

*Cognitive
Behavior
Protocol #03*

Conquering Insomnia

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The enclosed techniques and procedures are an adaption of materials from a book of cognitive behavior techniques titled 'Say Good Night to Insomnia' by Gregg D. Jacobs. The book was published by Henry Holt & Company, Inc. in 1998. Some of the information on other sleep disorders is from materials on Sleepnet.com, which indicates support from Dr. William C. Dement's book 'SleepWell'.

Protocol #03 Conquering Insomnia

INTRODUCTION

Insomnia has become an epidemic. It is probably the most frequent health complaint following pain and headaches. A 1995 Harris poll and a 1997 survey by Consumer Report found that the percentage of adults complaining of sleep difficulties was about one-half, up from one-third in 1995. At least 30 million adults endure the stress of severe, chronic insomnia.

The data for children indicates that between 20% and 25% of preschool and school-age children have sleep problems. Perhaps more importantly, however, is the fact that sleep disorders have been found to link to behavior problems. Gordon Wrobel, health-care coordinator for the National Association of School Psychologists suggests that clinical studies say a high percentage of kids have sleep disorders. He particularly links sleep problems with attention deficit hyperactive disorder [ADHD]. Wrobel goes on to say that students often have a combination of emotional disturbance [ED] and a sleep disorder since one feeds off the other. Ronald Chervin, director of the Michael S. Aldrich Sleep Disorders laboratory stated "...sleep problems in children could represent a major health issue. It's conceivable that by better identifying and treating children's snoring and other nighttime breathing problems, we could help address some of the most common and challenging childhood behavioral issues". And finally, Peg Dawson, staff psychologist for the Center for Learning and Attention Disorders states "The sleep pattern is critical to look at for children with attention disorders, as it may be part of the cause".

This protocol includes changing both the thoughts and the sleep culture of the child/family. Because the parents control the sleep culture of the family and may, in fact, supply many of the thought distortions about sleep, it is important, particularly for the younger child that both the child and the family be committed to the goal of improving sleep.

Whether a cause or an effect, sleep problems are worth exploring even

though to date they have been largely ignored by the medical community. The National Institutes of Health have granted almost no funding for insomnia research, while medical schools teach virtually nothing about sleep or insomnia. Doctors are not trained to diagnose or treat insomnia. The result, unfortunately, is that insomniacs have been left with two alternatives: take sleeping pills or live with the problems.

SLEEP IMPACTING CONDITIONS

Medical and psychological problems, certain underlying sleep disorders and various drugs can contribute to disturbed sleep or even play a primary role in some cases. However, even if such problems play a role, it is important to help the child/family understand that the child's thoughts and behaviors are still the primary factor in chronic insomnia. Therefore the techniques and procedures outlined here should be used in conjunction with any treatment for other problems.

It is important that the clinician explore with the child/family whether any of these conditions exist. In the Appendix, there is a ***Medical and Psychological Questionnaire - CBP#03-001*** which should be used in a brief interview. If any suggestion of a problem exists, the ***Medical and Psychological Resource - CBP#03-002***, should be reviewed for further information about the concern and for suggested responses.

While the questionnaire is not keyed, a brief reading of the fact sheet before the meeting will help the clinician connect the proper symptoms with the proper information.

INSOMNIA

The child and family should have a good understanding of what insomnia is and isn't. This will give you material to discuss in the psychoeducation [language and concepts] area.

- **Difficulty falling asleep:** Lying in bed for an average of one half hour or more before falling asleep is termed *sleep-onset* insomnia. Studies show that people with sleep-onset insomnia average about an hour and a quarter to fall asleep.
- No problem falling asleep but **difficulty staying asleep** (many

awakenings): Waking during the night and lying awake for an average of thirty minutes or more is known as sleep-maintenance insomnia. Studies show that people with insomnia average about an hour and a quarter to fall asleep when they wake.

- **Poor quality of sleep:** identified not by wakefulness but by outcome.

A person may experience one or a combination of types of insomnia or find that it changes over time from one type to another. How much sleep does a person need? Enough to feel alert during the day. Typically 7 to 9 hours (varies from person to person) of good quality sleep. To make a clinical diagnosis of insomnia, it is not merely how long you lie awake or the quantity of sleep that matters, you must also perceive detrimental consequences from disturbed sleep that extend into your day. If you have trouble falling asleep or staying asleep at night but feel alert and rested during the day, you are *not* an insomniac but a person who just requires less sleep.

Types of Insomnia

Transient insomnia -	lasting for a few nights
Short-term insomnia -	two or four weeks of poor sleep
Chronic insomnia -	poor sleep that happens most nights and lasts a month or longer

Transient and short-term insomnia generally occur in people who are temporarily experiencing one or more of the following:

- stress
- environmental noise
- extreme temperature change in the surrounding environment
- sleep/wake schedule problems such as those due to jet lag
- medication side effects

Chronic insomnia is more complex and often results from a combination of factors. One of the most common causes [or effects] of chronic insomnia is depression. Underlying physical causes can include arthritis, kidney disease, heart failure, asthma, sleep apnea, restless legs syndrome, Parkinson's disease, and hyperthyroidism. Chronic insomnia may also be due to behavioral factors, including the misuse of caffeine, alcohol, or

other substances; disrupted sleep/wake cycles as may occur with shift work or other nighttime activity schedules; and chronic stress.

In addition, the following behaviors have been shown to perpetuate insomnia in some people:

- poor sleep hygiene in general
- expecting to have difficulty sleeping and worrying about it
- ingesting excessive amounts of caffeine
- drinking alcohol before bedtime
- smoking cigarettes before bedtime
- excessive napping in the afternoon or evening
- irregular or continually disrupted sleep/wake schedules

HOWEVER, THE OVERRIDING FACTOR IS THE THOUGHTS AND BEHAVIORS THAT MAINTAIN SLEEPLESSNESS.

Difficulty sleeping at night is only one of the problems. Daytime symptoms include:

- Sleepiness
- Anxiety
- Impaired concentration
- Impaired memory
- Irritability

Traditional Responses

Transient and short-term insomnia may not require treatment since episodes last only a few days at a time. For example, if insomnia is due to a temporary change in the sleep/wake schedule, as with jet lag, the person's biological clock will often get back to normal on its own. However, for some people who experience daytime sleepiness and impaired performance as a result of transient insomnia, the use of short-acting sleeping pills may improve sleep and next-day alertness. As with all drugs, there are potential side effects. The use of over-the-counter sleep medicines is not usually recommended.

Chronic insomnia requires:

- diagnosing and treating underlying physical and psychological

problems.

- identifying behaviors that may worsen insomnia and stopping (or reducing) them.
- addressing and changing the thoughts that maintain sleeplessness

A person taking any sleeping pill should be under the supervision of a physician to closely evaluate effectiveness and minimize side effects. In general, these drugs are prescribed at the lowest dose and for the shortest duration needed to relieve the sleep-related symptoms. For some of these medicines, the dose must be gradually lowered as the medicine is discontinued because, if stopped abruptly, it can cause insomnia to occur again for a night or two.

Behavioral techniques can help to improve sleep, such as relaxation techniques, sleep restriction, reconditioning, and bright light.

Relaxation: There are specific and effective techniques [See **Technique #04**] that can reduce or eliminate anxiety and body tension. As a result, the person's mind may be better able to stop 'racing', the muscles can relax, and restful sleep can occur. It usually takes practice to learn these techniques and to achieve effective relaxation.

Sleep Restriction: Some people suffering from insomnia spend too much time in bed unsuccessfully trying to sleep. They may benefit from a sleep restriction program that at first allows only a few hours of sleep during the night. Gradually the time is increased until a more normal night's sleep is achieved.

Reconditioning: Another method that may help some people with insomnia is to recondition them to associate the bed and bedtime with sleep. For most people, this means not using their beds for any activities other than sleep and sex (some experts even say using the bed for sex can cause performance anxiety that could lead to insomnia). As part of the reconditioning process, the person is usually advised to go to bed only when sleepy. If unable to fall asleep, the person is told to get up, stay up until sleepy, and then return to bed. Throughout this process, the person should avoid naps and wake up and go to bed at the same time each day. Eventually the person's body will be conditioned to associate the bed and bedtime with sleep.

Bright Light: If you are having trouble getting to sleep early enough at night it will help to wake up at the same time every morning and try to get as much bright light in the morning as possible. This will help reset the internal clock to an earlier time at night for sleep. If you are having trouble staying awake in the evening and waking up too early in the morning then try to get bright light in the evening. This will help reset the internal clock to go to sleep later and wake up later. You may want to avoid early morning light using this method until you have stabilized your sleeping pattern.

Sleeping Pills

Sleeping pills are no longer considered a safe or appropriate treatment for chronic insomnia because they can have serious side effects that far outweigh their benefits; are only moderately effective for insomnia and stop working over time; strengthen the belief that the cure for insomnia comes from external factors; and can lead to physical or psychological dependency, which can cause feelings of helplessness, loss of control and lowered self esteem. Due to their potentially serious side effects and ineffectiveness with habitual use, it has become increasingly clear that sleeping pills are not the solution to insomnia. Most important, *sleeping pills don't cure insomnia, because they don't treat the causes of insomnia.* There is no scientific evidence that these medications are any more effective than a sugar pill!

Cognitive Behavior Response

This insomnia program achieves remarkable results because it addresses the underlying causes of insomnia. In most cases, the causes are thoughts and behaviors [habits] that are learned and can be unlearned. Some examples include:

- attitudes and beliefs about sleep
- negative, stressful thoughts about insomnia
- feeling of loss of control over sleep
- inadequate exercise or exposure to sunlight

- going to bed too early or sleeping too late
- trying to control sleep rather than letting it occur naturally
- negative responses to stress
- lying awake in bed, frustrated and tense.

This cognitive behavior management protocol is based on research and clinical practice conducted over the past ten years at the Harvard Medical School. It is the *only* drug free program scientifically proven to help insomniacs become normal sleepers. Not only have 100% of the people who have used it reported improved sleep, 90% have also decreased or eliminated their use of sleeping pills. And, unlike sleeping pills, this program has no side effects except significantly improved sleep, mood and energy. It is safe, less expensive and more effective than sleeping pills.

By learning to sleep well, the child will also feel more energy and joy, be more productive, feel calmer and more optimistic, and cope better in both social and academic situations.

The protocol will also teach the client clinically and scientifically proven relaxation and stress-reeducation techniques that will improve sleep and help the child to:

- handle negative emotions and stress-related symptoms more effectively, including headaches, gastrointestinal problems, anxiety and anger
- strengthen the functioning of the immune system and improve health
- quiet and control his/her mind and body
- think more positively and optimistically, and
- realize the powerful effect the mind has on the emotions and health and that s/he possesses the ability to alter and control events in the mind and body.

The key to conquering insomnia lies within the individual and this technique can be a catalyst for transforming the child on many levels.

Although relaxation and behavioral techniques have been used in the treatment of insomnia, they did not allow insomniacs to become normal

sleepers. They did not identify with the learned thoughts and behaviors which cause insomnia. With the realization that s/he can't fall asleep comes a distressing wave of anxiety and stressful thoughts about sleep - "I've got to get some sleep or I'll never function tomorrow". All these worries are made worse by the loneliness and darkness of the night.

INSTRUCTIONS:

PSYCHOEDUCATION

Sleep

Learning about sleep makes it less mysterious, which can give the child a feeling of control.

During a good night's sleep, you close your eyes and first spend a few minutes in a state of relaxed wakefulness that is characterized by drifting thoughts and *alpha* brain waves. In this step your thoughts gradually wander and your body begins to relax.

Stage 1. Drifting

Next you drift into Stage 1 sleep, which is a drowsy, relaxed state between waking and sleeping. Here the body becomes still more relaxed: muscle tension lessens, respiration and heart rate slow, body temperature drops, rolling eye movements occur, and a slower brain wave pattern called *theta* is generated. You may also experience fragmentary thoughts or a sensation something like daydreaming. When you observe some 'drowsing' during a boring lecture, the person is probably in Stage 1 sleep. If awakened from Stage 1, most of us would maintain that we were merely 'drifting off' and not really asleep. Because we are easily awakened, this stage is not regarded as true sleep.

Stage 2. Light Sleep

Following a few minutes in Stage 1, you enter into the first authentic sleep phase. This is deeper than Stage 1, since your body is calmer and you are more detached from the outside world. In this stage, we exhibit brain wave patterns called *sleep spindles* and *K-complexes*, which

represent intermittent attempts by the brain to preserve awareness before we 'turn off'. Stage 2 is considered a light stage of sleep, since we are still easily awakened.

Stages 3 & 4 Deep Sleep

After about thirty [30] to forty-five [45] minutes of Stage 2, you enter the most profound phases of sleep, Stages 3 & 4. These stages are distinguished by very slow brain wave patterns named *delta* and are collectively termed slow wave sleep, or deep sleep. In these stages, physiological activity, including respiration, oxygen consumption, heart rate and blood pressure realize the lowest level of the day. It is very difficult to awaken from deep sleep because we are nearly shut off from awareness of the exterior world. Children are particularly unawakeable from deep sleep. If they are awakened, they will often feel groggy, confused or disoriented and won't remember it later.

Stage 5 REM or Dream Sleep

After about forty-five [45] minutes in deep sleep, we revert to Stage 2 for a few minutes, and then enter the visual, emotional world of dream sleep. If awakened during dream sleep, we nearly always can describe the dream. Dream sleep is also termed rapid eye movement [REM] sleep, for the eyes move rapidly when we dream. The brain and body display significant levels of activity while we dream. For instance, heart rate, blood pressure, and breathing rate escalate and become highly irregular during dreaming. Our brain waves also accelerate and blood flow to the brain rises dramatically. Our brainwaves are similar to those that occur when we are awake. For this reason, REM sleep is also called *paradoxical sleep*. Except for small muscle twitches in the face and fingers, we cannot move when we dream because our large body muscles are paralyzed, apparently so that we can't act out our dreams. Thus, REM sleep can be conceived as an active brain in a paralyzed body. Because of this brain activity, we are more apt to awaken from this stage and are more likely to feel alert when we do.

During a sound night's sleep, we progress from Stage 1 to Stage 4 and

then to REM sleep in about ninety [90] minutes. A good sleeper will move through four [04] to six [06] of these cycles spending about 5% in Stage 1, 50% in stage 2, 20% in deep sleep, and 25% in REM sleep. During the early part of sleep, deep sleep periods are lengthier, sometimes lasting up to one hour, while REM periods last only a few minutes. As the night proceeds, however, deep sleep periods grow shorter and the duration of REM periods increases, so that, by the final sleep cycle, REM periods may persist for an hour. We therefore obtain most of our deep sleep during the first half of the night and the majority of our dream and light sleep in the second half.

Because sleep grows lighter as the night proceeds, awakenings are more prone to occur during the second half of the night. It is also normal to wake up six [06] or more times, particularly when we shift from one sleep stage to another. We normally fall back to sleep within seconds and don't recall awakening in the morning.

The precise function of sleep and what it does for our brain and body remains a mystery. It seems, however, that deep sleep serves a major biological restorative function by renewing our physical energy and affording a period for our immune system to turn on to combat illness. Several factors suggest that deep sleep is essential and is the most vital stage. First, it occurs first during the night and is therefore the stage least likely to be missed. Second, unlike the other stages, we recoup or 'make up' virtually all of the deep sleep lost as a consequence of sleep deprivation. Third, we experience the greatest impairment in our physical functioning [such as aching muscles and stiffness upon awakening] when we forfeit deep sleep.

Contemporary research suggests that a principal function of REM sleep is to permit us to process and save novel information in memory, particularly information obtained late in the day and 'how to' or procedural memory for activities such as academics. In computer language, we would be 'backing up' new data in the hard drive. REM sleep, therefore is more important for infants and younger children who are processing much more new information each day.

REM sleep seems also to be a required stage of sleep. When deprived of it we try to make up for it, although we only make up about half of what

we lose. Losing REM sleep causes anxiety, irritability and difficulty in concentrating that can lead, particularly in children to academic and behavioral problems.

Two Systems

Sleep and wakefulness are regulated by two systems in the brain: a wakefulness system dominates during the day and the weaker sleep system becomes dominant during the night. Even when we are deeply asleep, the wakefulness system is operating and evaluating what is occurring around us. Moreover, this system is more responsive to things significant to us happening in the immediate environment [parents response to newborns crying]. We are never altogether oblivious to the outside world. Some people have a robust sleep system, while others do not. However, since learned habits and behaviors play a salient role in sleep, it is clear that you can strengthen or weaken your sleep system by how you think about it. ["If you think you can or you think you can't, you are right." Henry Ford].

Body Temperature

The circadian ['about a day'] rhythm of body temperature is closely linked to the variations of daily levels of activity, alertness and sleepiness. We are most alert when the body temperature is highest, which is typically in the late morning and early evening. We grow sleepier and less active as the body temperature declines at night. These daily changes in body temperature and levels of alertness occur regardless of how well we slept the night before.

Recent studies have revealed that sleep and body temperature are directly influenced by the daily cycles of sunlight and darkness. When sunlight enters our eyes, melatonin levels decrease signaling the body temperature to rise. Conversely, when the sun sets, melatonin levels rise, prompting body temperature to decline.

Studies have also revealed that the body temperature of sleep onset insomniacs starts to drop about three hours later at night than normal sleepers, making it more difficult to fall asleep. Additional studies have

shown that the body temperature of sleep-maintenance insomniacs doesn't drop as much during the night as normal sleepers, which makes it difficult to sleep deeply. In this program, the child will learn a number of techniques that improve sleep by normalizing these disruptions in the body temperature rhythm.

What happens when you lie awake is that you think, which further stimulates the wakefulness system. The 'racing mind' may be the *result* of lying awake, not the cause. An important concept is that the techniques in this program function by teaching the child to enhance the sleep system and set the stage for sleep to occur. The child will attain greater control over the mind and body and their sleep than s/he can imagine.

Chronic Insomnia

Insomnia is such a customary reaction to stressful life events that some experts surmise that insomnia may serve an adaptive purpose in that it compels us to spend extra time thinking about and coping with these stresses. For some individuals, however, insomnia takes on a life of its own and persists long after the initial precipitating event has been resolved. If this endures for more than a month, it is termed chronic. The insomnia may affect you sporadically or in a cyclical fashion, being worse in some weeks than others. Some people react to short term insomnia by worrying about sleep loss. After a few weeks of lying awake worrying, frustrated and anxious, they start anticipating not sleeping and become apprehensive about going to bed. They soon associate bed with sleeplessness and frustration; consequently, the bed quickly becomes a learned cue for wakefulness and insomnia.

In an attempt to cope, most people begin to engage in an assortment of behaviors or habits that may seem to help in the short run but actually sustain insomnia. Some examples:

- going to bed earlier, sleeping later (especially on week-ends), and spending more time in bed in an effort to 'catch up' on sleep
- trying to control or 'force' sleep in the belief that "If I just try a little harder, sleep is bound to come"
- attempting to relax in bed by reading or watching television
- taking naps

- using alcohol to promote sleep or caffeine to combat the daytime fatigue
- reducing physical activity and exercise because of fatigue

Daily stress also exacerbates poor sleep. The child will learn more about how to improve sleep by managing stress.

Sleep decreases from about sixteen to eighteen hours a day in newborns to nearly ten hours for ten year olds and to approximately eight hours during teenage years.

By now the child should understand how the combination of worry about sleep, maladaptive sleep habits and daytime stress can transform a brief period of insomnia into a case of learned chronic insomnia that has a life of its own.

An important aspect of this model is that, although a number of factors may initially cause insomnia, the intervention for chronic insomnia must focus not on the precipitating factors but on changing the thoughts and behaviors that play the main role in perpetuating insomnia. Since the thoughts and behaviors are learned, they can be 'unlearned' using the techniques in this program.

Medical problems can cause insomnia and if a medical conditions exists, it should be addressed. However, thoughts and behaviors, not medical problems, play a primary role in most cases of insomnia. It is true that insomnia is a frequent symptom in many psychological problems, but it is unclear as to whether it is a cause and/or an effect. Depression can be the consequence of insomnia and not the cause.

SLEEP MEDICATION REDUCTION PROCEDURE

The major problem of sleeping pills is that you end up taking them so frequently. Since tolerance often develops, you need more and more. Attempts to stop taking them can result in increased anxiety, rebound insomnia, and resumption of use, trapping the person in a psychological dependency and feelings of loss of control. The procedures to reduce or eliminate sleeping pills can be used throughout this protocol. There are two important elements underlying the success of this medication

reduction technique. First, it is self paced, so that the child can reduce sleeping pill use at a rate with which s/he is comfortable. Second, it allows the child to decrease the medication gradually rather than abruptly and avoid the 'backlash' withdrawal symptoms.

Procedures: Keep in mind that children who have used sleeping pills in large doses or for longer periods of time, or those who are using multiple sleep medications, will naturally require more time to successfully implement these procedures. If the child is taking multiple medications, use these procedures to get off one first, then work on reducing the second medication.

Start the medication reduction when the child begins the six week program as successful implementation of the program will improve sleep and reduce the need for the sleeping pills. Do not start the medication reduction when the child's life is exceptionally hectic or stressful. For young children, the parents of the child will need to be convinced of the need/ability to reduce reliance on sleep medication. You may find that the parents provide maintaining thoughts to the thoughts of the child ["you won't be able to sleep if you don't take the medication"]. For older adolescents, have the child tell someone close to him/her that s/he is beginning the procedures; the social support will make it easier.

1. Begin by cutting the dose in half on one of the nights s/he takes medication. Choose an easy night [such as a weekend night] when there is lessened pressure to perform the following day.
2. Once s/he is sleeping reasonably well on this reduced dosage night [this may happen right away or may take a few weeks], s/he will feel more confident about reducing sleep medication and should therefore cut the dose in half on two nights. Space the reduction nights apart so that, if the child does not sleep on these nights, s/he won't experience disturbed sleep two nights in a row.
3. Continue in this fashion until s/he has cut the dose in half on all nights. Avoid at all costs going back to the original dose.
4. After cutting the dose in half on all nights on which medication is taken, eliminate the remaining half dose in the same gradual

fashion: on one night a week, then two and so on until the child is completely medication free.

5. To reinforce progress, have the child keep a record in the daily **60 Second Sleep Diary - CBP#03-003** and on the **Weekly Progress Summary - CBP#03-014**.

Finally, research has demonstrated that the only way to overcome anxiety-producing situations is to face these situations head-on rather than avoiding them. You can support the child through using the procedures in **Coping Imagery - Technique #09** and **Coping In Vivo - Technique #11**. The longer the child is able to avoid reducing the sleep medication the more anxious s/he will be about it.

Using the sleep medication reduction procedures will not only conquer sleeping pills, it will help the child prove to him/her self that s/he has the power to change his/her thoughts and behaviors. S/he will empower herself with the knowledge that s/he can achieve greater control of his/her body and behavior.

ASSESSMENT

The assessment is invaluable in learning to conquer insomnia, for it will assist the child/family in evaluating present sleep patterns and identify the child's particular thoughts and behaviors that are causing insomnia. By conducting his/her own insomnia assessment, the child will increase his/her awareness and understanding of the thoughts and behavior. This will help him/her develop a greater sense of control over sleep. S/he will feel more relaxed and empowered and will sleep better as a result.

Baseline Sleep Pattern

Have the child complete the **60 Second Sleep Diary - CBP#03-003** for seven [07] consecutive mornings. Most of the items are very straight forward, but three require additional explanation.

1. If the child fills out the diary on Monday morning, s/he will write 'Sunday' in the space marked 'night'. Always indicate the night before the morning of execution of the Diary.

2. Question 7: record the number of hours allotted for sleep by determining the number of hours elapsed between the time the child turned the lights off to go to sleep (question 1) and the time s/he got out of bed (question 3). For younger children, you or the parents may need to help with the math.
3. Question 9: record the dose and the number of prescription or over-the-counter sleeping pills that the child took before going to sleep or during the night.

Caution the child that the Diary is *not* meant to promote clock watching. If s/he is overly concerned about how long it took to fall asleep, s/he may feel more anxious about sleeping. S/he need only estimate within thirty [30] minutes the amount of time it took.

Using the seven Sleep Diaries, you and the child should answer the following questions:

- How many nights per week did s/he have difficulty falling asleep? _____
On these nights, how much time, on average, did it take to fall asleep?

- How many nights per week does s/he wake up and have difficulty falling back to sleep? _____ On these nights, how often did s/he wake up?
_____ On average, what is the total amount of time that s/he lies awake during the night after these awakenings? _____
- How many days per week is his/her final wake-up earlier than desired?

- On nights when s/he does have insomnia, how many hours on average did s/he sleep? _____
- On nights when s/he doesn't have insomnia, how many hours on average did s/he sleep? _____
- How many nights per week did s/he take sleeping pills? _____ On these nights, what is the average number of pills taken? _____ What is the typical dose? _____
- What is the average sleep quality rating on a scale of 1 to 5 [with five being the best].

CBP#03-004 - Sleep Pattern

Questionnaire

The answers to these questions represent the baseline sleep pattern that will serve as an objective reference point that will allow you and the child to monitor improvements in sleep. It is important to keep this

baseline for future reference. You should have the child continue to fill out the Sleep Diary each morning throughout the six week program in order to track progress.

Disruptive Thoughts & Behaviors

Once you have the baseline data, you will want to assess the factors that are disturbing the child's sleep.

Sleep Scheduling

The sleep scheduling behaviors include when the child goes to bed, how much time s/he spends in bed, when s/he gets out of bed, and whether s/he naps. Such behaviors may have helped to cope with insomnia in the short term but are actually exacerbating the insomnia by altering the body temperature rhythm and weakening the brain's sleep system.

To assess the sleep scheduling behaviors, have the parents and/or child answer the following questions. Use the sleep diaries as a reference.

- What time does s/he usually get in bed? _____ Get out of bed? _____
- Does the amount of time that s/he spends in bed exceed the amount of time that s/he actually sleeps? _____ If yes, by how much?

- Does s/he have an inconsistent rising time or sleep later on weekends compared to weekdays? _____
- Does s/he nap? _____ If yes, how many times per week and for how long? _____

CBP#03-005 Sleep Scheduling

We will later explore in detail how these maladaptive behaviors cause insomnia and how to improve sleep by changing the behaviors.

Wakefulness Cues

By spending time in the bedroom, watching television or talking on the telephone, the bed becomes a learned cue for wakefulness rather than for relaxation, drowsiness and sleep. Ask the following:

- Does the child use the bedroom to do homework, watch television or talk on the phone? _____
- Does s/he go to bed when s/he is not drowsy? _____
- Does s/he toss and turn and try to force sleep when s/he can't fall asleep?
- Does s/he fall asleep easily anywhere except the bedroom? _____
- Does s/he work on the computer, discuss problems or emotion issues with family members during the hour before bedtime? _____

CBP#03-006 Wakefulness Cues

Distressful Thoughts

Next, you will need to assess whether the way the child thinks about his/her sleep is exacerbating the insomnia. Ask the child/parents about what s/he thinks about and what s/he says about not sleeping. You may need to have the child keep an **Expanded Sleep Diary CBP#03-012** to capture these thoughts.

- Is s/he anxious about insomnia or perhaps in some way fear it? _____
- Does s/he tell him/herself that s/he won't be able to function during the day if s/he doesn't sleep well? _____
- Does s/he tell him/herself that s/he must have eight hours sleep to perform? _____
- Does s/he always blame poor daytime functioning on not having enough sleep?

CBP#03-007 Sleep Thought Questionnaire

We will explore later how to change these distorted, negative thoughts and replace them with more accurate thoughts about sleep.

Lifestyle Behaviors - CBP#03-008 Life Style Questionnaire

Exercise

First, you will need to explore whether the child engages in regular physical activity such as walking, running or other forms of aerobic exercises. Regular exercise and physical activity can improve sleep by causing the body temperature rhythm to rise and fall during the day. Lack of exercise can contribute to a flattening of the body temperature rhythm. Exercise may also contribute to more healthy sleep by improving mood.

We will also explore various types of exercises, how to start an exercise program and the beneficial effects of exercise on mood and health.

Sunshine

Second, you will need to consider whether the child receives regular exposure to sunlight? Remember that sunlight is an important timing mechanism for sleep. Light is also important for improving mood and energy.

We will be reviewing techniques for increasing exposure to sunlight or artificial bright light.

Caffeine

Third, we will need to explore the use of caffeinated beverages in the late afternoon or early evening. Does the child drink more than two caffeinated beverages per day? Caffeine can impair sleep by virtue of its stimulant and withdrawal effects.

Alcohol

Next, we will need to consider consumption of alcoholic beverages in the evening. While we would hope that not too many young children are drinking alcohol, we need to be persistent in exploring this with adolescents. While alcohol may help him/her to fall asleep more easily, it can diminish deep sleep and cause him/her to wake up during the night. Obviously, if the child is abusing alcohol, that issue should be addressed directly.

Tobacco

Smoking is another lifestyle behavior that can disturb sleep. If the child smokes near bedtime or after waking during the night, the stimulant and withdrawal effects of nicotine may keep him/her awake. Smokers experience more sleep problems than nonsmokers, and smokers who quit smoking usually experience improved sleep.

Sleep Environment

We will want to assess whether or not the child's sleep environment is conducive to sleep. Ask:

1. Is sleep routinely disturbed by noises, such as those made by family members, neighbors or traffic? _____
2. Is the temperature of the bedroom comfortable at night? _____

- 3. Is the bedroom dark? _____
- 4. Is the bed comfortable? _____

CBP#03-009 Sleep Environment Questionnaire

Stress

Although some people cope well with daily stress, others experience negative emotional and physical responses that can disturb sleep, health and well being. Stress and insomnia are inextricably linked: insomnia often begins in response to a stressful life event; it is one of the first warning signs of excessive daily stress; and many chronic insomniacs have a harder time sleeping after a stressful day.

To assess the current stress level, have the child complete the following two stress inventories.

CBP#03-010 Stress Inventory 1

Have the child circle the number that corresponds to his/her perception of stress with 1 being no stress and 10 being the worst possible stress.

School	1	2	3	4	5	6	7	8	9	10
Family	1	2	3	4	5	6	7	8	9	10
Social Life	1	2	3	4	5	6	7	8	9	10
Finances	1	2	3	4	5	6	7	8	9	10
Health	1	2	3	4	5	6	7	8	9	10
Living Situation	1	2	3	4	5	6	7	8	9	10
Neighborhood	1	2	3	4	5	6	7	8	9	10

CBP#03-011 Stress Inventory 2

The following is a checklist of some common stress warning signs. Have the child check those that s/he experiences on a weekly basis.

- Feelings of frustration or anger _____
- Racing or pounding heart _____
- Feelings of agitation, irritation _____
- Shallow or irregular breathing _____
- Feeling on edge _____
- Headaches _____
- Stiff neck or shoulders _____

Upset stomach, diarrhea or constipation _____
Cold or sweaty palms _____
Frequent urination _____

If the child circled eight [08] or higher on at least two of the scales on Stress Inventory 1 and s/he checked at least two of the warning signs on Stress Inventory 2, s/he is probably experiencing high levels of daily stress.

Having completed the self assessment process, the child should have a greater understanding of the particular thoughts and behaviors that are causing his/her insomnia. Now s/he is ready to begin the six week program. S/he will begin by learning one of the most powerful techniques: cognitive restructuring. This technique will teach the child how to improve his/her sleep by changing the way she thinks about sleep. It will also be the initial catalyst for improving him/herself and his/her life in a number of important ways.

The clinician is responsible for creating a full ***Sleep Assessment Report*** that includes all of these variables and spells out in detail the Baseline Sleep Data on the child.

CHANGWORK

Cognitive Rehabilitation

Stressful preoccupation with sleep is a condition shared by most insomniacs. Of all the factors that cause insomnia, this consuming, negative, distressful thinking about sleep plays the most salient role. Even if you realize that this negative thinking aggravates your insomnia, you probably feel powerless to do anything about it, which makes the problem of insomnia even more frustrating and exasperating.

Think about what this means. If your thinking can cause insomnia, can't it also overcome insomnia? In fact, changing distressing thinking about sleep is one of the most powerful techniques the child will learn. The use of this technique will also provide these other important benefits:

- the child will begin to understand the powerful effect his/her

- thoughts have on emotions and behavior; s/he will also learn to control such thoughts and emotions and think more positively;
- this technique will boost the child's confidence and sense of control over sleep because s/he will see that the power to conquer insomnia resides with him/herself and his/her thoughts; and
 - the technique will set the stage for the cognitive stress management techniques that s/he will learn later in the protocol.

In short, cognitive behavior management will be the initial catalyst for improving sleep in a number of important ways.

The Power of the Mind

Begin by examining some of the recent scientific findings concerning the placebo effect and the new field of psychoneuroimmunology. These exciting findings, which have precipitated a change in the way science looks at the mind and body, will help the child to understand the powerful effect thoughts about sleep have on his/her insomnia. They will also help him/her realized that thoughts have a greater effect on the emotions and body than s/he ever realized.

Placebo Proof

You and the child may be surprised to learn that prior to the 1900s most medicines were worthless. Yet, remarkably, people still improved. This was due to the person's *belief* in the physician and the medicine, which mobilized strong self-healing mechanisms in the body. This is called the placebo effect and it is recognized as a powerful component of all medical treatments.

In a dramatic case study during the 1950s, a woman who suffered nausea and vomiting during pregnancy was given a medication by her doctor and told that the medication was 'new' and 'effective' and that it would quickly relieve her symptoms. Within twenty minutes, the woman's nausea and vomiting stopped even though she had, in fact, taken a medication to induce vomiting. The study demonstrated that the woman's belief in the drug was so strong, it counteracted both her body's physical symptoms and the physiological action of the drug.

Study after study has shown that, for virtually all health problems, including anxiety, depression, pain, fever, headaches, seasickness, high blood pressure, angina, acne, asthma, insomnia, ulcers and arthritis, about one-third of the patients improve when given a placebo. In fact, about one-third of people in pain will respond as well to a placebo as they will to morphine, which is the most powerful narcotic ever developed! If a new medication were discovered that had the same powerful healing properties as the placebo effect, it would be undoubtedly hailed as a miracle drug.

Although we don't know the exact mechanism underlying the placebo effect, it is probably due to the effects our thoughts have on our brain and body chemistry. However it works, the placebo effect is one of the best pieces of scientific evidence demonstrating the power of thought on our moods and bodies. The very power of the placebo means that by maximizing your belief your sleep will improve.

Recent scientific research on the relationship between the mind and the immune system has given rise to the field of psycho-neuro-immunology [PNI]. PNI research, which exemplifies some of the most rigorous research in mind-body medicine, has challenged the traditional separation of the mind and the immune system by demonstrating that mental stress of various kinds, including loneliness, bereavement, marital separation and divorce, decreases immune functioning. A PNI study demonstrated that individuals with higher levels of psychological stress were at greater risk for developing the common cold. PNI has also demonstrated that relaxation techniques can strengthen the functioning of the immune system.

Distressing Sleep Thoughts

Insomnia is at root, an anxiety disorder. Like General Anxiety Disorder [GAD], the characteristics include restlessness, fatigue, difficulty concentrating, irritability, muscle tension and sleep disturbance. And like GAD, these characteristics are sustained by distressing thoughts. Because of the circumstances from which it arises, the distress is concentrated on the question of sleep, and to this extent is a lesser problem than the broader GAD.

The protocol includes the process of identifying and changing thoughts which are automatic and nonconscious. The process of cognitive error correction which is outlined in Technique #01 Perceiving Reflex Thoughts and #02 Altering Limited Thinking and/or #03 Changing Distressed Thoughts includes the underlying pattern of Awareness, Attendance, Analysis, Alternatives and Adaption. So here too, the child will need first to become aware of these distressing and insomnia sustaining thoughts and attend to them. Using **CBP#03-012 Expanded Sleep Diary** have the child record what s/he thinks about when she is lying awake at night or feeling the effects of restlessness and fatigue during daylight hours. This should be done on a regular basis [first thing every morning]. Review the above mentioned techniques for catching reflex thoughts that may be difficult to interpret at first. The cognitive error you are expecting to identify are negative thoughts about sleep, such as:

"I didn't sleep a wink last night."

"I need at least eight hours of sleep to function."

"If I don't get enough sleep, I am going to be sick."

"I hate bedtime."

"Why does sleep come so easily for everyone but me?"

"I feel just miserable because I didn't sleep very well."

"I can't sleep without sleeping pills."

CAUTION: do not 'seed' these thoughts into the mind of the child. An initial discussion about what the child thinks about when lying awake or the day after a particularly bad night, will gather basic information about the type of thoughts they generally have and the Sleep Thought Journal will help them to attend to these thoughts. One thing that you may discover is that the distressing thought that keep the child awake are not about sleep at all, but are about school, competitive performance [tests, athletic events, social events such as dating, etc.], or the distressing thoughts may be sleep thoughts AND other thoughts. If this is the case, your choice of protocols may include techniques included in the protocol for GAD.

The issue, the question that will then need to be addressed, is whether these thoughts are 'true' and useful. This process will require an analysis that includes realistic, factual information and a reframing of that

information to overcome the actuality. What this means is that many people cannot function after not sleeping, hate going to bed because they lie awake and get frustrated and are more prone to illness. This protocol will supply facts, however, that contradict these 'realities'. "So if the facts are true, why do I feel so bad!." Art Linkletter, of all people, may have said it best: "Things turn out best for those people who make the best of the way things turn out". Interpret this to mean that if I sleep badly tonight, but make the best of it, I will probably have a better day time than if I constantly remind myself that I had a bad night. What you think about not sleeping has more significance than how you slept. And negative thoughts sustain negative outcomes. Such thoughts have a forceful effect on making you feel anxious and frustrated. In turn, these negative emotions mobilize the stress response, which increases your heart rate, blood pressure, muscle tension and breathing rate and speeds up your brain waves. The stress response then activates your brain's wakefulness system and weakens the sleep system - leading to another night of insomnia.

Distressing sleep thoughts share a number of important features. One is that they are reflexive, like blinking and breathing, operating automatically until you consciously take control of them, which you can only do for very short periods of time. They are also often inaccurate and distorted even though they seem like normal, appropriate reactions to insomnia.

The aim of cognitive rehabilitation is to requalify these thoughts through the use of a process of conscious 'debugging' of a mental context [like a computer program] and reprogramming. With more accurate, positive thoughts about sleep the child will be less anxious and frustrated and better able to relax and go to sleep. *Keep in mind that this is not denying the insomnia, but rather thinking about insomnia in less negative and distorted ways.*

Start the process by giving the child some important scientific findings about sleep and insomnia.

The Eight Hour Myth

The belief that everyone must get eight hours of sleep is a myth. People

are not the same height and weight and their sleep needs vary as well. Although adults average just under seven and a half hours of nighttime sleep, many individuals function effectively on less. In fact, 20% of the population sleeps six or fewer hours per night, and research shows that some adults function well with as little as three hours per night. There is even some research to suggest that too much sleep can cause us to feel lethargic. While it may be true that children, particularly younger children need more sleep, here are some questions to ask to determine whether the child is getting enough sleep:

- Do you need an alarm clock to wake up?
- Do you habitually sleep late on weekends?
- Do you frequently fall asleep during class, boring activities or while watching television?

If the child answers NO to all three, s/he may be getting enough sleep and trying to get more sleep than s/he really needs. Even if s/he answers YES to one or more, you may want to explore the circumstances. If s/he sleeps well and later into the day on weekends, the anxiety may be more about school, for example, than sleep. By modifying the distressing thoughts and adopting a belief that s/he can function with less than eight hours sleep, the child will sleep better.

Measuring Sleep

Ask the child how much sleep s/he had last night. How accurate do you think the estimate will be? If s/he says that s/he didn't sleep a wink, or s/he hasn't slept in days, how realistic is that?

Studies consistently show that insomniacs are not accurate in estimating how much sleep they obtain. This is because they overestimate the time it takes to fall asleep and their time awake during the night; they also underestimate total sleep time compared to objective brain-wave sleep recordings.

In a study at the Stanford University Sleep Clinic, 122 people with insomnia spent the night in a sleep lab so that their sleep could be measured. On the average, these individuals overestimated the time it took them to fall asleep by thirty minutes and underestimated total sleep

time by one hour.

Why so some people exhibit this sleep 'misperception'? One reason is that they incorrectly perceive light stages of sleep, such as Stage 2 sleep, as wakefulness. However, recall that Stage 2 sleep is a bonafide sleep stage as illustrated by the fact that adults spend half the night and the elderly spend most of the night in this stage. Encourage the child to use this knowledge on night s/he slept lightly - it is very likely that she was in Stage 2 sleep. Another reason for sleep misperception is that unpleasant circumstances such as lying awake in bed from insomnia causes the subjective perception of time to be longer than actual clock time. Conversely, in relaxing and pleasant situations, we underestimate the duration of elapsed time.

Ask the child to think of a moment when s/he thought s/he was in danger, afraid, embarrassed, etc. Didn't it seem to take 'forever' to pass? This is what Albert Einstein meant when he said, "If you are sitting on a hot stove a minute seems like an hour, but if you are doing something pleasurable an hour can seem like a minute".

Remind the child that telling him/herself that s/he may be getting more sleep than s/he thinks is an effective strategy for improving sleep.

The Effects of Sleep Loss

Ask the child what is his/her greatest worry about insomnia. If s/he is like most poor sleepers, it the adverse effect of sleep loss on the daytime functioning. This concern is the result of a number of popular misconceptions about the effects of sleep loss.

There is no consistent scientific evidence that insomnia causes significant health problems and no one has ever died from insomnia. Also, our daytime functioning is affected by many factors, including, stress, nutrition, exercise, time of the year and our own negative expectations. Prophecies of negative outcomes tend to be self fulfilling and lead to negative outcomes. It is very common for people with insomnia to mistakenly attribute their daytime functioning entirely to their lack of sleep. [Just as elderly people attribute every forgetful incident to 'old age', forgetting how many times they misplaced their keys when they

were young.] The child will need to learn not to filter every misfortune through the lens of insomnia if his/her sleep is to improve.

There is substantial scientific evidence that people have a remarkable tolerance for sleep loss, at least on a temporary basis. For example, a large number of studies have failed to find significant adverse effects on daytime performance after a poor night's sleep. Even one night of total sleep loss makes healthy young volunteers sleepy, but has no major effect on daytime performance. It is only performance of monotonous or sedentary tasks that seem to deteriorate.

Even extended sleeplessness may have little effect on us other than making us feel very sleepy. This is illustrated by the case of Randy Gardner, who stayed awake in an experiment for eleven days and established the world record for sleeplessness. He did experience increased irritability and drowsiness, but never delusions or hallucinations. When he finally went to bed, he slept for fifteen hours and afterward felt fine with no ill effects.

This case underscores two facts: we don't need to recover all of the sleep we lose and if you think you haven't slept in weeks, you are either engaging in very unrealistic thoughts or you have set a new world record!

There is considerable evidence suggesting that, for most individuals, performance on alertness, memory and problem solving tasks can be maintained for extended periods of time with about 70% normal sleep, or about five and one half hours for an eight hour sleeper.

We do need to keep in mind that all of this research is done with adults, usually young adults, and children may have somewhat different requirements. Nonetheless, there seems to be substantial evidence that the negative thoughts about sleep loss are exaggerated and that the self prophecy of negative effects is more likely to be the culprit when negative effects occur.

Core Sleep

If the child obtains five and one half hours of core sleep, it seems likely that his/her daytime performance will not suffer. Core sleep is important

because it contains 100% of the deep sleep which is the most important stage of sleep for daytime functioning. Recent research suggests that this core sleep may even be interrupted. In fact, research on soldiers, fire fighters, and astronauts, who sometimes have to perform on drastically reduced, interrupted sleep, suggests that by breaking up sleep, a person can function on less time than full core sleep - as little as three hours - without significant consequences. Tradition has it that Leonardo De Vinci slept for one half hour every four hours - giving him, of course, exactly three hours of sleep every day in this interrupted manner. Given his successful performance, if the tradition is true, it is right in line with the research.

Another important finding about core sleep: if you don't obtain it one night, your brain will do everything possible to get it the next. This is because the brain compensates by producing an increased percentage of deep and dream sleep, which also explains why we don't have to recover all of the sleep we lose. You can assure the child that his/her brain is programmed to obtain core sleep.

Sleep is similar to food in that our body also needs a core amount of food to function. Most individuals in this society, however, eat far more than their core food requirements in order to *feel* good. Similarly, many people in this society don't feel their best unless they obtain additional sleep or what sleep researchers call *optional* sleep. These feelings of the need to eat and sleep too much contribute to both overweight and insomnia. We don't need it simply because it is available. Telling yourself that you can function on core sleep is a highly effective strategy which creates a placebo effect that will improve the child's sleep and his/her daytime performance and empower him/her with the realization that the ability to control insomnia is within his/her thoughts.

Daytime Mood

Since insomnia doesn't have significant effect on daytime alertness or performance, what are its main consequences? The primary effect of insomnia is impaired daytime mood in the form of irritability, frustration, anxiety, mild depression and/or reduced motivation. But aren't these the result of the self-fulfilling prophecies of distressed thoughts which create a negative placebo effect? If this is so, why not create a positive effect?

Awareness & Attendance

Using the ***Expanded Sleep Diary - CBP#03-012*** have the child write down his/her distressed thoughts every day. This is important in order to ensure that s/he is regularly aware of and attends to what s/he is thinking about sleep.

Analysis

When you review these diaries, make sure that you are addressing the distressing thoughts. Watch for words such as *horrible, awful* or *terrible*. Provide both scientific information and discuss the ramifications of self fulfilling prophecies.

Alternatives

You will need to help the child create more realistic thoughts about sleep and performance. For each of the distressing thoughts, help the child reframe the thought more realistically. For example, if she is thinking "I can't fall asleep", you might suggest that she substitute the thought that "I always fall asleep sooner or later". In fact, it will help to keep an ongoing list of all distressing thoughts and create specific alternative statements for each. A list of ***Realistic Sleep Thoughts - CBP#03-013*** is included in the appendix. However, the wording must suit the child and s/he may want to make up his/her own statement that feels comfortable to him/her.

Adaption

In order to adapt to the new thinking, the child will need to create a ritual substitution of old automatic thoughts with new self talk. Every time s/he thinks a distressing thought she may ritually say the alternative thought.

You may want to work with the child to create a ***mantra*** which is generalized enough to cover the insomnia issue. A ***mantra*** is a word or phrase repeated to aid memory as well as erase bad habits. One etymology of the word combines the Sanskrit root *man* ['to think'] with the suffix *tra* ['tool'], to mean 'a tool for thinking'. It could also be read as

man from *manas* ['mind] and *tra* from *tranam* ['protect'], meaning 'mind protector'. The purpose of the **mantra** is to teach 'mindfulness' or paying attention to what you think. A mantra such as Linkletter's statement 'Things turn out best for those who make the best of how things turn out', embodies a generalized concept about how we think about things. How we interpret events and experiences, affects our life. This may be too complex for a young child, but it makes the point. Providing the child with a mantra with which they are comfortable and which covers a broad perspective is a process of changing a life philosophy.

However you choose to intervene, review techniques #01, #02, & #03 for fuller directions in carrying out these procedures.

In using the Expanded Sleep Diary, you will be asking the child to list both distressing and alternative thoughts. Each time s/he thinks a distressing thought, you want to have him/her associate it with the alternative thought. You may also ask the child to repeat the alternative thought over and over when lying awake as both a form of habituation as well as a method of avoiding the negative thought process.

HOMEWORK:

Along with the Sleep Diary, you will ask the child/family to fill out the ***Weekly Progress Summary - CBP#03-014 to CBP#03-019*** at the end of each week.

These two *homework* assignments will help to continue the cognitive rehabilitation process throughout the six week period. You will need to review, discuss and comment on each piece of homework and make adjustments and disputes where necessary.

Cultural Restructuring

Establishing Sleep Promoting Rituals

We are creatures of habit and our sleep culture reflects those habits created from our thoughts and the thoughts of others about sleep. Since parents have a great deal to do with the sleep culture of the child, they

must be fully involved in the restructuring process. At this point you will want to teach the child/family rituals that will strengthen the brain's sleep system and create a positive association between the bed and sleep. Using these techniques to improve sleep, mood and energy will also enhance confidence in the ability to change.

Sleep Scheduling

Sleep scheduling pertains to when the child goes to bed, when s/he gets out of bed and how much time s/he spends in bed. To use sleep scheduling techniques to improve sleep, the child/family must first grasp two fundamental concepts: *prior wakefulness* and *sleep efficiency*.

Prior wakefulness refers to the number of hours that have elapsed from the time the child arises in the morning until s/he turns off the lights at bedtime to go to sleep. The child's sleep system follows a basic principle: the greater the amount of prior wakefulness, the greater the brain's pressure for sleep and the better we sleep.

The reason is well documented. With more prior wakefulness, we increase our exposure to sunlight and generate more physical activity, which in turn, causes the body temperature to rise and fall more. As a result, our sleep system is strengthened and we sleep better. Therefore, the earlier the child gets out of bed and the later s/he goes to bed, the more prior wakefulness s/he has accrued and the better s/he will sleep. S/he will fall asleep faster, produce more sound sleep with fewer and shorter wake-ups and sleep more hours.

Sleep efficiency is the ratio of time asleep divided by the time spent in bed, or:

$$\frac{\text{Time Asleep}}{\text{Time in Bed}}$$

Remind the child that, as stated in the Sleep Diary, the time in bed refers to the time elapsed from 'lights out' at bedtime until s/he rises [gets out of bed] in the morning. So if s/he spends eight hours in bed at night and sleep six hours, the sleep efficiency is 75%. On average, good sleepers exhibit a sleep efficiency of 90% - they are awake only 10% of the time

they are in bed. In comparison, poor sleepers typically average 65% sleep efficiency - they are awake 35% of the time they are in bed.

The child/family may think that the best measure for distinguishing normal sleep from insomnia is the amount of sleep. Actually, sleep efficiency is a better discriminator. The higher percentage becomes a strong cue for sleep.

People with insomnia, however, are awake, usually tense and frustrated for about one third of the time they are in bed. Consequently, the bed becomes a strong cue for wakefulness and frustration. In fact, because some people with insomnia are awake in their bed more than they are asleep, the bed becomes a stronger cue for wakefulness than sleep!

This may be counterintuitive for parents who want their child in bed at a regular time even though they know the child does not sleep. In fact, they may be putting the child to bed earlier and earlier in order to 'make up' sleep. Helping the parents understand these sleep facts, and having them monitor their child's sleep habits so that they can identify both the prior wakefulness and sleep efficiency for themselves will help to convince them that they may need to change the sleep culture rituals in the household.

Rising Rituals

In an effort to make up for lost sleep, many people sleep in on weekends or after a bad night of sleep. Although this strategy may work in the short term by providing a few hours of extra sleep or bed rest, it actually contributes to insomnia in the long run for several reasons. Remind the child/family that the body temperature rhythm starts to rise in the morning when we get out of bed, become active and allow sunlight to enter our eyes. If you sleep later, you delay the rise in your body temperature rhythm because you delay physical activity and exposure to sunlight. If the elevation is delayed by a few hours, the drop in temperature in the evening will also be delayed by the same amount of time. Therefore, if you try to go to bed at your normal time, you won't be able to fall asleep with your body temperature too elevated.

Although you can compensate for sleeping later on weekends by going to bed later [which gives your body temperature more time to fall, most people do just the opposite - they go to bed earlier in an attempt to get a good night's sleep for the beginning of the work/school week.

Sleep scheduling rule number 1: get out of bed around the same time every day, including weekends, no matter how little or poorly you have slept.

Planning enjoyable early morning activities such as exercising or walking will increase the likelihood of getting the child up. It is also helpful to expose the child to sunlight as soon as s/he gets out of bed to help body temperature rise.

By establishing a regular rising time, the child will fall asleep more easily, sleep more deeply and wake less often and for shorter periods of time. S/he will also improve his/her sleep efficiency and make the bed a stronger cue for sleep.

This will take a commitment on both child and family. Parents can overcome their desire to ensure that the child has regular sleep hours by controlling the rising rather than the bedtime. But at least in the beginning, this may seem harder. It may be more difficult to wake the child than to enforce a regular bedtime. The parent may also be required to change his/her own ritual to allow for a walk before breakfast instead of morning TV. But this commitment should ease as the child's insomnia comes under control.

Sleep Time Allotment

Another common coping strategy is to go to bed early in order to get a head start on sleep, to increase the likelihood of being asleep by a certain time or to catch up on lost sleep or bed rest. Some people also go to bed early simply to escape boredom.

Instead of leading to increased sleep time, going to bed early actually exacerbates insomnia by the simple principle: the earlier you go to bed the more time you spend in bed, the more you reduce prior wakefulness, weaken the sleep system and exacerbate insomnia. Increased time in

bed also contributes to reduced sleep efficiency and makes the bed a stronger cue for wakefulness.

Sleep scheduling rule number 2: *reduce your time in bed so that it more closely matches the amount of sleep you are averaging per night.*

If the sleep diaries indicate that the child is averaging five hours of sleep and the s/he is spending eight hours in bed, the goal would be to reduce the time in bed so that it more closely approximates five hours. This can be accomplished either by going to bed later, getting up earlier or a combination of the two. You and the child/family can determine the maximum allowable time in bed by simply adding one hour to the average sleep time. However, don't restrict time in bed to less than five and one half hours, otherwise the child won't be able to obtain core sleep.

You and the child/family can also determine the earliest allowable bedtime by starting from the designated wake-up time and subtracting the maximum allowable time in bed

Contrary to what the child/family may think, reducing time in bed will not reduce sleep time. Rather, it will increase prior wakefulness, strengthen the sleep system and therefore increase sleep time. Sleep efficiency will also improve and the bed will become a stronger cue for sleep.

Reducing the time in bed is only temporary until the child's sleep efficiency improves to at least 85%, which is close to normal. Once s/he has maintained a sleep efficiency of 85% for two weeks, the family can increase time in bed by fifteen [15] minutes each week so long as the child maintains the minimum sleep efficiency. Eventually, the child will reach a point at which s/he is obtaining the amount of sleep that is satisfactory. The child/family will be tracking the sleep efficiency by using the ***Weekly Progress Summary CBP#03-014 - CBP#03-019.***

Suggestions for scheduling:

1. If the child is easily able to stay awake for a later bedtime, the child/family should schedule activities to be both productive and pleasurable, but quiet and sleep enhancing. Since this is a 'wind down' period for the child, the parents should *not* leave the time

- unscheduled, thereby allowing the child to engage in stimulating activities which weaken the sleep system.
2. If, on the other hand, the child is having difficulty staying awake, the family can use a physical activity or other stimulating activity to ward off fatigue. The sleep enhancing, quiet activity will be counterproductive, except that there will need to be a 'wind down' period just before bedtime.
 3. You will need to work with the child/family to find the right balance. The sleep system does not operate like a switch which can simply be turned on and off. What is important is that the child be put on a regimen that sustains him/her until about one half hour before bedtime and then begins to calm into a sleep mode.
 4. If the child/family decide to reduce the time in bed by rising earlier in the morning, the child/family will need to pair the earlier rising time with an activity and with bright light or sunshine. This also cannot be left to chance. When the child is due to get out of bed, s/he must get out of bed and once out of bed, s/he must get moving.

Napping

Several lines of evidence, including the universal tendency of toddlers and the elderly to nap in the afternoon, and the afternoon nap of siesta culture have led sleep researchers to the same conclusion: nature intended that we take a nap in the middle of the day. The biological readiness to fall asleep in midafternoon, which coincides with a slight drop in body temperature and occurs regardless of whether or not we eat lunch, is almost as strong as the nighttime pressure to fall asleep. It is present even in good sleepers who are well rested. Sleep researchers have also discovered that the afternoon dip in mood and alertness is associated with poorer performance, particularly after a night of sleep loss.

A midday nap is an integral part of the daily routine of many cultures, particularly those near the equator. This suggests that napping may have been part of an evolutionary mechanism to get us out of the hot midday sun. However, because the urge of a nap is appreciably weaker than the need to sleep at night, it can be suppressed. Also, because naps conflict with work and school schedules, they are becoming less common.

Research on napping suggest that an afternoon nap as short as ten minutes can enhance alertness, mood and mental performance especially after a night of poor sleep. If it is possible to work out with the school district, it may be helpful for the child to take a nap. However, the nap should be limited to forty five [45] minutes and should not occur later than 4:00 p.m.; otherwise the child may enter deep sleep, which may cause him/her to feel groggy for a period of time and reduce the pressure for sleep that night.

Sleep itself may not be the crucial factor in the effects on mood and performance. What may be important is an afternoon period of relaxation common to both resting and napping. We will return to this idea when we explore relaxation techniques.

Stimulus Control

Many of our daily behaviors are influenced by learned cues, or stimuli, in our environment. Examples of stimulus control include feeling hungry when the clock says noon or whenever we walk into the kitchen; feeling anxious when the telephone rings in the middle of the night, but not when it rings during the day; or smokers reaching for a cigarette whenever they drink a cup of coffee. In each of these situations, environmental cues influence behavior. As we have previously indicated sleep behaviors are also stimulus controlled. For good sleepers, years of good sleep have made the bed a strong cue for sleep. In fact, it is not uncommon for good sleepers to go to bed with the intention of reading for watching television, yet quickly find themselves struggling to stay awake.

For poor sleepers, the opposite is true. They have lain awake for so many nights that the bed and bedroom have become strong cues for sleeplessness. As a result, just getting into bed triggers a learned arousal response and wakefulness. It is not uncommon for people with insomnia to find themselves falling asleep in front of the television in the living room, yet when they get into their bed to go to sleep, they become wide awake.

Stimulus control procedures that were originally developed by Richard Bootzin and modified by Gregg Jacobs, are designed to help the child

unlearn the connection between bed and insomnia.

- Use the bedroom for sleep only. Do not use the bedroom to watch television, study or talk on the telephone. If reading or watching television helps the child to fall asleep, limit these activities to thirty minutes so that s/he doesn't end up reading or watching television for long periods of time in the hope of inducing sleep. It may be wise to set a timer to turn off the light or television so that the child is not awakened as easily as s/he falls asleep.
- Learn to identify the child's internal cues for drowsiness [eyelids dropping, head nodding, yawning, reading the same line in a book several times and not understanding it] rather than relying on external cues such as the clock. Then go to bed.
- If the child doesn't fall asleep within thirty minutes or if s/he awakens during the night and doesn't fall back to sleep within that time, s/he should not lie in bed tossing and turning [since focusing on the clock only heightens anxiety, the time should be estimated].

The child should move to another room or sit up in bed and engage in a quiet, relaxing activity such as watching television or reading until s/he is drowsy enough to fall asleep again. Repeat as often as necessary until s/he falls asleep. If the child goes to another room, the child/family should not allow him/her to fall asleep on the couch or s/he will end up teaching him/herself that the couch is the place to fall asleep.

Staying in bed and reading or watching TV when s/he can't sleep is alright as long as s/he goes back to sleep in less than one hour; otherwise it will associate the bed with wakefulness.

Finally, make certain that the child has relaxing activities to engage in when s/he can't sleep; otherwise, s/he will become bored and frustrated, which will exacerbate the insomnia.

HOMEWORK: Tracking Progress

Sleep scheduling and stimulus control rituals require effort and

persistence and may require a week or more before there is noticeable improvement. With continued practice, these rituals will become more habitual and 'automatic' and easier to implement.

To help the child/family track the use of these rituals and their beneficial effects on sleep, the ***Week Two Progress Summary CBP#03-0015*** should be completed after a review of the seven Sleep Diaries for the week. This Summary adds new items to help the child assess his/her average sleep time, time in bed, sleep efficiency, wake-up time. Sleep quality and the consistency in using sleep scheduling and stimulus control rituals.

If sleep is not improving consistently, the child is probably not practicing the techniques and procedures as consistently and will need to be prodded to do so. The parents also will need to learn to provide realistic alternative thoughts and might invoke the ***mantra*** as a means of providing support.

Lifestyle Adjustments

Exercise

Our evolution over tens of thousands of years involved regular physical activity. Indeed, our early ancestors' day to day survival required physical activity in the form of hunting and gathering food. Daily physical activity was required later in our evolution to plant, sow and harvest crops. In the industrial revolution, people often worked as many as sixteen hours a day for seven days a week and most people had to walk everywhere. Without child labor laws, children as young as seven years of age, may do the work of an adult.

In a remarkably short period of time over the last hundred years, we have dramatically reduced our level of physical activity, and increased just as dramatically our sense of stress. Despite the public awareness of the negative consequences of a sedentary lifestyle, physical inactivity is epidemic in the United States. An alarming number of children are inactive and overweight. Children don't even play in the same manner as fifty years ago. Play now is an organized process in which adults transport the children to a specific play arena and control the process of who plays

when. It is not surprising that many children are inhibited from 'pushing too hard' or overexerting themselves. The culture is oriented toward taking it easy, despite a small counter culture of physical health fanatics.

Regular exercise enhances health and improves psychological functioning. Exercise is an outlet for the body's excessive tension, providing a healthy way to release anger and anxiety. Exercise has a tranquilizing effect that reduces anxiety more effectively than many antianxiety medications. Studies have found the tranquilizing effects follow within five to ten minutes of completing exercise and last for at least four hours.

Exercise has such a wide range of physical and mental benefits that, if it were a pill, it would undoubtedly be the most widely prescribed of all medications.

Two findings about exercise are particularly relevant to insomnia. One, people with insomnia lead more sedentary lives than good sleepers. The lack of physical activity can contribute to insomnia by inhibiting the daily rise and fall of the body temperature rhythm. As a result, many people get caught in a cycle of insomnia, reduced energy and physical activity, and worsened insomnia.

Two, exercise improves sleep by producing a significant rise in body temperature, followed by a compensatory drop a few hours later. The drop in body temperature, which persists for two to four hours after exercise, makes it easier to fall asleep and stay asleep.

The beneficial effect of exercise on sleep is greatest when exercise occurs within three to six hours of bedtime. Exercising less than three hours before bedtime, however, can make it more difficult to fall asleep, for body temperature may then be too elevated.

Exercise also improves sleep because it is a physical stressor to the body. The brain compensates for physical stress by increasing deep sleep. Therefore, we sleep more deeply and soundly after exercise. Exercise may also improve sleep because people often exercise outdoors during the day which increases exposure to sunlight.

Developing an exercise regimen for a child does not require engaging in

thirty minutes of high intensity exercise three to five times per week. New scientific evidence clearly indicates that moderate physical activity, such as walking, riding a bike or doing simple calisthenics for at least thirty minutes a day can provide substantial benefits. These activities can be broken up into several shorter sessions that add up to thirty minutes. For starters, getting the child to take a brisk walk three and or half hours before bedtime may get the child moving. Although getting outdoors is better, at the very least the family might consider a stationary bike that the child must ride while s/he watches television.

Once the child gets moving, however, it will be important to connect him/her to an activity that gives him/her a sense of satisfaction. What works for some people is torture for others. The child and family may make a game of avoiding labor saving devices such as escalators, lawn mowers, leaf blowers, remote controls, etc. Connecting the riding [keeping the wheel turning] of the bicycle to the watching may either increase exercise or reduce the watching of television, either of which may be beneficial.

Exercising together as a family or with friends will help to sustain the activity as 'quality' time. The focus should not be on the 'performance'. How fast or how many miles you walk are secondary to just walking and enjoying the walk. If this escalates into performance exercise such as jogging, so much the better, but it is not necessary and often is not as sustainable as a family walk on weekdays and a bicycle ride on week ends.

Bath

Although not as effective exercise for improving sleep, another way to affect body temperature is to take a hot bath. Several studies have demonstrated that like exercise, a hot bath causes a rise and fall in body temperature that can make it easier to fall asleep and stay asleep. The bath must be hot and kept hot for about twenty-five minutes. Also, because the temperature drop after a bath occurs more quickly than after exercise, the bath should be taken about two hours before bedtime. Baths taken too close to bedtime can make it harder to fall asleep because body temperature may be too elevated.

Mental Activity

Just as we need to be physically active to sleep well, we also need to be mentally active [although not at bedtime]. Boredom can reduce the pressure for sleep and contribute to insomnia, for the brain is not being stimulated. To alleviate boredom, the child may need to investigate new hobbies or activities, read books or socialize more. We have indicated in other techniques the importance of a 'circle of friends' and your child with insomnia may benefit from such a circle. Identifying with the child the favorite kinds of activities might lead to a reading, hiking, chess, computer or simply a puzzle making club.

Sunlight Connection

As we have already indicated, sleep and body temperature are directly influenced by the effects of the daily cycles of light and darkness on melatonin, a naturally occurring hormone found in the brain. When sunlight enters the eyes, melatonin levels decrease, which signals body temperature to rise and promote wakefulness. Darkness causes melatonin levels to increase and body temperature to fall, which promotes sleep.

With the advent of modern technology we have significantly altered our exposure to light and darkness. Studies have shown that, no matter where people live, they obtain only one hour of sunlight on average during the day. The nighttime lighting of urban environments means that many people also don't receive exposure to true darkness anymore.

A brightly lit room has about 500 luxes of light [a lux is the equivalent of the light from one candle] compared to 10,000 luxes at sunrise and 100,000 at noon on a summer day. To the brain, spending the day indoors is the equivalent to spending the day in semi-darkness.

By reducing our exposure to bright natural light and true darkness, melatonin secretion and the body temperature rhythm are altered, which can exacerbate sleep difficulties. That is why up to ninety percent of blind people experience sleep problems. Lack of exposure to bright light can

also adversely affect daytime mood, energy and alertness levels. Studies show that mood and energy are poorest during the winter months, which have the shortest days and the least amount of sunshine. Since lack of exposure to sunlight can disturb mood, it can also make it harder to cope with the daytime effects of insomnia.

Consequently, increased exposure to sunlight at certain times of the day can minimize sleep onset insomnia and early morning awakenings. We have seen that sleep onset insomnia is characterized by a body temperature rhythm that falls too late at night. Because sunlight causes body temperature to rise, people with sleep onset insomnia can cause their body temperature to rise earlier and fall earlier, and therefore fall asleep more easily, by increasing exposure to early morning sunlight. This can be accomplished by using these basic strategies:

- sleep, if at all possible on the east side of the house
- leave the drapes or shade open so that the sun wakens you, or open them immediately upon waking
- eat breakfast near a sun exposed window
- avoid dark sunglasses
- take an early morning walk

In contrast to sleep onset insomnia, individuals who experience early morning awakenings often exhibit a body temperature rhythm that rises too early in the morning. Several studies have shown that increasing exposure to evening bright light can minimize this problem. Simple techniques for increasing exposure to late day sun include:

- avoid dark sunglasses late in the day
- take a late afternoon walk
- sit near a sun exposed window the hour before sunset
- leave the drapes open until dark

Since bright light also improves energy and alertness, you may be better able to tolerate the daytime effects of insomnia by getting outside on a break or during lunch to increase your overall exposure to sunlight.

Artificial Sunlight

Another method for increasing exposure to bright light is the use of artificial bright light boxes. These devices contain special bulbs that emit 5,000-10,000 luxes of light, which is the equivalent to a sunrise or sunset. They are used for about thirty minutes while reading or watching television to increase early or late exposure to bright light. Several studies have demonstrated that using bright light boxes in the evening can delay the body temperature rhythm and effectively minimize early morning insomnia.

Light boxes can be rented from medical supply companies or purchased from an increasing number of manufacturers. Some insurance companies even reimburse the cost of light boxes if they are prescribed by a physician.

Stimulants

Caffeine is the most widely used drug in the world. Found primarily in coffee, tea and cola, caffeine is a stimulant that speeds up brain waves, increases heart rate and blood pressure and promotes alertness and reduces fatigue. These stimulant effects, which work in as little as fifteen minutes and can last for six or more hours, can also disturb sleep. Consequently, people with insomnia who use caffeine to counteract afternoon or early evening fatigue can get caught in a cycle of caffeine use and insomnia.

Caffeine can also produce daytime anxiety symptoms such as nervousness, irritability, shakiness and sweaty palms, and can also cause more frequent nighttime urination, which interrupts sleep. We vary greatly in our sensitivity to the stimulant effects of caffeine. People with insomnia are more likely to experience sleep disturbance from caffeine due to an overly sensitive sleep system.

If caffeine is consumed in large enough quantities, it can also lead to dependency and withdrawal symptoms such as headaches, anxiety, irritability and insomnia. Caffeine effects may affect individuals for six hours or longer and should be avoided after lunchtime.

Caffeine is also found in:

- foods such as ice cream and yogurt, cocoa and chocolate
- some analgesics, such as Anacin and Excedrin
- some prescription migraine medications
- many diet and cold remedies.

When a child drinks a can of cola, the caffeine intake is comparable to four cups of coffee for an adult.

Nicotine

Nicotine, along with being a chemical dependency problem, harms sleep. The effects of nicotine are similar to those of caffeine and include faster brain waves, heart and breathing rates, and increased amounts of stress hormones. These stimulant effects, which last for several hours after smoking, can make it harder to fall asleep and stay asleep.

Smoking also irritates the upper air passage and can exacerbate snoring and diminish sleep quality. That is why smokers sleep more poorly than nonsmokers and why insomnia ranks as one of the major health complaints of smokers. Since smokers cannot expect to sleep well, stopping smoking altogether is the best option.

If the adolescent child smokes s/he may need to make a choice between smoking and sleeping.

Alcohol

Alcohol disturbs sleep because, as it is metabolized during sleep, it produces mild withdrawal symptoms that cause sleep to become interrupted, shortened and fragmented. These disruptions result in lighter sleep and more awakenings, particularly in the early morning. Alcohol also exacerbates snoring and sleep apnea because it relaxes the muscles in the throat. Remember if the child combines alcohol with sleeping pills, s/he is risking his/her life.

It requires about one and one half hours to metabolize one ounce of alcohol, the mild withdrawal effects last for another two to four hours.

Food

It seems that certain types of food promote sleep while others inhibit it. Foods such as bread, bagels and crackers that are high in complex carbohydrates have a mild sleep enhancing effect. In contrast, foods high in protein can inhibit sleep, making us feel more alert. If you want to fall asleep more easily, eat a high carbohydrate snack and avoid high protein foods in the hour or two before going to bed. If you desire to minimize nighttime awakenings, eat a carbohydrate snack immediately before bedtime.

Other types of food can also disturb sleep and should be avoided before bedtime:

- foods high in sugar and refined carbohydrates cause a burst of energy that disturbs sleep
- foods that are likely to cause gas, heartburn or indigestion, such as fatty or spicy foods, garlic flavored foods, beans, cucumbers and peanuts
- monosodium glutamate [MSG], often found in Chinese food, which causes a stimulant reaction in some people

Because the digestive system slows at night, it is harder to digest late meals. The likelihood of indigestion increases, so avoid heavy meals before bedtime. Also, you should reduce fluid intake after dinner.

Some research suggests that deficiencies in certain B vitamins and folic acids can also disrupt sleep, as do deficiencies in calcium and magnesium, two minerals that produce calming effects on the brain. Although drinking a glass of warm milk before bedtime to improve sleep has never been substantiated scientifically, milk contains calcium and may therefore have sleep promoting effects.

Environment

Temperature

Room temperature can have a significant effect on sleep. Recall that insomnia is associated with a failure of body temperature to fall either at bedtime or during the night. Sleeping in a warm room will make it even harder for your body temperature to decrease and this will make it more difficult to sleep. Because deep sleep will also be reduced, nighttime awakening will be more likely to occur.

On the other hand, body temperature shows a more rapid drop in cooler rooms. In fact, the lower the room temperature at which we go to sleep, the greater the drop in body temperature and the easier it will be to fall asleep and to stay asleep. Keep the room cool by turning the heat down, leaving a window open, or using a fan or air conditioner.

Dark & Quiet

Many types of noise such as traffic, loud music, a dripping faucet, a neighbor's barking dog, trains and neighbors can disturb sleep. There are many ways to minimize bedroom noise. Earplugs work well for many people. For others, the hum of a fan or air conditioner, or a commercially available sound conditioner that works by blocking distracting noises and by producing constant, soothing sounds like water or rain relax the brain and induce sleep.

Listening to music at bedtime may help the child fall asleep, but s/he must set a timer so the music turns off after about forty-five minutes.

A bedroom that is insufficiently dark can also disturb sleep.

HOMEWORK: *Week Three Progress Summary*

Have the child/family complete the ***Week Three Progress Summary CBP#03-0016***. This is similar to the Week Two summary, but also contains a new item for assessing the use of lifestyle practices. If the progress summary indicates that the child/family are not implementing

these practices consistently, you will need to urge them to do so.

Notice that the progress summary lists ten [10] possible areas of improvement. This summary should be compared to the prior two summaries to determine which of the ten areas apply most to the child/family in this case. Remind the child/family that the degree of improvement in sleep is directly related to how consistently they implement these techniques.

The progress summary also contains a section for summarizing positive changes the child has experienced from the beginning of the program. By completing the summary each week, s/he will begin to recognize and reinforce positive change.

Managing Stress

Relaxation

The relaxation response is an inborn, quieting response that is elicited by muscular relaxation, mental focusing and breathing techniques. [See ***Technique #04 Relaxation*** and ***#26 The Calm Technique***]

The *stress response* is a set of involuntary physiological changes that occur whenever we are faced with a threatening or stressed situation. These changes are initiated to propel the body into a state of arousal and preparation for *fighting or fleeing*. The changes include:

- increased amounts of hormones such as adrenaline that activate the nervous system and put us 'on edge'
- increased heart rate, blood pressure and respiration for greater physical strength and energy
- heightened sensory acuity [improved vision and hearing] and faster brain waves for enhanced alertness and mental reactions
- decreased blood flow to the stomach and extremities; increased blood flow to the brain, muscles, heart and lungs to assist in fighting or fleeing
- increased muscle tension to assess danger and remain immobile so you won't be seen by predators, prepare for fight and flight and create a body armor that provides protection from injury

- increased sweating to cool the body
- increased blood sugar levels to reduce fatigue and increase energy

This survival mechanism is an evolutionary adaption to assist in fighting or fleeing acute, well defined physical threats such as predators. Although the response is still useful and necessary, remnants of it have filtered into use in more chronic, frequent and psychological situations: relationships, work, family and money. We also cope with an unprecedented number of social and environment stressors such as:

- changing social roles
- the decline of the nuclear and extended family
- noise pollution and overcrowding
- exposure to rapidly increasing amounts of information and communications
- a constant sense of time pressure

The brain does not distinguish between physical and psychological stressors. In fact, just imagining a stressful situation can trigger the stress response. This creates a problem of constant bodily stress responses to an increasingly abstract predator. The result is often chronic, inappropriate and excessive activation of the stress response, which in itself can become a stressor. For many the stress response occurs so often in daily life that it has become habituated: automatic and nonconscious.

It is not surprising that excessive activation of the stress response can also disturb sleep. Life events perceived as stressors are the most common precipitators of sleep difficulties. Research has shown that increased daytime stress is correlated with reduced deep sleep that results in lighter, more restless sleep. Other research has shed light on why stress disrupts sleep by demonstrating that daytime stress results in increased amounts of stress hormones throughout the day and *night*. Consequently, the wakefulness system is too stimulated, making insomnia more likely. Negative sleep thoughts themselves become daytime stress experiences which create a powerful self-sustaining cycle of reinforcement.

Fortunately, we can counter the stress response with the relaxation

response. Prior to the 1960s, voluntary control over the autonomic system was considered impossible. However, exciting discoveries in the field of biofeedback challenged this belief. Biofeedback involves the use of electronic instrumentation to measure physiological information that we are normally unaware of, such as brain waves and heart rate. The information is fed back to the individual using auditory tones or visual signals, thereby giving the person precise information concerning subtle, unconscious physiological processes.

Scientists discovered that, by altering mental activity [thoughts, images, concentration and attention], and using the biofeedback signal as a 'mirror', it is possible to achieve greater control over the autonomic nervous system. In fact, there is good evidence that we can gain a degree of conscious control over virtually any population of neurons, provided that we receive immediate conscious feedback from the neural activity [Baar].

The results of biofeedback were so impressive that many scientists began studying other mind-body techniques such as meditation and relaxation, which scientists found could also be used to gain more control over the autonomic nervous system. After years of research, Dr. Herbert Benson demonstrated the fact that these techniques each produces the same physiological quieting response, which he called the relaxation response. He defined the changes as:

- slower brain wave patterns and mental quieting
- reduced secretion of stress hormones
- reduction in heart and breathing rates and, in some cases, blood pressure
- increased blood flow to the extremities
- relaxation of the muscles throughout the body

These are the counter opposites of the stress response, and the two cannot coincide.

Dr. Benson also defined the four key elements necessary to elicit the relaxation response:

- a quiet place with eyes closed to minimize distractions

- a comfortable position
- a mental focusing device such as breathing, a word or an image to shift the mind away from distracting thoughts
- passive disregard of everyday thoughts

Dozens of scientific studies have proven that the relaxation response is an effective intervention for insomnia. Using first the Relaxation Technique and then perhaps adding the Calm Technique, teach your child/family how to relax.

Initially, feelings of relaxation may be only temporary. However, in as little as a few weeks the body's stress hormones become less reactive and the effects begin to 'carry over' to the rest of the day.

The more consistently the techniques are practiced, the greater the benefits for sleep. The child/family should practice daily for some time until the practice has become a habit and the outcome is secure.

Start by encouraging the family, as a group, to practice a minimum of twenty minutes per day sometime within an hour of bedtime. After the routine is established, the child may mini-practice [taking a moment whenever to relax neck, shoulders and face muscles and then use abdominal breathing and mental focusing techniques] at other times in the day as well, making the process of relaxation a regular part of their lifestyle habit.

HOMEWORK: *Week Four Progress Summary - CBT#017.*

While similar to the Week Three summary, it also contains two new items: one for tracking use of the Relaxation Response and the other for tracking the use for inducing sleep.

Cognitive Stress Control

Two major protocols can be considered for controlling stress in the child client, depending on the observations of the clinical supervisor. If the major characteristics of the child include:

Worry - excessively apprehension, more days than not, for at least six months.

Seriously anxious children find it difficult to control their worry and typically experience these symptoms:

- restlessness
- fatigue
- difficulty concentrating
- irritability
- muscle tension
- sleep disturbance

then you will want to implement, along with the Relaxation Technique, *Technique #05 Worry Control* and *#13 Problem Management*.

HOMEWORK: *Week Five Progress Summary - CBP#03-018*

Again, this is similar to the Week Four summary, with one exception: a new tracking item for cognitive stress techniques.

- improved ability to recognize and reframe negative thoughts
- improved ability to control negative emotions and stress responses
- enhanced feelings of relaxation, peace of mind and well being

Attitudes & Beliefs

Some people cope effectively, stay healthy and sleep well under stress while others don't. This occurs, in part, because these individuals have developed a constellation of attitudes and beliefs that are stress reducing. By thinking optimistically and viewing stress as a challenge, believing that s/he can exert some control over stress [seeing oneself as the subject of action rather than the object], laughing at oneself, reframing angry thoughts and seeking out friends and family a person become resilient to life's drama.

Optimists are people who focus on and expect positive experiences. They are more likely to attribute positive outcomes to themselves and believe they can influence events through their actions. Optimists also expect the best when faced with uncertainty, look on the bright side, are positive about the future, count on good things to happen and remember success better than failure. In short, optimists see the silver lining in every cloud.

While optimists certainly experience some negative thoughts and emotions, their positive attitudes and beliefs create a mental filter that allows in primarily positive thoughts while preventing negative thoughts. Therefore, optimists do not experience a lot of negative thoughts, can change from negative to positive thinking easily and experience a more positive mood and greater self esteem and well being than pessimists.

Although optimism may be due in part to inborn temperament, it can be learned. Since "things turn out best for those who make the best of the way things turn out" [Linkletter], it stands to reason that if a child thinks of him/herself as an object - is helpless in the face of adversity, sleep can be disturbed by stress more often.

In fact, psychologists have found that those who are stress resistant, are more than just optimistic, they distort reality and view it in the best possible light, exaggerating how competent they are, remembering past behavior with a rosy glow, and exaggerating their belief in the control they have in what occurs around them.

Stress resistant individuals see themselves through positive illusions that are stress reducing and mood and health enhancing. Generally, positive illusions are present in an even stronger degree in children. If this is not the case, you may want to consider a more salient protocol.

If the child's characteristics are focused on helplessness and include characteristics such as:

- sadness
- lack of interest
- lack of energy, exertion
- withdrawal
- hopelessness
- appetite change: gain or loss of weight
- feelings of worthlessness
- poor concentration
- sleep disturbance

you may want to use all or some of the depression protocol which includes: **#12 Getting Mobilized, #01 Perceiving Reflex Thoughts, #02 Altering Limited Thinking Patterns, #03 Changing Distressing Thoughts, #13 Problem Management and/or #10 Stress Inoculation.**

The clinical supervisor should build the appropriate protocol based on the characteristics presented by the child and the outcome expectation of the child/family through selection of the appropriate techniques available.

Two other areas may also be considered for intervention: social isolation and laughter.

Social Isolation

Individuals who are socially isolated - who possess the belief that they have no one with whom to share feelings or have close contact - are more likely to die earlier than those with strong social ties. This finding holds true regardless of race, ethnic background, sex, age or socioeconomic status. In fact, inadequate social support is as dangerous to health as lack of exercise or high cholesterol and is as great or greater a risk factor for death than smoking.

Of course, isolation is not the same as solitude. Many people who live on their own may well be happy and healthy. It is the subjective sense of being isolated and alone, cut off from people and having no one to confide in, that is problematic. And not all social ties are health enhancing. Some negative relationships, such as troubled and abusive ones, can be associated with suppression of immune functioning leading to illness and death.

Nevertheless, there remains a significant advantage for those who have strong, stable connections to others. A predisposition to social support is rooted in our biology: it was essential for survival. Studies consistently demonstrate that infants' mental and physical development are directly linked to adequate attachment and nurturing. Indeed, because we have the longest infancy in the animal kingdom, social attachment is a matter of life and death.

The creation of a 'circle of friends' may be an intervention that the clinical supervisor will want to consider for the child, if feelings of isolation are prevalent.

Laughter

Recent studies document that taking a more humorous attitude toward ourselves and the world reduces stress. Strong laughter numbs pain, produces a mild state of euphoria and possibly also produces endorphins, the brain's opiate-like chemicals that produce a 'high', some studies have found that humor is as effective as the relaxation response in reducing stress and pain; others have found that humor boosts the functioning of the immune system.

Laughter reduces stress, anxiety, anger and depression. Most children laugh freely and often. If the child with insomnia does not, you may want to implement a procedure to enhance laughter. You might recommend that the child/family rent humorous videos, read cartoons, seek out and tell jokes from the internet or simply smiling. Research shows that by changing facial expressions we can elicit corresponding emotions. Thus by 'putting on a smile', we can change our thoughts and make ourselves feel better. Even pretend laughing can turn into a contagious laughing spree. By stimulating daily laughter, the child/family can help to contain the stress and improve sleep.

HOMEWORK: *Week Six Program Summary - CBP#03-019*

This summary has one addition, an item for the child to note improvement in daily life that has resulted from practicing stress resistant attitudes and beliefs. Examples:

- more optimistic, healthier thinking
- enhanced control over stress and stress related symptoms
- reduced anger or heightened sense of humor
- increased sense of connectedness to others
- more peace of mind

CLOSURE

Compared to adult studies, there has been far less research on children's sleep problems. Fortunately there has been a significant increase in research on infant, child and adolescent sleep in the past few years. We now know that although children may inherit a tendency toward being good or poor sleepers, learning factors play an important role and that children can learn to sleep better or worse. Teaching children to sleep well involves time and patience but is well worth the effort, as they will learn good sleep habits that will ensure sound sleep for the rest of their lives.

The evidence that sleep habits and behavior problems have a correlation should be of concern to all parents. While it will not always be clear as to whether good sleep habits have been eroded by daily stress responses or whether the child did not learn to sleep effectively in the first place, the outcome of irritability and diminished competence can lead to many social performance problems that then escalate into behavior issues. Addressing the sleep issues may be the best and most effective way to reverse the trend and get the child on the right social path.

Appendix

Medical & Psychological Assessment Questionnaire

CBP#03-001

Medical Problems

A wide range of medical problems can disturb sleep. If you suspect that the child has any of these problems or if the child has not seen a doctor in a while, schedule a through medical evaluation so that the doctor can determine whether any of these problems may be affecting the child's sleep.

- asthma, bronchitis and emphysema are conditions that disturb sleep by interfering with breathing
 - allergies, congestion or coughing
 - indigestion, reflux or ulcers are gastrointestinal conditions that disrupt sleep by causing heartburn or acid regurgitation
 - chronic pain conditions
 - epilepsy, which causes abnormal electrical activity in the brain that can disturb sleep
 - bladder problems such as frequent urination
 - hyperthyroidism, a condition caused by an overproductive thyroid gland
 - Diabetes and hypoglycemia
1. Is the child presently medicated with either prescription or over the counter drugs?
 2. Is the child using illicit drugs?
 3. Does the child:
 - twitch, jerk, kick during sleep leaving the bed in disarray?
 - awaken suddenly with a piercing scream or cry and manifest intense fear?
 - seem to be out of phase - falling asleep at 7:00 p.m. or 8:00 p.m. or 3:00 a.m. Or 4:00 a.m. And then sleeping deeply?
 - walk or move about when sleeping?
 - grind his/her teeth at night?
 - have chronic muscle or ligament pain?
 - get excessively sleepy and/or have difficulty awakening?
 - fall asleep suddenly for thirty [30] seconds to [30] minutes?
 - lose muscle control - become limp?
 - become unable to wake up, move or talk for a brief time?
 - snore/stop breathing
 4. Has the child been diagnosed with:
 - depression
 - general anxiety disorder
 - post traumatic stress disorder

See Resource Materials if any of these factors exist.

Medical & Psychological Resource Materials CBP#03-002

Medications

A significant number of prescriptions and over-the-counter [OTC] drugs can disturb sleep either by causing stimulant or withdrawal effects. Drugs can also impair the quality of sleep by suppressing deep sleep or dream sleep.

If the child is taking prescription drugs, ask the doctor if the drugs may be disturbing sleep and whether modifying the medication dose or even switching to another related medication is possible. In some cases, simply taking the medication earlier may eliminate sleep problems.

If the child is taking an OTC, ask the pharmacist if it contains sleep disrupting ingredients.

Illicit Drugs

Illicit drugs such as cocaine and amphetamines [speed] have a powerful stimulant effect that can make it harder to fall asleep. These drugs can also compromise sleep quality by reducing deep sleep and dream sleep. Marijuana is a widely used drug that can have variable effects on sleep. For some users, it can act as a stimulant and make it harder to fall asleep. Research also suggests that long term usage can impair sleep by reducing dream sleep. If the child is using such drugs, a rehabilitation program may need to precede or even replace this program.

Sleep Disorders

There are many sleep disorders of which the following may be the most important. Consult a sleep specialist for an assessment if you are concerned.

Sleep Assessment

A sleep test (polysomnography) is usually done to diagnose sleep

apnea. There are two kinds of polysomnograms. An overnight polysomnography test involves monitoring brain waves, muscle tension, eye movement, respiration, oxygen level in the blood and audio monitoring. (for snoring, gasping, etc.) The second kind of polysomnography test is a home monitoring test. A Sleep Technologist hooks you up to all the electrodes and instructs you on how to record your sleep with a computerized polysomnograph that you take home and return in the morning. They are painless tests that are usually covered by insurance.

Periodic Limb Movements

Periodic Limb Movements in Sleep (PLMS) are characterized by leg movements or jerks which typically occur every 20 to 40 seconds during sleep. This is not the same as the occasional body jerks, called hypnic jerks, that some people experience at the onset of sleep. Rather, PLMS are episodes lasting from a few minutes to several hours during sleep that involves the legs or arms twitching, jerking or even kicking repeatedly. PLMS causes sleep to be disrupted. These movements are typically reported by the bed partner or seen in the disarray of the bedcovers. These movements fragment sleep leaving the person with excessive daytime sleepiness.

Sleep Terrors

Sleep Terrors are characterized by a sudden arousal from slow wave sleep with a piercing scream or cry, accompanied by autonomic (controlled by the part of the nervous system that regulates motor functions of the heart, lungs, etc.) and behavioral manifestations of intense fear. Also known as Pavor Nocturnus, incubus, severe autonomic discharge, night terror.

Symptoms

- A sudden episode of intense terror during sleep
- The episodes usually occur within the first third of the night
- Partial or total amnesia occurs for the events during the episode.

Associated features include:

- Polysomnographic monitoring demonstrates the onset of episodes

- during stage 3 or 4 sleep
- Tachycardia usually occurs in association with the episodes.
- Other medical disorders are not the cause of the episode, e.g., epilepsy
- Other sleep disorders can be present, e.g., nightmares.

In its severest form, the episodes occur almost nightly, or are associated with physical injury to the patient or others.

Phase Disorder

Individuals with delayed phase can't fall asleep until late at night, often around 3:00 or 4:00 a.m. Once asleep, however, they usually sleep well for seven or eight hours and awaken feeling refreshed. The opposite is advanced phase disorder which is characterized by falling asleep early in the evening around 8:00 p.m. For example, then waking in the predawn hours and being unable to fall back to sleep. Both are caused by body temperature which falls too late or too early. These disorders are treated by using artificial bright light boxes to normalize the body temperature rhythm.

Somnambulism (Sleepwalking)

Somnambulism is a series of complex behaviors that are initiated during slow wave sleep and result in walking during sleep.

Symptoms

Ambulation (walking or moving about) that occurs during sleep. The onset typically occurs in prepubertal children.

Associated features include:

- difficulty in arousing the patient during an episode
- amnesia following an episode
- episodes typically occur in the first third of the sleep episode
- polysomnographic monitoring demonstrates the onset of an episode during stage 3 or 4 sleep
- other medical and psychiatric disorders can be present but do not account for the symptom
- the ambulation is not due to other sleep disorders such as REM

sleep behavior disorder or sleep terrors

Prevalence

Medical reports show that about 18% of the population are prone to sleepwalking. It is more common in children than in adolescents and adults. Boys are more likely to sleepwalk than girls. The highest prevalence of sleepwalking was 16.7% at age 11 to 12 years of age. Sleepwalking can have a genetic tendency. If a child begins to sleepwalk at the age of 9, it often lasts into adulthood.

Significance

In its most severe form, the episodes occur almost nightly or are associated with physical injury. The sleepwalker may feel embarrassment, shame, guilt, anxiety and confusion when told about their sleepwalking behavior.

If the sleepwalker exits the house, or is having frequent episodes and injuries are occurring, it is time to seek professional help from a sleep disorder center. There have been some tragedies with sleepwalkers.

Responses

There are some things a sleepwalker can do:

- Make sure you get plenty of rest; being overtired can trigger a sleepwalking episode.
- Develop a calming bedtime ritual. Some people meditate [See Technique #26 The Calm Technique] or do relaxation exercises [See Technique #04 Relaxation]; stress can be another trigger for sleepwalking.
- Remove anything from the bedroom that could be hazardous or harmful.
- The sleepwalker's bedroom should be on the ground floor of the house. The possibility of the patient opening windows or doors should be eliminated.
- An assessment of the sleepwalker should include a careful review of the current medication so that modifications can be made if necessary.
- Hypnosis has been found to be helpful for both children and adults.

- Benzodiazepines have been proven to be useful in the treatment of this disorder. A small dose of diazepam or lorazepam eliminates the episodes or considerably reduces them.

Sleep Bruxism

Sleep Bruxism is a stereotyped movement disorder characterized by grinding or clenching of the teeth during sleep. The disorder has also been identified as nocturnal bruxism, nocturnal tooth-grinding and nocturnal tooth-clenching.

Symptoms

The symptoms of Sleep Bruxism are tooth-grinding or tooth-clenching during sleep that may cause:

- abnormal wear of the teeth
- sounds associated with bruxism (It's about as pleasant as fingernails on a chalkboard!)
- jaw muscle discomfort

Significance

Some people have episodes that occur less than nightly with no evidence of dental injury or impairment of psychosocial functioning. Others experience nightly episodes with evidence of mild impairment of psychosocial functioning. Yet others have nightly episodes with evidence of dental injury, temporomandibular (jaw) disorders, other physical injury or moderate or severe impairment of psychosocial functioning.

When someone with suspected sleep bruxism has a polysomnographic test there is evidence of jaw muscle activity during the sleep period and the absence of abnormal movement during sleep. Other sleep disorders may be present at the same time, e.g., obstructive sleep apnea, restless legs syndrome.

Fibromyalgia

Fibromyalgia is a disorder involving chronic pain in your muscles, ligaments and tendons. Fibromyalgia is also known as Fibromyositis, rheumatic pain modulation disorder or Fibrositis Syndrome.

Symptoms

- Unrefreshing sleep
- Muscular pain
- Firm, tender zones are found within the muscles, particularly those of the neck and shoulders

Polysomnography shows alpha activity during non-REM sleep, particularly stage 3 and 4 sleep. A Multiple Sleep Latency Test (MSLT) shows a normal amount of time in falling asleep.

Responses

A low dose of tri-cyclic antidepressants seem to help. Exercise and relaxation techniques are suggested. Sometimes an analgesic is prescribed.

Hypersomnia

Hypersomnia is excessive sleepiness. It is an excessively deep or prolonged major sleep period. It may be associated with difficulty in awakening. It is believed to be caused by the central nervous system and can be associated with a normal or prolonged major sleep episode and excessive sleepiness consisting of prolonged (1-2 hours) sleep episodes of non-REM sleep.

Symptoms

- Long sleep periods
- Excessive sleepiness or excessively deep sleep
- The onset is insidious (gradually, so you are not aware of it at first)
- Typically appears before age 25
- Has been present for at least six months

A sleep specialist will probably order an overnight polysomnography test. The specialist may also want to do a Multiple Sleep Latency Test (MSLT) that tests how sleepy you are.

Responses

Since the cause is still unknown, treatment consists of behavioral changes, good sleep hygiene and taking stimulants to help you be more alert. Limit your naps to one (preferably in the afternoon) lasting no longer than 45 minutes. Get at least 8¹/₂ hours of sleep. Avoid shiftwork, alcohol and caffeine. Your doctor will determine the amount and type of stimulants you may take.

Narcolepsy

Some people, no matter how much they sleep, continue to experience a irresistible need to sleep. People with narcolepsy can fall asleep while at work, talking, and driving a car for example. These 'sleep attacks' can last from 30 seconds to more than 30 minutes. They may also experience periods of cataplexy (loss of muscle tone) ranging from a slight buckling at the knees to a complete, 'rag doll' limpness throughout the body.

Narcolepsy is a chronic disorder affecting the brain where regulation of sleep and wakefulness take place.

The prevalence of narcolepsy has been calculated at about 0.03% of the general population. Its onset can occur at any time throughout life, but its peak onset is during the teen years. Narcolepsy has been found to be hereditary along with some environmental factors.

Symptoms

- Excessive sleepiness.
- Temporary decrease or loss of muscle control, especially when getting excited.
- Vivid dream-like images when drifting off to sleep or waking up.
- Waking up unable to move or talk for a brief time.

Narcolepsy is a disabling disorder of sleep regulation that affects the control of sleep and wakefulness. It may be described as an intrusion of the dream sleep (called REM or rapid eye movement) into the waking state. Symptoms generally begin between the ages of 15 and 30. The four classic symptoms of the disorder are excessive daytime sleepiness; cataplexy (sudden, brief episodes of muscle weakness or paralysis brought on by strong emotions such as laughter, anger, surprise or

anticipation); sleep paralysis (paralysis upon falling asleep or waking up); and hypnagogic hallucinations (vivid dreamlike images that occur at sleep onset). Disturbed nighttime sleep, including tossing and turning in bed, leg jerks, nightmares, and frequent awakenings, may also occur. The development, number and severity of symptoms vary widely among individuals with the disorder. There appears to be an important genetic component to the disorder as well.

Excessive sleepiness is usually the first symptom of narcolepsy. Patients with the disorder experience irresistible sleep attacks, throughout the day, which can last for 30 seconds to more than 30 minutes, regardless of the amount or quality of prior nighttime sleep. These attacks result in episodes of sleep at work and social events, while eating, talking and driving, and in other similarly inappropriate occasions. Although narcolepsy is not a rare disorder, it is often misdiagnosed or diagnosed only years after symptoms first appear. Early diagnosis and treatment, however, are important to the physical and mental well-being of the affected individual.

Responses

There is no cure for narcolepsy; however, the symptoms can be controlled with behavioral and medical therapy. The excessive daytime sleepiness may be treated with stimulant drugs, while cataplexy and other REM-sleep symptoms may be treated with antidepressant medications. At best, medications will reduce the symptoms, but will not alleviate them entirely. Also, some medications may have side effects. Basic lifestyle adjustments such as keeping a good sleep schedule, improving diet, increasing exercise and avoiding "exciting" situations may also help to reduce the effects of excessive daytime sleepiness and cataplexy.

Although narcolepsy is a life-long condition, most individuals with the disorder enjoy a near-normal lifestyle with adequate medication and support from teachers, employers, and families. If not properly diagnosed and treated, narcolepsy may have a devastating impact on the life of the affected individual, causing social, psychological, and financial difficulties.

Sleep Apnea

Sleep Apnea is a disorder of breathing during sleep. Typically it is accompanied by loud snoring. Apnea during sleep consist of brief periods

throughout the night in which breathing stops. People with sleep apnea do not get enough oxygen during sleep. There are 2 major types.

- *Obstructive Sleep Apnea* is the most common type and is due to an obstruction in the throat during sleep. The syndrome is characterized by repetitive episodes of upper airway obstruction that occur during sleep, usually associated with a reduction in blood oxygen saturation. In other words, the airway becomes obstructed at several possible sites. The upper airway can be obstructed by excess tissue in the airway, large tonsils or a large tongue and usually includes the airway muscles relaxing and collapsing when asleep. Another site of obstruction can be the nasal passages. Sometimes the structure of the jaw and airway can be a factor in sleep apnea. Bed partners notice pauses of approximately 10 to 60 seconds between loud snores. The narrowing of the upper airway can be a result of several factors including inherent physical characteristics, excess weight, and alcohol consumption before sleep.
- *Central Sleep Apnea* - caused by a delay in the signal from the brain to breathe. It also is characterized by the cessation of breath due to a lack of effort in breathing during sleep. Central Sleep Apnea is not as common as OSA and is more difficult to diagnose. Typically it is due to some neuromuscular problem but other sources could be the cause.

With both obstructive and central apnea you must wake up briefly to breathe, sometimes hundreds of times during the night. Usually there is no memory of these brief awakenings.

Symptoms

- loud snoring
- waking up non refreshed and having trouble staying awake during the day
- morning headaches
- Waking up during the night sometimes with the sensation of choking
- Waking up sweating
- very sleepy during the day
- breathing stops frequently during sleep (usually unaware)

- chest pulls in during sleep in young children
- may be overweight
- * a dry mouth upon awakening
- difficulty concentrating
- excessive perspiring during sleep
- heartburn
- frequent trips to the bath room during the night
- restless sleep

Significance

Sleep Apnea is a potentially life-threatening condition that requires immediate medical attention. The risks of undiagnosed obstructive sleep apnea include heart attacks, strokes, impotence, irregular heartbeat, high blood pressure and heart disease. In addition, obstructive sleep apnea causes daytime sleepiness that can result in accidents, lost productivity and interpersonal relationship problems. The severity of the symptoms may be mild, moderate or severe.

A polysomnogram (sleep study) will show:

- Snoring and other sounds often occurring for long episodes during the sleep period
- No associated abrupt arousals, arterial oxygen desaturation (lowered amount of oxygen in the blood) or cardiac disturbances
- Normal sleep patterns
- Normal respiratory patterns during sleep
- No signs of other sleep disorders

Response

Mild Sleep Apnea is usually treated by some behavioral changes. Losing weight or sleeping on your side are often recommended. There are oral mouth devices (that help keep the airway open) on the market that may help to reduce snoring in three different ways. Some devices (1) bring the jaw forward or (2) elevate the soft palate or (3) retain the tongue (from falling back in the airway and blocking breathing). Sleep Apnea is a progressive condition (gets worse as you age) and should not be taken lightly.

Moderate to severe Sleep Apnea is usually treated with a C-PAP

(continuous positive airway pressure). CPAP is a machine that blows air into your nose via a nose mask, keeping the airway open and unobstructed. For more severe apnea, there is a Bi-level (Bi-PAP) machine. The BI-level machine is different in that it blows air at two different pressures. When a person inhales, the pressure is higher and in exhaling, the pressure is lower. Your sleep doctor will 'prescribe' your pressure and a home healthcare company will set it up and provide training in its use and maintenance.

Some people have facial deformities that may cause the sleep apnea. It simply may be that their jaw is smaller than it should be or they could have a smaller opening at the back of the throat. Some people have enlarged tonsils, a large tongue or some other tissues partially blocking the airway. Fixing a deviated septum may help to open the nasal passages. Removing the tonsils and adenoids or polyps may help also. Children are much more likely to have their tonsils and adenoids removed.

There are several other surgical treatments. Usually a surgeon will ask the patient to be on CPAP for at least month to see if they get better. If CPAP cannot help then surgery is probably not the right thing to do. These treatments include, removing excess tissue to clear the airway, moving the tongue forward, and moving the upper and lower jaw forward. These and other procedures try to increase the size of the upper airway.

Snoring is a noise produced when an individual breathes (usually produced when breathing in) during sleep which in turn causes vibration of the soft palate and uvula (that thing that hangs down in the back of the throat). The word 'apnea' means the absence of breathing.

All snorers have a partial obstruction of the upper airway. Many habitual snorers have complete episodes of upper airway obstruction where the airway is completely blocked for a period of time, usually 10 seconds or longer. This silence is usually followed by snorts and gasps as the individual fights to take a breath. When an individual snores so loudly that it disturbs others, obstructive sleep apnea is almost certain to be present.

There is snoring that is an indicator of obstructive sleep apnea and there is also primary snoring.

Primary Snoring, also known as simple snoring, snoring without sleep apnea, noisy breathing during sleep, benign snoring, rhythmical snoring and continuous snoring is characterized by loud upper airway breathing sounds in sleep without episodes of apnea (cessation of breath).

Snoring that Indicates Obstructive Sleep Apnea

- A complaint of snoring by an observer
- No evidence of insomnia or excessive sleepiness due to the snoring
- Dryness of the mouth upon awakening

Psychological Problems

The psychological problems that most affect sleep are those that are best addressed by cognitive behavior management techniques. Since both the psychological problems and the insomnia are the result of the thoughts that support these difficulties, it is unclear as to whether there is a cause and effect relationship; what direction this cause and effect would be; or whether it is simply two different manifestations of a person who tends to have maladaptive cognitive processes.

Depression

People with depression exhibit reduced deep sleep, increased light sleep, and excessive REM sleep. They enter REM sleep earlier in the night and spend a greater percentage of time in REM sleep than nondepressed people. Recent research also suggests that the dream content of depressed people is more depressing than that of nondepressed people. Since the vector of depression is a pessimistic explanatory style, it follows that they have more depressing material to 'backup'. Antidepressants work in part by suppressing REM sleep which creates its own set of difficulties.

Another physiological abnormality associated with depression is a flattened body-temperature rhythm. The body temperature doesn't rise and fall as much during the day as that of a nondepressed person. The same is true for insomniacs. This may be the result of increased fatigue or helplessness and reduced physical activity that accompanies both insomnia and depression

Major depression affects the way people think, behave and interact with others. When depressed we feel helpless, hopeless and experience little pleasure or joy in life. These thought processes can be addressed with or before the techniques employed here for insomnia. See Protocol for Depression [***Techniques #12 Getting Mobilized, #01 Perceiving Reflex Thoughts, #02 Altering Limited Thinking Patterns, #03 Changing Distressing Thoughts, #13 Problem Management, & #10 Stress Inoculation***]

Anxiety

Anxiety is another prevalent psychological problem that can disturb sleep. Anxiety manifests itself in feelings of apprehension, worry or fear that differs from stress in a fundamental way. Whereas stress involves a reaction to an identifiable external stressor or event, anxiety occurs in the absence of such a precipitator. Insomnia itself can be seen as an anxiety disorder, since the precipitating event that produces short term insomnia is long gone and the feelings of apprehension and worry are self completing. The most common treatment for General Anxiety Disorder is anti-anxiety medication which, like sleeping pills, can have side effects such as dependence and tolerance. Such drugs also hide the problem, but don't correct it. Like depression, these thought processes can be addressed with or before the techniques employed here for insomnia. See Protocol for General Anxiety Disorder [***Techniques #04 Relaxation, #05 Worry Control, and #13 Problem Management***].

Post Traumatic Stress Disorder [PTSD]

A traumatic event [such as physical or sexual abuse, war or a natural disaster] is continually reexperienced emotionally. This chronic 'reliving' of the trauma results in fear, anxiety, physical stress response, insomnia and nightmares. These thought processes can be addressed with or before the techniques employed here for insomnia. [See ***Technique #28 (formerly #32) Traumatic Incident Reduction***].

CBP#03-003
60 Second Sleep Diary

Night _____ **Date:** _____

1. What time did you get into bed? _____
Turn off the light? _____
2. About how long did it take you to fall asleep? _____
3. About how many times did you awaken during the night? _____
4. For each time, how long were you awake?
Time? _____ Time? _____
Time? _____ Time? _____
5. What time did you finally wake up this morning? _____
What time did you get out of bed? _____
6. Approximately how many hours did you sleep last night?
7. How many hours did you allot for sleep last night [time elapsed from 'lights out' to 'out of bed']? _____
8. Rate the quality of your sleep last night?

1	2	3	4	5
Excellent				Poor
9. Sleep medications taken _____

CBP#03-004 - Sleep Pattern Questionnaire

Using the seven assessment Sleep Diaries, answer the following questions:

- How many nights per week did s/he have difficulty falling asleep? _____ On these nights, how much time, on average, did it take to fall asleep? _____
- How many nights per week does s/he wake up and have difficulty falling back to sleep? _____ On these nights, how often did s/he wake up? _____ On average, what is the total amount of time that you lie awake during the night after these awakenings? _____
- How many days per week is his/her final wake-up earlier than desired? _____
- On nights when s/he does have insomnia, how many hours on average did s/he sleep? _____
- On nights when s/he doesn't have insomnia, how many hours on average did s/he sleep? _____
- How many nights per week did s/he take sleeping pills? _____ On these nights, what is the average number of pills taken? _____ What is the typical dose? _____
- What is the average sleep quality rating on a scale of 1 to 5 [with five being the best].

The answers to these questions represent the baseline sleep pattern that will serve as an objective reference point that will allow you and the child to monitor improvements in sleep. It is important to keep this baseline for future reference. You should have the child continue to fill out the Sleep Diary each morning throughout the six week program in order to track progress.

CBP#03-005 Sleep Scheduling

The sleep scheduling behaviors include when the child goes to bed, how much time s/he spends in bed, when s/he gets out of bed, and whether s/he naps. Such behaviors may have helped to cope with insomnia in the short term but are actually exacerbating the insomnia by altering the body temperature rhythm and weakening the brain's sleep system.

To assess the sleep scheduling behaviors, have the parents and/or child answer the following questions. Use the sleep diaries as a reference.

- What time does s/he usually get in bed? _____ Get out of bed?

- Does the amount of time that s/he spends in bed exceed the amount of time that s/he actually sleep? _____ If yes, by how much? _____
- Does s/he have an inconsistent rising time or sleep later on weekends compared to weekdays? _____
- Does s/he nap? _____ If yes, how many times per week and for how long? _____

CBP#03-006 Wakefulness Cues

By spending time in the bedroom, watching television or talking on the telephone, the bed becomes a learned cue for wakefulness rather than for relaxation, drowsiness and sleep. Ask the following:

- Does the child use the bedroom to do homework, watch television or talk on the phone? _____
- Does s/he go to bed when s/he is not drowsy? _____
- Does s/he toss and turn and try to force sleep when s/he can't fall asleep?
- Does s/he fall asleep easily anywhere except the bedroom?

- Does s/he work on the computer, discuss problems or emotion issues with family members during the hour before bedtime?

CBP#03-007 Sleep Thought Questionnaire

Next, you will need to assess whether the way the child thinks about his/her sleep is exacerbating the insomnia. Ask the child/parents about what s/he thinks about and what s/he says about not sleeping. You may need to have the child keep an **Expanded Sleep Diary CBP#03-012** to capture these thoughts.

- Is s/he anxious about insomnia or perhaps in some way fear it?

- Does s/he tell him/herself that s/he won't be able to function during the day if s/he doesn't sleep well? _____
- Does s/he tell him/herself that s/he must have eight hours sleep to perform? _____
- Does s/he always blame poor daytime functioning on not having enough sleep?

CBP#03-008 Life Style Behavior Questionnaire

Exercise

Explore whether the child engages in regular physical activity such as walking, running or other forms of aerobic exercises. Regular exercise and physical activity can improve sleep by causing the body temperature rhythm to rise and fall during the day. Lack of exercise can contribute to a flattening of the body temperature rhythm. Exercise may also contribute to more healthy sleep by improving mood.

Sunshine

Consider whether the child receives regular exposure to sunlight? Remember that sunlight is an important timing mechanism for sleep. Light is also important for improving mood and energy.

Caffeine

Explore the use of caffeinated beverages in the late afternoon or early evening. Does the child drink more than two caffeinated beverages per day? Caffeine can impair sleep by virtue of its stimulant and withdrawal effects.

Alcohol

We will need to consider consumption of alcoholic beverages in the evening. While we would hope that not too many young children are drinking alcohol, we need to be persistent in exploring this with adolescents. While alcohol may help him/her to fall asleep more easily, it can diminish deep sleep and cause him/her to wake up during the night. Obviously, if the child is abusing alcohol, that issue should be addressed directly.

Tobacco

Smoking is another lifestyle behavior that can disturb sleep. If the child smokes near bedtime or after waking during the night, the stimulant and withdrawal effects of nicotine may keep him/her awake. Smokers experience more sleep problems than nonsmokers, and smokers who quit smoking usually experience improved sleep.

CBP#03-009 Sleep Environment Questionnaire

We will want to assess whether or not the child's sleep environment is conducive to sleep. Ask:

1. Is sleep routinely disturbed by noises, such as those made by family members, neighbors or traffic? _____
2. Is the temperature of the bedroom comfortable at night? _____
3. Is the bedroom dark? _____
4. Is the bed comfortable? _____

CBP#03-010 Stress Inventory 1

Have the child circle the number that corresponds to his/her perception of stress with 1. Being no stress and 10 being the worst possible stress.

School	1	2	3	4	5	6	7	8	9	10
Family	1	2	3	4	5	6	7	8	9	10
Social Life	1	2	3	4	5	6	7	8	9	10
Finances	1	2	3	4	5	6	7	8	9	10
Health	1	2	3	4	5	6	7	8	9	10
Living Situation	1	2	3	4	5	6	7	8	9	10
Neighborhood	1	2	3	4	5	6	7	8	9	10

CBP#03-011 Stress Inventory 2

The following is a checklist of some common stress warning signs. Have the child check those that s/he experiences on a weekly basis.

- Feelings of frustration or anger _____
- Racing or pounding heart _____
- Feelings of agitation, irritation _____
- Shallow or irregular breathing _____
- Feeling on edge _____
- Headaches _____
- Stiff neck or shoulders _____
- Upset stomach, diarrhea or constipation _____
- Cold or sweaty palms _____
- Frequent urination _____

If the child circled eight [08] or higher on at least two of the scales on Stress Inventory 1 and s/he checked at least two of the warning signs on Stress Inventory 2, s/he is probably experiencing high levels of daily stress.

CBP#03-012
Expanded Sleep Diary

Night _____ **Date:** _____

1. What time did you get into bed? _____
Turn off the light? _____
2. About how long did it take you to fall asleep? _____
3. About how many times did you awaken during the night? _____
4. For each time, how long were you awake?
Time? _____ Time? _____
Time? _____ Time? _____
5. What time did you finally wake up this morning? _____
What time did you get out of bed? _____
6. Approximately how many hours did you sleep last night?
7. How many hours did you allot for sleep last night [time elapsed from 'lights out' to 'out of bed']? _____
8. Rate the quality of your sleep last night?

1	2	3	4	5
Excellent				Poor
9. Sleep medications taken _____
10. Distressed thoughts _____

Realistic Positive thoughts _____

CBP#03-013
Realistic Sleep Thoughts

I can do well even if I didn't sleep well.

I am probably getting more sleep than I think.

Since I have survived bad sleep night before, I can do it again.

Since I didn't sleep well last night, I will probably sleep good tonight.

The need for sleep varies from person to person.

The worst that can happen if I don't sleep well is that I will have to watch my mood tomorrow.

If I awaken after about five and a half hours of sleep, I have gotten my core sleep.

I am more likely to fall asleep as my body temperature falls throughout the night.

It is normal to feel alert if I waken from a dream, drowsiness will follow.

I will function better as my body temperature rises during the day.

I might just need less sleep than most people.

As I lay in bed, I can practice my relaxation techniques.

These protocols have worked for everyone else and will work for me.

CBP#03-014
Weekly Progress Summary - 1

1. Assess your sleep pattern this week by noting:
 - a) the number of good nights of sleep _____
 - b) the number of nights of core sleep [5¹/₂ hours or more] _____

2. On how many daily sleep diaries did you record a positive sleep thought? _____

3. How often did you mentally practice cognitive reframing this week
[circle one] regularly occasionally never

4. Assess your sleep medication use this week by noting:
 - a) medication free nights _____
 - b) reduced dosage nights _____
 - c) regular dosage nights _____

CBP#03-015
Weekly Progress Summary - 2

1. Assess your sleep pattern this week by noting:
 - a) the number of good nights of sleep _____
 - b) the number of nights of core sleep [5¹/₂ hours or more] _____

2. On how many daily sleep diaries did you record a positive sleep thought? _____

3. How often did you mentally practice cognitive reframing this week [circle one] regularly occasionally never

4. Assess your sleep medication use this week by noting:
 - a) medication free nights _____
 - b) reduced dosage nights _____
 - c) regular dosage nights _____

5. Track your sleep efficiency by calculating
 - a) your average sleep hours per night _____
 - b) your average hours in bed per night _____
 - c) your average sleep efficiency [average sleep time divided by the average time in bed] _____

CBP#03-016
Weekly Progress Summary - 3

1. Assess your sleep pattern this week by noting:
 - a) the number of good nights of sleep _____
 - b) the number of nights of core sleep [5¹/₂ hours or more] _____
2. On how many daily sleep diaries did you record a positive sleep thought? _____
3. How often did you mentally practice cognitive reframing this week [circle one] regularly occasionally never
4. Assess your sleep medication use this week by noting:
 - a) medication free nights _____
 - b) reduced dosage nights _____
 - c) regular dosage nights _____
5. Track your sleep efficiency by calculating
 - a) your average sleep hours per night _____
 - b) your average hours in bed per night _____
 - c) your average sleep efficiency [average sleep time divided by the average time in bed] _____
6. Track your sleep quality and the consistency of your rising time by noting:
 - a) your average sleep quality rating from your sleep diaries

 - b) the number of days you arose within one half hour of the target time _____
7. How often did you practice sleep scheduling and stimulus control this week? [Circle one] regularly occasionally never
8. How often did you engage in sleep enhancing lifestyle practices this week [circle one] regularly occasionally never
9. Check all areas of progress since the beginning of the program:
experiencing fewer nights of disturbed sleep _____
experience more nights of core sleep _____
experiencing more nights of good sleep _____
falling asleep faster _____
waking less often during the night _____
waking for shorter periods of time _____
averaging more sleep time per night _____
improved quality of sleep _____
improved sleep efficiency _____
decreased sleep medication _____

CBP#03-017
Weekly Progress Summary - 4

1. Assess your sleep pattern this week by noting:
 - a) the number of good nights of sleep _____
 - b) the number of nights of core sleep [5¹/₂ hours or more] _____
 - c) number of nights of disturbed sleep _____
2. On how many daily sleep diaries did you record a positive sleep thought? _____
3. How often did you mentally practice cognitive reframing this week [circle one] regularly occasionally never
4. Assess your sleep medication use this week by noting:
 - a) medication free nights _____
 - b) reduced dosage nights _____
 - c) regular dosage nights _____
5. Track you sleep efficiency by calculating
 - a) your average sleep hours per night _____
 - b) your average hours in bed per night _____
 - c) your average sleep efficiency [average sleep time divided by the average time in bed _____
6. Track you sleep quality and the consistency of your rising time by noting:
 - a) your average sleep quality rating from your sleep diaries

 - b) the number of days you arose within one half hour of the target time _____
7. How often did you practice sleep scheduling and stimulus control this week? [Circle one] regularly occasionally never
8. How often did you engage in sleep enhancing lifestyle practices this week [circle one] regularly occasionally never
9. How often did you practice the relaxation technique this week [circle one]? regularly occasionally never
10. How often did you practice the relaxation technique to help you fall asleep or back to sleep [circle one]? Regularly occasionally never

CBP#03-018
Weekly Progress Summary - 5

1. Assess your sleep pattern this week by noting:
 - a) the number of good nights of sleep _____
 - b) the number of nights of core sleep [5¹/₂ hours or more] _____
 - c) number of nights of disturbed sleep _____
2. On how many daily sleep diaries did you record a positive sleep thought?

3. How often did you mentally practice cognitive reframing this week [circle one] _____ regularly _____ occasionally _____ never _____
4. Assess your sleep medication use this week by noting:
 - a) medication free nights _____
 - b) reduced dosage nights _____
 - c) regular dosage nights _____
5. Track your sleep efficiency by calculating
 - a) your average sleep hours per night _____
 - b) your average hours in bed per night _____
 - c) your average sleep efficiency [average sleep time divided by the average time in bed] _____
6. Track your sleep quality and the consistency of your rising time by noting:
 - a) your average sleep quality rating from your sleep diaries _____
 - b) _____ the number of days you arose within one half hour of the target time _____
7. How often did you practice sleep scheduling and stimulus control this week? [Circle one] regularly _____ occasionally _____ never _____
8. How often did you engage in sleep enhancing lifestyle practices this week [circle one] _____ regularly _____ occasionally _____ never _____
9. How often did you practice the relaxation technique this week [circle one]? _____ regularly _____ occasionally _____ never _____
10. How often did you practice the relaxation technique to help you fall asleep or back to sleep [circle one]? Regularly _____ occasionally _____ never _____
11. How often did you practice stress management procedures this week [circle one]? _____ regularly _____ occasionally _____ never _____
12. Check all areas of progress since the beginning of the program:
experiencing fewer nights of disturbed sleep _____
experience more nights of core sleep _____
experiencing more nights of good sleep _____
falling asleep faster _____
waking less often during the night _____
waking for shorter periods of time _____
averaging more sleep time per night _____
improved quality of sleep _____
improved sleep efficiency _____
decreased sleep medication _____

CBP#03-019
Weekly Progress Summary - 6

1. Assess your sleep pattern this week by noting:
 - a) the number of good nights of sleep _____
 - b) the number of nights of core sleep [5¹/₂ hours or more] _____
 - c) number of nights of disturbed sleep _____
2. On how many daily sleep diaries did you record a positive sleep thought?

3. How often did you mentally practice cognitive reframing this week [circle one] _____ regularly _____ occasionally _____ never _____
4. Assess your sleep medication use this week by noting:
 - a) medication free nights _____
 - b) reduced dosage nights _____
 - c) regular dosage nights _____
5. Track your sleep efficiency by calculating
 - a) your average sleep hours per night _____
 - b) your average hours in bed per night _____
 - c) your average sleep efficiency [average sleep time divided by the average time in bed] _____
6. Track your sleep quality and the consistency of your rising time by noting:
 - a) your average sleep quality rating from your sleep diaries _____
 - b) the number of days you arose within one half hour of the target time _____
7. How often did you practice sleep scheduling and stimulus control this week? [Circle one] regularly _____ occasionally _____ never _____
8. How often did you engage in sleep enhancing lifestyle practices this week [circle one] _____ regularly _____ occasionally _____ never _____
9. How often did you practice the relaxation technique this week [circle one]? _____ regularly _____ occasionally _____ never _____
10. How often did you practice the relaxation technique to help you fall asleep or back to sleep [circle one]? Regularly _____ occasionally _____ never _____
11. How often did you practice stress management procedures this week [circle one]? _____ regularly _____ occasionally _____ never _____
12. How often did you practice for new attitudes and beliefs this week [circle one]? _____ regularly _____ occasionally _____ never _____
13. Check all areas of progress since the beginning of the program:
experiencing fewer nights of disturbed sleep _____
experience more nights of core sleep _____
experiencing more nights of good sleep _____
falling asleep faster _____
waking less often during the night _____
waking for shorter periods of time _____
averaging more sleep time per night _____
improved quality of sleep _____
improved sleep efficiency _____
decreased sleep medication _____
14. summarize on another sheet of paper or on the back any positive changes you have noticed in yourself as a result of this program.