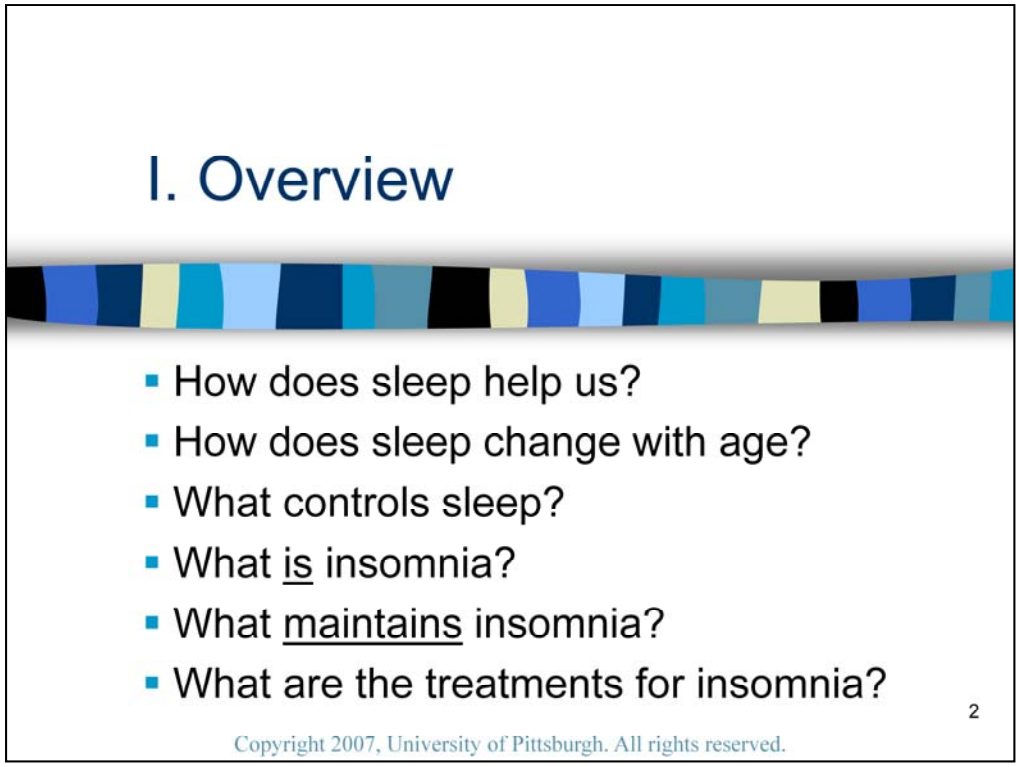
Sleep and insomnia

Educational material for patients

Brief Behavioral Treatment of Insomnia
In Primary Care



This treatment program consists of three parts:

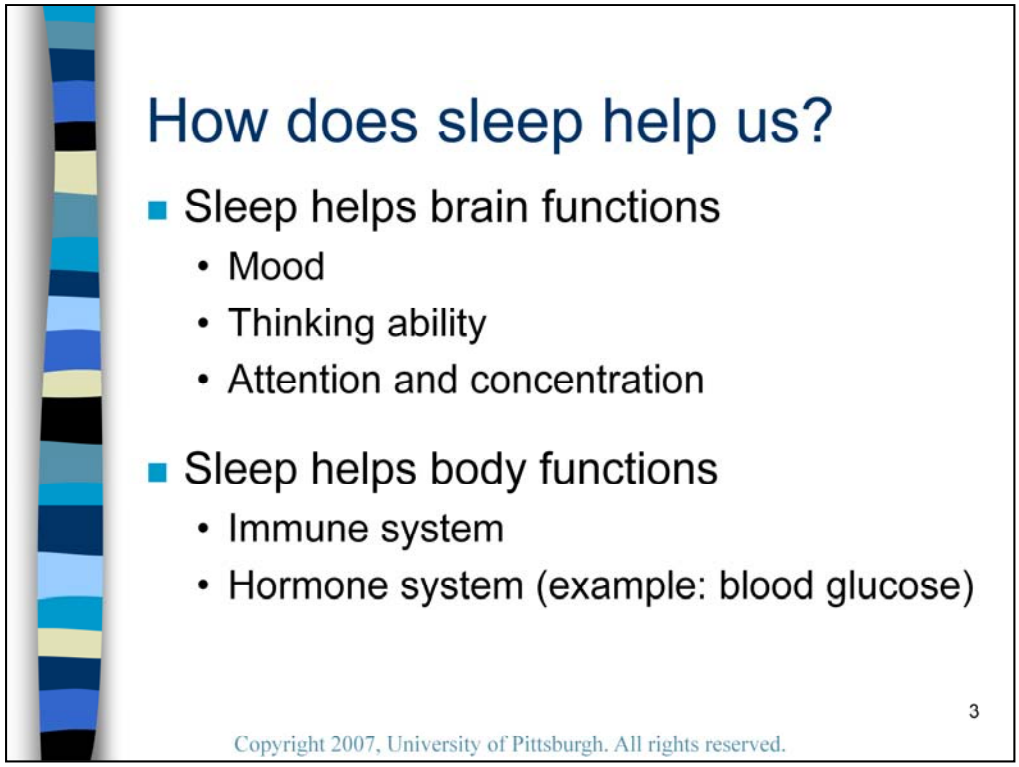
I. Education about sleep, aging, and treatments of insomnia

II. General rules for healthy sleep

III. Specific suggestions about how you can change your behavior to improve your sleep.

Although the treatment program is fairly simple, it can be very effective for people who are having sleep problems.

In the first part of our program, we will review some basic information about sleep, including these topics. (Therapist then presents bullet points)



Sleep helps brain functions. We can think of sleep as being of the brain, by the brain, and for the brain. For instance, sleep affects:

Mood. Sleep deprivation (and insomnia) can lead to low mood, irritability, and frustration.

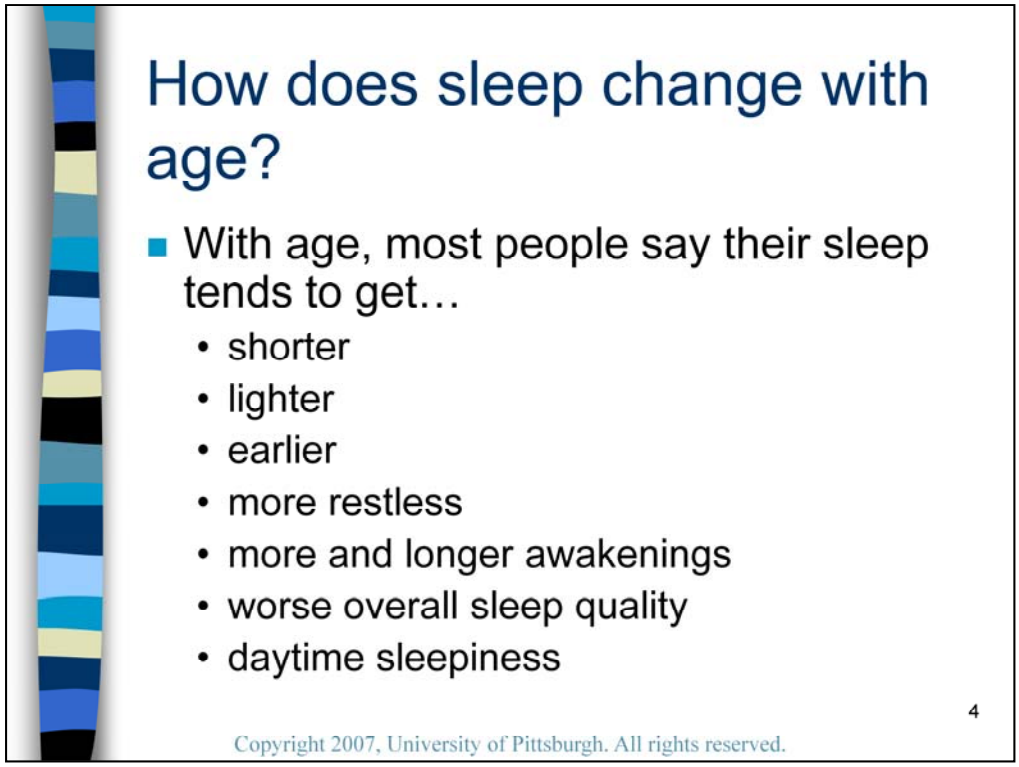
Executive function, or "thinking ability." Sleep deprivation impairs flexibility and creativity in thinking, and it can impair judgment as well.

Attention and concentration. Sleep deprivation causes difficulty with attention and concentration, which can then lead to memory problems.

Sleep helps body functions: Although sleep is mainly for the brain, the brain influences many body functions. For instance, sleep affects…

Immune system. This is important for fighting infections, stress, and a variety of diseases. Sleep deprivation and insomnia seem to cause minor worsening in some immune functions.

Hormone systems. Sleep is important for regulation of hormones, which are the body's "internal messengers." For instance, sleep deprivation can affect insulin regulation and blood glucose and growth hormone.



Aging affects our sleep in several consistent ways.

Self-report: When we ask people how their sleep changes with increasing age, most people say that their sleep…

…is shorter in total amount

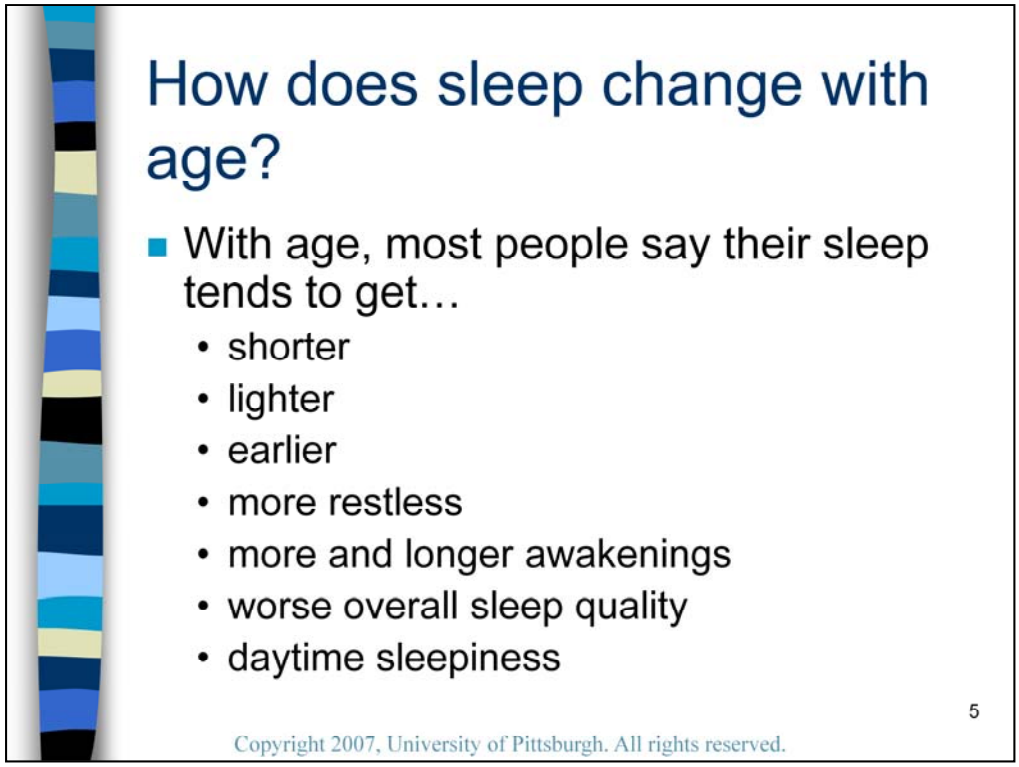
…is lighter, or feeling like less sound sleep, or it is easier to awaken

…is earlier. As people get older, they tend to go to bed earlier and awaken earlier

…has more awakenings, and longer awakenings

…is of slightly worse quality, overall, I.e., not as restorative as used to be.

In terms of daytime sleepiness, age can have different effects in different people. Older adults, especially men, take more naps than younger adults. Many, but not all, adults feel sleepier during the daytime than young adults.



Sleep measurements collected in the laboratory corroborate what people report about their sleep.

Sleep studies show that aging is associated with:

-Shorter sleep: when provided with the same opportunity to sleep, older adults sleep less than younger adults.

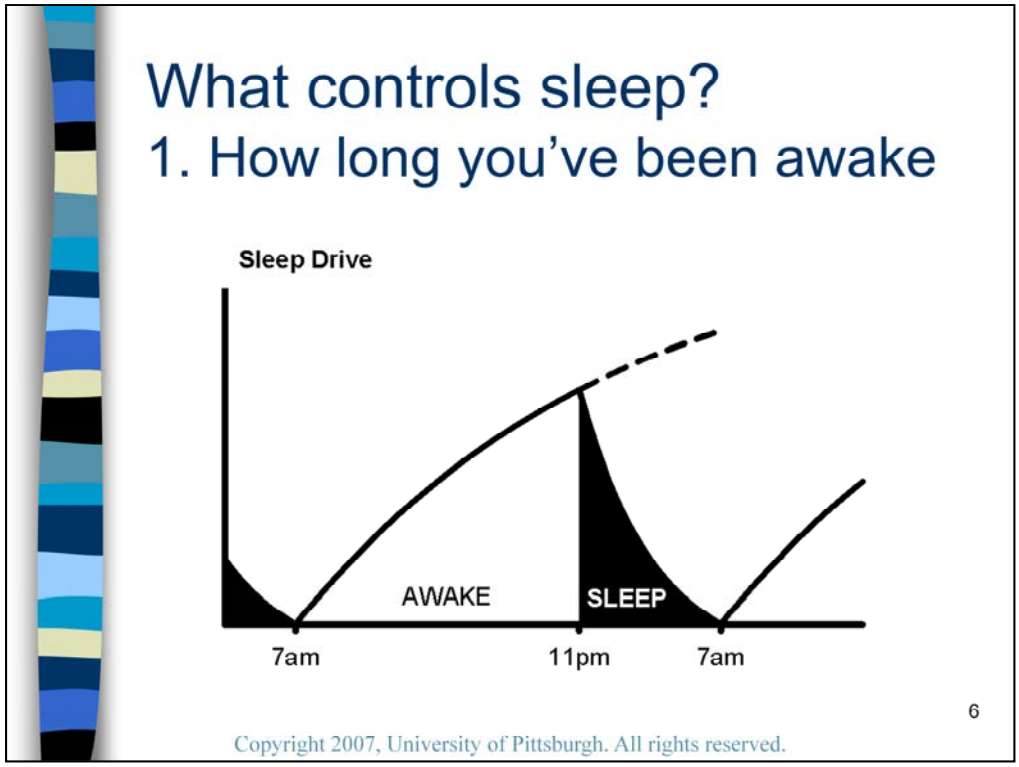
-Sleep is lighter: there is a considerable decrease in the amount of deep sleep with increasing age (shown on next page). With age, deep sleep is replaced by lighter sleep stages(shown on next page).

-More and longer awakenings: short and long awakenings become more frequent with increasing age.

-More breathing disturbances: Sleep apnea is an example of breathing problem during sleep. Older people often have more breathing pauses, or apneas, during sleep.

-Periodic limb movements. Older people may have a greater number of regular, rhythmic “twitches” in their feet and legs; these can disturb sleep.

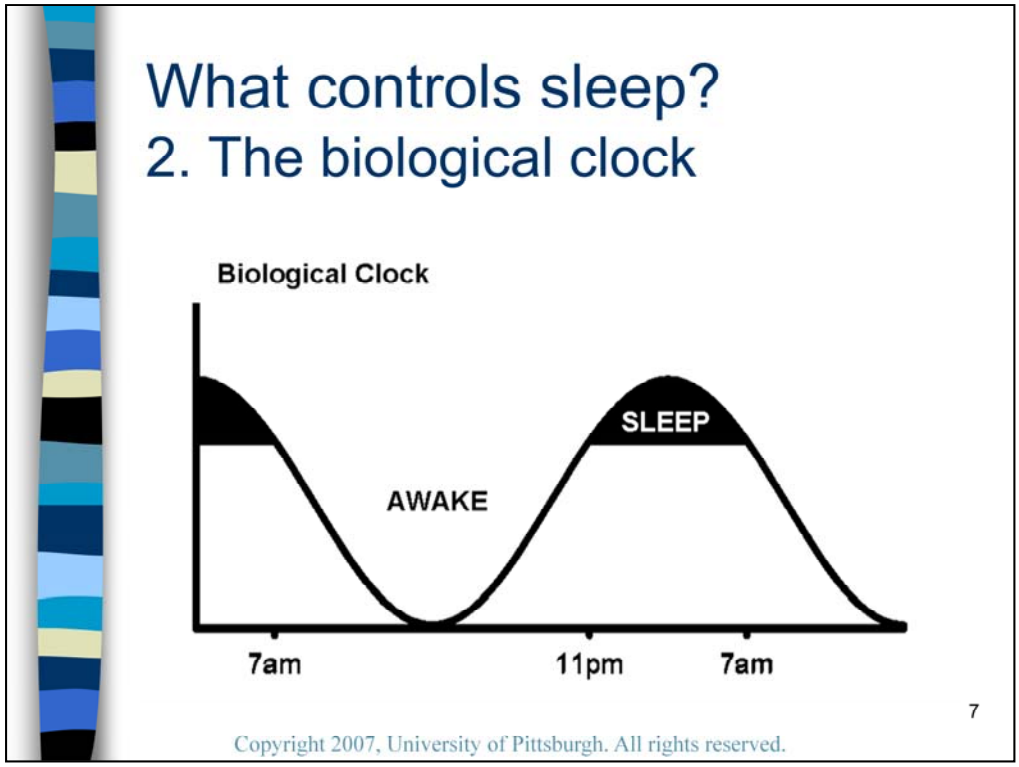
So is poor sleep just a part of getting older? In some ways, yes, our sleep isn’t as good when we’re older. However, many older adults ARE satisfied with their sleep, and are fully awake and alert in the daytime. This figure shows that older adults are still able to get quite a bit of perfectly good sleep. Even more importantly, our behavior-- HOW we choose to sleep-- can have a very important impact on our sleep. In other words, people can improve their sleep by changing their behavior.



One of the keys to understanding how you can improve your sleep is understanding how your brain controls sleep. There are basically two ways that this happens.

The first way that your brain controls sleep is by measuring how long you've been awake. Quite simply, the longer you've been awake, the higher your sleep drive gets. Or think of it this way: Your "sleep juice" builds up during the day, and the longer you've been awake, the more "sleep juice" builds up. That same sleep drive, or sleep juice, decreases quickly during the time you're asleep.

Of course, this makes perfect sense. Almost everyone knows that the longer you've been awake, the sleepier you feel.



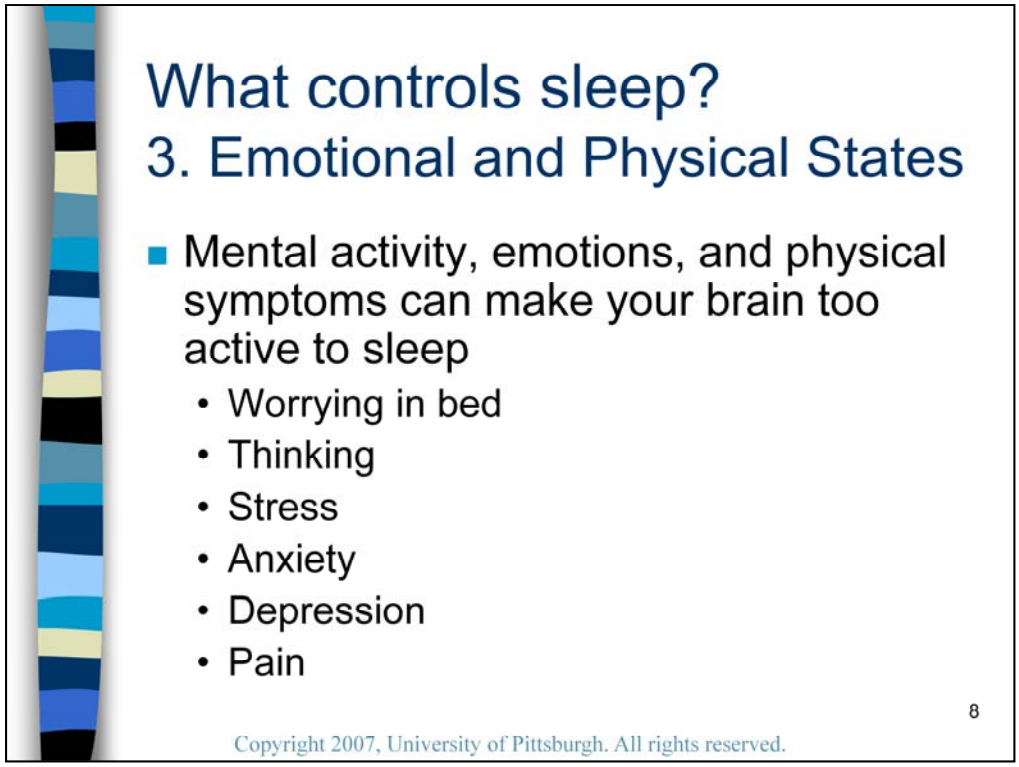
The second thing that controls our sleep is the biological clock. Our brains know how to tell time even without clocks. For instance, if you put someone in a cave or a room with no windows, telephone, television, or radio and let that person sleep whenever he wants, you find that he will continue to fall asleep and wake up on something very close to a 24-hour day. Even when we're not living in caves, our biological clock is at work. The clock increases our sleep drive in the middle of the night, and has its lowest sleep drive during the day (actually, in the late afternoon or early evening).

If you've ever had to stay awake all night, you'll know that this makes sense, too. The times that it's hardest to stay awake are from about 3 - 6 a.m. (if you've been awake all night). If you stay awake longer, you notice a "second wind" of alertness kicking in later in the morning, at 9 a.m. to noon. That wouldn't make sense if our sleep is only regulated by how long we've been awake-- we should be even sleepier at noon that at 3 a.m. on the same day. But our biological clock makes sure that we're less sleepy during the day than at night.

The case of NAPS

However, with increasing age, there is a tendency to feel sleepier and to take more naps. Increased daytime sleepiness with increasing age may be related to other medical, psychiatric, or sleep disorders, or may be due to genetic factors. Older adults have more opportunities for napping, I.e., not working or working less hours, fewer familial and social activities.

This is why sleep specialists recommend to avoid napping during the daytime. If daytime sleepiness becomes overwhelming, you should limit nap time to a single nap of less than one hour, no later than 3 pm. Remember, the sleep drive is rapidly reduced when we sleep. Napping reduces the total sleep drive that is left when bedtime arrives. Napping can either increase the time required to fall asleep, or can interfere with sleep maintenance, or both.


What controls sleep?
3. Emotional and Physical States
Mental activity, emotions, and physical symptoms can make your brain too active to sleep
Worrying in bed
Thinking
Stress
Anxiety
Depression
Pain
8
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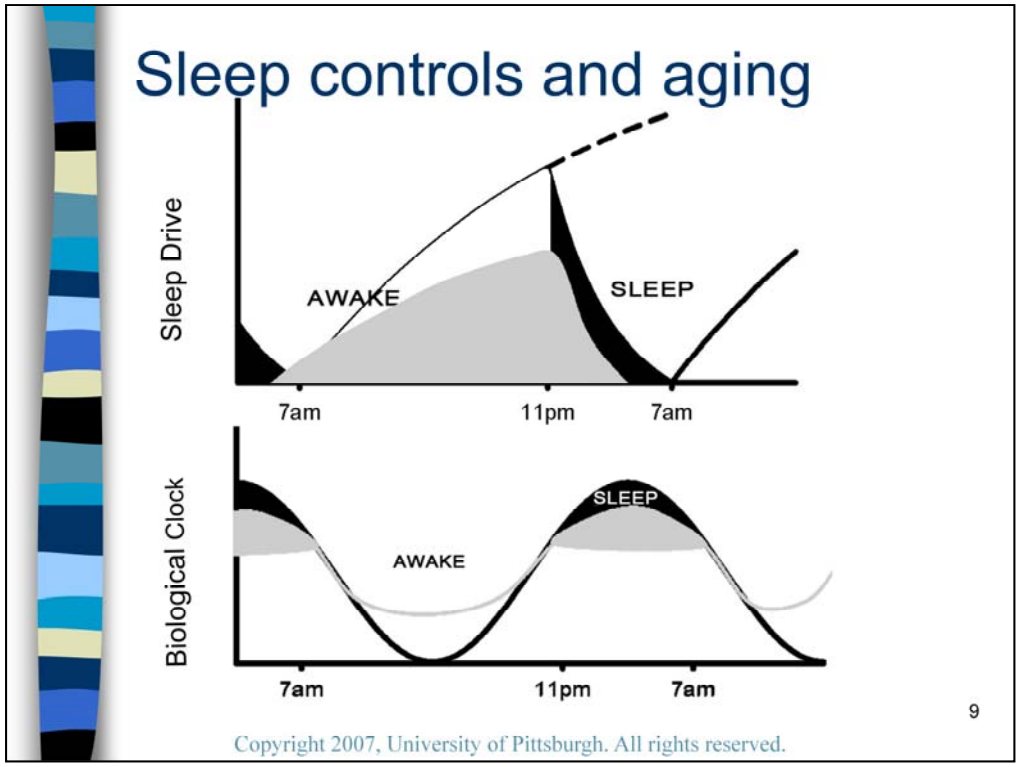
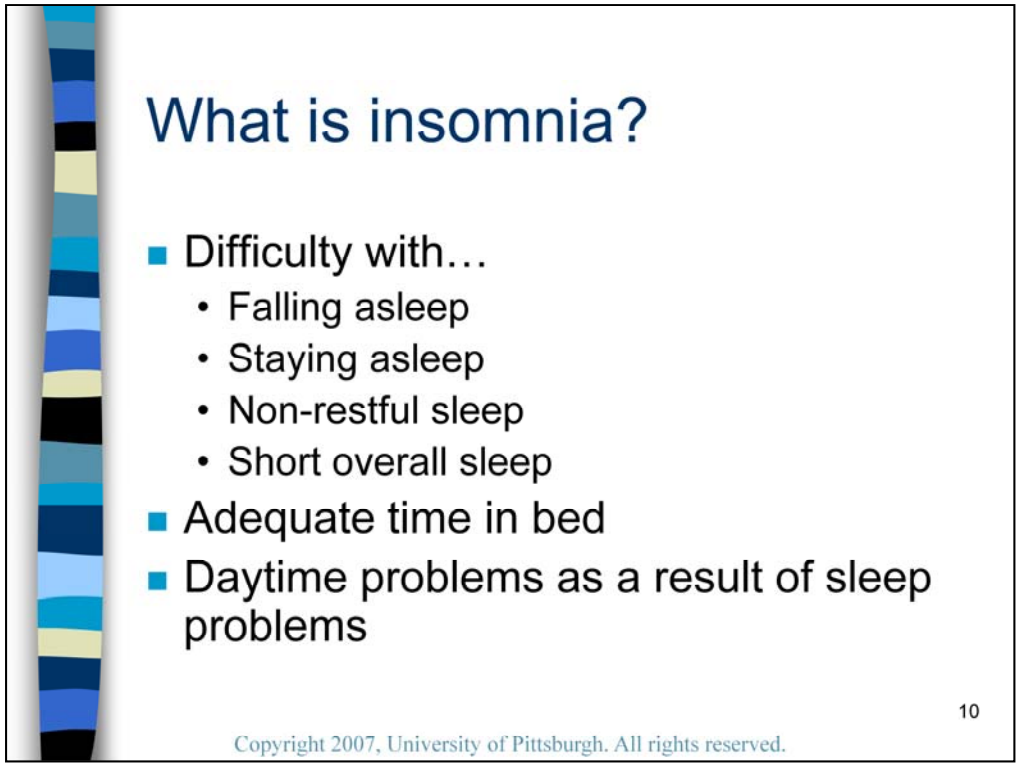


As you can see from this picture, the two forces that guide our sleep usually work together. At the end of the day, our "sleep juice" is high because of how long we've been awake, and we can fall asleep. Later in the night, our biological clock's sleep drive reaches a peak, helping us to stay asleep.

With aging, both systems that control sleep change.

Top figure: As we age, the sleep drive is not as "powerful" as it used to be at younger ages. It increases more slowly during the day, and the peak is not as high as it use to be. With sleep, the sleep drive decreases faster. This may explain why older people report waking up in the early morning hours more so than younger adults.

Lower figure: The biological clock also changes with aging. Our biological clock because less accurate in keeping time. The clock still increases our sleep drive in the middle of the night, but not as "powerfully" than it is in younger adults.


What is insomnia?
Difficulty with…
Falling asleep
Staying asleep
Non-restful sleep
Short overall sleep
Adequate time in bed
Daytime problems as a result of sleep problems
10
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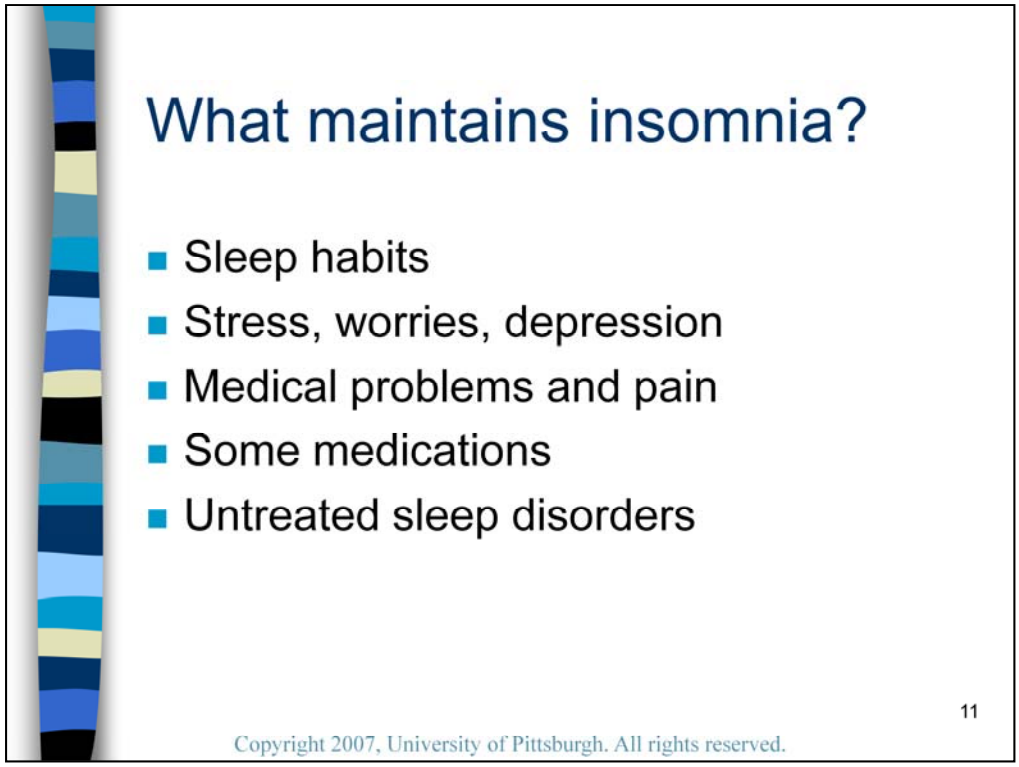
What maintains insomnia?
Sleep habits
Stress, worries, depression
Medical problems and pain
Some medications
Untreated sleep disorders
11
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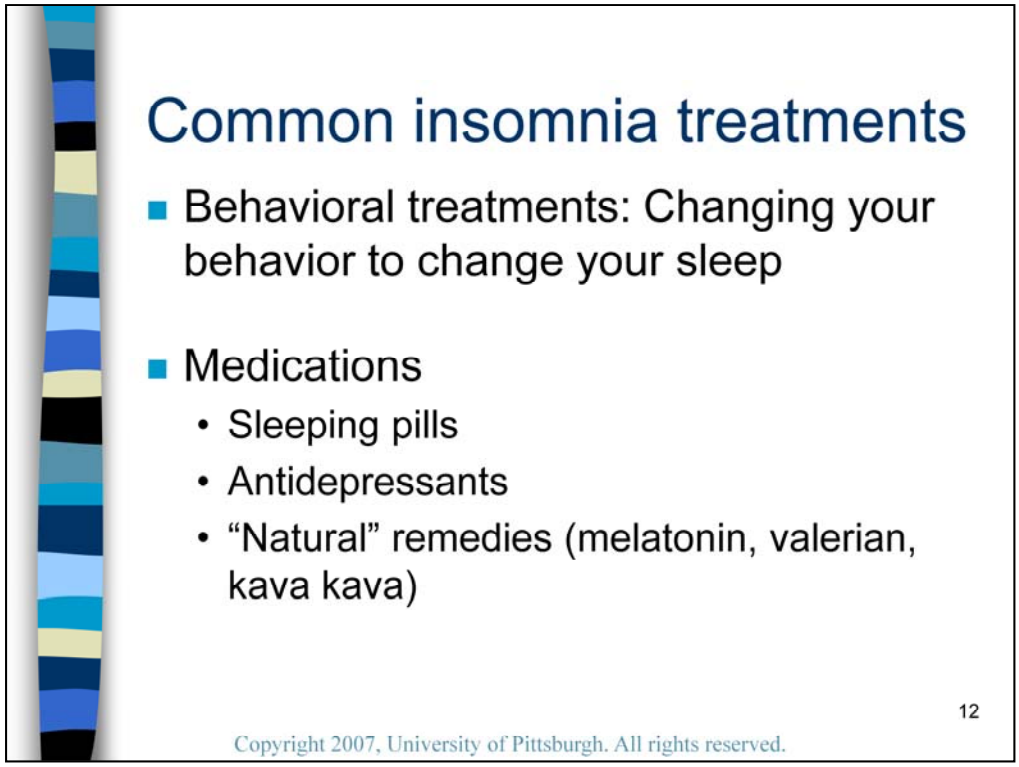
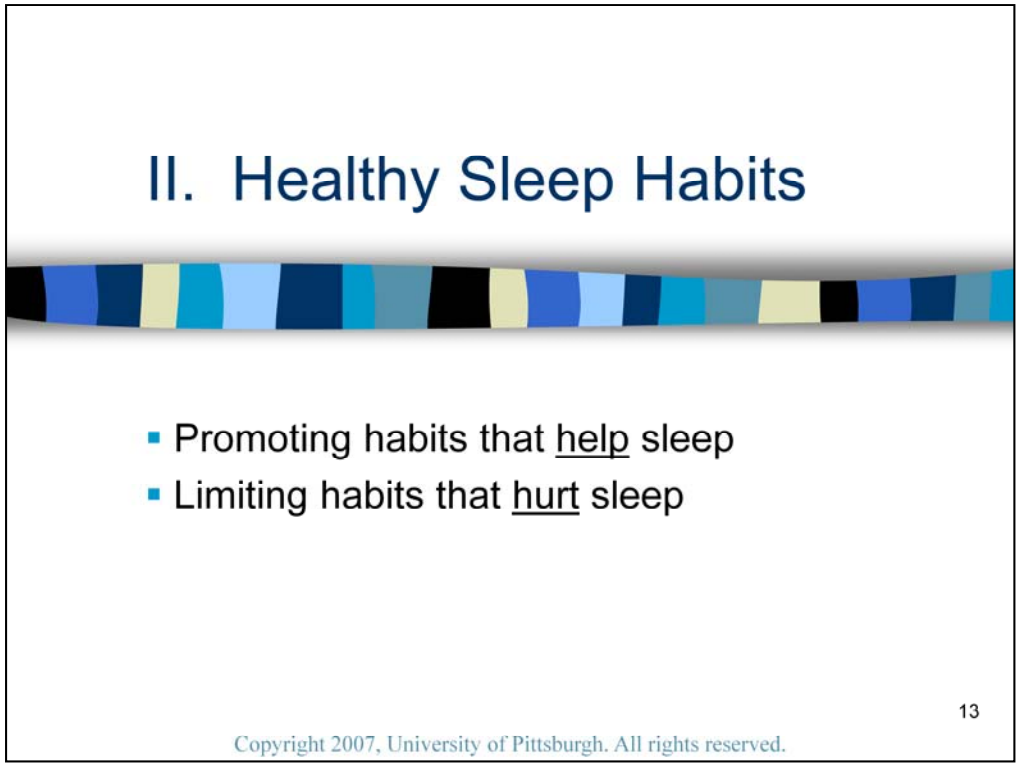


The good news is that there are several treatments for insomnia in older adults. These treatments have been tested in several research studies, and can be effective not only in the short term, but over longer periods of time as well.

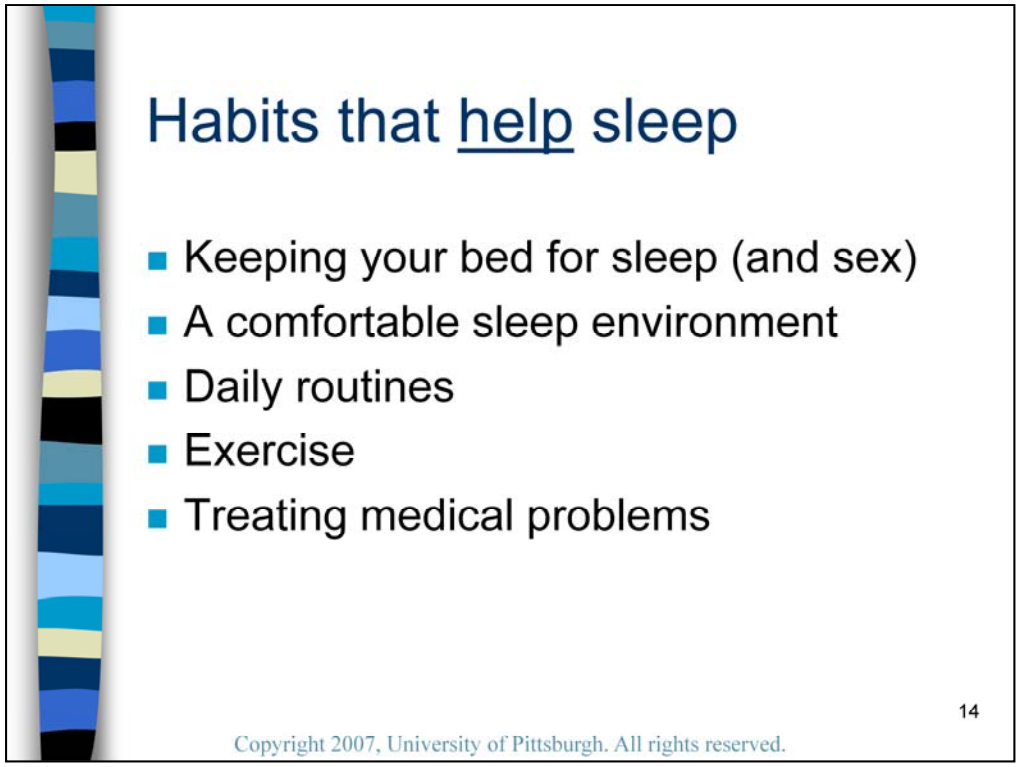
The first type of treatments are behavioral treatments, or changing your behavior to change your sleep. The advantage of this type of treatment is that it does not involve medications, is generally safe, and puts you in charge of your sleep problem. The down side is that it may take a while to be effective, it doesn't necessarily work for everyone, and-- most importantly-- behavior can be hard to change.

Medications can also be effective for insomnia. Sleeping pills are effective over the short term. However, insomnia is most often a long-term problem, and the safety and effectiveness of sleeping pills have not been demonstrated over the long term. Some antidepressants, like trazodone, can also help insomnia, but they generally haven't been tested as carefully as sleeping pills. Of course, any medication can have side effects, including sleeping pills and antidepressants, and medications can also interact with your other medications.

Natural remedies include hormones like melatonin and plant chemicals like valerian and kava kava. Some people may find these effective, but they generally haven't been carefully tested, and when they have, their effects are rather small. These treatments can also have side effects.



Now that we've talked about sleep, insomnia, and treatments, we'll turn to some of the things you can do to improve your own sleep. First we'll talk about some general healthy sleep practices, and then we'll talk about more specific behaviors.


Habits that help sleep
Keeping your bed for sleep (and sex)
A comfortable sleep environment
Daily routines
Exercise
Treating medical problems
14
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Habits that hurt sleep
Using your bed for things other than sleep (and sex)
Worries
A poor sleep environment
Alcohol
Caffeine
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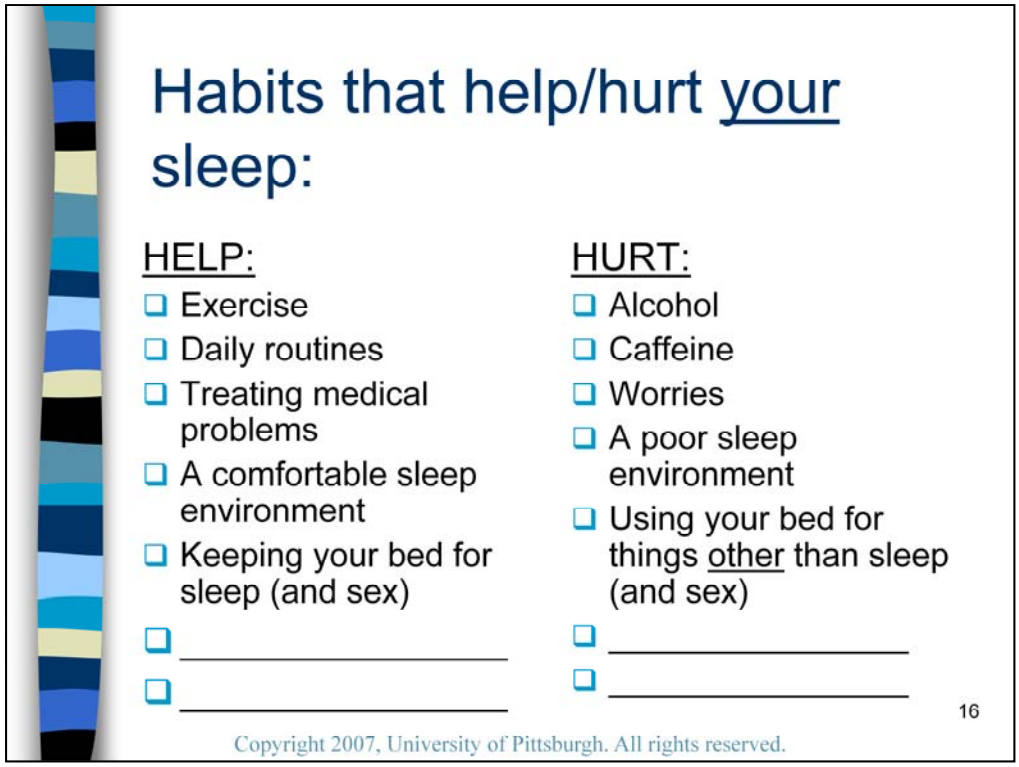


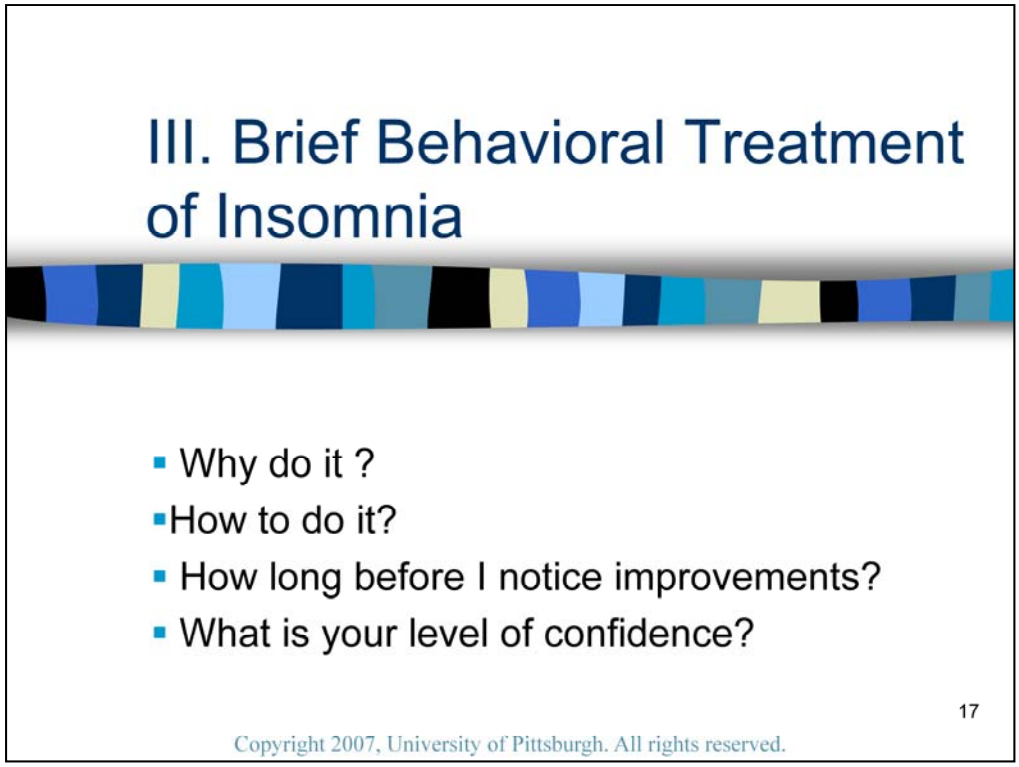
From the following list, check all that applies to you.

Can you think of other (current or past) habits that may help or hurt your sleep?

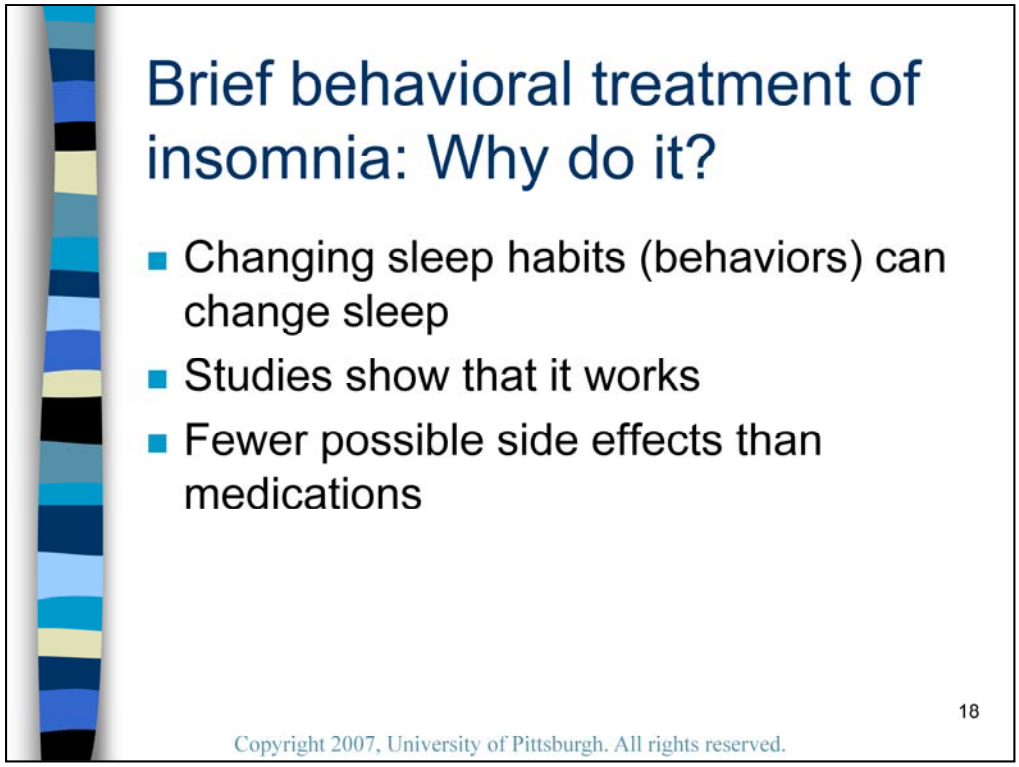
List here the current habits you have that help and hurt your sleep.

We will keep these practices in mind because they are the ones we will be working with later today.

We will make sure can use implement and reinformce the practices that help your sleep, and that you can use these behaviors to modify and replace the practices that hurt your sleep.



Now we'll turn to some more specific things you can do to improve your sleep.



As we discussed before, there are basically three reasons for using this particular treatment. (Discuss three points.)

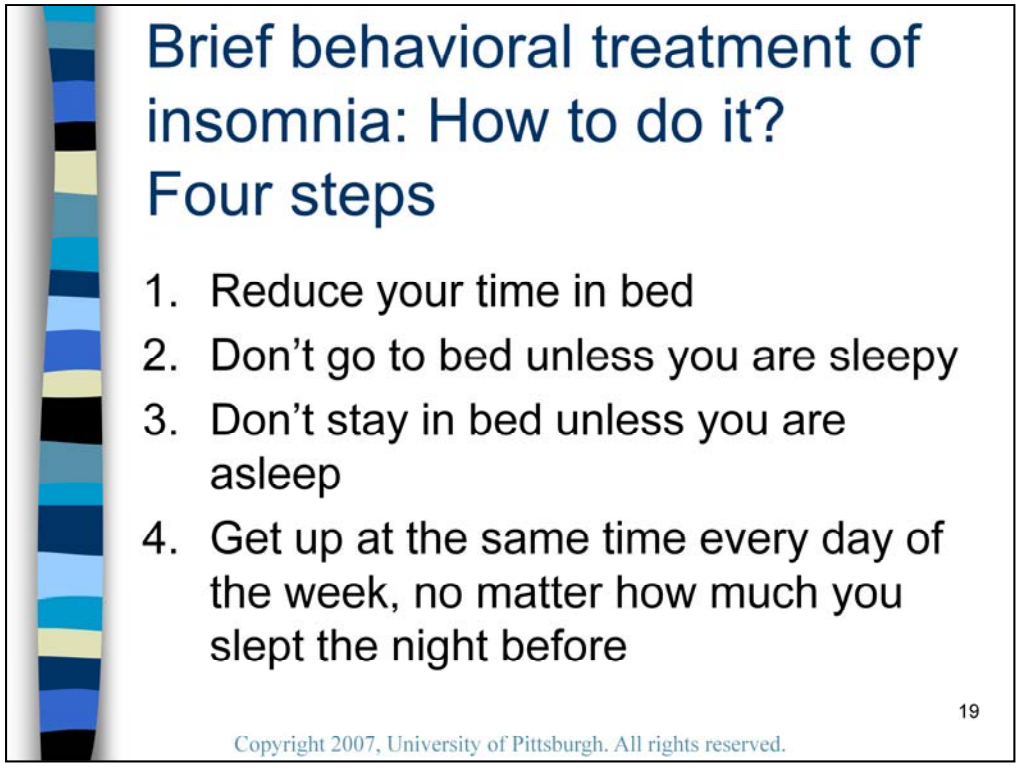
1- Changing sleep habits (behaviors) can change sleep:

Together, based on your experience with sleep habits and insomnia, and based on what I know of your sleep history, we will identify targets that can be modified to improve your sleep quality.

2- Studies show that it works

Several studies have shown that modifying sleep habits can be very effective at improving sleep quality, and that once people start practicing the new sleep habits (I.e., reduce behaviors that hurt sleep), their sleep improves within 1 to 4 four months, and that the sleep improvements are maintained over time. People who sucessfully include a few behaviors that help sleep quality in their daily routine also feel more alert, less irritable and/or depressed.

3- Fewer possible side effects than medications: Medications work well for sleeping, but over long period of time, the chronic use of sleep medications can cause more problems. For example, dependence and tolerance may develop over tims, people may feel less alert during the day, especially in the morning.

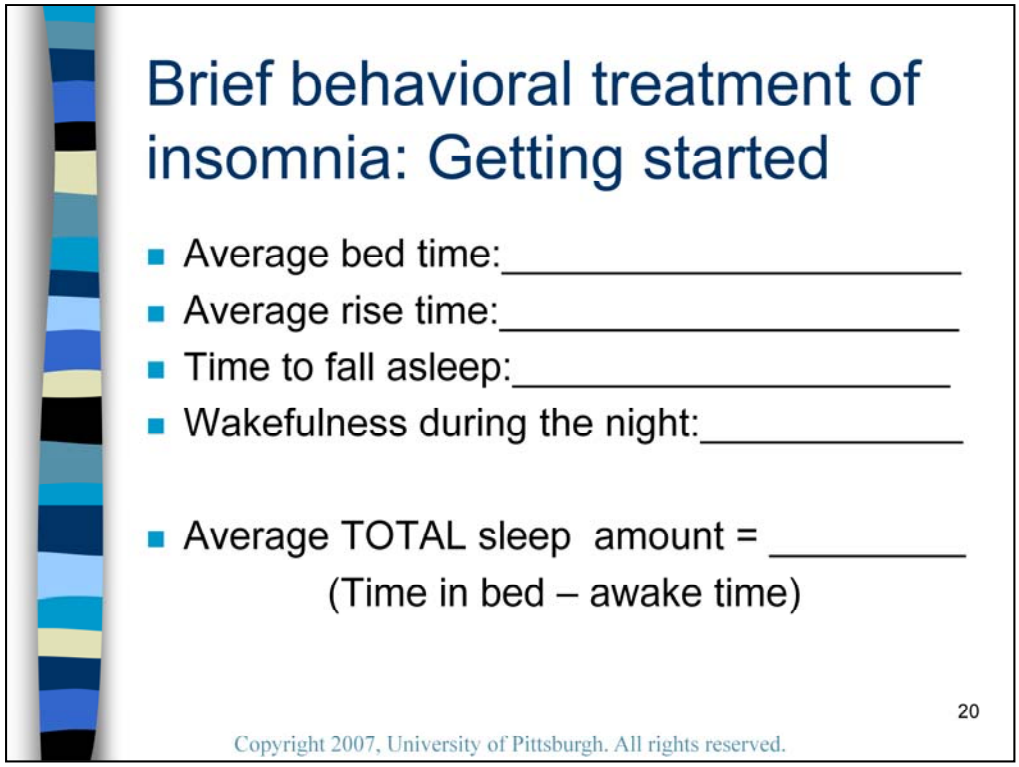


The four steps involved in the treatment are as follows:

(Read steps with patient.)

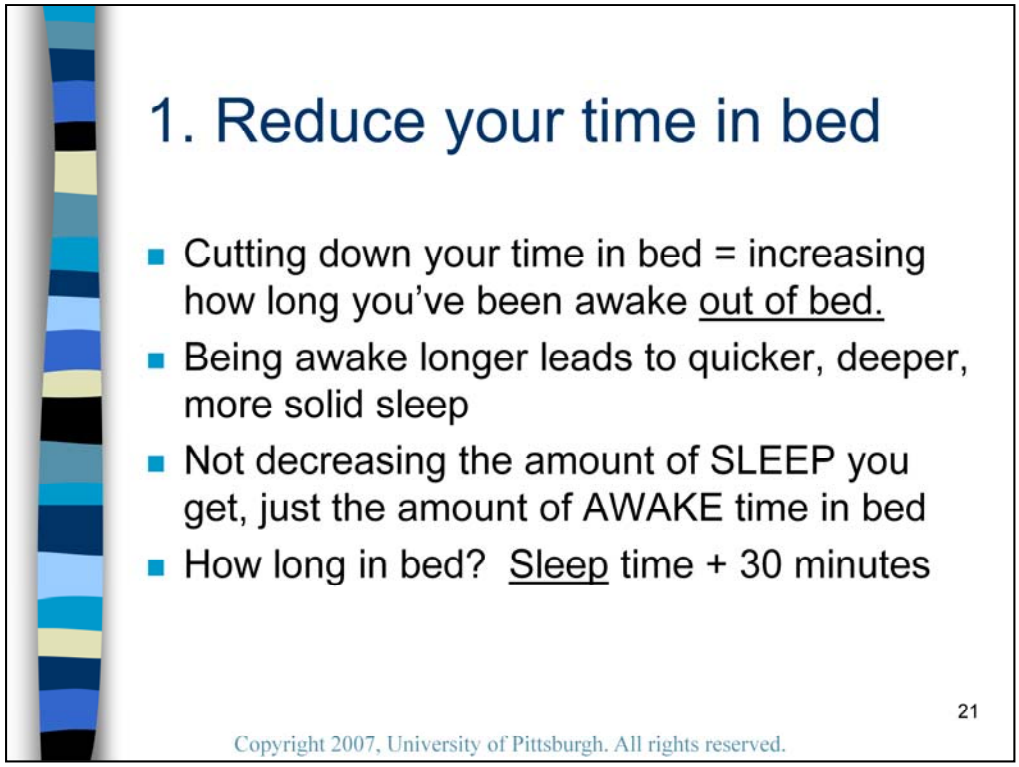
1. Reduce your time in bed
2. Get up at the same time every day of the week, no matter how much you slept the night before
3. Don't go to bed unless you're sleepy
4. Don't stay in bed unless you're asleep
5. Do not worry in bed

We'll review each of these in a little more detail.



In order to get started, we need to look at your current pattern of sleep and wakefulness. Let's think about what your sleep is like on average. I know that your sleep times and sleep pattern vary somewhat from day to day, but we'll try to look at the pattern that's most typical for you.

(Therapist then uses all available information, including sleep diary and patient report, to determine above averages. These will then be used for calculating new recommended amounts of time in bed, and new sleep times.)

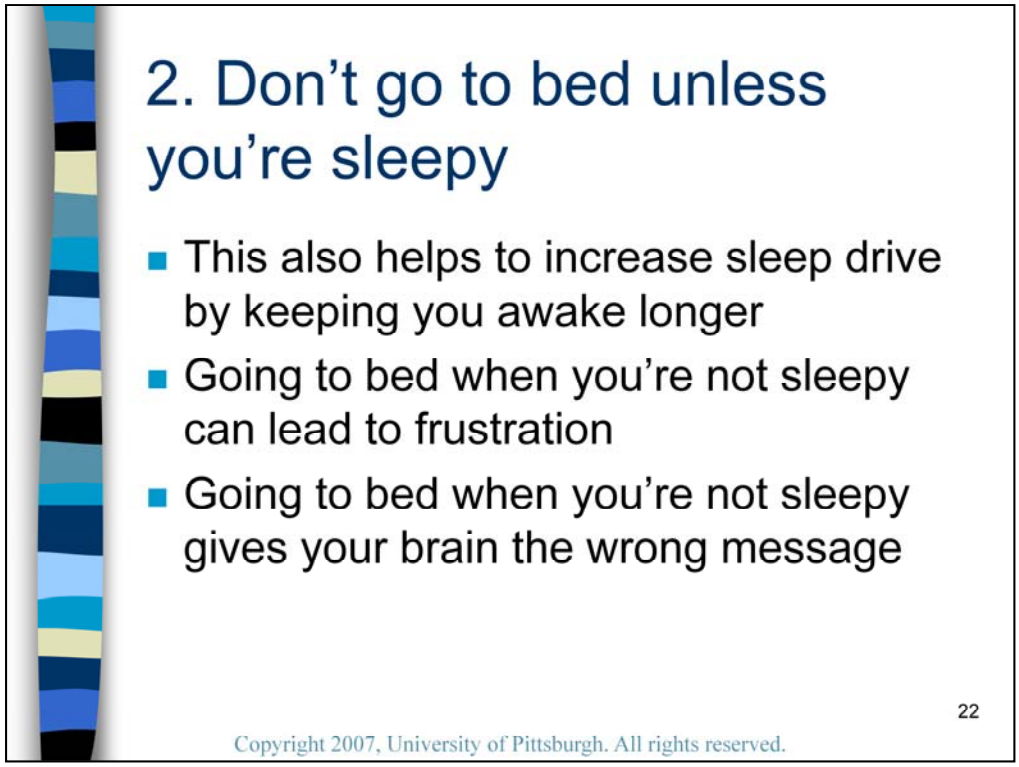


The first step is to reduce your time in bed so that it's pretty close to the actual time you're actually able to sleep.

This step is based on the first factor that controls sleep: How long you've been awake (refer back to slide 10 and review). As we discussed, "sleep juice" is increased by increasing amounts of wakefulness during the day. And cutting down your time in bed increases the time you're awake, which of course increases that same "sleep juice."

Studies clearly show that for people with and without insomnia, staying awake longer leads to several positive effects, including falling asleep faster, sleeping more deeply, and having fewer awakenings during sleep-- which most people find to be more satisfying.

When we say to decrease time in bed, we are not really aiming to decrease the amount of sleep you get in bed, just the amount of wakefulness you have in bed. Think of it this way. Your brain is only able to produce so much sleep per 24 hours, and people with insomnia are usually able to produce less sleep than other people. If your brain is able to get 5 hours of actual sleep at night, but you spend 8 hours in bed, then you're guaranteed to have 3 hours of wakefulness in bed. That can lead to lots of frustration, which can actually make your sleep worse still.

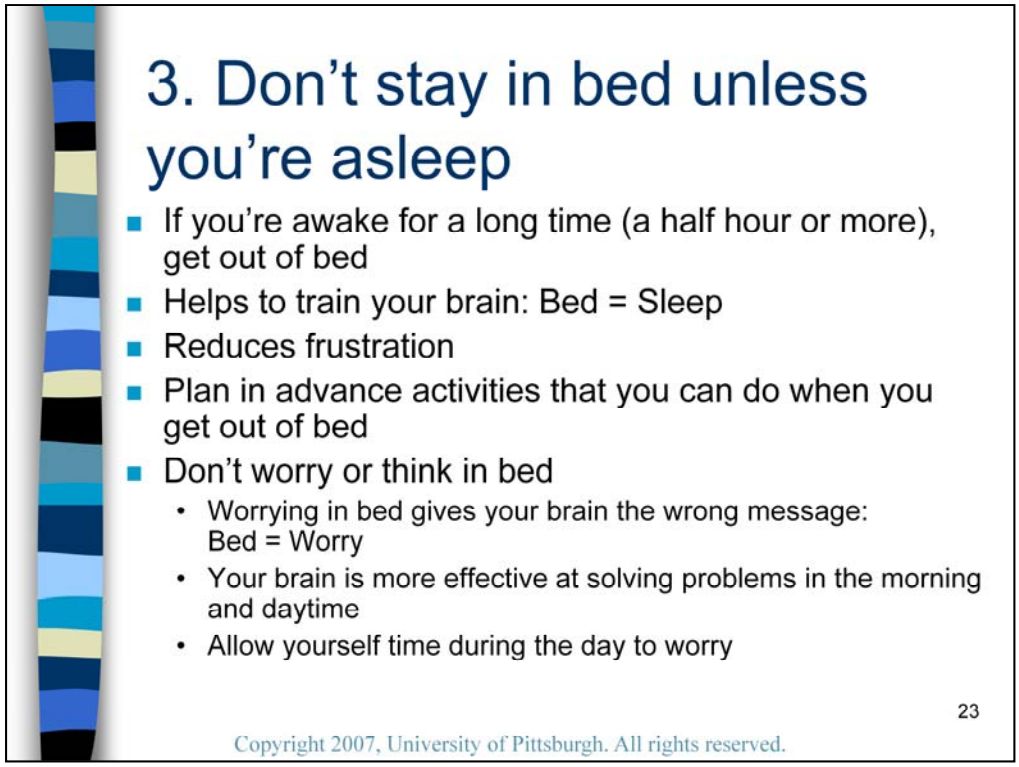


The third rule is related to the first, and says simply that you shouldn’t go to bed unless you’re sleepy. We’ve talked about how long you should spend in bed based on your amount of sleep, and the time you should wake up each morning. From those two things, we can say when you should probably go to sleep. However, if you’re not sleepy at our “bedtime,” you shouldn’t go to bed yet. Let yourself stay up a little longer, and only go to bed when you’re actually feeling that you could fall asleep.

This step also helps to increase your “sleep juice,” because it’s just another way of increasing the amount of time you’re awake.

Furthermore, going to bed when you’re not sleepy can lead to frustration, which actually interferes with sleep.

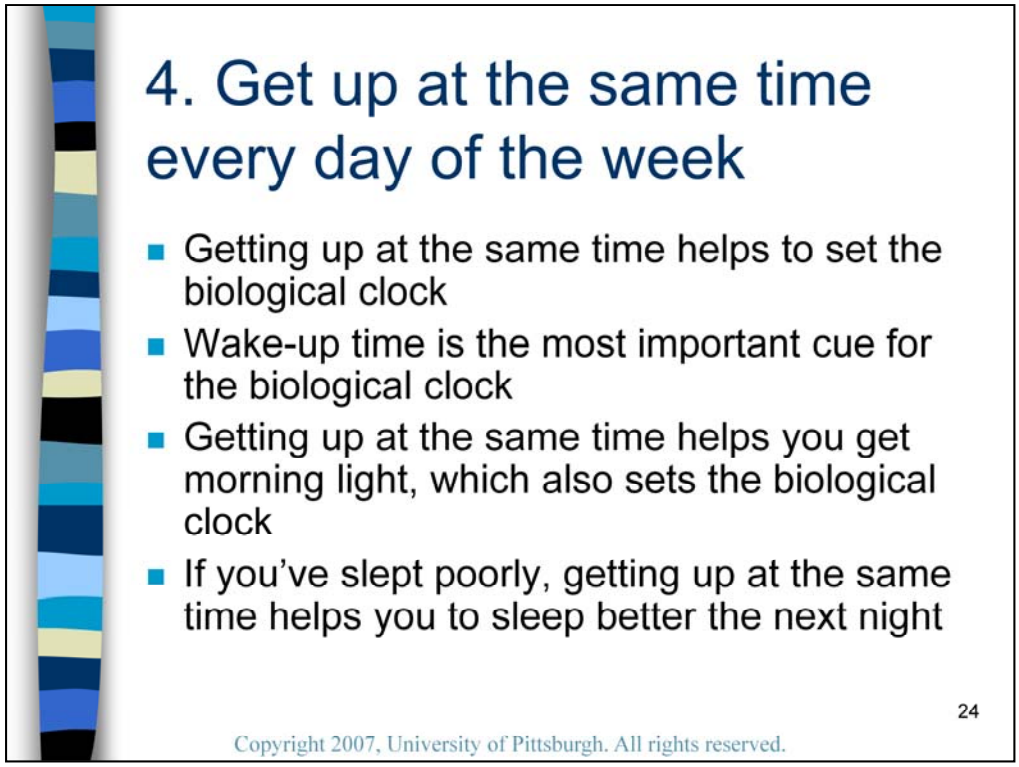
Finally, going to bed when you’re not sleepy gives your brain the wrong message. Instead of learning that bed is the place for sleep, going to bed when you’re not sleepy helps you to learn that bed is a place for wakefulness and frustration.



The last rule is similar to the third, but it says that if you wake up in the middle of the night and are not falling back asleep, you should get out of bed and do something else for a while. You should not look at the clock to see how long you've been awake. If it feels like it's been a half hour or so and you're not feeling sleepy, it's time to get out of bed.

Getting out of bed this way also helps to train our brain that bed is for sleep, and the rest of the house is for waking.

This step, like the others, can also help to keep you from being too frustrated in bed. As we've said before, frustration makes sleep less likely.



The second step in the treatment is to get up at the same time every day of the week, no matter how long you've slept the night before. Why?

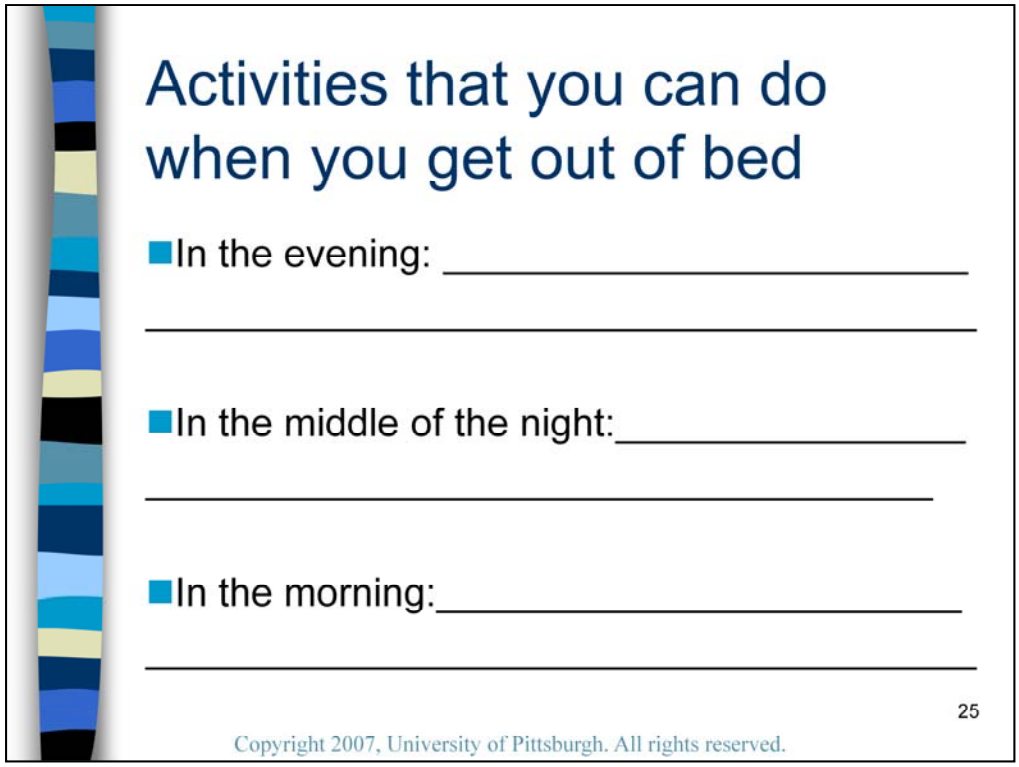
The basic reason is that getting up at the same time every day helps to "set" the biological clock. (Refer to slide 11.) Many people with insomnia will try to sleep whenever they can, and they may even find that their best sleep of the day occurs in the early morning hours. Or after a bad night of sleep, they'll try to sleep in longer to "catch up."

Unfortunately, having an irregular wake-up time confuses the biological clock. In fact, wake-up time is probably the most important cue for setting the biological clock. Another very important signal to the clock-- the timing of morning light-- also depends on waking up at a regular time.

Some people are concerned that, if they get up after only a few hours' sleep, they'll feel terrible during the day. And although it's true that you may feel kind of bad that day, remember that the biological clock will help to wake you up during the day. Remember, too, that getting up at a regular time after a poor night's sleep will build up the "sleep juice" that helps you to fall asleep the following night.

Now let's look at what time you should actually get up. (Therapist uses sleep diary and patient report information to determine "Good morning time," and reinforces that this is for every day of the week.

Based on that wake-up time, and how long we said you should be in bed, we can also figure out an approximate time for going to bed. (Therapist calculates based on GMT and target time in bed.)



When practicing these new sleep habits, you will end you having more time to occupy in the morning and/or in the evening.

What should you do when you are outside of bed in the evening?

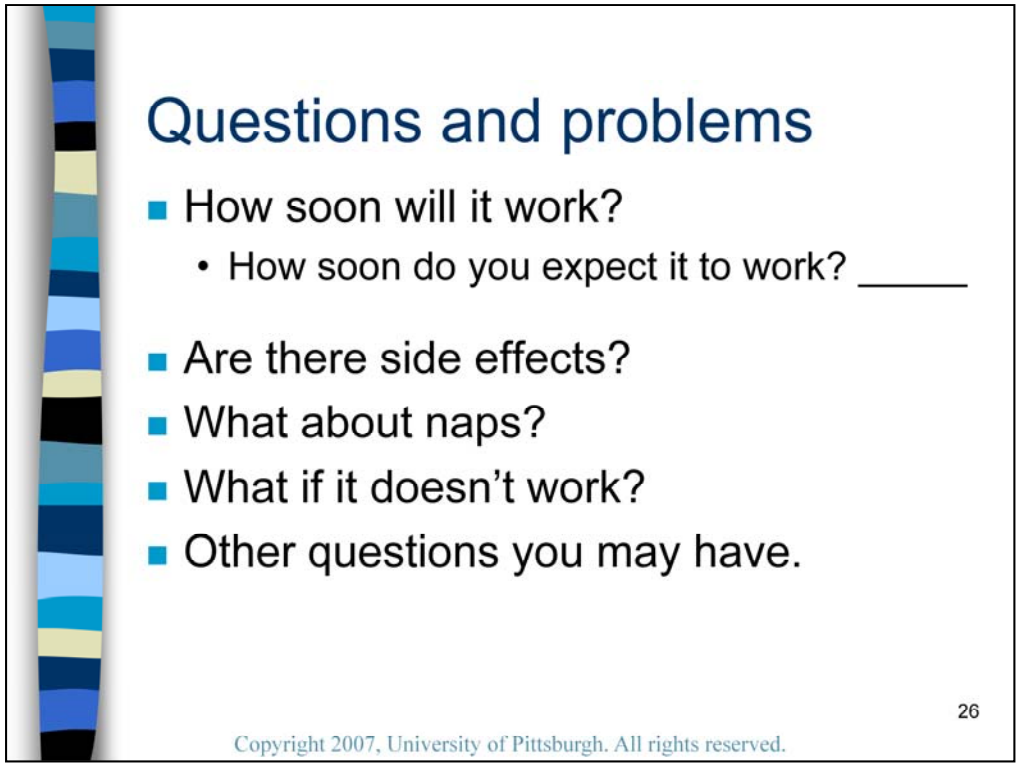
Let's think about that together. (Therapist and patient generate some options, e.g., reading, watching TV, listening to radio-- all out of bed.) It's important not to do something that's too interesting, because you don't want to make yourself more awake. It's also important to keep the lights low, because we don't want to disturb your biological clock.

What should you do when you are outside of bed in the morning?

(If the patient is required to get out of bed earlier than his/her typical Good Morning Time, use the next page to identify with the patient activities that can be incorporated in the morning and evening routines to occupy the morning time out of bed. This is the best time to do something that's very interesting, because you want to make yourself more awake. This will help your biological closk reset itself to daytime alertness levels. Favor activities that involves bright light, intellectual stimulation, physical activity if possible to reinforce the signal to the biological clock that this is the time to be awake, and to increased alterness.All of the identified daytime activities, of course, are out of bed.

Identify activities that can be done in the evening, and that favor rest and sleep.

List at least three activities that can be done.



I expect that things will go rather smoothly for you, and that you'll begin to notice improvements fairly quickly. However, we should talk about some questions you may have.

One question is how soon it's likely to work. You may notice improvements in your sleep within a few days, although it's not unusual for it to take a couple of weeks. The important thing is to stick with it.

Another question is whether there are any side effects. Most people do very well with this type of treatment, and don't really have side effects. However, some people notice that they may become a little more sleepy in the afternoon or evening. In a way, this is a good sign. It tells us that you are building up that "sleep juice." If you notice sleepiness that is bothering you, give me a call and we'll figure out what to do.

Some people also want to know about naps. Although in general naps will reduce your "sleep juice" for the following night, some people just feel better. If you need to take a nap (therapist must determine for each subject), the best advice is to take it in the afternoon between 1:00 p.m. and 4:00 p.m., and to keep it no longer than 30 minutes. Later and longer naps can interfere with your nighttime sleep.

Although I expect the treatment to work, we can talk about what to do if it doesn't. We can talk about other non-medication treatments, and about the possibility of medications is they seem to be needed.

Do you have any questions?

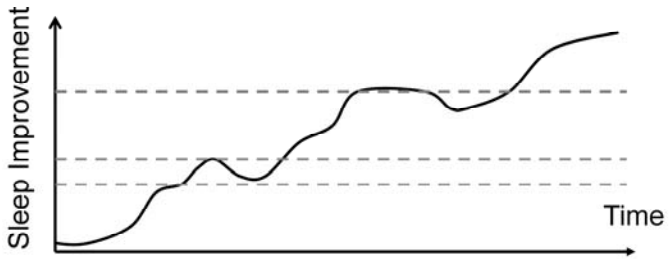
Anything we discussed that is not clear or that you may want more information about?

Can you picture yourself doing these new exercises in the next few weeks?

What difficulties do you foresee?

What can I expect?

- "Practice makes perfect"
- Changes in sleep are gradual, and not necessarily steady



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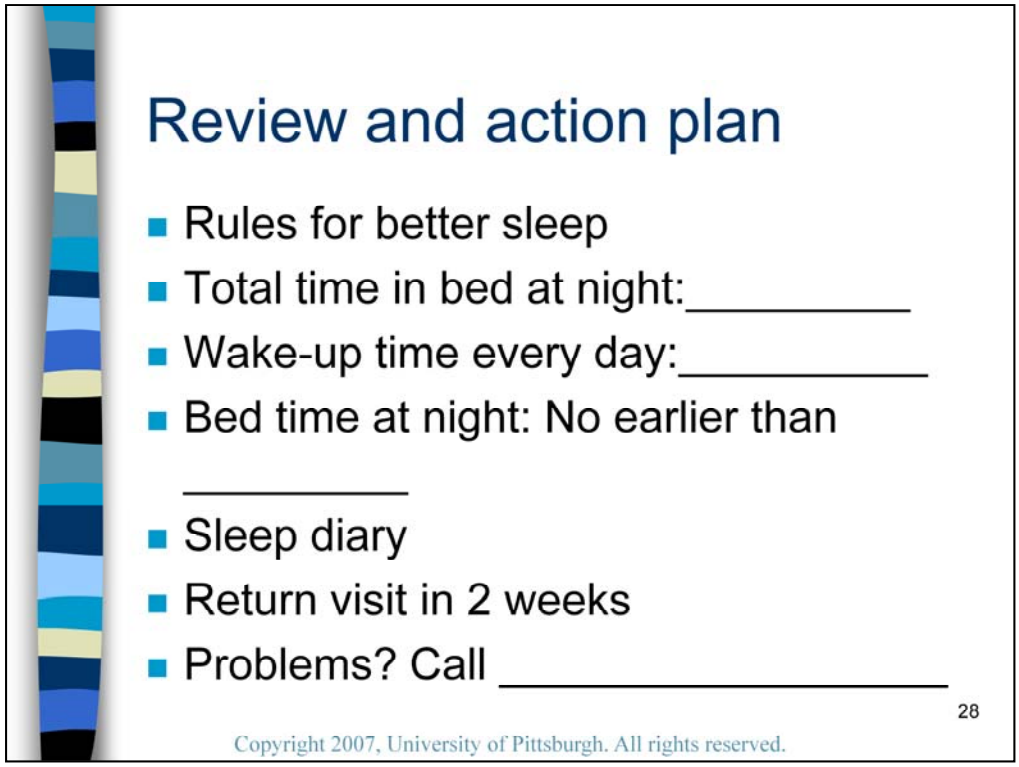
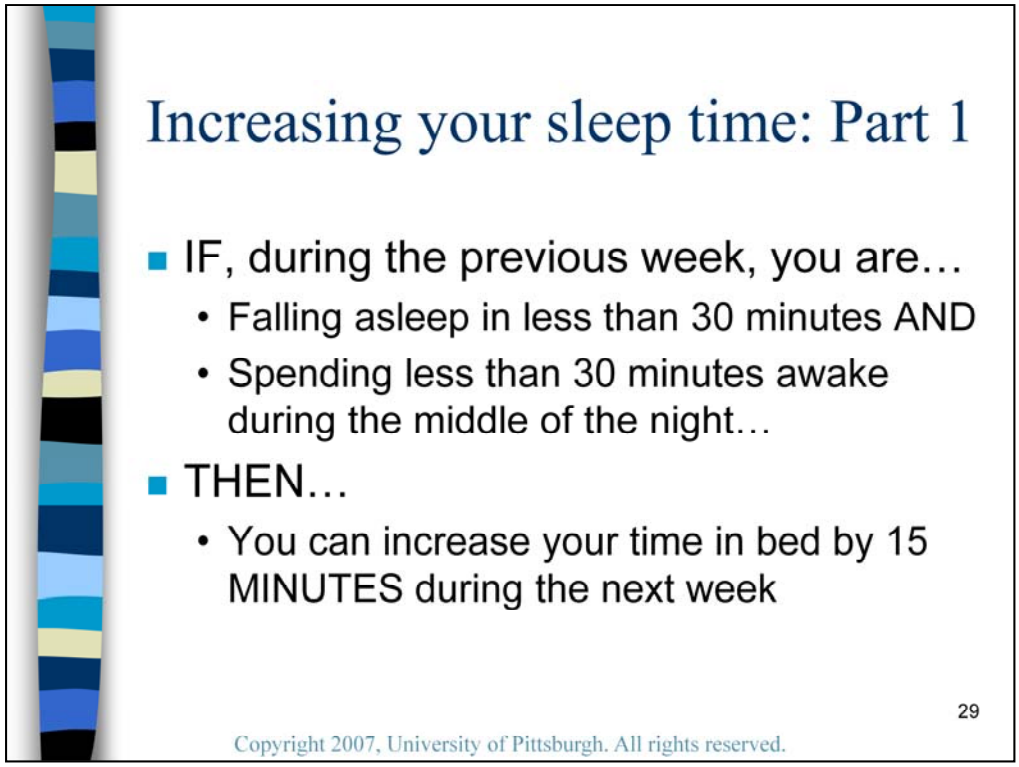


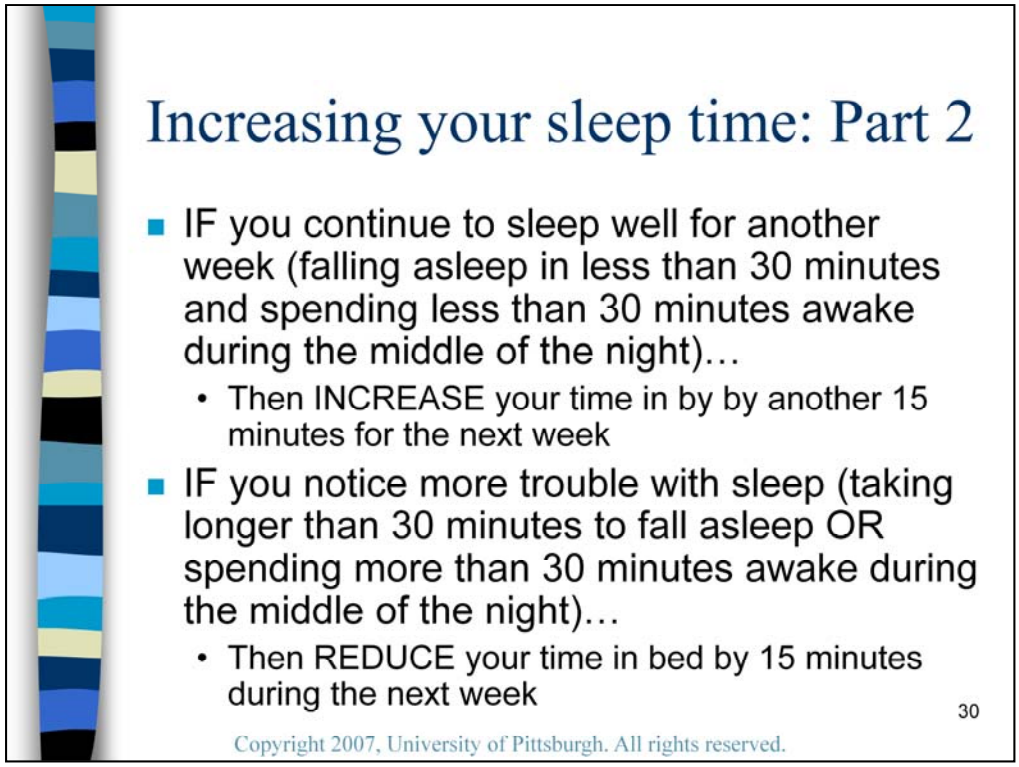
(Therapist will review and refer to rules for better sleep. Therapist will also review total time in bed, wake-up time, and bedtime, writing in actual numbers for the patient. Therapist will review importance of sleep diary, and schedule return visit. Patient will be give contact number for any problems. Finally, therapist will address any questions patient has.)



When discussing how to increase time in bed (referred to as increasing sleep time on the patient slide):

Discuss the principle of slow, gradual (15 minute) increases to their time in bed. (See steps 1-3 on slide.)

Be sure to emphasize that they need to be realistic – DO NOT EXPECT TO SLEEP MORE THAN 8 HOURS PER NIGHT, and the important point is that insomnia symptoms might return due to increased time in bed. At that point, they should re-restrict their time in bed to the last time that was working for them (or possibly further – see next slide).



It takes time to adapt to this extra time in bed. Your insomnia symptoms may worsen if you try to change your sleep-wake schedule too quickly.

If your insomnia symptoms come back or get worse, return to the last schedule that was working for you.

Shorten the amount of time you stay in bed. (You may need to return to the original sleep schedule that you established at the beginning of this program).

If this helps, remain at this schedule for at least 2 weeks to allow things to stabilize (you may need to wait longer) before again trying to increase your sleep time.

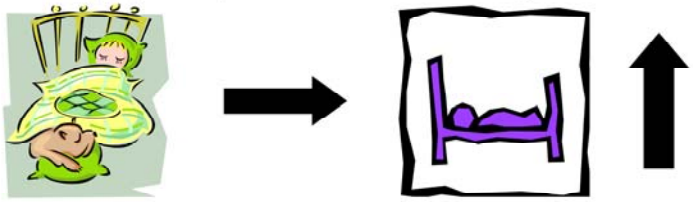
Remember to continue to follow the other instructions:

Be sure to maintain a consistent wake-up time every day.

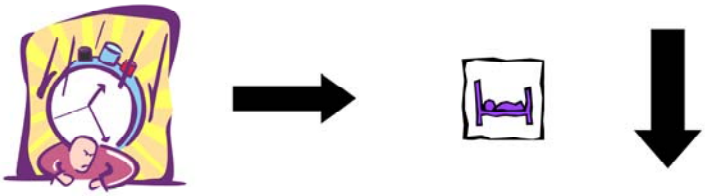
Get out of bed if you cannot fall asleep or return to sleep during the night after 20 to 30 minutes.

Increasing your sleep time: Part 3

If you ARE sleeping soundly… …INCREASE your time in bed



If you are NOT sleeping well… …DECREASE your time in bed



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