

# Sleep

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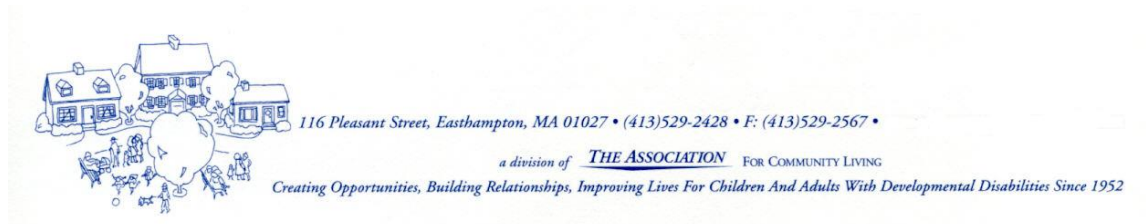
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Updated: 7/6/2009





## Good Night, Sleep Tight, and Don't Let the Bed Bugs Bite: Establishing Positive Sleep Patterns for Young Children with Autism Spectrum

Contributed by  
[Marci Wheeler](#)

Most parents have had some experience with a child who has difficulty falling asleep, wakes up frequently during the night, and/or only sleeps a few hours each night. Temporary sleep difficulties are an “expected” phase of child development. Ongoing and persistent sleep disturbances can have an adverse effect on the child, parents and other household members. Children with autism spectrum disorders appear to experience these sleep disturbances more frequently and intensely than typically developing children. A child’s sleeping problems can quickly become a daily parenting challenge.

There are a number of factors to address when establishing a plan to reinforce a positive sleep pattern. First, any underlying medical problems that may be affecting sleep should be assessed. Consider checking for food and/or environmental allergies or intolerances, gastrointestinal disturbances, and seizures. All of these are more common in persons with autism spectrum disorders. Also sleep disturbances can be a side effect of other medications an individual takes and so this should be considered, too.

Sleep disorders that affect the general population should also be ruled out for your child with an autism spectrum disorder. Sleep apnea is a disorder that can affect anyone at any age. It is a disorder in which a person experiences pauses in breathing when the airway becomes obstructed during sleep. The most common cause for blockage is enlarged tonsils or adenoids. Upper respiratory illnesses and/or allergies can also contribute to the development of sleep apnea. Beside pauses in breathing, symptoms of sleep apnea in children include: snoring, mouth breathing, restless sleep, sweating, night wakings, and/or frequent coughing or choking while asleep. Other sleep disorders to assess in a child, if appropriate, include sleep terrors and confusional arousals. These both are frequently referred to as parasomnias.

Parasomnias are disorders of “partial arousal” that lead to unusual behaviors during sleep. Children with sensory processing difficulties have more problems falling asleep and night waking. An assessment and consultation with an occupational therapist trained in sensory integration may be important to assess relaxation and arousal difficulties, and to help design strategies that address these issues.

After possible medical problems have been addressed, other factors contributing to sleep problems should be considered and strategies for addressing these implemented. Other issues to consider are: environmental variables, bedtime routines and the use of a sleep training method. Each of these three topics is discussed in further detail below.

### **Environmental Variables**

After examining your child’s sleep environment more closely, there may be some adaptations and modifications needed to assist your child’s ability to relax at bedtime.

1. Consider whether your child is too hot or too cold. Assess the temperature of the room, bedding and sleep clothes to decide what combination is best for your child. Remember that your child’s sense of temperature may be different than your own. Recall what temperature your child seems to prefer and/or seek during the day, and consider when making decisions.
2. Consider tactile sensitivities that may be affecting your child’s ability to sleep. Certain textures can relax or arouse your child. Look at bedding and pajama textures. Your child may prefer his/her feet covered or uncovered with footed pajamas, socks and or even the covers themselves. How tight or loose the clothing fits, and whether or not there is elastic or seams can be an issue for some children. Also bedding should provide the optimum level of pressure, as this too can affect individuals with autism spectrum disorders.
3. Consider noises and how they affect your child. At night, when trying to relax and fall asleep, the noises your child hears may be overpowering and impossible for the child to filter out. These noises, such as water running or an animal scratching may not affect you or other household members but can be disrupting for a child with an autism spectrum disorder. Can certain household noises be monitored for the effect on your child? Sometimes a fan, air filter, TV or soft music in the child’s room can help mask other noises and provide a consistent sound that is comforting and/or soothing for the child.
4. Also consider visual stimuli that may be causing problems for your child

at bedtime. Is your child afraid of the dark? Some children with autism spectrum disorders may seem to prefer dark places during the day but that is different than being expected to sleep in a big room in a bed at night in the dark. Streetlights, the moon, or car lights shining in the room at intermittent intervals may be affecting your child's sleep. Providing a room that is consistently light or dark may be very important, depending on your child's needs.

### **Bedtime Routines**

Bedtime routines and rituals are very important for most children in establishing positive sleep patterns, but are extremely critical for children with an autism spectrum disorder.

1. Your child will benefit from a set bedtime. Pick a time for bed that is reasonable for your child and which you can consistently provide.
2. Children with an autism spectrum disorder need to know what is going to happen next. Establish a bedtime routine that can provide predictability and a comforting, familiar pattern. For further understanding and structure, a visual bedtime schedule can help. The visual schedule can provide reminders and consistency for the whole family.
3. A good bedtime routine will help teach a child to calm down, relax and get ready to sleep. For example, if bathing is stimulating or frightening for your child, even though you may want him/her to bathe before bed, it may be best to bathe at a completely different time of the day. Likewise, there may be sensory integration activities that have proven to be relaxing to your child during the day that you can also use as part of the bedtime routine.
4. A bedtime routine should be the same everyday and should include activities that are pleasant and relaxing as well as special and individualized to fit your child's needs and interests. A bedtime routine should realistically consist of 4 to 6 steps that do not take more time than is reasonable on a nightly basis.
5. Some activities to consider as part of a bedtime routine or ritual include looking at the same book or story each night, saying good night to favorite objects, toileting, bathing, getting pajamas on, brushing teeth, having a glass of water, singing a favorite song or prayer, listening to calming music that the child enjoys, hugging and kissing family members and/or engaging in a calming sensory integration activity.
6. On days when you are away from home and/or get home late, it is still

important to follow bedtime routines and rituals. You can shorten each step significantly and potentially eliminate nightlong frustrations due to the change. If your child is away from home for a night or two you may see old sleeping patterns emerge. Even in a temporary new environment, routines may help. Upon returning home the bedtime routine will continue to be effective, though the excitement from the change may take a night or more to fade depending on your child and how long you have been away.

### **Sleep Training**

After addressing medical issues, environmental variables and bedtime routines it is time to tackle the hardest piece in establishing positive sleep patterns: teaching your child to sleep through the night. There are various versions of sleep training methods you may have read or heard about. Basically after the bedtime routine is done and your child is in his bed or crib, leave the room without long drawn out words or further attempts at touching the child in any way.

If the child is upset and obviously not sleeping, wait a few minutes and then go back into the child's room to check on him/her. Checks involve going back into the child's room and briefly (not more than a minute, preferably less) touching, rubbing or maybe giving a "high five", "thumbs up" or hug for an older child who better responds to these gestures. Gently but firmly say, "it's okay, it's bedtime, you are okay" or a similar phrase and then leave the room until it is time for the next check or until the child falls asleep.

Using this technique consistently is generally harder on the parent than it is on the child. It could take a couple of hours the first few nights. It is important to know that it is very likely the child's behavior will get worse for a few days or more before it improves. This is the child testing the change and trying to bring the old routine back. For some children who are older and not genuinely tired at a reasonable bedtime, a routine of staying in the bed or in the room quietly may be appropriate for these children. Sleep training methods can still be applied in these situations. Also a gate or other barrier may be needed at the bedroom door to remind the child it's bedtime and the expectation is to stay in your room.

If your child is older and never consistently slept through the night, you may be totally sleep deprived yourself. Ask for help from your doctor, a psychologist, social worker or from a case manager if you have applied for Medicaid Waivers. It may not be easy to find a knowledgeable professional but you might start by asking other parents who might know a professional that has helped them in the past. Also if your child seems to regress in their sleeping habits, you may need to consult with knowledgeable professionals. Again, it is best to start with a medical assessment and proceed from there.

Sometimes if other medical problems are ruled out, a temporary trial of medication taken under a doctor's care can assist in turning around poor sleep patterns, while working to establish bedtime routines and rituals that work for your child.

Several doctors in the field of autism spectrum disorders have done preliminary research on the short-term use of the over the counter supplement melatonin. Melatonin can help stabilize and promote normal sleep for some children by helping them fall asleep more quickly. The few studies currently available do caution, however, that melatonin sometimes stops working and does not usually help those who frequently wake up during the night. In addition, the long-term effect of taking melatonin has not been established. Some parents have found vitamin supplementation helpful for helping a child get to sleep.

It is extremely common for children with autism spectrum disorders to have difficulty getting to sleep, sleeping for a few hours at a time, and/or staying asleep without frequently waking throughout the night. These poor sleep habits are easily created and can be extremely difficult to change. One issue not yet addressed in this article is the habit of sleeping with the child. This habit may understandably gets started when poor sleeping patterns affect not only the child but the parents and the rest of the family as well.

If the child is in the habit of sleeping with a parent and/or in the parent's bed, the same steps described above should be considered with additional support needed during the examination of the environment and bedtime ritual/routine. For example, a pillow or other item(s) from the parent(s) may help make the environment more comforting to the child as the parent(s) transitions from sleeping with the child. Desensitization to a new bed or room can be added as part of the bedtime routine. Desensitization to a new room or bed can be added as part of a routine done daily for a few days or weeks before also being done as part of the bedtime routine.

It can't be stressed enough, the best advice is to avoid creating sleep routines and habits that will have to be broken later, if at all possible.

Checking for medical issues and environmental variables and then planning and consistently as possible following a bedtime routine and a sleep training method can improve the quality of life for the whole family. It can take time to establish positive sleeping patterns particularly if trying to change a long-standing problem. Families frequently have to make sleeping issues a priority until positive sleeping patterns are established. It is a priority that is worth the effort.

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## Sleep, Baby, Sleep

**By Maureen Bennie**

Parents at one time or another struggle with a child who has difficulty falling asleep turning bedtime into a stressful time of the day. Instead of being a comforting time to wind down, tempers flare and tears fall. Children with autism seem to be particularly prone to poor sleeping habits that surface when trying to go to bed, in the middle of the night, or in chronic early waking.

I have several friends with autistic children who struggle getting their child to sleep. "It's awful," complains Andrea. "My son seems to gain energy as the night wears on. Sometimes he'll sleep from 11 p.m. until 1 a.m. and then is up again running around the house. He's hyper and I'm exhausted and unable to deal with the demands of the day."

Chandra says bedtime routines for her son go on forever. "First he needs to see a certain video. Once that's over then there's some other routine that needs to be done before he can go to sleep. The worst part is I have to sleep with him

every night. Night waking is still a problem and if he wakes up alone, he panics and it takes a long time for him to fall back a sleep. Night waking also wakes up my other children."

Do these stories sound familiar? My son Marc went to bed late every night and he had to be rocked into a deep sleep. Once that was accomplished, the night waking began every two hours. Marc was up an average of five times a night at a year old. I was nursing him each time I went in to see him. He was crying fitfully so I felt I couldn't ignore him. I went into work everyday on four hours of sleep. Teaching music to elementary school children became a chore due to chronic sleep deprivation. I felt like screaming at my students when they were playing the xylophones or banging on drums. Mastitis, a breast infection, was a recurring problem too - probably related to fatigue. I was hitting the wall. Something had to change.

My best friend Cori suggested I take a course at the Infant Resource Centre in Calgary, Alberta, Canada, the city where I live. I was desperate enough to agree even though I was terrified at some

person telling me I had to let my baby "cry it out". Headaches, Ibuprofen, and poor judgement were taking over my life so I had to listen to Cori and try the sleep course. It was the best \$15 I've ever spent. Here is what I learned from the instructor Kitty Raymond.

A baby needs ten to twelve hours of sleep a night, not including naps. If the baby is under a year, two naps are necessary - a one hour nap in the morning and a one to two hour nap in the afternoon. After a year of age, a baby needs a two-hour afternoon nap until age three. The best time for the afternoon nap is 1 or 1:30 p.m. The baby should sleep no later than 3:30 p.m. or it will interfere with bedtime. The optimum time for bed is 8 p.m.

The biggest no-no is nighttime feedings. It takes approximately 2 ½ hours to digest a bowl of cereal. Babies sleep best on an empty stomach. If feeding occurs during the night, a baby does not fall into a deep sleep because the digestive system is continually working. Milk feedings should be limited to no more than 2 ½ cups a day after a year of age. Milk feeding from nipples should not be done close to bedtime or that becomes a crutch for

sleep induction.

A strong, consistent bedtime routine needs to be established. If your child is having a bath, it should happen by around 7:20 p.m. All milk feedings need to be done by 7 or 7:15 p.m. Do not do the feedings in their room. Get the child's pajamas on, then read one or two stories maximum. Remember the longer the bedtime routine is, the harder it is to put your child to bed because they want you to stay with them.

At 7:55 p.m., instead of nursing or giving the child a drink, sing a song or say good night to main objects in the room such as the window, clock, lamp, dresser etc. I used the "Goodnight Moon" book by Margaret Wise Brown as a routine, taking Marc around the room in my arms allowing him to touch each object as we said good night to it. Now it is time for bed. Put some toys on the bed, say "It's nighttime, I love you, I'll see you in the morning", close the door, and don't come back for a bed check for 45 minutes. Make sure the non-nursing parent puts the child to bed if you are still night nursing.

Closing the bedroom door may seem cruel

but there are two reasons for doing this. One is to keep the focus in the child's room. If the door is open even a crack, the light from the hall will pour in and the child will draw his/her attention towards the outside light. It is also better to have the door closed in case of a fire.

On the first night of this routine, you'll experience some crying or objection from your child as it is a new routine with new expectations. Let them protest for the first 45 minutes before you do your second bed check. At this time, open the door and say, "It's nighttime, I love you, I'll see you in the morning." This should take five seconds. Don't hang around in the room. Spending more than the five seconds becomes cruel for the child. Keep repeating this routine until they are asleep.

If the child wakes up again in the night, do a check after ten minutes of fussing or crying. Say the bedtime phrase and leave. Start the checks every 45 minutes again until the child is back asleep. This process may sound cruel but by the morning, everything is fine. The first night of this routine will be the worst night but hang tough. By the second night, the child will

cry half of what they did the night before. By the third night, they might cry for five to ten minutes. If the child wakes up at all in the night, it will be for less than ten minutes.

I used this routine with Marc at thirteen months after a year of very little sleep for both of us. To my surprise, Marc was a much happier child on more sleep. I used to feed him cereal before bedtime and nurse him until he fell asleep. Cutting those two things out made bedtime a breeze. Marc cried only a few minutes the first night at bedtime and by the second night he didn't wake up at all. The interesting thing is after a year of this solid bedtime routine, going to bed became a pleasant, worry-free experience for us. Marc is now five and requests his bed before 8 p.m. There are no struggles or fights. It has become a time for us to read a book, cuddle, say a good night prayer, and say our "I love you's". Marc wakes up in the night occasionally after a bad dream or if he is sick.

When I took the sleep course, Marc had not been diagnosed with autism yet. Knowing what I know now, I would recommend this sleep routine to any

parent of a child with autism. Our children love routines and predictability. Use PEC symbols if they aid the process. Have special toys only for bedtime. Read a book that is only read at bedtime, which will make the book special. Be consistent and firm with your expectations. Wanting your child to sleep is not a cruel thing. It is a necessity for both you and your child in order to function at an optimum level the next day.

I did the sleep routine with my second child when she was five months and I've never looked back. She also has autism. I occasionally have problems getting her into bed but she is also in the "terrible twos", behaving quite typically in that department. There are many books out there on the subject of sleep, but I found Kitty Raymond's method worked for us. Everyone needs a good night's sleep to be at his or her best. Try the sleep routine, adapting it to make it personal for your child. Sweet dreams! See you in the morning...

[Articles](#) >> Sleep, Baby, Sleep

## **Sleep and Autism**

(Source: [MSN—Autism Home Page](#))

Although sleep problems are not part of the diagnostic criteria for autism, sleep problems seem to go hand in hand with autism. Many parents report this as a problem in their children with autism. However, there is some confusion about what constitutes a sleep problem. Using a broad definition of sleep problems, researchers have noted that anywhere between 56% (Clements, Wing, & Dunn, 1986) and 83% (Richdale & Prior, 1995) of persons with autism experience some sleep difficulties. Sleep problems may include: refusing to go to bed, getting out of bed, tantrums at bed-time, early waking, requiring a parent to sleep with the child, hyperactivity at night, etc. However, one study found that parents may be oversensitive to the sleep problems of children with autism and that the sleep of children with autism was similar (except for some "early night arousal") to that of children without autism (Hering, Epstein, Elroy, Iancu, & Zelnik, 1999). Since this article is not a scientific study, we will side with the parents on this one. Parents have been blamed too much for problems associated with autism, so we will not add to their burden here. Instead, let's discuss some solutions for sleep problems (Outlined in more detail in Schreck, 2001):

**1. Establish a bed-time routine** - Children with autism tend to create their own routines and may thrive on routines. In my home we started with a purposely-named ritual known as the "Night-night snack". In essence, to accept the snack meant acceptance of the process of going to bed. Start with a set time to go to bed and stick to it. Then initiate a standard bed-time routine or ritual. A typical bed-time routine may include: **a.** Snack; **b.** Bath; **c.** Pajamas; **d.** Brush hair and teeth; **e.** Read a story; **f.** Lights out; **g.** Get in bed. In order to establish this as a routine, it would have to be consistently practiced for at least three weeks. The idea is that as the child sees this as an inevitable occurrence each night just prior to sleep, the routine will soon be associated with sleep. Above all, pray. The Lord knows all about sleep and will always help. Psalm 4 is known as the "Sleep Psalm" and it may be a good thing to read with your child at night - it will remind him or her that God has everything under control, even while we sleep.

**2. Non-Graduated Extinction** - This may also be known as the "cold turkey" method. It involves ignoring any sleep disruption after going through the bed-time routine and placing the child in bed. The parents are to ignore the child by not talking to him, not touching him (except to return him to bed), and not looking at him. The child is placed in bed, if he gets up, he is put back in bed and (optionally) the door may be closed as a form of consequence. Be prepared, however, for an "extinction burst", that is, if he was used to you letting him stay up or is used to you sleeping with him, he will have a big tantrum to try to get that to happen again. This may last for an hour or so. Remember, it always gets worse before it gets better. If you consistently ignore him and never give in to him and let him stay up, etc. then he will eventually sleep on his own.

**3. Graduated extinction** - Some parents just cannot be "mean" enough (read: tough enough) to use the "cold turkey" method so they use a more gradual approach. Continue to use the bed-time routine. Once you place the child in bed, if he gets up, tantrums, or cries, ignore him for five minutes. If he continues after five minutes, go in to his room and settle him down with as little attention as possible, and then leave the room. Wait for a little longer time before going

in the next time (say 10 minutes) and gradually increase the amount of time you let him cry. The key to both graduated methods is that the child never is allowed to get up or have you stay with him due to his tantrum behavior.

**4. Stimulus fading** - This method is especially good with children who have trapped their parents into sleeping with them. In essence it involves gradually moving the parent further and further away from the child's bed. Add a bed or mattress to the child's room. The first night the parent sleeps in the bed right next to the child's bed. Night after night the parent's bed is moved further and further away from the child's bed, until it is out of the room and, finally, the parent is transferred back to the parent's bed (boy, will your spouse be happy!).

#### **General Recommendations:**

Make sure your child is screened by his physician for any medical conditions that may interfere with sleep (allergies, asthma, pain, sleep apnea, etc.) prior to beginning any of these recommendations. Part of the bed-time routine should include a cessation of exciting activities about an hour before bed time. Give your child a warning before starting the bed-time routine (e.g., "Bobby, in five minutes it will be time to get ready for bed."). Remember, children with autism may have difficulty shifting from one activity to another, so warn him when one activity is about to stop and another begin. Make sure there are no sensory distractions to bed time. Check out unusual smells, sounds, sights, the feel of the sheets and blankets, the temperature, etc. to be sure they are not interfering with sleep - correct any problems. Set a time to go to bed and a time to get up - oversleeping one day may lead to difficulty going to bed that night. Avoid caffeine in drinks and food. Try not to use sleep medications. Some children with autism do respond to the synthetic hormone, melatonin, as an aid to sleep. It is believed that some children and adults lack sufficient amounts of the hormone. Limit fluid intake after 6:00 pm or so. Keep track of successful bed-times and praise your child for going to bed so well, for staying in bed all night, etc. Make sure your child has an active day-time schedule to include periods of vigorous exercise. Make the bedroom sleep-friendly by removing exciting toys, televisions, etc. and adding favorite blankets or stuffed animals (not too many). Use a night light if necessary but generally keep the room dark with the curtains drawn. Night-night! ;-)

**Note:** "Romero," one of our Autism Home Page Moms, recommends the following: when her child got up at night, she began simple ABA drills with him. It wasn't long before he decided he would rather sleep! (Of course, it didn't hurt Romero's feelings either).

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#### **Sleep-Related Links:**

[Bedtime](#) - Some practical tips on why children may not want to sleep, how to help them sleep, and a chart that lists how much sleep children need at each age (State of Oklahoma web site).

[Melatonin, The Sleep Master](#) - Center for the Study of Autism

[Too Much Television Viewing May Lower Melatonin Levels & Hasten Puberty!](#) - New Scientist

[Physical Exercise and Autism](#) - Center for the Study of Autism

Book: [Sleep Better!: A Guide to Improving Sleep for Children With Special Needs](#) - Amazon.com.

[Sleep, Baby, Sleep](#) - Autism Today article.

[Sleep Problems in Asperger's Syndrome](#) - A journal article on PubMed that indicates that sleep problems may be a common concern for adults with AS as well.

Coping With Night Terrors - The Kids Health web site article has some great information on this problem and some great, practical suggestions on how to treat it.

Sleep Problems - The Kids Health web site discusses the various types of sleep disturbances that children may have and also offers some good solutions.

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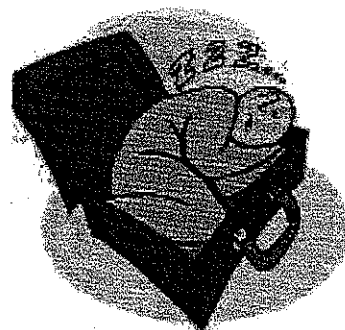
Disclaimer: The information on this page and from the links are not intended as medical advice. Do not make any changes in your child's treatment without first consulting your child's physician.

# UNPACKING

# YOUR

# BAGS

Sleep Strategies for  
Individuals with Autism  
By Max Wiznitzer, M. D.



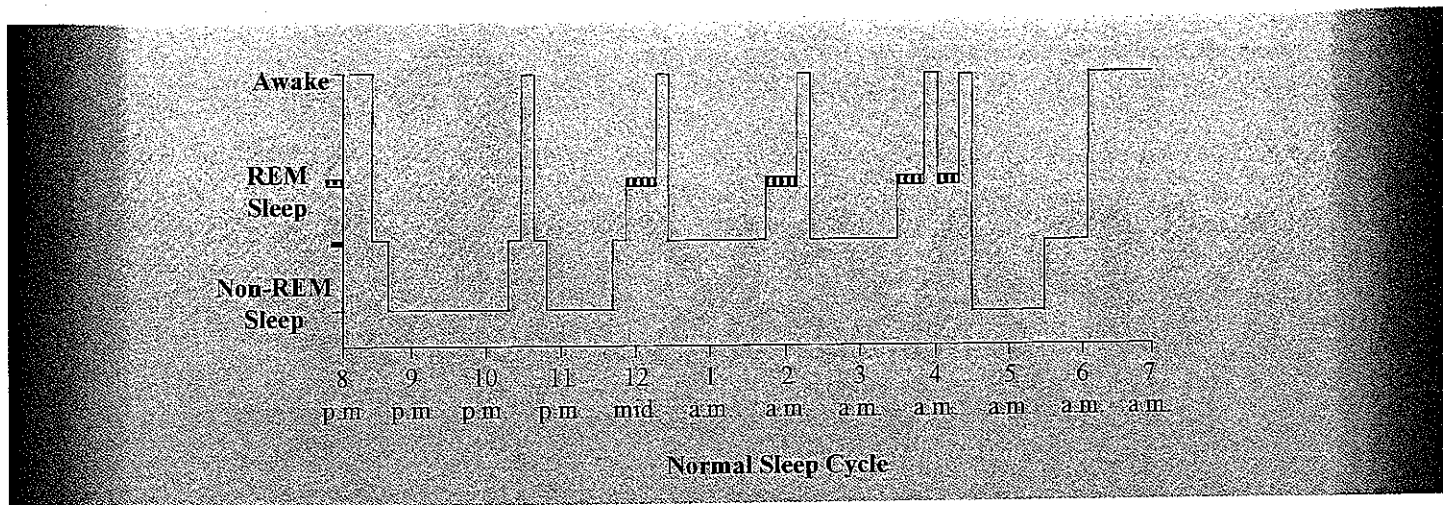
## Part 1: Introduction to Sleep

**J**ohnnie is a 3 year-old boy with autistic disorder. His parents have been complaining for over 1 year about his erratic sleep behavior. He refuses to go to sleep at the same time as his 5 year-old sister and screams for hours when his parents attempt to leave him in his bed. He will only fall asleep by 11 pm while watching his favorite videotape in the family room or if one parent lies in bed with him and pats his back. Even if he falls asleep elsewhere, his parents will place him in his own bed before they go to sleep. However, his parents' sleep is disturbed almost nightly by Johnnie's awakening at 2 am and either wanting to go into their bed or to return to the family room sofa to watch more videos. He usually awakens at 6 am and is irritable and overactive during the day. Both parents are frustrated by their apparent inability to control this situation. The fatigue caused by the late bedtime and nightly arousals is affecting their relationship and work performance.

This story is a common complaint from parents of children with autism/PDD. About 40-70% of these children will have persistent sleep disturbances that negatively affect their and their family members' functioning. While some of the causes for sleep problems are directly related to autism, the majority result from an interaction between their challenging behaviors and normal components of the sleep cycle and are common in children with and without developmental disabilities. Therefore, if parents understand the basic components of sleep and the factors that can disrupt them, they should be able to assure a restful night's sleep for any child.

Sleep is an essential activity in our daily functioning. It is a normal body behavior characterized by a prolonged decrease in our awareness and responsiveness to the external environment. While the exact purpose for sleep has not been definitely determined, it is thought to help with the establishment of learning and memory, and to play a role in brain development. The latter would explain the increased need for sleep in infants and young children in comparison to the adult population.

Sleep is not a uniform process. It goes through various stages and cycles throughout the night (Table I). The two major portions of the cycle include REM (rapid eye movement), or dream sleep, so named because of the characteristic eye movements that are present and non-REM, or slow wave sleep. Non-REM sleep dominates the early sleep hours while REM is more frequent in latter parts. Within sleep, there are brief periods of micro arousal during which individuals appear to check or monitor their internal and external environments (such as checking about the need to use the bathroom, presence of any changes



in bed coverings, individuals in the room, or sound).

Sleep follows a developmental pattern. Sleep with both REM and slow wave components is present in the full term child. Dream sleep comprises 50% of early infant sleep, rapidly decreases to 30% by 2 years, and 25% by the adult years. This suggests the importance of dream sleep for normal brain development. While sleep in the newborn consists of multiple 2-4 hour segments, these consolidate so that, by school age, the child has stopped daytime napping and sleeps about 12 hours nightly. This shows the expected maturation of sleep patterns in association with brain maturation.

The timing of sleep is closely linked to the body's internal sleep-awake clock, called the Circadian rhythm. Rhythm spontaneously cycles every 25 hours, but shifts to a 24-hour schedule with external cues. One of the most dominant cues is the daily light-dark cycle. Other potentially important influences include air temperature, environmental noise, the regular daily schedule, (including meal times) and social interaction. Therefore, disturbances in any of these areas can adversely affect onset, maintenance or length of sleep.

Inadequate sleep on a chronic basis has an adverse impact on an individual's functioning. It can cause impairment in several areas: sustained attention, excessive emotional swings and poor tolerance of normal daily stressors and demands. Chronic sleep deprivation can appear as a mood disturbance with easy irritability, decreased pleasure from activities, and apparent lack of enjoy-

ment of daily activities. It may also show itself as an increased activity level with impulsivity, distractibility and short attention span (similar to attention deficit-hyperactivity disorder). Children who have sleep disturbances can produce similar problems in caregivers or siblings because of the disruptions in their nighttime routine and sleep.

## Types of Sleep Disorders

Sleep disturbances are common in childhood and are most prevalent during the preschool years. They are noted in 20-25% of normal children, 20-40% of children with behavioral problems, 30-80% of children with mental retardation, and 40-70% of children with autism. Major areas of disturbance are listed below.

### Childhood Sleep Disturbances

- ❖ Sleep Initiation/Onset
- ❖ Sleep Maintenance
- ❖ Sleep Phase
- ❖ Excessive Sleepiness

## Problems Going to Sleep

Causes of excessive sleepiness include narcolepsy and sleep apnea syndrome. Since these are not more prevalent in children with autism than in the

general population, they will not be further discussed.

There are many different reasons for disturbances of sleep initiation, but they generally fall into one of three related areas: lack of a bedtime routine; lack of a defined time to go to bed; and lack of a clearly identified sleep location, including both a bedroom and bed. Children may experience problems going to sleep when any one of more of these areas is compromised. Other factors that contribute to difficulty with sleep initiation include: separation problems from a parent or caregiver and problems with self-control, especially in the area of limit setting. Similarly, a frightening experience, too much external stimulation and activity close to bed time, a long daytime nap, fears such as monsters or the dark, or medication side effect causing insomnia, can delay a child's normal bedtime.

## Problems Staying Asleep

Problems with maintenance of sleep usually represent the problem of staying asleep, rather than falling asleep. Since small arousals occur periodically during sleep, and serve the purpose of checking for changes in the child's surroundings, any alterations in the environment can lead to an unwanted awakening. Changes can include: falling asleep in one location and being transferred to a regular bed, having a caregiver leave the room after the child falls asleep, needing

to eat or drink at night, medication effects, medical illness (such as an ear infection), day time stressors that cause "bad dreams", persisting fears, and unexpected external stimuli (such as loud noises).

## Problems with Sleep Phase

Sleep phase involves the timing and length of the daily sustained sleep pattern. Usually, a preschooler or early school age child falls asleep between 7-9 p.m. and awakens between 6-8 a.m. A shift in the timing of going to sleep or waking up is considered to be a disturbance of sleep phase. Causes can include excessive stimulation, inappropriate shifts of the Circadian rhythm, and absence of needed choice for onset of sleep. Problems with sleep phase occur more frequently in children with pre-existing brain dysfunction.

Parasomnias are disturbances that occur during sleep stages. These include quick body movements, or

any alterations in the environment can lead to an unwanted awakening. Changes can include: falling asleep in one location and being transferred to a regular bed, having a caregiver leave the room after the child falls asleep . . .

**Dr. Max Wiznitzer specializes in autism, disorders of higher cognitive function in children and stroke in children. He attended Northwestern University Medical School and completed his pediatrics residency at Children's Hospital Medical Center in Cincinnati, Ohio. He completed a developmental pediatrics fellowship at Cincinnati Center for Developmental Disorders, a child neurology fellowship at Children's Hospital of Philadelphia, and a two-year National Institutes of Health fellowship in disorders of higher cognitive function in children at the Albert Einstein College of Medicine, Bronx, NY.**

Since that time he has been a staff physician at Rainbow Babies and Children's Hospital in Cleveland, Ohio, and presently serves as associate professor of pediatrics, neurology and international health at Case Western Reserve University, in Cleveland. Dr. Wiznitzer is a member of the State of Ohio's Pervasive Developmental Disorders Committee that is drafting guidelines for assessment and intervention in the preschool population and is part of the NIH Working Conference on Screening, Diagnosis and Assessment in Autism. He was awarded an NIH grant to study the neurobiology of high functioning autism.

In his personal time, Max is an avid, but slow, swimmer and despite his long hours and intermittent speaking engagements, he has a patient wife and three children who can still recognize him when he comes home. His expertise on sleep disorders comes in part from 13 years of personal experience with his own children's sleep disturbances.

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myoclonus, sleep walking, bed wetting, sleep talking, teeth grinding, head banging and night terrors. The latter are episodes of screaming with a fearful appearance and the inability to calm the child, that do not represent "bad dreams", but rather a disturbance of the deeper part of slow wave sleep. They are usually not remembered by the child. Parasomnias are not reported to be increased in children with autism, although there may be an increased amount of night terrors, teeth grinding, sleep walking and sleep talking in children with excessive daily anxiety or stressful days.

Other medical disorders can cause disruptions of the sleep state. Acute illness, asthma, and gastrointestinal problems may lead to inappropriate arousal. Seizures, which occur in up to 20-25% of children with autism, can occur during sleep and can consist of a generalized convulsion, excessive body stiffening, arousal with unresponsiveness and stereotypic activities. If medical problems, such as seizures, are frequent at night, they will disrupt the normal sleep pattern and may lead to excessive daytime sleepiness and its associated behavioral and learning problems. ■

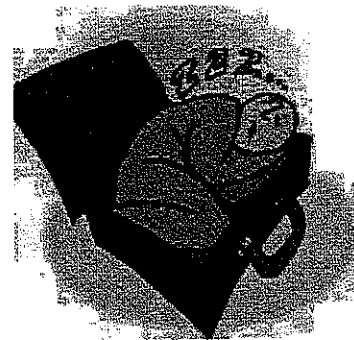
Part 2's goal is an understanding of appropriate interventions as a means of helping the child achieve a good night's sleep. It will explore specific reasons for sleep disturbances in children with autism. Behavioral interventions based on the necessary components of sleep will be described. Indications for the use of medication to help children fall asleep or to treat associated disorders will be provided.

*Happiness is to be found along the way,  
not at the end of the road, for then the  
journey is over and it is too late. Today,  
this hour, this minute is the day, the hour,  
the minute for each of us to sense the fact  
that life is good, with all of its trials and  
troubles, and perhaps more interesting  
because of them.*

*Robert R. Updegraff*

# UNPACKING YOUR BAGS

Sleep Strategies for  
Individuals with Autism  
By Max Wiznitzer, M. D.



## Part 2: Interventions

*Johnny, a preschool child with autism, has several sleep problems. In Part 1 of our article, we introduced the sleep cycle and some of the reasons why children may have problems falling and staying asleep. However, what can Johnny's parents do now to ensure that Johnny and, therefore, the rest of the family, get a good night's sleep?*

A systematic approach is needed. Before determining what strategies might be helpful for the child with a sleep disturbance, you'll need to play detective for a while and observe the child's current pattern of behaviors. This includes:



**Start a Sleep Diary to document the exact problems that are encountered.** The Diary should include when the sleep difficulties first started (if you can still recall!) and descriptions of the child's specific problems: ie falling asleep, awakening in the middle of the night and/or having an early arousal. Keep track of what happens on a routine basis (he goes to bed each night at 8 pm) as well as the problem behaviors. Note things like where in the home the child falls asleep, at what time, how long s/he sleeps and if the sleep problems occur just at home or at other locations too. Include descriptions of how often per week or month sleep is disturbed, and any details of the day that you think might have impacted his/her sleep (ie Aunt Margaret is visiting, or dinner was two hours later than usual, etc.) Lastly, the overall impact of the sleep disturbance on the child's and on other family members' daytime functioning should be noted.



**Are there physical or psychiatric problems that can impair sleep?** Sleep disturbances can be associated with medical and psychiatric conditions. Causes include acute illnesses such as ear infections or recurrent conditions such as asthma and gastroesophageal reflux. Medical problems that interrupt breathing during sleep, such as markedly enlarged tonsils or adenoids, result in sleep apnea and poor sleep

throughout the night. In children with autism, associated psychiatric conditions can often be present. Attention deficit hyperactivity disorder (with or without oppositional defiant disorder) can lead to difficulties falling asleep and excessive movement during sleep, both resulting in fitful sleep. Children who experience anxiety may have difficulty separating from their parents. They also may be excessively fearful at the time of falling asleep or have recurrent awakenings. Depression may cause excessive fatigue or insomnia while bipolar disorder may lead to a decreased need for sleep, with associated increased energy or irritability. Parents who suspect that any of these medical or psychiatric problems may be a causal agent for sleep problems should seek evaluation by a trained professional. Appropriate treatments for these conditions will lead to improved sleep patterns for your child.



### **Are there behavioral problems that interfere with sleep?**

If associated medical conditions have been excluded, a behavioral problem may be at the root of the sleep problems. If this is the case, you'll probably begin to notice the behavioral pattern in your Sleep Diary.

Once you've identified the reasons for your child's sleep disturbances, an intervention plan can be developed.

## Disorders of Sleep Onset

Parents report that a consistent and structured bedtime routine is very effective in helping a child get a good night's sleep. A child should have a regular time to go to bed, a regular bedtime routine and a quiet bedroom environment with minimal stimulation. Excessive stimulation and excitement prior to bedtime should be avoided. Since children with autism can have problems with auditory processing, visual cues or a visual schedule can provide details of the bed-

time routine. The child should fall asleep in the location that is meant only for sleep, (ie his bed) so that confusion about the environment does not occur. If the child repeatedly leaves the room, physical reminders can be used to encourage compliance. This can include gating or double gating the doorway or using a Dutch door with the top open and the bottom locked. The child's room should be examined for items that may disturb the child and prevent sleep. This includes pictures, cabinets, windows with or without shades, ticking clocks, tree limbs scratching against a window, even bed sheets. One child had a negative experience at Disney world, and consequently, would not sleep until his Mickey Mouse bedsheets were replaced.

## Disorders of Sleep Maintenance

The two most likely reasons for a child not staying asleep are a lack of appropriate sleep associations and a change in the sleep environment. The latter can include falling asleep in one location and then being moved to a bedroom, or being in a strange bedroom environment, such as a hotel. An example of sleep associations is when a caregiver stays in the room with the child until sleep onset and then leaves. The child associates sleep with the caregiver and may awaken during periods of microarousal because of the absence of this individual. Keep in mind this basic concept: maintain the same sleep environment when the child is falling asleep as what will exist when the child stays asleep. Another example is the child who is used to getting a snack in the middle of the night. This pattern will lead to repeated awakenings that will only stop when the snack is no longer provided. A simple way to ascertain whether a child truly has difficulties with sleep maintenance is to note if the child will quickly fall back to sleep after he's returned to the original sleep environment. If this occurs, then the problem is not with falling asleep but with staying asleep.

## Disorder of Sleep Phase

Some children have difficulties with falling asleep too early or too late and/or very early or late awakening. In part, this may be related to sleep cycle disturbances noted in children with autism. A basic intervention rule is that it is easier to push back the sleep time (for instance from 8 to 9 p.m.) than it is to move the time forward. Therefore, any attempt to encourage an earlier bedtime must be done gradually and in small steps. If the child is going to bed at a late hour and waking too late in the morning, he can be awakened an hour earlier each morning and not allowed to take a nap so that he is tired earlier in the evening. Changing the awakening time by 30 - 60 minutes every 5 - 7 days should lead to a more appropriate sleep pattern.

## Medication Interventions

Parents should try a behavioral technique for at least a few weeks before assessing results, since time is needed to unlearn accustomed patterns of behavior. If one approach is not successful, another can be tried.

However, despite the use of these behavioral interventions, there are some children with autism/PDD who continue to have difficulties with sleep. This may reflect inherent problems with sleep related to autism, learned sleep behaviors that are very resistant to behavior management strategies or unexpected changes in the environment. In these situations, families may want to consider using medication.

Several options are available. For intermittent short-term sleep disturbances, diphenhydramine (Benadryl) or another sedating antihistamine is frequently used. The only frequent side effect is overstimulation and overactivity, probably due to an anticholinergic effect. Diphenhydramine is available as an over the counter medication, but should be used under a physician's guidance and dose recommendations.

Another prescription-only option in a difference class of medication is clonidine. It was originally developed as a blood pressure medication but is now used to help stabilize mood and decrease impulsivity and overactivity. It can make a child calmer prior to bedtime and, because of its side effect of making children tired, can help with sleep onset. Since regular clonidine lasts for about four hours, it will not help maintain sleep. If children have difficulties sleeping through the night, the use of a clonidine transdermal patch, worn for a period of 3 - 7 days before being changed, can be considered. The common side effects are tiredness and, sometimes, irritability. When used at bedtime in a moderate dose, there is little concern about its effect on blood pressure.

Other treatment options include Imipramine, Amitriptyline and Trazodone, all antidepressants with a sedating side effect that usually lasts throughout the night. Benzodiazepines such as diazepam and chlorazepate have also been used but have the potential for developing dependency and making individuals tired during the daytime. Since some of the antipsychotic preparations make individuals tired, low doses of these preparations (such as thioridazine, haloperidol, pimozide or risperidone) can be used.

## Melatonin

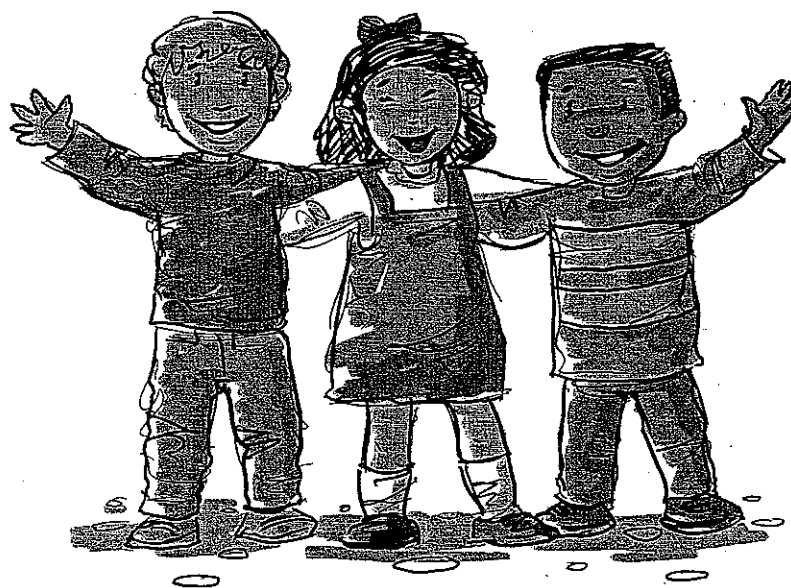
More recently, there have been many reports about the effectiveness of melatonin in helping individuals fall asleep. Melatonin is a hormone that helps regulate the sleep/awake cycle. Rising levels in the evening signal the body that it is time to sleep and help with sleep transition. Melatonin levels are determined by factors that influence the sleep/awake cycle, such as exposure to light, social interaction, noise and temperature. Since children with autism have problems with social interaction, this may have a disruptive effect on this cycle and, therefore, on sleep. Doses ranging from

0.25 - 3mg approximately 30 - 60 minutes prior to bedtime have been reported to help children with autism fall asleep. If a longer lasting effect is needed because of nighttime arousals, a sustained release preparation is available. Since Melatonin does not need a prescription, it can be obtained through local pharmacies, grocery stores or health food stores. The downside to Melatonin is that the quality of an individual preparation cannot be guaranteed, and the potential side effects of long term use are not known.

Since sleep disturbances are most prevalent in the preschool years, handling problems at that time will avoid greater difficulties as the child grows older. While studies have shown that lower-functioning individuals with autism have a greater amount of sleep disturbances, regardless of their level of mental retardation, it can be difficult at that early age to determine the functioning level of the child. Therefore, the techniques outlined above should be applied to all children, if appropriate. Consistent use of routines from an early age and quick response interventions to any change in sleep habits should help parents ensure that their child gets a full nights sleep, and can function adequately during his waking hours. And, as we parents know all too well, when our children sleep well, so can we. ■

**Dr. Max Wiznitzer specializes in autism, disorders of higher cognitive function in children and stroke in children. He is a staff physician at Rainbow Babies and Children's Hospital in Cleveland, Ohio, and presently serves as associate professor of pediatrics, neurology and international health at Case Western Reserve University, in Cleveland. His expertise on sleep disorders comes in part from 13 years of personal experience with his own children's sleep disturbances. Dr. Wiznitzer can be contacted via mail at Rainbow Babies & Childrens Hospital, 11100 Euclid Ave., Cleveland, OH 44106.**

# EVERYDAY SOLUTIONS



**A Practical Guide for Families  
of Children with Autism Spectrum Disorders**

**Mindy Small, M.A.  
Lisa Kontente, ACSW**

**CREATED BY HERBERT G. BIRCH SERVICES, INC.**

## SLEEP

### **Presenting Problem:**

Simon gets up out of bed each night shortly after being tucked in, often wanders the house, comes into his parents' bed or crawls under his own bed.

### **Possible Relevance to Autism Spectrum Disorders:**

- Varying degrees of difficulty with his five senses: taste, touch, smell, hearing, and vision (sensory input)
- Extra strong reactions to his senses (hypersensitive)
- Limited reactions to his senses (hyposensitive)

### **Suggested Strategies/Recommendations:**

- Move Simon's bed against a wall in his bedroom so he can nuzzle up to the wall.
- Provide a sleeping bag with a zipper to sleep in. This technique will provide a closed-in, secure feeling.
- Adapt Simon's sleeping area to meet his sensory needs; for example, consider providing a bean bag doll to take to bed, therapy putty to play with while resting and calm background music. This will assist the entire family in regaining routine sleep habits. Restructuring Simon's physical space accomplishes two things: (a) it clarifies where he should sleep, and (b) it accommodates his sensory needs.
- Provide Simon with the option of sleeping directly on the floor.
- Use the Power Cards strategy (see page 107) of highlighting his special interest in Scooby-Doo to assist with sleep.

### **Conclusion:**

We addressed Simon's as well as his family's needs in the least intrusive way. Accommodating Simon's sensory deficits through the use of the physical structure solved an extremely disruptive issue.

## BEDTIME

### Presenting Problem:

Latricia has difficulty getting to sleep at night.

### Possible Relevance to Autism Spectrum Disorders:

- Difficulty understanding concept of time
- Difficulty understanding verbal language
- Difficulty following verbally presented routines

### Suggested Strategies/Recommendations:

- Provide a visual structure for the bedtime routine. Use objects, photos, line drawings or the written word to establish a clear routine. For example;
  1. Wash face
  2. Brush teeth
  3. Use toilet
  4. Story time
  5. Good night kiss and hug
  6. Lights out

This routine should be individualized to meet the specific needs of the family.

- If Latricia receives daily medication, consult with the pediatrician to determine if the medication is interfering with her sleep habits and schedule.
- Use the Power Card strategy (see page 107) of incorporating Latricia's special interest, such as Rug Rats, to assist in getting her to sleep at night.
- For a child who may require less sleep, provide safe, quiet alternatives (books, music with headphones) for use in her room when the rest of the family sleeps.

### Conclusion:

While sleep is a natural ending to the daily routine, it often presents problems for individuals with ASD. The need for sleep is abstract and should be visually outlined for people with ASD. Routines often help people with ASD understand the expectations and provide a way to complete tasks that would otherwise present a challenge.

1.	wash face
2.	brush teeth
3.	use toilet
4.	story time
5.	kiss and hug
6.	turn off light

**Vignette—Example E**

**BEDTIME**

This written word-enumerated schedule helps Latricia complete her bathroom routine in preparation for bed.