

# Children and Sleep

## What's normal, what's not and can chiropractic help

BY TRACY BARNES, DC, DICCP

"He never sleeps!" complained the mother of four-month-old Brendan. "I put him down at night and an hour later, he's awake again." She is obviously distressed and has been suffering from lack of sleep. Brendan's pediatrician says that this pattern is typical and that he'll "grow out of it." This response is no help for the desperate parent. So they arrive at my office seeking chiropractic care and a "more holistic approach."

Brendan's history was relatively unremarkable. He was delivered in a vaginal, hospital birth at full-term, weighing 9 lbs. 6 oz. He breastfed successfully from birth and both his parents noted a consistent happy demeanor. His only apparent difficulty was that he repeatedly woke up in the middle of the night at intervals of 20 minutes to every one-and-a-half hours. The couple's other child slept for much longer intervals from early on and Brendan's sleep pattern was most disturbing to everyone in the home. Upon waking, Brendan was usually consoled at the breast and put back down to sleep but woke again shortly thereafter, apparently hungry again.

On evaluation in my office, Brendan was found to have a vertebral subluxation complex at the occiput-atlas level as well as a right posterior inominate. These were corrected using Diversified and Logan Basic methods and Brendan's care plan was set at a once to twice-weekly frequency for a period of two months. During the initial treatment phase, Brendan would respond with minimally improved sleep immediately after his adjustment, but the effects were not prolonged. Our frustration with the lack of intended result led us to more in-depth testing and Brendan was found to be suffering from a variety of food sensitivities. Sensitivity to wheat was most pronounced. Once his mother modified his diet, his sleep patterns improved and his frequency of need for adjustment decreased.

It has been my experience that many parents report an improvement in their children's sleep habits following an adjustment. Many will comment how well their infants and toddlers sleep on the way home from the office and that they tend to sleep better in general after an adjustment. In a recent literature search linking chiropractic care and sleep, a total of eight citations were found.

"The Effect of a Chiropractic Spinal Adjustment on Toddler Sleep Pattern and Behavior"<sup>1</sup> by Rome details the case of a 12-month-old male who was waking up seven to eight times each night. This child was described as very restless and irritable and had been prescribed Panadol by the family physician. This report noted how after the first adjustment to the C1/2 and T8/9 vertebral subluxation complexes, the child slept for seven straight hours. This positive effect of the chiropractic adjustment on the child's disturbed sleep patterns was consistent, according to Dr. Rome, at a follow-up visit of 18 months. Dr. Rome's report also notes a similar improvement in the sleep pattern of a four-month-old infant who slept for up to 11 hours following an upper cervical adjustment. Several other articles note the presence of improved sleep habits following adjustment.<sup>2,3</sup>

My purpose for this paper is not to present a standard case study, but instead I seek to

explore the question, "What is a normal sleep pattern for a child?" As primary care providers for children of all ages, chiropractors can play an essential role in alleviating parents' fears about "doing the right thing" with their child. Helping a parent to understand what is normally expected behavior can be immensely helpful. With this in mind, let us explore the world of sleep and children.



### The REM story

There are two distinctly different forms of sleep. They are rapid eye movement sleep (REM sleep, also sometimes known as paradoxical sleep) and non-REM or slow wave sleep (SWS). Active dreaming occurs during REM sleep and the sleeper's eyes often move rapidly under partially open or closed eyelids. This sleep state is generally a stage

where heart and respiratory rate become irregular and there is extreme inhibition of the peripheral muscles. The brain is in a high state of activity during REM and thus the "paradox" of the asleep state along with marked brain activity.

Slow-wave sleep (SWS) is characterized by a deep, restful sleep that is associated with a decrease in both peripheral vascular tone and other vegetative functions of the body. Blood pressure, respiratory rate and basal metabolic rate decrease by 10 to 30 percent and although dreams and nightmares can occur during this phase, they are generally not remembered. SWS occurs on four different levels and has characteristic EEG patterns.<sup>4</sup>

Sleep progresses through four known phases throughout the night for children and adults. We move from the awake state to gradually deeper levels of non-REM sleep and then back through these phases to the first period of REM sleep, which lasts approximately 10 minutes. Then the cycle is repeated.

Infants spend about 50% of their sleep time in non-REM sleep and 50% in REM sleep. Adults spend about 20% of their sleep time in REM and 80% in non-REM sleep. Elderly people spend less than 15% of their sleep time in REM sleep.

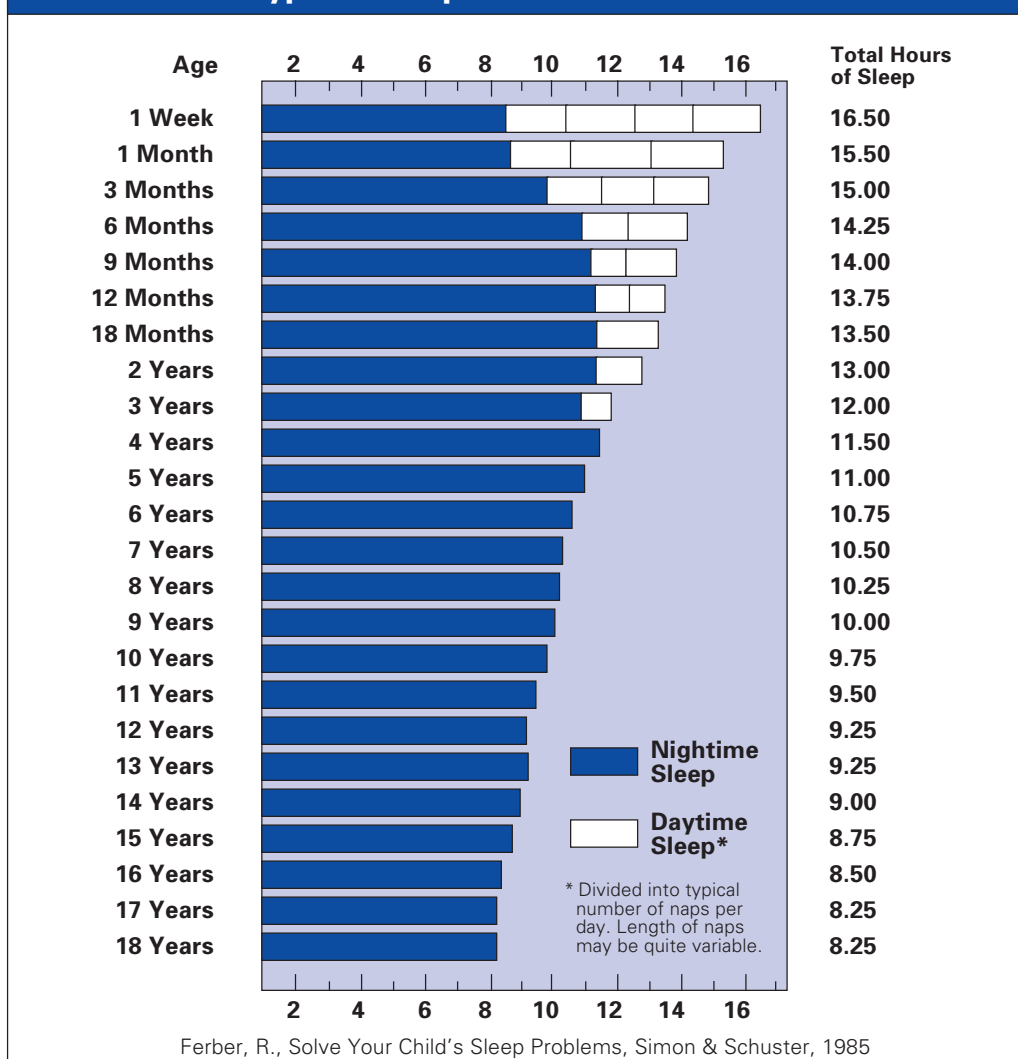
Many sleep researchers believe that the function of REM sleep is to allow for brain maturation. Perhaps it is that the innate intelligence of the body is providing our children with the ability to grow and mature in the needed sleep state of youth.<sup>5</sup>

### Lullaby and good-night...

Let's be clear with the parent's who come to us. Children wake during the night. They

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Table 1. Typical Sleep Patterns in Childhood



THE CHIROPRACTIC CHOICE