

Overview

- What is CBT-I?
- Sleep Diary
- Sleep Restriction
- Stimulus Control



A HX PERSPECTIVE COGNITIVE & BEHAVIORAL TXs

Sept. 29, 1894.] EAU-DE COLOGNE TIPLERS. [THE BRITISH MEDICAL JOURNAL 719

SLEEPLESSNESS.

culled from the *Glasgow Herald* :

What is CBT-I?

CBT-I is a psychotherapy that targets:

Behaviors

- Increase sleep drive
- Strengthen the signals from the circadian clock
- Optimize congruency between circadian clock and placement of sleep opportunity (time in bed)
- Strengthen bed as cue for sleep (conditioned insomnia)
- Reduce physiological arousal

Cognitions

- Reduce sleep effort
- Reduce cognitive arousal
- Address dysfunctional beliefs about sleep
- Address safety behaviors
- Address obstacles to adherence

THERAPY



SLEEP RESTRICTION
 STIMULUS CONTROL
 SLEEP HYGIENE
 COGNITIVE THERAPY

“WHAT ARE WE GOING TO DO TODAY?”
 THE SAME THING AS EVERY DAY ... !

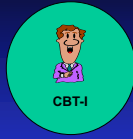


- SLEEP DIARY
- Introduced at the end of first (assessment) visit
- Completed daily throughout treatment
- Reviewed at beginning of each session
- Essential to carry out treatment

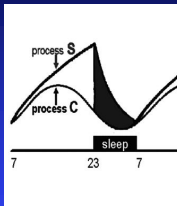
CONSENSUS SLEEP DIARY

Sample		ID/Names:							
Today's date	4/5/11								
1. What time did you get into bed?	10:15 PM								
2. What time did you try to go to sleep?	11:30 PM								
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?	6 times								
5. In total, how long did these awakenings last?	2 hours 5 min								
6a. What time was your final awakening?	6:35 AM								
6b. After your final awakening, how long did you spend in bed trying to sleep?	45 min								
6c. Did you wake up earlier than you planned?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
6d. If yes, how much earlier?	1 hour								
7. What time did you get out of bed for the day?	7:20 AM								

THERAPY



- SLEEP RESTRICTION
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WHAT ABOUT INSOMNIA ?

SRT: A Multi-step Process

Aim: Create and harness a strong sleep drive to improve sleep quality as represented by increasing sleep efficiency (SE)

$$SE = \text{total sleep time} / \text{total time in bed} \times 100$$

Step 1: Decrease time in bed to approximate current average total sleep time (based on sleep diaries)

Step 2: Slowly increase time in bed when:

- Sleep improves (SE \geq 85%) BUT
- Sleep need is not met (daytime sleepiness present)

SLEEP RESTRICTION

Spielman et al. 1987

11 PM 7 AM

Baseline Insomnia
← TST = 5 hrs TIB = 8.0 hrs SE% = 62.5

Week 1 SR
← PTIB = 5.0 hrs TST = 4.75 hrs SE% = 95.0

Week 2 SR
← + 15 Min. PTIB = 5.25 hrs

Schematic representation by Michael Smith PhD

- Keep diary
- Restrict to the number of hours in bed = average TST
 - 5.0 Hrs should be the minimum
 - PTB and PTOB are inflexible
 - Review ways to stay awake
- Titration based on diary data (< 80%, 80-85%, > 85%)

Considerations when setting Sleep Window

- Collaborate with patient to determine out-of-bed time
- Instruct to set alarm and get out of bed shortly after WT

TIB window should be congruent with

Life constraints (e.g. work schedule)	Patient's eveningness/morningness tendency
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Determine BT based on TIB and WT

Count back from out of bedtime	Example: TIB=6 hours and WT=6AM → BT=12AM
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SLEEP RESTRICTION

Spielman et al. 1987

11 PM 7 AM

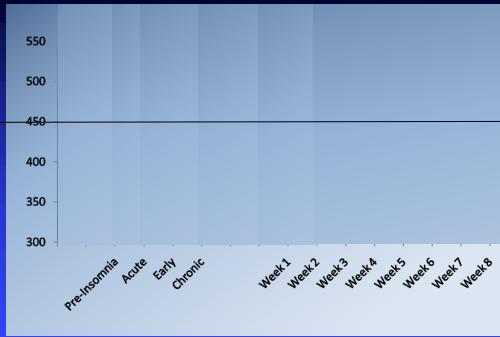
Baseline Insomnia

Week 1 SR

Week 2 SR

Schematic representation by Michael Smith PhD

TIB: BEFORE, OVER TIME, AND W/ TX



Schematic representation by Michael Grandner PhD



**A COLD CALL APPROACH TO SETTING TIB
MAY RESULT IN RESISTANCE AND NON-
COMPLIANCE**

Sleep Restriction Rationale

- Putting quality before quantity
- Improve quality by enhancing sleep drive
- What is better-solid sleep or more sleep?
- Once sleep quality is improved (as measured by sleep efficiency) and body learns to sleep solidly, sleep quantity will gradually be extended.
- Look for optimal sleep times and windows

SLEEP RESTRICTION-TAKE TWO

ANOTHER WAY OF THINKING ABOUT SLEEP RESTRICTION

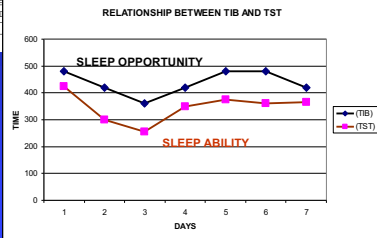
THE PIZZA DOUGH ANALOGY



SLEEP RESTRICTION-TAKE THREE

COMPLETE IMMEDIATELY ON AWAKENING (PLEASE CALCULATE TOTAL TIME IN BED AND TOTAL SLEEP TIME)

	MON	TUES	WED	THURS	FRI	SAT	SUN	MEAN
TIME TO BED (CLOCK TIME)	9:00	9:30	9:30	9:30	9:30	9:30	9:30	9:30
TIME OUT OF BED (CLOCK TIME)	5:00	5:00	5:00	5:00	5:00	5:00	5:00	5:00
TIBD TOTAL TIME IN BED	4:00	4:20	3:00	4:20	4:00	4:00	4:20	4:21.1
TIME TO BED (SLEEP FROM Y)	60	0	60	0	60	60	0	60
TIME OUT OF BED (SLEEP FROM Y)	60	60	60	60	60	60	60	252.7
OST TIME TO FALL ASLEEP	35	55	45	35	60	65	20	45.8
WAKENUP NUMBER TIMES WAKENED	2	1	3	3	4	2	1	2.3
WAKENUP WAKE UP AFTER SLEEP ONSET	20	65	60	25	45	55	35	48.8
TIBD TOTAL SLEEP TIME (MIN)	0	0	0	0	0	0	0	0.0
TST TOTAL SLEEP TIME (MIN)	425	300	255	350	375	300	365	347.1
95% SLEEP								79.2
SLEEP ON								4.1
FATIGUE								4.1



Example

A 68 Year Old Retired Air Force Mechanic

Stressor: Wife recent diagnosis of lung cancer; grandson soon to be deployed

History: Insomnia during periods of anxiety, increased with diagnosis of Restless Legs Syndrome

Dozes off and on in the evening

BT: 19:00 watches TV Lights out: 19:30-20:00 SL < 30 minutes

WASO 3-4 times a night, up 20-40 minutes each time

WT = 04:00 AM Out-of-Bed = 4:30 AM

Daytime effects: Tired, does not drive, tries to nap during the day

Problems: Arthritis, Restless Legs Syndrome; Depression (mild)

Medications: Motrin, Mirapex, Calcium

Coffee and a glass of wine with dinner at 17:30 PM

Goal: Stay asleep through the night, "like everyone else"

Example Diary

Today's date	7/1	7/2	7/3	7/4	7/5	7/6	7/7
In total, how long did you nap or doze yesterday?	30	60	45	60	60	40	50
1. What time did you get into bed?	7:00	7:15	7:00	7:00	7:30	8:30	8:00
2. What time did you try to go to sleep?	7:00	8:00	7:15	8:00	8:00	7:00	8:00
3. How long did it take you to fall asleep?	15	10	10	10	10	15	10
4. How many times did you wake up, not counting your final awakening?	2	1	3	2	1	2	1
5. In total, how long did these awakenings last?	2 hrs	2 hrs	3 hrs	2 hrs	2 hrs	3 hrs	2 hrs
6a. What time was your final awakening?	3:00	4:00	4:30	4:30	4:00	4:50	4:00
6b. Did you wake up earlier than you desired?	Yes 150	Yes 90	Yes 30	Yes 30	Yes 60	Yes 40	Yes 90
6c. If yes how many minutes earlier?							
7. What time did you get out of bed for the day?	5:30	5:30	5:00	5:00	5:00	5:30	5:30
8. How would you rate the quality of your sleep?	X poor	X Poor	X very Poor	X very poor	X poor	X very Poor	X Poor
9. Comments (if applicable)							
Averages: TIB = 9.68 hrs; TST = 6.04 hrs; SE = 62.55%							

Example

Patient sleep diary indicates the following averages:

- TST = 6.04 hours
- TIB = 9.68hours
- WT = 5:30 AM
- SE= 62.5%
- No strong circadian tendencies

Q: What BT and out-of-bed time would you suggest?

Activities before bed time



- Sit up and forward
- Wash face
- Cold compress
- Stand (5-10mins)
- Rinse and repeat
- Activities



THINGS TO DO WHEN YOU ARE AWAKE

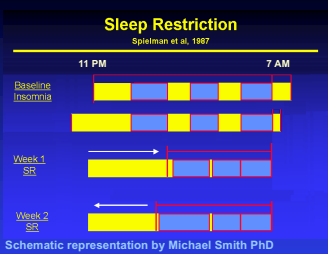
- In the evening:**
- ◆ Choose clothes that you can wear for work or school the next day
 - ◆ Make your lunch
 - ◆ Minate or start to prepare food for dinner the following day and store it in the refrigerator
 - ◆ Take a bath or long shower
 - ◆ Write thank you notes or short emails to friends
 - ◆ Surf the internet (non-stressful topics only), do research for major purchases (cars, appliances, vacations)
 - ◆ Watch movies or episodes of television shows that you haven't seen in a long time (no action films)
 - ◆ Take the dog for a long walk
 - ◆ Groom your pets
 - ◆ Listen to slow, relaxing or instrumental music
 - ◆ Gather old bills and statements and shred them
 - ◆ Organize collections- photos, old letters, wine, books, or other items
 - ◆ Catch up on laundry or folding clothes
 - ◆ Polish your shoes
 - ◆ Iron or mend clothing
 - ◆ Write in your journal
 - ◆ Do some stretches to relax your muscles
 - ◆ Give yourself a pedicure, manicure or facial
 - ◆ Sweep or mop the kitchen floor while no one else is there to walk on it
 - ◆ Floss
 - ◆ Knit
 - ◆ Quilt

SRT: Difficulty Getting Out of Bed at Designated Time



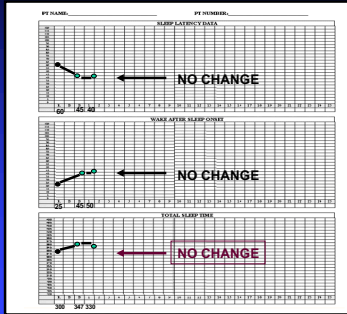
- Relevant to "owls" and patients with depression
 - Plan highly motivating activities
 - Plan activities that involve commitment to others
 - Use multiple, staggered alarm clocks
 - Elicit help from significant others

TITRATION RULES



- SE ≥ 85%- Increase Sleep Opportunity 15mins.
- SE between 80-85%- Stick
- SE < 80%- Ctrl Alt Del / Decrease Sleep Opportunity 15mins.

SESSION – 3 POST FIRST WEEK OF ACTIVE TX
 GRAPH MEAN SLEEP CONTINUITY – SCENARIO 1



Exploring Reasons For Insufficient Progress

- Inconsistent adherence** • → Troubleshoot obstacles
- Misplacement of TIB window for the patient's chronotype** • → Shift TIB window as needed
- Increased sleep-related anxiety** • → Cognitive Work
- Change in life circumstances such as illness, travel, etc.** • → Recalibrate TIB to fit changed circumstances

ASSESSMENT

THE EPWORTH SLEEPINESS SCALE

Name: _____
 Today's Date: _____
 Your sex (male = M, female = F) _____

How likely are you to doze off? This refers to your usual way of recently try to work out how the appropriate number for each set.

0 = Never doze
 1 = Little chance of dozing
 2 = Some chance of dozing
 3 = Moderate chance of dozing
 4 = High chance of dozing
 5 = Very high chance of dozing

Situation: _____

Sitting and reading
 Watching TV
 Sitting, inactive in a public place
 As a passenger in a car for an hour
 Lying down to rest in the afternoon
 Sitting and talking to someone
 Sitting quietly after a lunch while in a car, while stopped for a few minutes in the traffic

1 _____
 2 _____
 3 _____
 4 _____
 5 _____

Thank you for your cooperation

Extending TIB

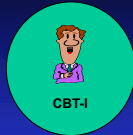
Extend TIB if BOTH conditions are met:

- High sleep quality
 - SE \geq 85%
- Pt feels they need more sleep

How much to extend?

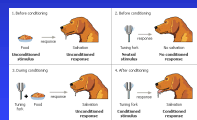
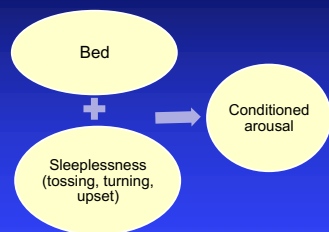
- Base on ESS
 - ESS $<$ 10, add 15mins
 - ESS $>$ 10, add 30mins

THERAPY



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SC: Conditioned Arousal



WHAT IS "STIMULUS CONTROL ?"

GOOD STIMULUS CONTROL ODDS 1 IN 2	STIMULUS DYSCONTROL ODDS 1 IN 8
<p>BEDROOM BEDTIME</p> <p>SEX</p> <p>SLEEP</p>	<p>EAT IN BED</p> <p>READ IN BED</p> <p>WATCH TV IN BED</p> <p>BEDROOM BEDTIME</p> <p>SEX</p> <p>SLEEP</p> <p>WORK IN BED</p> <p>WORK IN BED</p> <p>CLEAN IN BDRM</p>

STIMULUS CONTROL

1. Lie down to go to sleep at the prescribed TTB ~~sleep~~
2. Do not use your bed for anything except sleep and sex.
3. If you find yourself unable to fall asleep, get up and go into another room. Return to bed only when sleepy
4. If you still cannot fall asleep, repeat step 3.
5. Set your alarm and get up at the same time every morning irrespective of how much sleep you got during the night.
6. Do not nap during the day.

SC: More than meets the eye!

- Ends association between being awake and bed (Extinction of conditioned arousal)
- Let go of sleep effort
- Curtail micro-sleeping
- Serves as exposure
- Tonight is sacrificed-strengthen bed/sleep association over time

Obstacles to SCT



“My partner always reads in bed and sleeps just fine”

Partner does not have conditioned insomnia

“I always read in bed at bedtime and have no problem falling asleep; It helps me fall asleep”

Then why are you here?
Dependency on reading

SCT: Practical Considerations For Instruction #3



Patient: “How long should I wait before getting out of bed?”

- Rule of thumb is 15 to 20 mins. ?
- Do not look at clock →creates anxiety and make you try harder to sleep.
- Use your internal sensation that sleep is not imminent. Do not dwell.

SC: Practical Considerations for Instruction #3



Patient: “What should I do when out of bed?”

- Prepare a comfortable spot: warm throw cover, space heater, dim lighting
- Use coping self talk: “I can’t sleep now so I might as well enjoy the time rather than struggle.
- Engaging but non-stimulating activities. ?

Things to do when awake at night

What not to do

- No eating
- No exercise
- No work

What to do

- Relaxing enjoyable activities
 - TV
 - Movies
 - Reading
 - Hobbies/crafts
 - Games



SC: Obstacles to Instruction #3



"If I get out of bed, I will be up longer than if I stay in bed."

How would you answer this?

SC: Instruction #5

Instruction: "Get up (and out of bed) at a consistent time each day regardless of how you slept the night before"

- Strengthens circadian clock signal
- Increases sleep drive

Patient: "But what if I had a terrible night?"

- Do it anyway!!! It's the way to stop future "terrible nights"

SC: Instruction #6

Instruction: "Do not take daytime naps"

- Increases sleep drive at night

BUT if needed for safety DO nap

- **Safety needs ALWAYS come first**

A regular short nap (15-30 minutes) taken 7-9 hours after morning wake time will not affect sleep drive or weaken the circadian clock

BREAK



QUESTIONS