Understanding Sleep Health in Families of Infants

Infant sleep is related to infant development, caregiver sleep, caregiver mental health, and family relationships. The quantity, quality, and nature of sleep health information can be overwhelming for caregivers to navigate on their own. It is therefore important that concerns about infant sleep be identified, assessed, and addressed by home visiting public health nurses. This resource explores essential information for home visiting staff required to support families in making sleep-related decisions.

Sleep Terms

Active Sleep

Characterized by increased body movement, irregular respirations, movement of the face (including smiling) and eyes under the eyelids, increased responsiveness, fussing or crying sounds. It is typically easy to awaken baby in this sleep state.

Circadian Rhythm

A pattern of physical, mental and behavioural changes that occur over a 24-hour cycle. Circadian rhythms are influenced by light/dark and other environmental factors, food intake, stress, physical activity, and temperature. Circadian rhythms influence important body functions including the release of hormones (cortisol, melatonin). Not well-developed at birth, usually developed by 2-3 months of age, delayed in premature infants.

Drowsy

This is a transitional state between awake and asleep characterized by variable activity, delayed responsiveness, irregular respirations, and eyes that appear glazed/unfocused and may open and close. It can be difficult to tell if baby is awake or asleep in this state. Baby may return to sleep if left alone.

Homeostatic Sleep Drive (or Sleep Pressure):

Pressure for sleep that builds up in the body as the time awake increases. The pressure gets stronger the longer a person stays awake and decreases during sleep, reaching a low after a full night of good-quality sleep. In the newborn period, this is the main driver of sleep.

Nocturnal Wakefulness

The total duration of time, or occurrences, of being awake during the night.

Quiet Sleep

Characterized by lack of body activity, smooth, regular respirations, lack of facial or eye movements. In this state, baby may occasionally startle but is generally unresponsive. It is very difficult to awaken baby in this sleep state and if awakened, baby quickly returns to sleep.

Sleep Associations

Conditions a child learns to need to fall asleep (such as rocking, nursing, white noise, or lying next to a caregiver). These same sleep associations are then required to fall back to sleep.

Sleep Efficiency

Amount of sleep a person actually gets, divided by the total amount of time a person is sleeping and trying to sleep. Impacted by sleep timing, personal characteristics (age, temperament, clarity of cues), and environmental conditions (e.g., screen time exposure).

Sleep Latency

The time it takes to fall asleep.

Domains of Pediatric Sleep Health

There are six domains of pediatric sleep health[1] that can be explored with families.

The table below provides evidence-informed expectations and foundational knowledge on the domains of pediatric sleep health. This information can be used in conjunction with *Assessing Sleep Health in Families*, and *Interventions to Promote Sleep* resources from PHN-PREP.

Sleep Health Domain	Typical Expectations	Foundational Knowledge
Duration	• 0-3 months: 14-17 hours of sleep per 24 hours • 4-11 months: 12-16 hours of sleep per 24 hours • 1-2 years: 11-14 hours of sleep per 24 hours[2]	✅ The specific amount of sleep considered adequate varies based on individual need ✅ As nighttime sleep duration increases, daytime sleep duration decreases
Timing	• At birth: sleep occurs at all times ("around the clock") • 2-3 months and older: sleep consolidates to occur more overnight than during the day[3]	✅ The proportion of infants who "sleep through" the night depends on how it is defined ✅ About 2/3 of infants aged 6 months will sleep for an 8 hour stretch at nighttime[3]
Efficiency	Efficiency can be affected by: ***Sleep Latency:*** • 0-3 months: average of 40 minutes • 12 months: average of 22 minutes • All other ages: 15 – 30 minutes ***Nocturnal Wakefulness:*** • 0-3 months: ranges from 1.15 hours (+/- 1 hour) • After the newborn period, infants spend less than 1 hour (total) awake per night • 9-11 months: 20 minutes (+/- 30 minutes)	✅ It is normal to wake through the night ✅ Sleep latency is influenced by **sleep associations** and the presence or absence of these conditions ✅ Babies learn to combine sleep cycles, consolidating sleep periods, and improve sleep efficiency over time

Sleep Health Domain	Typical Expectations	Foundational Knowledge
Alertness During Waking Hours	The average number of naps per day: • 0-5 months: 3 (range of 1-5) naps • 6-12 months: 2 (range of 1-3.5) naps • 1-2 years: 1 (range of 0.5-2) naps[4]	✅ Napping is developmentally appropriate for infants ✅ The amount of wakefulness (quiet alert and active alert states) between naps depends on infant age, environment, routines, and quality of previous sleep
Satisfaction and Quality	• About 20-30% of parents consider their infant's sleep to be a problem[5]	✅ Parental **satisfaction** of infant sleep can be influenced by parenting values, parental mood and mental health, and socio-cultural expectations ✅ Parental perception of **sleep quality** is influenced by the infant's sleep latency, incidence of nocturnal wakefulness, and the length of the longest stretch of nighttime sleep
Sleep Promoting Behaviours & Environments	***Sleep promoting behaviours:*** • Consistent and regular sleep opportunities • Consistent use of pre-sleep routines • Sleep associations that are sustainable for the child and family ***Sleep-promoting environments:*** • Reduced exposure to bright light, including light from electronic screens and caregiver devices • Dark and cool sleeping environment	✅ Babies learn to fall asleep ✅ As babies mature, they develop **sleep associations** ✅ Regular, consistent, and sustainable sleep associations are key for sleep health

Factors That May Influence Sleep

There are several factors to consider when discussing sleep health with families. The interaction of these factors influence the sleep of the individual and members of the family unit and may change over time.

Infant

- Current age & gestational age at birth
- Temperament
- Development, including learning new motor skills or developing separation anxiety
- Concerns regarding regulation (e.g., difficulties with feeding, sleeping, and crying)
- Concerns about development and/or physical growth (e.g., difficulties with feeding and/or weight gain, risk for nutritional deficiencies)
- Ability to provide clear cues and responsiveness to caregiver
- Caregiver reports of snoring and/or breathing difficulties during sleep

Parental

- History of sleep difficulties (e.g., insomnia during or before pregnancy, sleep apnea) and/or restless sleep)
- Mental health concerns
- Use of medications and/or supplements

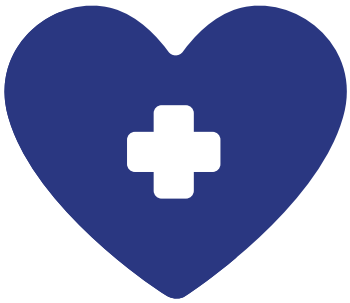
Familial

- Infant-caregiver interactions & relationships
- Involvement of caregiving partners and/or additional social supports
- Daily routines & schedules
- Physical home characteristics and sleeping spaces

Socio-Cultural

- Caregiving values and practices
- Sleep-related beliefs
- Time zone changes
- Daylight savings time

NOTE: Snoring or breathing difficulties during sleep, feeding or weight gain concerns, and/or multiple regulatory concerns (feeding, sleeping and/or crying) are strong indicators of further assessment being required by a health care provider.



See *Assessing Sleep Health in Families* for examples of questions to ask to uncover how these factors may be affecting an individual family.

Resources

Keys, Elizabeth. (2024). Promoting and Supporting Sleep Health in Families of Infants, via PHN-PREP Webinar, originally aired February 14, 2024. Recording retrieved: https://www.youtube.com/watch?v=2yOMIGOyqD8

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References

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[5] Cook, F., Conway, L. J., Giallo, R., Gartland, D., Sciberras, E., & Brown, S. (2020). Infant sleep and child mental health: A longitudinal investigation. Archives of Disease in Childhood, 105(7), 655-660.

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