\_ **X** \_\_\_\_\_ Very alert

# DIARY

ID \_\_\_\_\_

Date    /    /     
m m / d d / y y

## BEDTIME

*Keep by Bed - Please Fill this out Last Thing at Night.*

Today is: Sun  M  T  W  Th  F  Sat      Today's date is:    /    /       /    /   

Today, I had my first contact (in person or by phone) with another person at       :    :     AM  PM

Today, I started work, school, housework, volunteer activities, child or family care at    :    :     AM  PM

Today, I ate my meals at:      breakfast    :    :     AM  PM  
 (if none, write 'none')

lunch    :    :    AM  PM

dinner    :    :     PM  AM

During the course of today, I had the following amount in each time period: *(if none, leave blank)*

	amount before or with breakfast	amount after breakfast before/with lunch	amount after lunch before/with dinner	amount after dinner
caffeinated drinks	_____	1	1	_____
alcoholic drinks	_____	_____	1	_____
cigarettes	_____	2	2	2
cigars/pipes/plugs (of chewing tobacco)	_____	_____	_____	_____

Today, I took the following drugs and medications: *(prescribed & over the counter)*

name of medication	time taken	dose taken
<u>  Aspirin  </u>	<u>  8 AM  </u>	<u>  325 mg  </u>
<u>  Vitamin C  </u>	<u>  6:45 AM  </u>	<u>  1000 mg  </u>
<u>  Folic Acid  </u>	<u>  6:45 AM  </u>	<u>  300 mg  </u>
_____	_____	_____
_____	_____	_____

Today, I took the following exercise at the following times: *(if none, check here)*

start   5:50 AM   end   6:30 AM   type \_\_\_\_\_

start   5:50 PM   end   6:00 PM   type \_\_\_\_\_

Today, I took       naps *(if none, write 0)* at the following times:

start   1:30 PM   end   3:15 PM   start \_\_\_\_\_ end \_\_\_\_\_

## WAKETIME

*Keep by Bed - Please Fill this out First Thing in the Morning.*

Today is: Sun  M  T  W  Th  F  Sat      Today's date is:    /    /       /    /   

Last night I got into bed at    :    :     PM  AM

I actually tried to go to sleep at    :    :     PM  AM

I think it took me about    minutes to fall asleep

This morning, I finally woke at    :    :     AM  PM

I actually got out of bed to start my day at    :    :     AM  PM

My final awakening this morning was caused by (check one):

alarm clock/radio  someone woke me      noises I just woke up

Last night after I finally fell asleep, I woke up this many times during the night (circle one)

0   1    2   3   4   5 or more.

Altogether, these awakenings lasted       minutes.

Of these awakenings (circle one for each line):

I woke to use the bathroom 0  1 2 3 4 5 or more times.

I woke due to noises, child, or bedpartner 0  1 2 3 4 5 or more times.

I woke due to discomfort or a physical complaint  0 1 2 3 4 5 or more times.

I woke due to another or no special reason  0 1 2 3 4 5 or more times.

Last night I remember that I had 0 1  2 3 4 5 or more dreams.

Please place an X on the following lines where it best describes your feelings:

The quality of my sleep last night was:

Very Bad \_\_\_\_\_  \_\_\_\_\_ Very Good

My mood when I finally woke up this morning was:

Very Tense \_\_\_\_\_  \_\_\_\_\_ Very Calm

My alertness when I finally woke up this morning was:

Very Sleepy \_\_\_\_\_  \_\_\_\_\_ Very Alert

In general, my dreams last night were: *(answer only if you had dreams)*

Very Unpleasant \_\_\_\_\_  \_\_\_\_\_ Very Pleasant

Not at all Intense \_\_\_\_\_  \_\_\_\_\_ Very Intense



# Pittsburgh Sleep Diary: AgeWise Program Project (August, 2003)

## Differences from standard?

Please keep this booklet by your bed, and fill it out last thing at night and first thing in the morning every day.

Please fill out the sheet marked BEDTIME just before you go to sleep at night.

Fill out the sheet marked WAKETIME the first thing the following morning.

The first page in this packet is an example of what a page should look like when it is completed. Your actual answers will probably be different than this example.

It may be hard to know the exact answers to some questions, such as how long it took you to fall asleep, or how many times you awakened. That's OK. We are only asking for your best guess, not exact answers. Do the best you can, but please answer every question.

For the last five questions, the line is like a thermometer of *your own feelings*, going from one extreme to the other. Place an "X" mark somewhere along each line to show your feelings

# DIARYAW

ID \_\_\_\_\_

Today's date is: \_\_\_\_\_

Please fill out this page at **BEDTIME**

Tonight is (circle one): Sun Mon Tue Wed Thur Fri Sat \_\_\_\_\_

Today, I had my first contact  
(in person or by phone) with another person at: \_\_\_\_\_:\_\_\_\_\_ AM PM

Today, I started work, school,  
housework, volunteer activities,  
child or family care at: \_\_\_\_\_:\_\_\_\_\_ AM PM

Today, I ate my meals at:  
(if none, write 'none')

Breakfast	_____:	_____	AM	PM
-----------	--------	-------	----	----

Lunch	_____:	_____	AM	PM
-------	--------	-------	----	----

Dinner	_____:	_____	AM	PM
--------	--------	-------	----	----



Today, I took \_\_\_\_\_ naps (if none, enter 0). Naps include any sleep out of bed, however brief.

This also includes any time you fell asleep in the evening, before going to bed. My nap times were:

How many minutes did you spend doing each of the following types of activity today?

(If you did not do the activity, write '0')

AW: bottom of bedtime page  
Why ask these questions now?

Light activity \_\_\_\_\_ minutes; Medium activity \_\_\_\_\_ minutes; Heavy activity \_\_\_\_\_ minutes

During the course of today, I had the following amount in each time period (if none, enter '0'):

	before or with breakfast	after breakfast before or with lunch	after lunch before or with dinner	after dinner
Caffeinated drinks				
Drinks containing alcohol				

Today, I wore my actiwatch (circle one):

**Yes**

**No**

Today, I took off my actiwatch (circle one):

**Yes**

**No**

If yes, I took off my actiwatch and put it back on at these times:

OFF

ON

OFF

ON

1. \_\_\_\_ : \_\_\_\_ AM PM

\_\_\_\_ : \_\_\_\_ AM PM

2. \_\_\_\_ : \_\_\_\_ AM PM

\_\_\_\_ : \_\_\_\_ AM PM

# DIARYAW

Awakening

ID \_\_\_\_\_

Today's date is: \_\_\_\_\_

Please fill out this page in the **MORNING**

Today is (circle one): Sun Mon Tue Wed Thur Fri Sat Today's date is:  
\_\_\_\_\_

Did you take anything to help you sleep last night? Yes \_\_\_ No \_\_\_

(If yes, please indicate:

Last night I got into bed at \_\_\_\_:\_\_\_\_ PM AM

I actually tried to go to sleep at \_\_\_\_:\_\_\_\_ PM AM

I think it took me about \_\_\_\_\_ minutes to fall asleep



---

I woke up \_\_\_\_\_ times, not counting my final awakening. *(Number of times I woke up between when I first fell asleep and my final awakening.)*

In total, these awakenings lasted \_\_\_\_\_ hours \_\_\_\_\_ minutes. *(The TOTAL time I was awake between the time I first fell asleep and finally awakened.)*

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This morning, I finally woke at \_\_\_\_:\_\_\_\_ AM PM

I actually got out of bed to start my day at \_\_\_\_:\_\_\_\_ AM PM

Alarm clock/radio

Someone woke me

Noises

I just woke up

Please place an "X" on the following lines where it best describes your feelings:

AW: bottom of awake page  
Differences from standard?  
Why ask these questions now?  
Why ask about wake up mode?

Last night at bedtime I felt mentally alert/active:

Not at All \_\_\_\_\_ Very Much

Last night at bedtime I had trouble shutting off my thoughts:

Not at All \_\_\_\_\_ Very Much

Last night at bedtime I felt worried:

Not at All \_\_\_\_\_ Very Much

Last night at bedtime I felt sleepy:

Not at All \_\_\_\_\_ Very Much

Last night my sleep was deep:

Not at All \_\_\_\_\_ Very Much

The quality of my sleep last night was:

Very Bad \_\_\_\_\_ Very Good

My mood when I finally woke up this morning was:

Very Tense \_\_\_\_\_ Very Calm

My alertness when I finally woke up this morning was:

Very Sleepy \_\_\_\_\_ Very Alert

# Pittsburgh Sleep Diary: SWAN Sleep Study

## DIARYSWANZ

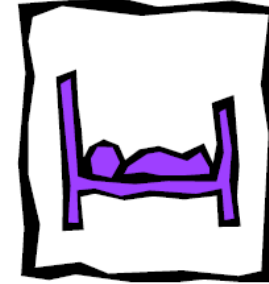
ID \_\_\_\_\_

Date         /         /          
          m   m   /   d   d   /   y   y

**Keep by Bed-Please fill this out LAST thing at night**

Today is: Sun M T W Th F Sat

Today's date is: \_\_\_\_\_



Today, I had my first contact (in person or by phone) with another person at ..... \_\_\_:\_\_\_ AM PM

Today, I started work, school, housework, volunteer activities, child/family care at ..... \_\_\_:\_\_\_ AM PM

Today, I ate my evening meal at ..... \_\_\_:\_\_\_ AM PM

Today, I napped for a total of ..... \_\_\_ minutes

Today, I was ill (e.g., cold, fever, nausea).    1 = Yes    2 = No

Today, I had my period.                            1 = Yes    2 = No

Today, I did the following exercise ..... 0 = none    1 = light    2 = medium    3 = heavy

If you exercised, what time did you last exercise? \_\_\_:\_\_\_ AM PM

During the course of the day I had:	Total Number (0 = none)	What time did you last have.....?
Caffeinated drinks	_____	___:___ AM PM
Alcoholic drinks	_____	___:___ AM PM
Cigarettes	_____	___:___ AM PM

You have told us what medications you take regularly. Did you take **any other** medications today?  
**PRNs?**

Name of other medication(s): (OTC, herbal, prescription, and PRNs)	Time	Amount of each dose
_____	___:___ AM PM	_____
_____	___:___ AM PM	_____
_____	___:___ AM PM	_____
_____	___:___ AM PM	_____

Please read each item and circle the appropriate number to indicate the frequency and severity of each symptom you may have experienced **today**.

How many times did you experience these symptoms today?								<u>IF</u> you had this symptom today, how <u>severe</u> was it?				
	0	1	2	3	4	5 or more	All day	not at all	slightly	moderately	quite	extremely
Fatigue/Tired	0	1	2	3	4	5	9	0	1	2	3	4
Cold Sweats	0	1	2	3	4	5	9	0	1	2	3	4
Hot Flashes or Flashes	0	1	2	3	4	5	9	0	1	2	3	4
Menstrual Symptoms/Cramps	0	1	2	3	4	5	9	0	1	2	3	4
Other Pain/Discomfort	0	1	2	3	4	5	9	0	1	2	3	4

**Today, I took off my actigraph.      1 = Yes    2 = No**

If yes, when?	Time off	Time back on	Time off	Time back on
1. _____	_____	_____	3. _____	_____
2. _____	_____	_____	4. _____	_____



**Keep by Bed-Please fill this out FIRST thing I the morning**

Today is: Sun M T W Th F Sat Today's Date is: \_\_\_\_\_



Last night I got into bed at ..... \_\_\_\_:\_\_\_\_ AM PM

I actually tried to go to sleep at ..... \_\_\_\_:\_\_\_\_ AM PM

I think it took me about ..... \_\_\_\_ minutes to fall asleep

This morning I finally woke at ..... \_\_\_\_:\_\_\_\_ AM PM

I actually got out of bed to start my day at ..... \_\_\_\_:\_\_\_\_ AM PM

Last night after I finally fell asleep, I remember waking up this many times during the night

(circle one):      0            1            2            3            4            5 or more

Altogether, these awakenings lasted about \_\_\_\_\_ minutes.

Please read each item and circle the appropriate number to indicate the frequency and severity of each symptom you may have experienced **last night**.

How many times did you experience these symptoms last night?								<u>IF</u> you had this symptom last night, how <u>severe</u> was it?				
	0	1	2	3	4	5 or more	All night	not at all	slightly	moderately	quite	extremely
Cold Sweats	0	1	2	3	4	5	9	0	1	2	3	4
Hot Flashes or Flashes	0	1	2	3	4	5	9	0	1	2	3	4
Night Sweats	0	1	2	3	4	5	9	0	1	2	3	4
Menstrual Symptoms/Cramps	0	1	2	3	4	5	9	0	1	2	3	4
Other Pain/Discomfort	0	1	2	3	4	5	9	0	1	2	3	4
Worries	0	1	2	3	4	5	9	0	1	2	3	4

Please circle the appropriate number to indicate how you feel **this morning**, after waking up.

This morning I feel:	not at all	a little	moderately	quite a bit	extremely
Rested	0	1	2	3	4
Blue/down	0	1	2	3	4
Anxious/tense	0	1	2	3	4

## The Consensus Sleep Diary: Standardizing Prospective Sleep Self-Monitoring

Colleen E. Carney, PhD<sup>1</sup>; Daniel J. Buysse, MD<sup>2</sup>; Sonia Ancoli-Israel, PhD<sup>3</sup>; Jack D. Edinger, PhD<sup>4</sup>; Andrew D. Krystal, MD<sup>5</sup>; Kenneth L. Lichstein, PhD<sup>6</sup>; Charles M. Morin, PhD<sup>7</sup>

<sup>1</sup>Ryerson University, Toronto, Canada; <sup>2</sup>University of Pittsburgh School of Medicine, Pittsburgh, PA; <sup>3</sup>University of California San Diego, La Jolla, CA; <sup>4</sup>Veterans' Affairs and Duke University Medical Centers, Durham, NC; <sup>5</sup>Duke University Medical Center, Durham, NC; <sup>6</sup>The University of Alabama, Tuscaloosa, AL; <sup>7</sup>Laval University, Quebec, Canada

**Study Objectives:** To present an expert consensus, standardized, patient-informed sleep diary.

**Methods and Results:** Sleep diaries from the original expert panel of 25 attendees of the Pittsburgh Assessment Conference<sup>1</sup> were collected and reviewed. A smaller subset of experts formed a committee and reviewed the compiled diaries. Items deemed essential were included in a Core sleep diary, and those deemed optional were retained for an expanded diary. Secondly, optional items would be available in other versions. A draft of the Core and optional versions along with a feedback questionnaire were sent to members of the Pittsburgh Assessment Conference. The feedback from the group was integrated and the diary drafts were subjected to 6 focus groups composed of good sleepers, people with insomnia, and people with sleep apnea. The data were summarized into themes and changes to the drafts were made in response to the focus groups. The resultant draft was evaluated by another focus group and subjected to lexile analyses. The lexile analyses suggested that the Core diary instructions are at a sixth-grade reading level and the Core diary was written at a third-grade reading level.

**Conclusions:** The Consensus Sleep Diary was the result of collaborations with insomnia experts and potential users. The adoption of a standard sleep diary for insomnia will facilitate comparisons across studies and advance the field. The proposed diary is intended as a living document which still needs to be tested, refined, and validated.

**Keywords:** Sleep diary, insomnia, sleep assessment

**Citation:** Carney CE; Buysse DJ; Ancoli-Israel S; Edinger JD; Krystal AD; Lichstein KL; Morin CM. The consensus sleep diary: standardizing prospective sleep self-monitoring. *SLEEP* 2012;35(2):287-302.

Consensus Sleep Diary-Core

ID/Name: \_\_\_\_\_

Sample								
Today's date	4/5/11							
1. What time did you get into bed?	10:15 p.m							
2. What time did you try to go to sleep?	11:30 p.m							
3. How long did it take you to fall asleep?	55 min.							
4. How many times did you wake up, not counting your final awakening?	3 times							
5. In total, how long did these awakenings last?	1 hour 10 min.							
6. What time was your final awakening?	6:35 a.m.							
7. What time did you get out of bed for the day?	7:20 a.m							
8. How would you rate the quality of your sleep?	<input type="checkbox"/> Very poor <input checked="" type="checkbox"/> Poor <input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Very good	<input type="checkbox"/> Very poor <input type="checkbox"/> Poor <input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Very good	<input type="checkbox"/> Very poor <input type="checkbox"/> Poor <input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Very good	<input type="checkbox"/> Very poor <input type="checkbox"/> Poor <input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Very good	<input type="checkbox"/> Very poor <input type="checkbox"/> Poor <input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Very good	<input type="checkbox"/> Very poor <input type="checkbox"/> Poor <input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Very good	<input type="checkbox"/> Very poor <input type="checkbox"/> Poor <input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Very good	<input type="checkbox"/> Very poor <input type="checkbox"/> Poor <input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Very good
9. Comments (if applicable)	I have a cold							



Consensus Sleep Diary-M Continued

ID/NAME: \_\_\_\_\_

Sample

Today's Date	4/5/11							
11a. How many times did you nap or doze?	2 times							
11b. In total, how long did you nap or doze?	1 hour 10 min.							
12a. How many drinks containing alcohol did you have?	3 drinks							
12b. What time was your last drink?	9 :20 p.m.							
13a. How many caffeinated drinks (coffee, tea, soda, energy drinks) did you have?	2 drinks							
13b. What time was your last drink?	3 :00 p.m.							
14. Did you take any over-the-counter or prescription medication(s) to help you sleep?  If so, list medication(s), dose, and time taken	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Medication(s): Relaxo-Herb Dose: 50 mg Time(s) taken: 11 pm	<input type="checkbox"/> Yes <input type="checkbox"/> No Medication(s):  Dose:  Time(s) taken:	<input type="checkbox"/> Yes <input type="checkbox"/> No Medication(s):  Dose:  Time(s) taken:	<input type="checkbox"/> Yes <input type="checkbox"/> No Medication(s):  Dose:  Time(s) taken:	<input type="checkbox"/> Yes <input type="checkbox"/> No Medication(s):  Dose:  Time(s) taken:	<input type="checkbox"/> Yes <input type="checkbox"/> No Medication(s):  Dose:  Time(s) taken:	<input type="checkbox"/> Yes <input type="checkbox"/> No Medication(s):  Dose:  Time(s) taken:	<input type="checkbox"/> Yes <input type="checkbox"/> No Medication(s):  Dose:  Time(s) taken:
15. Comments (if applicable)	I have a cold							



Consensus Sleep Diary - E (Please Complete Before Bed)

ID/NAME: \_\_\_\_\_

Sample

Today's Date	4/4/11							
11a. How many times did you nap or doze?	2 times							
11b. In total, how long did you nap or doze?	1 hour 10 min.							
12a. How many drinks containing alcohol did you have?	3 drinks							
12b. What time was your last drink?	9:20 p.m.							
13a. How many caffeinated drinks (coffee, tea, soda, energy drinks) did you have?	2 drinks							
13b. What time was your last drink?	3:00 p.m.							
14. Did you take any over-the-counter or prescription medication(s) to help you sleep?  If so, list medication(s), dose, and time taken	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Medication(s): Relaxo-Herb Dose: 50 mg Time(s) taken: 11 pm	<input type="checkbox"/> Yes <input type="checkbox"/> No Medication(s):  Dose:  Time(s) taken:	<input type="checkbox"/> Yes <input type="checkbox"/> No Medication(s):  Dose:  Time(s) taken:	<input type="checkbox"/> Yes <input type="checkbox"/> No Medication(s):  Dose:  Time(s) taken:	<input type="checkbox"/> Yes <input type="checkbox"/> No Medication(s):  Dose:  Time(s) taken:	<input type="checkbox"/> Yes <input type="checkbox"/> No Medication(s):  Dose:  Time(s) taken:	<input type="checkbox"/> Yes <input type="checkbox"/> No Medication(s):  Dose:  Time(s) taken:	<input type="checkbox"/> Yes <input type="checkbox"/> No Medication(s):  Dose:  Time(s) taken:
15. Comments (if applicable)	I have a cold							



### **General Instructions**

**What is a Sleep Diary?** A sleep diary is designed to gather information about your daily sleep pattern.

**How often and when do I fill out the sleep diary?** It is necessary for you to complete your sleep diary every day. If possible, the sleep diary should be completed within one hour of getting out of bed in the morning.

**What should I do if I miss a day?** If you forget to fill in the diary or are unable to finish it, leave the diary blank for that day.

**What if something unusual affects my sleep or how I feel in the daytime?** If your sleep or daytime functioning is affected by some unusual event (such as an illness, or an emergency) you may make brief notes on your diary.

**What do the words "bed" and "day" mean on the diary?** This diary can be used for people who are awake or asleep at unusual times. In the sleep diary, the word "day" is the time when you choose or are required to be awake. The term "bed" means the place where you usually sleep.

**Will answering these questions about my sleep keep me awake?** This is not usually a problem. You should not worry about giving exact times, and you should not watch the clock. Just give your best estimate.

### **Item Instructions**

Use the guide below to clarify what is being asked for each item of the Sleep Diary.

*Date:* Write the date of the morning you are filling out the diary.

- 1. What time did you get into bed?* Write the time that you got into bed. This may not be the time that you began "trying" to fall asleep.
- 2. What time did you try to go to sleep?* Record the time that you began "trying" to fall asleep.
- 3. How long did it take you to fall asleep?* Beginning at the time you wrote in question 2, how long did it take you to fall asleep.
- 4. How many times did you wake up, not counting your final awakening?* How many times did you wake up between the time you first fell asleep and your final awakening?
- 5. In total, how long did these awakenings last?* What was the total time you were awake between the time you first fell asleep and your final awakening. For example, if you woke 3 times for 20 minutes, 35 minutes, and 15 minutes, add them all up ( $20+35+15=70$  min or 1 hr and 10 min).
- 6. What time was your final awakening?* Record the last time you woke up in the morning.
- 7. What time did you get out of bed for the day?* What time did you get out of bed with no further attempt at sleeping? This may be different from your final awakening time (e.g. you may have woken up at 6:35 a.m. but did not get out of bed to start your day until 7:20 a.m.)
- 8. How would you rate the quality of your sleep?* "Sleep Quality" is your sense of whether your sleep was good or poor.
- 9. Comments* If you have anything that you would like to say that is relevant to your sleep feel free to write it here.

### **Morning Sleep Diary Item Instructions**

Use the guide below to clarify what is being asked for each item of the Sleep Diary.

*Date:* Write the date of the morning you are filling out the diary.

1. *What time did you get into bed?* Write the time that you got into bed. This may not be the time you began “trying” to fall asleep.
2. *What time did you try to go to sleep?* Record the time that you began “trying” to fall asleep.
3. *How long did it take you to fall asleep?* Beginning at the time you wrote in question 2, how long did it take you to fall asleep.
4. *How many times did you wake up, not counting your final awakening?* How many times did you wake up between the time you first fell asleep and your final awakening?
5. *In total, how long did these awakenings last?* What was the total time you were awake between the time you first fell asleep and your final awakening. For example, if you woke 3 times for 20 minutes, 35 minutes, and 15 minutes, add them all up (20+35+15= 70 min or 1 hr and 10 min).
- 6a. *What time was your final awakening?* Record the last time you woke up in the morning.
- 6b. *After your final awakening, how long did you spend in bed trying to sleep?* After the last time you woke-up (Item #6a), how many minutes did you spend in bed trying to sleep? For example, if you woke up at 8 am but continued to try and sleep until 9 am, record 1 hour.
- 6c. *Did you wake up earlier than you planned?* If you woke up or were awakened earlier than you planned, check yes. If you woke up at your planned time, check no.
- 6d. *If yes, how much earlier?* If you answered “yes” to question 6c, write the number of minutes you woke up earlier than you had planned on waking up. For example, if you woke up 15 minutes before the alarm went off, record 15 minutes here.

*Figure 3 continues on the following page*

**Figure 3**—Sleep Diary Instructions (CSD-E)

7. *What time did you get out of bed for the day?* What time did you get out of bed with no further attempt at sleeping? This may be different from your final awakening time (e.g. you may have woken up at 6:35 a.m. but did not get out of bed to start your day until 7:20 a.m.)
8. *In total, how long did you sleep?* This should just be your best estimate, based on when you went to bed and woke up, how long it took you to fall asleep, and how long you were awake. You do not need to calculate this by adding and subtracting; just give your best estimate.
9. *How would you rate the quality of your sleep?* “Sleep Quality” is your sense of whether your sleep was good or poor.
10. *How restful or refreshed did you feel when you woke up for the day?* This refers to how you felt after you were done sleeping for the night, during the first few minutes that you were awake.

## ***Nighttime Sleep Diary Item Instructions***

Please complete the following items before you go to bed.

*Date:* Write the date of the evening you are filling out the diary.

*11a. How many times did you nap or doze?* A nap is a time you decided to sleep during the day, whether in bed or not in bed. "Dozing" is a time you may have nodded off for a few minutes, without meaning to, such as while watching TV. Count all the times you napped or dozed at any time from when you first got out of bed in the morning until you got into bed again at night.

*11b. In total, how long did you nap or doze?* Estimate the total amount of time you spent napping or dozing, in hours and minutes. For instance, if you napped twice, once for 30 minutes and once for 60 minutes, and dozed for 10 minutes, you would answer "1 hour 40 minutes." If you did not nap or doze, write "N/A" (not applicable).

*12a. How many drinks containing alcohol did you have?* Enter the number of alcoholic drinks you had where 1 drink is defined as one 12 oz beer (can), 5 oz wine, or 1.5 oz liquor (one shot).

*12b. What time was your last drink?* If you had an alcoholic drink yesterday, enter the time of day in hours and minutes of your last drink. If you did not have a drink, write "N/A" (not applicable).

*13a. How many caffeinated drinks (coffee, tea, soda, energy drinks) did you have?* Enter the number of caffeinated drinks (coffee, tea, soda, energy drinks) you had where for coffee and tea, one drink = 6-8 oz; while for caffeinated soda one drink = 12 oz.

*13b. What time was your last drink?* If you had a caffeinated drink, enter the time of day in hours and minutes of your last drink. If you did not have a caffeinated drink, write "N/A" (not applicable).

*14. Did you take any over-the-counter or prescription medication(s) to help you sleep? If so, list medication(s), dose, and time taken:* List the medication name, how much and when you took EACH different medication you took tonight to help you sleep. Include medication available over the counter, prescription medications, and herbals (example: "Sleepwell 50 mg 11 pm"). If every night is the same, write "same" after the first day

*15. Comments* If you have anything that you would like to say that is relevant to your sleep feel free to write it here.











When filling out the Bedtime Dairy, we would like to know about your physical activity that day. If you did more than one type of activity, please tell us about your most strenuous type. The table below contains examples of different levels of physical activity.

## EXERCISE

Light (walk)	 <p>Walking, shopping, light work at home, carrying light items.</p>
Medium (jog)	 <p>Jogging, bowling, golf, heavy work at home, moderate exercise.</p>









# Measuring Sleep Health: RU\_SATED?

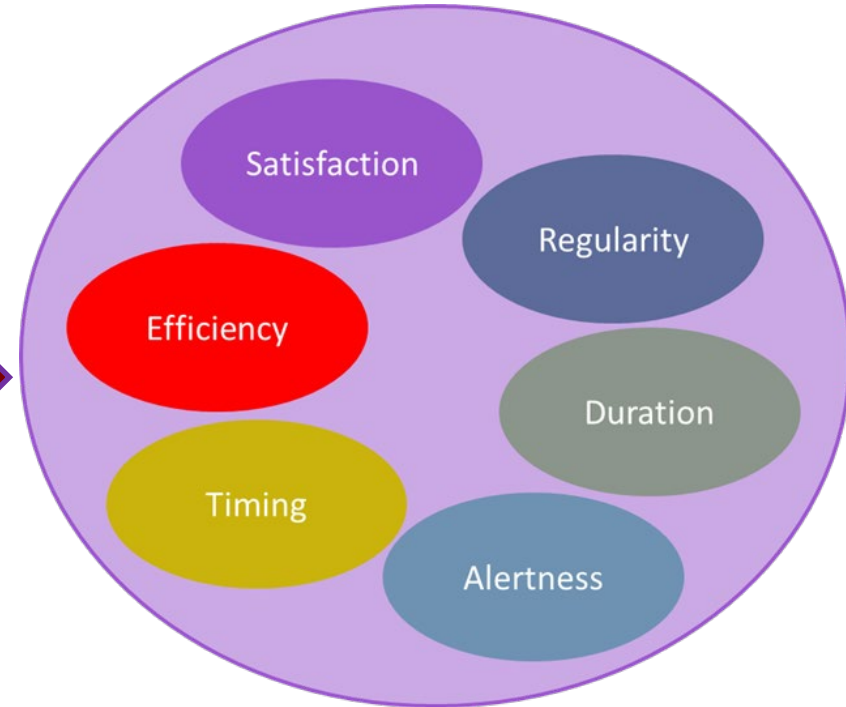
## RU SATED?

		Rarely/ Never (0)	Sometimes (1)	Usually/ Always (2)
<u>R</u> egularity	Do you wake up at about the same time (within one hour) every day?			
<u>S</u> atisfaction				
<u>A</u> lertness				
<u>T</u> iming				
<u>E</u> fficiency	Do you spend less than 30 minutes awake at night? (This includes the time it takes to fall asleep plus awakenings during sleep.)			
<u>D</u> uration	Do you sleep between 6 and 8 hours per day?			

**Total for all items ranges from 0-12**

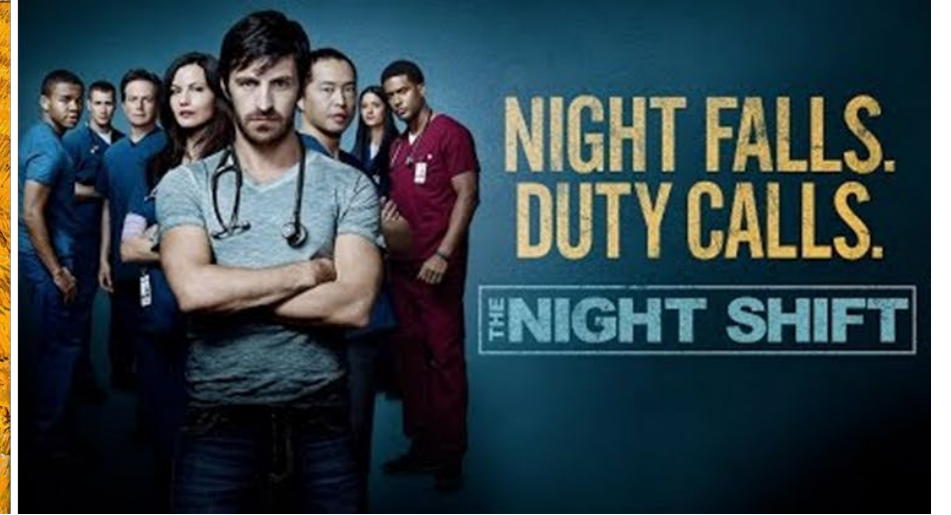
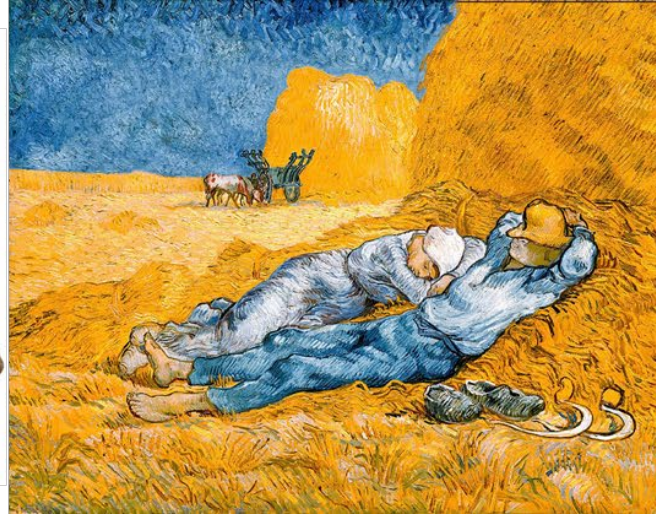


# Predictors of Multidimensional Sleep Health



*3 examples...*

# Further Discussion?



# Sleep – The Beauty, The Beast

