

Sleep Health Institute



BRIEF BEHAVIOURAL THERAPY FOR INSOMNIA

BBTi

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Brief Behavioural Therapy for Insomnia (BBTi)

Brief Behavioural Therapy for Insomnia is a non-pharmacological therapy for Chronic Insomnia Disorder or Psychophysiological Insomnia (PPI) that can be initiated in 5-10 minutes by any physician or ancillary health care provider.

Cognitive Behavioural Therapy for insomnia (CBTi) is the recommended first line treatment for patients with uncomplicated Psychophysiological Insomnia or Chronic Insomnia Disorder. CBTi is usually provided by psychologists at additional cost and is not readily available. BBTi can enable any physician or health care provider to initiate an insomnia program with the patient during a regular office visit without additional cost to the patient or significant additional time expended by the health care provider. The patient can be followed by the health care provider with or without using the BBTi patient app.

Psychophysiological Insomnia (PPI) is one of the more common forms of Chronic Insomnia Disorder. The medical literature reports about an 80% response rate to CBTi in patients with uncomplicated PPI. For those with uncontrolled depression, anxiety, chronic pain, excessive stress or other factors significantly contributing to their insomnia, the program can still be quite helpful but will require addressing the other co-morbidities to be fully effective. CBTi typically takes 4 – 8 visits, each lasting 30 - 60 minutes which is not usually possible in most medical practices other than psychiatry. However, a large percentage of the responders to CBTi may do well just with the behavioral component. The behavioural component operates largely through the effects of conditioning. The basic mechanics of this component can be taught to insightful and receptive patients in 5 to 10 minutes. Most CBTi programs offer one or two of the components of the program at each visit. This may help to legitimize multiple visits but may also reduce the power and immediate effectiveness of the program. Until the patient grasps the concept of conditioning, parts of the program may appear counter-intuitive. However, it can be presented reasonably simply with all of the components initiated at once to increase effectiveness. This reduces the number of visits required to fine tune the program or to determine if the patient needs to see a CBT therapist to add the cognitive component.

What is Insomnia?

The word *insomnia* means “inability to sleep” and generally refers to difficulty getting to sleep, staying asleep or getting back to sleep. Insomnia usually results in feeling unrested in the morning and tired during the day. Insomnia may be short or long lasting. When insomnia has existed for longer than 3 months, it is considered “chronic”.

Insomnia is a symptom, not a diagnosis. There are many causes of insomnia. Thus, it is important to have a reasonable working diagnosis of what kind of insomnia the patient has before you can initiate effective treatment.

Insomnia can be caused by pain, hot flashes and other underlying medical conditions such as asthma or allergies. Various medications can disturb sleep such as non-sedating antidepressants (eg: Wellbutrin, Prozac), stimulants (eg: Ritalin, Dexedrine), prednisone, and beta-blockers (eg: metoprolol). Most psychiatric conditions including anxiety, depression, PTSD and OCD are associated with significantly disturbed sleep.

Sometimes symptoms of “insomnia” consisting of frequent awakenings and non-restorative sleep are the presenting symptom of another underlying sleep disorder such as [Obstructive Sleep Apnea](#) or [Periodic Limb Movement Disorder](#). A sleep study or [polysomnogram](#) (PSG) is required to evaluate the patient’s sleep and determine if there is an underlying sleep disorder.

Circadian rhythm disorders usually present with insomnia. Patients with [Delayed Sleep Phase Syndrome](#) have a delayed biological clock. They may be considered “night owls” and like to stay up late and sleep-in late. When they try to go to sleep at an earlier and more conventional time, they have trouble falling asleep. “Larks” or people with [Advanced Sleep Phase Syndrome](#) may feel like they are waking up too early and unable to return to sleep.

Patients with [Restless Legs Syndrome](#) have great difficulty falling asleep because they cannot get their legs comfortable or keep them still. They are constantly moving around in bed and often have to get up and walk around before they can return to bed and fall asleep.

Some patients are excessively sleepy during the day because of an underlying sleep disorder. Consequently they are often falling asleep during the day. Napping during the day can sometimes make it harder to fall asleep at night and lead to symptoms of insomnia.

Types of Insomnia

In the third edition of the International Classification of Sleep Disorders (ICSD), the diagnostic nomenclature for insomnia has been revised. Insomnia lasting less than 3 months is called *Short-term Insomnia Disorder*. Other names for this is *Acute Insomnia* or [Adjustment Insomnia](#). Insomnia lasting longer than 3 months is now called *Chronic Insomnia Disorder*. This includes insomnias previous known as [Psychophysiological Insomnia](#) (PPI), [Inadequate Sleep Hygiene](#), *Paradoxical Insomnia* (Sleep State Misperception), and *Idiopathic Insomnia*.

PPI is probably one of the most common forms of Chronic Insomnia Disorder and often contains many elements of Inadequate Sleep Hygiene. Paradoxical Insomnia is where the patients feels they are sleeping much less than objective measurement shows. This is likely due to them being aware of being awake a lot during the night and not being aware of the time in which they are asleep. Coupled with feeling tired the next day, they significantly underestimate the amount of sleep they are getting. Patients with Paradoxical Insomnia usually have PPI or Idiopathic Insomnia. Idiopathic Insomnia usually refers to patients who have had insomnia their whole life. Insomnia may be congenital in these patients and therefore is less likely caused by the issues that contribute to PPI. However, even if it is congenital, it can still be aggravated by poor sleep habits and hygiene. Therefore it is still worthwhile for these patients to follow the same BBTi program

to see what benefit they can achieve. In summary it helps to look at Chronic Insomnia Disorder as if it is all primarily PPI for the purposes of understanding the BBTi program.

Psychophysiological Insomnia

As the name suggests, Psychophysiological Insomnia consists of psychological and physiological factors that interfere with the ability to sleep. The physiological factors are sometimes obvious like pain, restless legs or hot flashes. Sometimes they are not so obvious like an underlying sleep disorder such as *Obstructive Sleep Apnea* or *Periodic Limb Movement Disorder*. If an underlying sleep disorder is suspected then a referral for a sleep disorder consultation and PSG is required to objectively evaluate the patient's sleep. In addition to these physiological factors, if the patient is tired and has to push themselves to get through the day, they may have an "adrenalin hangover" at the end of the day due to hyperarousal of the sympathetic nervous system. This makes it hard to fall asleep. Even when the patient falls asleep their body may still be physiologically in "fight or flight" mode which causes lighter and more fragmented sleep.

If the patient is currently dealing with significant amounts of anxiety, depression or severe stress, then these issues will need to be addressed in order to be successful at resolving the insomnia. However, the primary psychological component of PPI has to do with conditioning. When a patient goes through a period of time in their life during which their sleep is significantly disturbed, if this goes on long enough (and sometimes it does not take long at all) the patient may become conditioned to sleep that way. This may continue even after the original factors that caused the insomnia have resolved or significantly improved. We can call this "conditioned insomnia". The patient may have developed a habit of thinking, worrying, planning, problem solving, or just spending long periods of time in bed awake. Watching the clock and feeling anxious or frustrated about the inability to sleep can also make sleep worse. Ultimately, the patient may become conditioned to associate the bed with mental activity, alertness and frustration rather than relaxation and sleep.

The classic example of this kind of insomnia is in the new mother who immediately learns to sleep with "one ear open" to listen for the needs of her precious new-born baby. She may become so vigilant during the night that she not only hears the baby when it cries, she is aware of everything else going on at night such as the house creaking, the wind blowing or the dog walking down the hall. Unfortunately, long after the baby is old enough to leave home, the mother is often still sleeping this way. She has become conditioned to be a light and vigilant sleeper. The good news is that once we understand what we are dealing with, we know how to change conditioning.

The Sleep Questionnaire

The 2 page sleep questionnaire is very useful for quickly identifying the most likely sleep disorders in the patient. See Appendix A for a description on how it is used. Give this to the patient before the first visit to help you with the sleep disorder diagnosis and initiating the BBTi program.

The Sleep Disorder Diagnostic Tool

There are 65 sleep disorders and 9 normal variants listed in the third edition of the ICSD, of which there are actually about 34 different conditions (see Appendix B). For example, there are 8 types of central sleep apnea and 6 types of sleep hypoventilation disorders. Hypersomnia due to a medical disorder, medication or substance, or associated with a psychiatric disorder are listed as three separate diagnoses. By combining these similar diagnoses into single items we can simplify the list into these 34 conditions. The *Sleep Disorder Diagnostic Tool* is one way of organizing these diagnosis for further clinical simplicity. The Tool divides the different diagnoses into 2 basic categories: *Insufficient Sleep* and *Non-restorative Sleep*. The Insufficient Sleep diagnoses are the ones you can make clinically and therefore initiate treatment immediately. The Non-restorative Sleep diagnoses require a referral for diagnostic testing before treatment is initiated.

Diagnosis of Psychophysiological Insomnia

The diagnosis of PPI is based on a history of difficulty initiating, maintaining and/or returning to sleep often associated with a habit of thinking worrying, planning or problem solving in bed. It is often triggered by an event such as childbirth, painful illness or injury, or a stressful event. Although it can coexist with any other medical, psychiatric or sleep disorder, in PPI these disorders do not appear to be the primary cause of the difficulty sleeping. If there is significant pain, anxiety, depression, restless legs, etc., then these conditions also need to be satisfactorily addressed before you should expect success at managing the insomnia. However, even when these aggravating conditions have been controlled, there is residual insomnia. This is most likely the result of poor sleep conditioning after a significant period of disturbed sleep. This should respond to a non-pharmacological insomnia treatment program to recondition good sleep.

If the insomnia symptoms began after an obvious simple trigger like childbirth, then a Nocturnal Polysomnogram may not be necessary. However, if there is a history compatible with a possible underlying sleep disorder such as snoring associated with pauses in breathing (possible Obstructive Sleep Apnea), repetitive twitching or movement (possible Periodic Limb Movement Disorder), or a [Parasomnia](#), then a Nocturnal Polysomnogram would be required to rule out other conditions contributing to poor sleep.

Although people with insomnia are tired during the day from lack of sleep, they are not usually very sleepy. If the patient is significantly sleepy as well, then this raises the possibility of another underlying sleep disorder and a Nocturnal Polysomnogram should be performed. There is usually no significant harm caused by following non-pharmacological measures to improve sleep while you await the results of further investigation. However, sleep restriction should be avoided.

Management

To successfully manage Psychophysiological Insomnia you need to manage the underlying psychological and physiological factors contributing to poor sleep.

The psychological factors are primarily related to conditioning. Many of the recommendations in this program are focused on the conditioning of good sleep. For example, maintaining a regular sleep schedule, using a relaxation technique to fall asleep and return to sleep, setting an alarm, getting out of bed if unable to sleep, are all recommendations that help condition good sleep. Some of these recommendations may also be considered good [Sleep Hygiene](#). Lots of patients with insomnia are already familiar with sleep hygiene and may tell you that, "I have already tried this and it didn't work." What is important for them to understand is that this program goes beyond sleep hygiene. What we are doing is "sleep conditioning".

However, if there is significant anxiety or depression, then these issues need to be treated as well. It takes energy to cope with day to day issues big or small. Fatigue makes it harder to cope. "Molehills turn into mountains" more easily due to difficulty coping. A patient can easily become overwhelmed at times even with minor problems leading to anxiety and depression. Helping the patient understand the cause of their insomnia and the mechanism through which it can be treated can create hope that their condition can get better. Teaching the patient strategies they can use to manage their insomnia is empowering. Hope, empowerment and some success at sleeping better may be enough to help improve mild anxiety and depression. If the patient is feeling desperate, a short term use of a sleeping pill like zopiclone may be necessary while at the same time following the sleep program to address the underlying insomnia conditioning. Once the patient is sleeping well and feeling rested, they no longer need the sleeping pill. Then they can follow the [Sleeping Pill Withdrawal Protocol](#) to wean off of it. However, sometimes anxiety and depression are major contributing factors to the insomnia and must also be treated at the same time using cognitive behavioral therapy (CBT) or anti-depressant medication.

Managing the physiological (physical) factors that contribute to PPI is also important in order to be successful at achieving restorative sleep. If nighttime pain is significantly interfering with the ability to sleep, then it needs to be managed. If a Nocturnal Polysomnogram shows a significant underlying sleep disorder contributing to poor sleep, then this condition needs to be treated. Good sleep hygiene also needs to be followed such as winding down before bed to allow the adrenalin to wear off, avoiding TV and computer the last hour to remove the stimulating effect on the brain, avoiding caffeine after 4 pm and preferably after 12 noon, and avoiding alcohol within 3 hours of bedtime. It is also important to have a comfortable bed and a cool, dark and quiet environment to sleep in.

Indications and Contraindications for BBTi

BBTi is first line treatment for uncomplicated Psychophysiological Insomnia and Chronic Insomnia Disorder. The program will also be helpful for insomnia complicated with other comorbidities such as depression, anxiety and chronic pain. However, these comorbidities will need to be under reasonable control for insomnia treatment to be effective. The patient usually needs some degree of psychological insight for the program to be effective. However, the process of conditioning works even if the patient does not understand or believe the program works. Many skeptical patients have been successful at resolving their insomnia by following the program even if they did not initially believe the program would work. However, patients are less likely to follow

the program to the degree necessary to be effective if they do not understand how it will work for them.

Contraindications are generally related to the impact that sleep deprivation may have on other conditions. Sleep deprivation may lower the seizure threshold in patients with epilepsy. It may increase the susceptibility to mania in patients with bipolar disorder. It may increase the risk of falls in susceptible elderly patients. Patients with insomnia feel fatigue but are usually not sleepy during the day. If they are sleepy, be suspicious that they may have another coexisting sleep disorder. Sleep restriction is contraindicated in sleepy patients and they should be referred for a sleep disorder consultation and PSG. The other components of the program can still be followed even if sleep restriction is contraindicated.

Sleep restriction should also be more conservative in patients with safety critical occupations because of the potential for increasing daytime sleepiness.

The Program

The program is based on the principles of conditioning. It is important to note that conditioning requires consistency. Patients should understand that their success at training to become good sleepers will require consistent effort on their part. It is also important that they are realistic about the timelines. They need to understand that the process will take a few months to work their way through. However, you can tell them that most patients notice significant improvement in the first month. You should also warn them that the first 2 weeks are usually the most difficult because of the “hoops they must jump through” to change their conditioning. However, if they invest in the process, it usually pays off.

There are 2 major strategies used in this program:

- Conditioning
- Sleep restriction

There are 3 phases to the program:

- Consolidate sleep through sleep restriction and the 4 habits outlined below.
- Lengthen sleep until the patient is getting enough to feel rested.
- Wean off hypnotic medication

It is important to note that getting off sleep medication is the last step, not the first step. Otherwise, the patient will go into withdrawal, make their sleep worse and prevent themselves from experiencing and re-conditioning better sleep.

There are 4 essential habits to learn in this program:

- winding down to allow the “adrenalin” to wear off before going to bed
- setting an alarm so the patient knows what time to get up without looking at the clock
- using relaxation as a strategy to fall asleep and to return to sleep

- getting out of bed if unable to sleep so that the bed is associated with sleep and not with being awake or frustrated.

In addition to these 4 habits, in order to optimize the results of the Program, the patient should follow good *Sleep Hygiene*.

Conditioning

The main strategy of this program is to practice behaviours that “condition” the patient to associate the bed with good sleep. To achieve this, we also need to extinguish behaviors that are associated with poor sleep. Thus, it is important that the patient not be doing anything else in bed but sleep or sexual activity. They should not be thinking, worrying, planning, problem solving or even lying awake in bed for long periods of time because these behaviours will just reinforce the bed as a place to do those things. The patient should go to bed primarily to sleep and nothing else. Obviously, that is easier said than done and there are a number of things that can help the patient be successful at this.

Many patients have a habit of reading or watching TV in bed to help them fall asleep. Although the patient may think that these behaviours are helping their sleep, they are also interfering with optimal sleep. Just like aiming 45 degrees to the side of the golf green may help to correct for the consequences of a bad slice, this may not be the most effective way of playing golf. If a patient is seeing you about insomnia, then whatever they are doing is not working well enough. Clearly they need to do something significantly different to expect a significant positive change in their sleep. Reading and watching TV may help them relax and distract their mind from thoughts that keep them awake. However, reading is a wakeful activity that reinforces the bed as a place to be awake. The more time spent reading in bed at night, the more they are reinforcing the bed as place to be awake. TV’s, computers, tablets, and cell phones are all bright flashing lights that suppress melatonin, delay sleep onset and stimulate the brain. Even if the patient falls asleep, they will not sleep as well as if they followed the strategies outlined below. The patient needs to know there are more effective ways to help themselves fall asleep.

Sleep Restriction

One of the most powerful and natural way to immediately improve a patient’s ability to sleep is “sleep restriction”. Take, for example a patient who typically goes to bed at 9 pm, takes 2 hours to fall asleep, wakes up 4 times and takes 15 minutes to return to sleep each time (total of one hour awake during the night), wakes up finally at 6 am but does not get out of bed until 7 am. The patient would have spent 10 hours in bed but only have slept 6 hours. That means there are 4 hours per night that the patient is in bed awake, reinforcing the bed as a place to be awake and reinforcing the habit of insomnia. Essentially, the patient is “practicing insomnia” 4 hours a night and that is why they are so good at it!

Right away we can decrease the likelihood of the patient being in bed awake by reducing their time in bed to the number of hours we think they can sleep. In this example the patient appears to have the ability to sleep about 6 hours. Therefore, there is not much point in the patient being

in bed much longer than 6 hours otherwise they are “diluting” their sleep. The more time they spend in bed awake, the more they are reinforcing the bed as a place to be awake. In this example we would restrict the patient to 6.5 hours in bed which gives them the opportunity to improve their sleep by 30 minutes but reduces the amount of time spent in bed awake by 3.5 hours. The best way to do this for most patients is to go to bed later so that they are more biologically sleepy when they try to sleep.

Ask the patient, “What time would you like to get up in the morning if you could have a good sleep?” In this example, it might be 6 am. You would then instruct the patient to get up in the morning at 6 am, and go to bed 6.5 hours before that time which would be 11:30 pm. When this patient goes to bed at 9 pm, they are setting themselves up for up for “failure”. When the patient starts going to bed at 11:30 pm, they are much more biologically sleepy based on the 24 hour sleepiness biorhythm in their body. This extra sleepiness essentially “bulldozes” them into sleep and “bulldozes” them through the night, naturally filling in the “holes” and “gaps” in their sleep.

Going to bed later seems counterintuitive when your goal is try and get more sleep. The patient needs to think of this as an “investment” in becoming a good sleeper. The application of “sleep restriction” is a very powerful strategy. If the patient can do it, it usually works. What we are doing is “stacking the deck” physiological speaking, in favor of the patient not being able to stay awake during the night, long enough to experience “success” at sleeping well. After a few weeks of sleeping well the patient starts to feel more confident in their ability to sleep. After a few weeks of confidence in their ability to sleep, they start to think of themselves as a good sleeper again. At this point, they have changed their conditioning to that of a good sleeper. Once they are a good sleeper, they should be able to gradually advance their bedtime routine 30 minutes at a time until they are getting enough sleep to feel rested.

If the patient is unable to fall asleep or to return to sleep during the night, it is important that they do not stay in bed awake for long periods of time because this is reinforcing the bed as a place for being awake. When this happens, they are essentially “practicing insomnia”. If the patient cannot fall asleep within an estimated 20 minutes (estimated because they should not look at the clock), they need to get out of bed, go into another room and do something relaxing until they start to feel sleepy, or 30 minutes goes by, whatever happens first. Then they should go back to bed and repeat their relaxation technique to fall asleep. No one likes getting out of bed when they are tired. However, if they do not consistently get out of bed when unable to sleep, they will continue to be tired because their insomnia will not get better. If they get out of bed consistently when they cannot sleep, then they will learn to associate the bed with sleeping and more quickly resolve their insomnia.

The 4 Essential Habits for Conditioning Good Sleep

1. Winding Down

The first habit of this program has to do with the patient taking enough time to wind down before bed to allow the “adrenalin” to wear off after pushing their body through the day when they are

tired. The patient needs to take at least one hour to wind down doing something they find relaxing and enjoyable. Examples of relaxing activities include reading, listening to pleasant music or doing some kind of craft or hobby that is not frustrating. The patient should not be trying to “accomplish” anything. They should not be paying bills, answering emails, folding laundry or making lunches. They should not be watching a TV, computer, video game or cell phone during this time as these are bright, flashing lights. The brightness suppresses the patient’s natural melatonin which delays sleep onset. The flashing stimulates the brain to some degree. Even though people may fall asleep watching their electronic devices, their nervous systems are not as relaxed and their sleep quality will not be as good. It is not acceptable to use blue light filters so the patient can continue to watch their screens before bed. Changing the colour of the light may reduce the impact on the biological clock but it does not stop it. In addition, the flashing will still tend to stimulate the brain and reduce sleep quality.

As mentioned before, a lot of people go to bed and think, worry, plan or problem solve in bed. To stop this is easier said than done. There are a couple of useful strategies to help the patient address this. If the patient finds themselves with a lot of things they need to think about most nights in bed, then they need an opportunity to think about these things before bed. They should set aside some “worry time” earlier in the evening before they wind down. This is when they will sit at a desk or a table (not the place they want to associate with winding down) and think about all the things that need thinking about, worry about things that need worrying, plan the things that need planning, problem solve the things that need problem solving and “take care of business.” Then they may want to write something down, make a list, put a note on a calendar, or journal to get something “out of their head”. They need to do whatever it takes so that they can give themselves permission to “forget about it” for the rest of the night. Then, they take the next hour to wind down to allow the “adrenalin” to wear off, and to help “insulate their sleep” from what is going on in their life.

Another very important strategy for helping a patient turn their mind off is through the use of relaxation techniques and is discussed below.

2. Set an Alarm

It is critical for the patient to set an alarm every night (even on days off) for the time they intend to wake up in the morning. This is important even if the patient is retired or currently wakes up without an alarm or before the alarm.

Most patients think of an alarm as something to wake them up. Although the concept may initially seem counter-intuitive, the main reason for using the alarm is to help the patient sleep. Setting the alarm takes away the patient’s responsibility of deciding when they are going to get up in the morning.

If the patient does not use an alarm or gets up before the alarm, then every time they wake up during the night they have to decide whether to get up or try to return to sleep. In the process of making that decision (however subconscious this may be), the patient has to gather data.

Typically they open their eyes to see how much light is sneaking around the blinds or they look at the clock to see the time. Then they have to process data. They may calculate how much time they have left to sleep. The closer it is to morning, the harder it is to return to sleep. Then they make decisions. Should they get up? Should they go to the bathroom? Should they try to return to sleep? All this thinking is what is ruining their sleep. They need to get over their curiosity about time. They need to recognise that they are not going to do anything differently based on knowing what time it is other than ruin their sleep.

Patients often do not understand this concept right away and they have a number of excuses for why they think they do not need an alarm. The bottom line is that if the patient wants to resolve their insomnia, an alarm is critical to their success for three reasons.

The first reason is that it will help to reduce the number of awakenings they have during the night to see if it is time to get up, especially in the last hour or two of the night.

The second reason is that the alarm facilitates the protocol for returning to sleep during the night. When the patient wakes up in the night, their body is still tired and wants to sleep. Typically it is their mind that is active and keeping them awake. If they repeat their relaxation technique and turn their mind off it will help them return to sleep. It is important for the patient to train themselves so that as soon as they become aware that they are conscious during the night, (assuming it is not the alarm waking them up) their job is to repeat the relaxation technique before any other thoughts gain a foot-hold in their mind and return to sleep. The goal is to practice this strategy consistently until it becomes an automatic reflex (like self defense). It should be noted that a person usually needs to be awake for at least 2 – 3 minutes to process the memory of being awake. The goal is to eventually train themselves to return to sleep so quickly, they may not even be awake long enough to process the memory of being awake.

The third reason for using the alarm is that it is the most effective way to train a patient to sleep longer. Once an insomniac is programmed to wake up after a certain number of hours of sleep, chances are that if they try to go to sleep earlier they will probably just wake up earlier. Similarly, if they try to sleep later in the morning they cannot. Thus, it can be very difficult to get more sleep. However, if the patient is trained to sleep until the alarm goes off, that anchors their sleep to the alarm. Then, when they start to go to sleep earlier and sleep until the alarm, they can actually get more sleep. Similarly, if they set their alarm later, they can sleep later.

When choosing an alarm, it should be something gentle like a clock radio. Not an obnoxious electric buzzer that will startle the patient awake and train them to dread the alarm going off. The patient is instructed to set the alarm, turn the clock away, and allow themselves to be off duty until the alarm goes off the next day.

Using an alarm is like putting a cast on a broken leg. It helps to create the framework for healing. Once it is healed, you remove the cast. Once the patient is a good sleeper, getting as much sleep as they need to feel rested, and they are off all their sleep medications, then they can stop using the alarm if they want.

3. Relaxation to fall asleep and to return to sleep

One of the primary issues that most insomnia patients have is the inability to control their thoughts when they are trying to fall asleep. The use of a “relaxation technique” to help them “turn their mind off” is the primary strategy for controlling this. Relaxation is like “self defense” for insomnia. It is important whether the patient is having trouble falling asleep initially or returning to sleep during the night.

There are 4 reasons why relaxation is a critical technique for those who want to resolve insomnia. To begin with, relaxation helps the patient turn their mind off so they can fall asleep quicker. Second, if the patient goes to sleep with “stuff” on their mind, “stuff” will “fuel” their dream content and disturb their sleep. Stressful thoughts are more likely to result in stressful dreams. Anxious thoughts are more likely to result in anxious dreams even though the content may be completely different than what they were thinking about as they fell asleep. However, if the patient goes to sleep with pleasant, relaxing thoughts, they are more likely to have pleasant, relaxing dreams and sleep deeper. Third, when a patient practices relaxation every night when they go to bed, they will get good at it. Fourth, if every night the patient falls asleep doing a relaxation technique, they will learn to associate relaxation with falling asleep. When the patient wakes up in the night, it is worth noting that their body is still tired and wants to sleep. Typically it is their mind that is active and keeping them awake. If they repeat the relaxation technique and turn their mind off, it will help them get back to sleep, especially if they have become conditioned to associate relaxation with falling asleep.

Ironically, if the patient makes the mistake of only practicing relaxation when they have trouble falling asleep, they run the risk of learning to associate relaxation with trouble falling asleep! Therefore, it is very important that the patient does relaxation every night, even if they normally do not have trouble falling asleep at the beginning of the night. This is so that they can learn to associate relaxation with falling asleep. It is all about conditioning.

The easiest way to learn a relaxation technique is to use a relaxation App on their smart phone or tablet. This is something that they listen to with their eyes closed and permission to fall asleep while they are doing it. It is not a video that they watch. They are not looking at their phone. They can go to their App Store and search on “relaxation technique”. They want something with a “voice” on it that will guide them step by step through a relaxation exercise and teach them how to relax. It is not enough just to listen to pleasant music, pod casts or nature sounds because these will not teach them anything. After 1 – 2 weeks the patient should be able to memorize the principles of the technique and learn how to do it on their own in their own way. They can emphasize the parts they like, leave out the parts they don’t and mix a match different techniques to create their own. Initially they will have to guide themselves through their own relaxation technique. Eventually they can just “relax” without having to think about how to do it. It is important that the patient understand that relaxation is a critical skill that they need to learn to do on their own without the App. It is not optional if they want to become a good sleeper.

It is also important to acknowledge that relaxation often does not come that naturally to patients with insomnia. This may be one of the reasons they are more prone to insomnia. For example, some people are athletic and can learn to play a sport fairly easily. Others will take longer and may never be as good as those that are athletic. It does not mean they cannot learn to play well enough to enjoy the sport. They may just not be as good as others. It is similar for relaxation. Anyone can learn how to relax but some will find it easier than others. Some people have great difficulty with relaxation. They may need to see a psychologist for custom relaxation training.

Herbert Benson was a Harvard physician who in 1975 coined the term “the Relaxation Response”. Essentially, this is the physiological response that occurs in the body when you remember what it feels like to relax. The whole purpose of a relaxation or mediation technique is to essentially trick the body into remembering this feeling.

For those that believe they cannot do a relaxation technique, it can be illustrative to recall a very frustrating or aggravating experience that they may have had in the past. Ask them, “ Did you ever notice that just by thinking about it again that you start to feel tense, aggravated or upset?” Just about anyone can recall an aggravating experience from the past and re-experience it in the present. Similarly, if they were to recall a relaxing experience, they could re-experience that. It is just something that they have to practice to get good at.

Some patients may have misconceptions about what relaxation is and may be resistant to doing it. It is important that they understand it is just a way to control their thoughts and relax the muscles of their body. It is a skill they can learn like hitting a golf ball or driving a car. This skill does not put them to sleep. Relaxation is a technique they can use to keep their mind “out of the way” while they are waiting for sleep to happen naturally.

4. Getting out of bed if unable to sleep

It is important that the patient not stay awake in bed for prolonged periods of time reinforcing the bed as a place to be awake and practicing insomnia. If the patient is unable to fall asleep at the beginning of the night or unable to return to sleep during the night within an estimated 20 minutes, they need to get out of bed. They go into another room and do something relaxing (like reading) until they feel sleepy or 30 minutes has gone by, whichever comes first. Then they return to bed and repeat the relaxation technique to fall asleep. This process is repeated as required until the alarm goes off.

BBTi Program Summary

It helps to explain to the patient that the program is a finite series of habits that when practiced until they can be done without thinking, result in the patient training themselves to become a good sleeper. It can be summarized with the following:

- Take an hour to wind down before bed (no technology).
- Set an alarm
- Do a relaxation technique until falling asleep.

- If unable to sleep, get up until feeling sleepy (no technology) and then return to bed and repeat the relaxation technique.
- When awakening in the night, repeat the relaxation technique.
- If unable to return to sleep, get up until sleepy (no technology) and then return to bed and repeat the relaxation technique.
- Repeat until the alarm goes off.
- Follow good Sleep Hygiene

Once the habits are learned, the program is simple and requires no thinking. Thinking must be avoided. The program should be practiced until it is automatic and reflexive.

Sleep Log

Give the Sleep Log handout to the patient at the end of the first visit to remind them of the 4 Habits for conditioning good sleep as well as the recommendations for good sleep hygiene. Ask them to fill out the sleep log for the week prior to their next visit, usually in 4 weeks. The sleep log will help you determine the patient's compliance with the BBTi program as well as document their progress with improving their sleep. It will also be used to determine if the patient is ready to lengthen their sleep or further restrict it.

The 3 phases of becoming a good sleeper

1. Consolidating Sleep

Take a sleep history to determine:

- Average time the patient goes to bed (not when they turn off the light or try to go to sleep)
- Average number of awakenings
- Average range of time it takes to return to sleep
- Average time patient finally wakes up in the morning
- Average time patient gets out of bed.

This information is obtained from the Sleep Questionnaire.

- Determine average number of hours from bed time to final wake time. Call this "Time in Bed" (TIB) even if the patient gets out of bed when they cannot sleep. The convention is not to include the time awake in bed after the final waking before the patient actually gets out of bed in the TIB number. We will call this time in bed after sleep (TIBAS)
- Determine average time to fall asleep initially and call it "Sleep Latency" (SL)
- Determine average time awake during the night (number of awakenings X's the average time to return to sleep) and call it "Wake After Sleep Onset" (WASO).
- Determine "Total Wake Time" (TWT = SL + WASO). Determine average "Total Sleep Time" (TST = TIB – TWT).

Ask the patient if these numbers make sense to them. Often the patient will think they are only sleeping a few hours when the calculated number is larger than they thought. It is worth pointing out if the math indicates that they are sleeping more than they thought.

It is illustrative to point out to the patient how much time they are spending awake during the night. Sometimes they get out of bed so they are not reinforcing the bed as a place to be awake. However, if they spend most of their awake time in bed, it is important to point out how much time they are in bed awake “practicing insomnia” every night. This would explain why they are “so good at insomnia.” For illustrative purposes to the patient, this time included TWT + TIBAS.

The main reason for these calculations is to determine how much the patient is actually sleeping on average. We use this number to determine their degree of “Sleep Restriction”. Although the strategy is called sleep restriction we are usually not reducing the amount of sleep the patient is getting. Instead, we are reducing the total amount of time in bed closer to the number of hours the patient can actually sleep. This reduces the time spent in bed awake and therefore helps to reinforce the bed as a place to be asleep rather than a place to be awake.

When you calculate the average amount of time the patient is actually sleeping, make sure to add in the length of time they are napping during the day. Sometimes naps are considerable. Since the patient is no longer allowed to nap on the program, if you do not add this in, they may become excessively sleep deprived. Add 30 minutes to the average number of hours of sleep to determine how much time they will be spending in bed going forward with the program. Keep in mind that patients with insomnia often have a degree of “sleep state misperception” and may significantly underestimate the amount of their sleep. In light of this uncertainty, try not to restrict the patient to less than 6 hours per night and definitely not less than 5 hours. Ideally, you want the patient to spend at least an hour less in bed than before to create a significant impact on consolidating and deepening their sleep.

Sleep restriction is usually the most effective when the patient is going to bed later than usual. When the patient goes to bed later they are more biologically sleepy which makes it easier for them to fall asleep at the beginning of the night and to return to sleep during the night. If the main issue is that they are waking up too early and cannot return to sleep, then getting up earlier may work better. In this case try to have the patient set the alarm to a time no later than the time they usually wake up (as opposed to the time they usually get up).

To implement sleep restriction:

- Determine the wake up time. Usually this is the time they normally want or need to wake up.
- Determine the average number of hours they are sleeping (TST + naps) and add 30 minutes, preferably not less than 6 hours (unless you are sure that they are currently getting less) and definitely not less than 5 hours. Call this the new Time In Bed (nTIB).
- Have the patient go to bed nTIB hours before the wake up time.

2. Lengthening Sleep

Once sleep is consolidated and the patient is sleeping well, the second phase is to lengthen sleep until they feel rested. To be considered to be “sleeping well”, three conditions have to be met:

1. The patient is falling asleep within 20 minutes (estimated because they are not looking at the time).
2. When they wake up during the night they return to sleep in 5 - 10 minutes using their relaxation technique (total WASO < 30 minutes).
3. They are waking in morning with the alarm, not before the alarm.

If the patient is waking up before the alarm it usually means that on some level they are still keeping track of time and waking up after their usual, insufficient number of hours of sleep. If you have them go to bed earlier at this point they are likely just to wake up earlier after the same number of hours of sleep. However, if they can train their brain to “wait” for the signal of the alarm to wake up, this will anchor their sleep to the alarm. Then when they start to go to bed earlier, they will sleep to the alarm and actually get more sleep.

Although it may take a few weeks, once the patient can “sleep well” for at least a week to establish the conditioning of good sleep, then they can go to bed 30 minutes earlier. Once the patient is actually sleeping 30 minutes longer (not just lying in bed awake 30 minutes longer) for at least a week to establish the conditioning of sleeping longer, then they can go to bed another 30 minutes earlier and so on until they are getting enough sleep to feel rested.

In the less common scenario where you had the patient wake up earlier instead of going to bed later, then they may delay their alarm 30 minutes at a time. Once they are waking finally at the time they want to, if they need more sleep to feel rested, then they can start going to bed earlier.

3. Weaning off sleeping pills.

To be successful at weaning off hypnotic medication it is important that the sleep is consolidated and consistent. In addition, they are practicing and good at the 4 habits which will become more critical once the patient has less hypnotic in their system to help them sleep. Then the patient needs to expand their sleep time until they are feeling fully rested. If the patient is still tired and pushing themselves to get through the day, the resulting “adrenalin hangover” at the end of the day will make it hard to sleep without the tranquilizing effect of the sleeping pill. However, once the patient is getting enough sleep to feel fully rested, they no longer have to push themselves to get through the day. Then, they no longer have an adrenalin hangover at the end of the day that they need to tranquilize with a sleeping pill in order to be able to fall asleep. Since they no longer need the sleeping pill at this point, it is fairly easy to get off . The patient is then ready to follow the *Sleeping Pill Withdrawal Protocol*.

In the Sleeping Pill Withdrawal Protocol, the medication is reduced gradually by ½ pill at a time. Even reducing the pill by ½ may result in some withdrawal effects making it more difficult to fall

and stay asleep. If the patient experiences poor sleep during this withdrawal process they could undermine their good sleep conditioning all over again. To prevent this from happening, the patient will also go to bed 2 hours later for the first 5 nights to increase their biological sleepiness. This extra sleepiness will counteract the reduced sleepiness from medication withdrawal so that they will continue to be a good sleeper and not upset their sleep conditioning. Because the patient will be feeling fully rested before they start this process, getting 2 hours less sleep will not feel as bad as when they had insomnia. They were probably much more sleep deprived and fatigued prior to starting the program.

After 5 nights of going to bed 2 hours later, as long as the patient is still sleeping fairly well, they will now start going to bed 30 minutes earlier every 1 – 2 nights until they are back to getting the full number of hours of sleep they need to feel rested. After a couple of weeks to recover from this period of sleep deprivation, they repeat the process, reducing by 1/2 pill each time until they are completely off of all their sleep medication.

Addressing Comorbidities that affect sleep

When treating Psychophysiological Insomnia you need to address the psychological and physiological factors that contribute to the insomnia:

- Psychological factors
 - Insomnia Conditioning – addressed with BBTi, CBTi
 - Psychiatric disorders – eg: depression, anxiety, ADHD
 - Addressed with antidepressant medication, stimulants, psychotherapy
 - Keep in mind most newer antidepressants are activating and should be taken in the morning unless found to be sedating. Most antidepressants and major tranquilizers aggravate restless legs and periodic limb movement disorder. Stimulant dosing should be timed to be worn off by bedtime.
 - Excessive stress – stress management, psychotherapy
- Physiological factors
 - Clinically obvious disorders
 - Pain – insufficient sleep aggravates pain and pain aggravates sleep. Need to control pain at night so the patient can sleep and heal their pain. Avoid using pain medication to be able to do things during the day which will end up aggravating pain at night. Focus on night time pain control to determine to what degree daytime pain can improve through healing from better sleep.
 - Hot flashes – medical treatment should be considered if this is a major impediment to sleep
 - Restless legs – Check Hgb and ferritin. Ferritin < 50 indicates low iron stores which may aggravate RLS
 - Remove antidepressant medication if possible or at least take in morning if they are not sedating
 - No caffeine after 12 pm and no alcohol

- Anti-Parkinson medications most effective unless RLS secondary to neuropathy, then gabapentin or pregabalin may be more effective
 - Meds taken an hour before bed or early evening. Not usually required during day unless prolonged inactivity eg: air travel
- Other medical conditions – eg: asthma, bowel disease, urinary disease, orthopnea
 - Optimize medical control
- Not clinically obvious disorders
 - Underlying sleep disorders eg: sleep apnea, movement disorders, parasomnia
 - Need PSG to diagnose and treat as appropriate

Follow-Up and Fine Tuning the Program

Most patients notice significant improvement in the first month. The first 2 weeks are often the most difficult. During the first 2 weeks, the patient may have a number of difficulties, concerns and questions as they try to implement the program. However, it is best to try and book the first follow-up at least 2 weeks, and preferably 4 weeks after the initial visit to give the patient time to work on their sleep habits and start to notice improvement.

At the follow up visit you will review the sleep log with the patient. The most relevant log is the most recent week. It is important to do this part in a supportive, encouraging and non-judgemental way.

Adjustment to sleep program:

- Determine average TIB, SL, WASO, TWT and TST
- If TST > 7 hours and patient feels rested, then they can continue the program as it is. If the patient is on hypnotics, then they can consider following the *Sleeping Pill Withdrawal Protocol* and wean off their medication.
- If TST < 9 hours, SL < 20 minutes and WASO < 30 minutes then, they can advance the bed time or delay the alarm 30 minutes at a time.
- If the patient is still tired and TST > 6 hours but < 9 hours and TWT is > 75 minutes, then the patient should restrict their TIB another 30 minutes. If they are having trouble initiating or maintaining sleep, then it would be best to restrict by going to bed later. If the primary issue is waking up too early, then restriction could be obtained by setting the alarm earlier. If TWT is < 75 minutes then they continue the program with their current bed time and wake time.
- If TST > 9 hours per night and still not feeling rested, they need to be referred for a sleep disorder consultation and polysomnogram.

Problem Solving Ongoing Sleep Issues:

Difficulty Initiating Sleep (DIS) – key issues are to make sure they are taking enough time to wind down before bed (not in bed), avoiding screens, using relaxation to fall asleep, and going to bed late enough so that they are biological sleepy.

Difficulty Maintaining Sleep (DMS) – key issues are to make sure they are not looking at or thinking about the time during the night, and that they are using an alarm so the patient is not waking to see if it is “time to get up yet”; need to avoid thinking they need to go to the bathroom every time they wake up; need to avoid the habit of waking up to eat, drink, smoke or take medication to return to sleep

Difficulty Returning to Sleep (DRS) – need to use relaxation to return to sleep; need to train themselves that their first thought when they wake in the night is to automatically repeat the relaxation technique to return to sleep before any other thoughts gain a foothold in their mind.

Waking before the alarm – Key issues are they going to bed late enough or setting the alarm early enough; make sure they are not looking at the time or thinking about the time during the night; make sure they are using relaxation to return to sleep; Make sure they are treating this awakening the same as all the other awakenings with the same expectation of returning to sleep; make sure they are not prejudicing their expectation of returning to sleep by anticipating they will be getting up soon.

Re-evaluate all the co-morbidities that may be interfering with sleep. Reinforce all the sleep hygiene habits including taking an hour to wind down, not using screens during this time, setting an alarm, using relaxation to fall asleep (even if not having trouble falling asleep initially), using relaxation to return to sleep, getting up if unable to sleep and not using screens when they get up. Patients should not be getting up to eat, smoke or take sleep medication because that reinforces the behavior of waking up in the night.

When to Refer for CBTi

The first line of treatment for PPI is BBT which is the behavioral part of CBTi. If the patient is having trouble making progress with the program, it may be because there are not following all the components consistently enough and you should work with the patient on fine tuning the program. If insomnia persists despite you and the patient’s best efforts at fine tuning the behavioural program for at least 8 weeks, there may be other psychological issues that need to be addressed. A referral to a psychologist trained in CBTi could be helpful to evaluate the patient in more detail. In particular they will look for underlying dysfunctional beliefs and self-defeating attitudes about their sleep. These beliefs and attitudes may contribute to a degree of anxiety that can aggravate their insomnia and undermine the process of conditioning good sleep.

The Place for Hypnotics

There are 5 main indications for supplementing BBTi with hypnotics:

1. If the patient is having trouble coping and is at their “wit’s end” with fatigue, anxiety or depression, you may consider starting the patient on a hypnotic at the beginning of the program. If depression or anxiety appears to be the primary issue then initiating treatment with antidepressant medication is appropriate. If symptoms of depression or anxiety seem to stem primarily from not having the energy to cope with day to day stressors, improving their sleep with a hypnotic may provide a more immediate and practical effect for the patient.
2. Excessive daytime sleepiness (as opposed to fatigue) is not a typical symptom of insomnia and often suggests another underlying sleep disorder. A score of 12 or greater on the Epworth Sleepiness Scale should raise your suspicion. Double check the score to make sure the patient is actually sleepy and not confusing fatigue for sleepiness. It may take time to get an appointment for a referral and have a PSG performed to evaluate for this. In the meantime, if the patient is significantly sleep deprived from insomnia, a therapeutic trial of a hypnotic can be useful. If the patient shows an immediate improvement in their sleepiness, then clearly insufficient sleep was a significant contributing factor for their sleepiness. It would still be worth keeping the appointment with the sleep specialist while the patient continues to work on BBTi with the goal to train themselves to become a good sleeper, get enough hours of sleep to feel rested, and eventually wean off their hypnotic.
3. If the patient is going to have a PSG or HSAT, they are more likely to have trouble sleeping with the equipment on. If they do not sleep, the results will not be very useful. These patients should be offered a hypnotic that does not suppress respiration and confound the evaluation for sleep apnea, such as zopiclone. It will also help reduce the patient’s anxiety about their ability to sleep in the lab. Some patients will worry that if they take a hypnotic you will not be evaluating their “usual sleep”. You can reassure the patient that you are not ordering a sleep study to find out about their insomnia. You already know they have insomnia because they are awake when it is happening and they have already told you about it. However, you need them to sleep to see if there is anything else going on in their sleep. If they lie awake in the lab most of the night because of their insomnia then you will not learn anything new. You should find out what hypnotic your local lab makes available to patients having a PSG. Otherwise you can prescribe them a hypnotic.
4. If your patient is having a trial of CPAP at home, they are also more likely to have trouble sleeping with the equipment on. If the patient is having trouble sleeping with CPAP or threatening to give up on CPAP due to inability to sleep, then you should consider offering them a hypnotic.
5. If despite your best efforts, the BBTi program is not being effective by itself and the patient is clearly suffering from the effects of insufficient sleep, then a hypnotic may be appropriate. A hypnotic is also worth considering if seeing a psychologist for CBTi has not been effective, not available, or the patient is not a good candidate for this form of therapy.

Hypnotic Medication

Medications used as hypnotics can be divided into 4 categories:

1. True hypnotic medications such as zopiclone, zolpidem, lemborexant
2. Prescription medications with sedating properties such as trazadone, mirtazapine, amitriptyline
3. OTC medications with sedating side effects marketed as sleep aids such as dimenhydrinate, diphenhydramine
4. Other sedating substances such as melatonin, marijuana, 5-HTP

In choosing a medication it is recommended that you select one designed for the intended purpose. Antidepressants should be used when treating depression and anxiety. Anti-nausea medications for when you are treating nausea. Anti-allergy medications for when you are treating allergies. Hypnotics should be used when the primary disorder is insomnia. Using medications primarily for their side effects should be avoided.

If the patient has co-morbid anxiety, then it makes sense to consider an antidepressant with a sedating side effect. If the patient just has insomnia, then it would be better to use a true hypnotic which is designed to have less daytime side effects. The goal is to train the patient to become a good sleeper and then wean them off the medication.

Appendix A

Using the Sleep Questionnaire

The 2 page Sleep Questionnaire can quickly give you an idea about what is going on with the patient.

From the sleep history you can see if the patient is having difficulty initiating sleep, maintaining sleep, returning to sleep, getting enough sleep, having a delayed sleep phase or advance sleep phase.

	Work Days	Non-workdays
What time do you go to bed?	_____	_____
How long does it take for you to fall asleep?	_____	_____
Estimate the number of times you wake up during the night?	_____	_____
Average time it takes you to return to sleep?	_____	_____
What time do you finally wake up in the morning?	_____	_____
What time do you actually get up?	_____	_____
Estimate average number of hours of actual sleep, including light sleep?	_____	_____
If you usually use an alarm, what time is it set for?	_____	_____
Do you feel rested when you get up?	_____	_____
How many hours of sleep do you normally need to feel rested? _____		

From the Epworth Sleepiness Scale you can determine a sleeping score out of 24. A score of 6 or less is normal, 7 – 9 is mild daytime sleepiness, 10 – 15 is moderate sleepiness, 16 and above is severe sleepiness.

In the following situations, please use this scale to rate the likelihood of you actually DOZING or FALLING ASLEEP (not just feeling tired or sleepy). This refers to falling asleep during the day or evening, not at bedtime when you would normally fall asleep. This refers to your usual way of life in recent times. Even if you have not done some of these things recently, try to estimate how they would have affected you:

	Never	Slight Chance	Moderate Chance	High Chance
Sitting and reading	0	1	2	3
Watching TV	0	1	2	3
Sitting inactive in a public place (e.g.: theatre or meeting)	0	1	2	3
As a passenger in a car for an hour without a break	0	1	2	3
Lying down to rest in the afternoon when circumstances permit	0	1	2	3
Sitting and talking to someone	0	1	2	3
Sitting quietly after a lunch without alcohol	0	1	2	3
In a car, while stopped for a few minutes in traffic	0	1	2	3

The next section will help you determine if the insomnia is acute (less than 3 months) or chronic (greater than 3 months). It will give you an idea if the insomnia was triggered by an event like a personal stress, an illness or pregnancy for example. It will give you an idea if it is related to shift work or jet lag.

How long have you had trouble with your sleep? _____

What triggered your difficulty sleeping? _____

Do you perform shift-work? Yes No Recent travel across more than 1 time zone? Yes No

The following section will help you determine if the sleep is affected by poor sleep hygiene with respect to caffeine, smoking, alcohol, recreational drugs or exercise.

How much caffeine do you use per day? _____ Do you have caffeine after 4 pm? Yes No

How much nicotine do you use per day? _____ Do you smoke during the night? Yes No

How much alcohol do you use per week? _____ Do you drink within 2 hours of bed? Yes No

Do you use any other recreational drugs? _____

How many days a week do you exercise? _____ Do you exercise within 2 hours of bed? Yes No

The second page of the Questionnaire is chunked in sections related to a particular sleep disorder. The first section is Restless Legs Syndrome and helps to differentiate it from restlessness secondary to pain.

- I have "restless legs" (trouble getting my legs comfortable or keeping them still).
- I have to stretch my legs or get up and walk around because of the uncomfortable feeling in my legs.
- I get "creepy-crawly" sensations in my legs when sitting for long periods of time.
- These sensations in my legs frequently make it hard for me to fall asleep.
- I have iron deficiency or anemia.
- Chronic pain is a more significant cause of my disturbed sleep than restless legs.

The second section is questions related to Psychophysiological Insomnia.

- I have a habit of thinking, worrying, planning or problem solving in bed.
- When in bed, I watch the clock.
- When lying awake, I feel anxious or frustrated about my inability to sleep.
- I feel nervous or tense in bed.
- I look forward to bedtime with anxiety or dread.
- I am a light sleeper and hear every little noise.

The third section are questions about Obstructive Sleep Apnea.

- I have been told that I snore loudly in my sleep.
- I have been told that I stop breathing, choke or gasp in my sleep.
- I am aware of waking myself snorting, gasping or choking

Height: _____ Weight: _____ Collar size: _____

The fourth section are questions about Periodic Limb Movement Disorder.

- I have been told that I frequently twitch, kick, or jerk in my sleep.
- I have sciatica, numbness or tingling in my legs.

The Fifth section is related to parasomnias.

- I have been told that I talk, scream, walk or eat in my sleep.
 - This significantly disrupts the sleep of my bed-partner.
 - I am concerned about harming myself or someone else in my sleep.

The sixth section is related to questions about Narcolepsy. The first line is about Hypnagogic or Hypnopompic Hallucinations. The second line is about Sleep Paralysis. The third is about excessive daytime sleepiness. The fourth is about inattention. The fifth is about cataplexy. The sixth is about family history.

- I sometimes wake up hallucinating that something is in the room that really is not there.
- I sometimes wake up paralyzed, unable to move for a few seconds or minutes.
- I sometimes get so sleepy during the day that I fall asleep when I don't want to.
- I sometimes do something (like driving somewhere) and don't remember doing it.
- In response to a strong emotional event, such as laughing, surprise or anger, I can suddenly become so weak that my knees buckle, my head droops, my jaw drops, I have trouble speaking, or I fall down.
- Someone in my family has similar problems to those listed in the previous 5 statements.

The seventh section is about bruxism.

- I have been told that I grind my teeth in my sleep.
- I wake up with a headache or a sore jaw.

Appendix B

Sleep Disorder Diagnostic Classification

The Third Edition of the International Classification of Sleep Disorders (ICSD) lists 65 sleep disorders and 9 normal variants totaling 74 sleep diagnoses. The ICSD is divided into 6 categories:

- Insomnias
- Sleep Related Breathing Disorders
- Central Disorders of Hypersomnolence
- Circadian Rhythm Sleep-Wake Disorders
- Parasomnias
- Sleep Related Movement Disorders

Of these 74 diagnosis, there are about 34 that are clinically significantly different:

Insomnias

- Chronic Insomnia Disorder
- Short-Term Insomnia Disorder

Sleep Related Breathing Disorders

- Obstructive Sleep Apnea
- Central Sleep Apnea
- Complex Sleep Apnea (Treatment-Emergent Central Sleep Apnea)
- Sleep Hypoventilation
- Sleep Hypoxemia
- Snoring

Central Disorders of Hypersomnolence

- Narcolepsy Type 1 & 2
- Idiopathic Hypersomnia
- Insufficient Sleep Syndrome
- Kleine-Levin Syndrome

Circadian Rhythm Disorders

- Delayed Sleep-Wake Phase Disorder
- Advanced Sleep-Wake Disorder
- Shift Work Disorder
- Jet Lag Disorder
- Irregular Sleep-Wake Rhythm Disorder
- Non-24 hour Sleep-Wake Rhythm Disorder

Parasomnias

- Confusional Arousal (Sleep Talking)
- Sleep Walking

- Sleep Terrors
- Sleep Related Eating Disorder
- Night Eating Syndrome
- REM Sleep Behavior Disorder
- Nightmare Disorder
- Sleep Paralysis
- Sleep Related Hallucinations (Hypnagogic, Hypnopompic)
- Sleep Enuresis

Sleep Related Movement Disorders

- Restless Legs Syndrome
- Periodic Limb Movement Disorder
- Bruxism
- Leg Cramps
- Myoclonus
- Rhythmic Movement Disorder
- Sleep Starts (Hypnic Jerks)/Priopriospinal Myoclonus

Excluding snoring and bruxism, the remaining 32 clinically different sleep disorders can be divided for diagnostic purposes into 2 basic categories: Insufficient Sleep, and Non-restorative Sleep.

Insufficient sleep

- Insomnia
 - Chronic Insomnia Disorder
 - Short-Term Insomnia Disorder (acute insomnia, adjustment insomnia)

- Restless Legs Syndrome
- Insufficient Sleep Syndrome
- Circadian Rhythm Disorders
 - Delayed Sleep-Wake Phase Disorder
 - Advanced Sleep-Wake Disorder
 - Shift Work Disorder
 - Jet Lag Disorder
 - Irregular Sleep-Wake Rhythm Disorder
 - Non-24 hour Sleep-Wake Rhythm Disorder

Other conditions that may be associated with reduced sleep:

- Leg Cramps
- Rhythmic Movement Disorder
- Sleep Starts (Hypnic Jerks)/Priopriospinal Myoclonus

Non-restorative sleep

- Sleep Related Breathing Disorders
 - Obstructive Sleep Apnea

- Central Sleep Apnea
- Complex Sleep Apnea (Treatment-Emergent Central Sleep Apnea)
- Sleep Hypoventilation
- Sleep Hypoxemia

Central Disorders of Hypersomnolence

- Narcolepsy Type 1 & 2
- Idiopathic Hypersomnia
- Kleine-Levin Syndrome

Parasomnias

- Confusional Arousal (Sleep Talking)
- Sleep Walking
- Sleep Terrors
- Sleep Related Eating Disorder
- Night Eating Syndrome
- REM Sleep Behavior Disorder
- Nightmare Disorder
- Sleep Paralysis
- Sleep Related Hallucinations (Hypnagogic, Hypnopompic)
- Sleep Enuresis

Periodic Limb Movement Disorder

See the **Sleep Disorder Diagnostic Tool** flow chart for a brief diagnostic algorithm.