

Supplemental Information

INFANT QUESTIONNAIRE (6- AND 12-MONTH TIME POINTS)

Instructions: Now I'm going to ask you some questions about (infant's name)'s sleeping habits over the past month. Please think about the past month when answering these questions.

Questions and Response Options	Response Pattern (% of respondents or mean \pm SD)	
	6 mo	12 mo
Nonspecific sleep problem question		
Overall, do you think that (name) has sleeping problems?		
Yes	9.6	10.3
No	90.4	89.7
Sleep onset latency		
Some parents have a routine that they follow to prepare their children for bed at night. This may include a bath, reading a book, or other activities. Thinking about the period of time that occurs after this routine has been finished, over the past month, how long has it usually taken to get (name) to sleep at night, on average?		
<10 min	37.1	37.0
10–19 min	33.9	31.8
20–29 min	14.1	12.2
30–39 min	8.3	9.6
40–49 min	1.7	2.3
50–59 min	1.1	0.9
\geq 1 h	3.7	6.1
On average, over the past month, how many times a week have you had problems getting (name) to sleep at night?		
No problems	43.8	43.8
Problems less than once a week	15.7	13.5
Problems 1 night a week	17.4	18.1
Problems 2 nights a week	9.8	9.7
Problems 3 nights a week	5.3	5.7
Problems 4 nights a week	2.5	3.2
Problems 5 nights a week	2.8	1.1
Problems 6 nights a week	0.0	0.6
Problems every night of the week	2.4	4.3
Sleep maintenance		
On average, over the past month, how many nights a week has (name) woken when he or she sleeps?		
None	17.4	21.8
Less than once a week	10.7	12.6
1 night a week	13.5	8.0
2 nights a week	7.9	10.9
3 nights a week	8.7	8.3
4 nights a week	2.2	3.7
5 nights or more a week	3.1	3.7
Every night of the week	2.2	2.0
On average, over the past month, how many times has (name) woken each night?		
Never	17.7	21.8
Less than once a night	9.8	10.3
Once a night	44.7	47.6
Twice a night	18.0	14.0
3 times a night	8.7	3.7
4 times a night	0.8	1.7
5 or more times a night	0.3	0.9
24-h sleep duration		
On average, over the past month, how much time does (name) spend sleeping each night?	9.6 \pm 1.7 h	10.2 \pm 1.5 h
On average, how much time does (name) spend napping each day?	3.0 \pm 1.5 h	2.5 \pm 1.0 h

Continued

Questions and Response Options	Response Pattern (% of respondents or mean \pm SD)	
	6 mo	12 mo
Naps		
On average, over the past month, how many days per week has (name) napped during the day?	6.9 \pm 0.7	6.9 \pm 0.7
On average, over the past month, how many naps has (name) taken per day?	2.6 \pm 0.9	1.7 \pm 0.6
Sleep location		
On most nights over the past month, where has (name) slept most of the night?		
Own bed, crib, or bassinette	80.9	81.9
Sibling's bed	0.6	0.0
Parent's bed	16.6	17.2
Other	2.0	0.9
If (name) sleeps in your bed at night, is this where he or she is initially laid down to sleep?		
Yes	13.2	12.3
No/doesn't sleep in parent's bed at night	86.8	87.7
Restlessness and vocalization		
On average, over the past month, how many nights per week have you seen or heard (name) talking or vocalizing during sleep?		
Never	54.5	59.6
1–2 nights	24.4	26.9
3–4 nights	8.7	6.0
5–7 nights	12.4	7.4
On average, over the past month, how many nights per week have you seen or heard (name) being restless or moving around during sleep?		
Never	26.4	26.9
1–2 nights	30.3	28.4
3–4 nights	16.9	12.3
5–7 nights	26.4	32.4
Nightmares/night terrors		
On average, over the past month, how many nights per week have you seen or heard (name) wake up sweating, screaming, and inconsolable during sleep?		
Never	84.8	86.2
1–2 nights	13.5	12.4
3–4 nights	0.6	1.1
5–7 nights	1.1	0.3
Snoring		
On average, over the past month, how many nights per week have you seen or heard (infant's name) snoring loudly during sleep?		
Never	70.2	65.6
1–2 nights	17.4	18.6
3–4 nights	5.9	6.9
5–7 nights	6.5	8.9

PRESCHOOL QUESTIONNAIRE (24- AND 36-MONTH TIME POINTS)

Instructions: The following statements are about your child's sleep habits and possible difficulties with sleep. Think about the past week. Was this a typical week for your child's sleep or was there something that made it unusual? If typical, then think about this past week when you answer the questions. If last week was unusual for a specific reason, choose the most recent typical week.

Questions and Response Options	Response Pattern (% of respondents or mean \pm SD)	
	6 mo	12 mo
Nonspecific sleep problem question		
Overall, do you think that (name) has sleeping problems?		
Yes	9.5	10.0
No	90.5	90.0
Sleep onset latency		
How often does [name] fall asleep within 20 min after going to bed?		
5–7 times per week	64.3	52.6
2–4 times per week	24.5	28.9
0–1 times per week	11.2	18.5

Continued

Questions and Response Options	Response Pattern (% of respondents or mean \pm SD)	
	6 mo	12 mo
How often does [name] resist going to bed at bedtime?		
5–7 times per week	15.6	23.7
2–4 times per week	34.7	30.7
0–1 times per week	49.7	45.6
How often does [name] struggle at bedtime (cries, refuses to stay in bed, etc)?		
5–7 times per week	9.5	10.4
2–4 times per week	26.5	28.5
0–1 times per week	63.9	61.1
How often is [name] ready to go to bed at bedtime?		
5–7 times per week	57.5	45.2
2–4 times per week	29.9	31.1
0–1 times per week	12.6	23.7
Sleep maintenance		
How often does [name] wake up once during the night?		
5–7 times per week	17.3	12.6
2–4 times per week	32.3	34.8
0–1 times per week	50.3	52.6
How often does [name] wake up more than once during the night?		
5–7 times per week	5.2	3.0
2–4 times per week	12.4	8.1
0–1 times per week	82.4	88.9
24-h sleep duration		
What is [name]'s usual amount of sleep each day combining nighttime sleep and naps:	12.5 \pm 1.5 h	11.8 \pm 1.3 h
Naps		
How often does [name] nap during the day?		
5–7 times per week	88.4	63.3
2–4 times per week	9.2	24.4
0–1 times per week	2.4	12.2
Sleep location		
How often does [name] fall asleep alone in his or her own bed?		
5–7 times per week	63.6	62.5
2–4 times per week	10.2	11.5
0–1 times per week	26.2	26.0
How often does [name] fall asleep in parent's or sibling's bed?		
5–7 times per week	18.4	18.9
2–4 times per week	9.5	11.5
0–1 times per week	72.1	69.6
Restlessness and vocalization		
How often does [name] talk or vocalize during sleep?		
5–7 times per week	9.9	9.3
2–4 times per week	24.5	24.4
0–1 times per week	65.6	66.3
How often is [name] restless and moving a lot during sleep?		
5–7 times per week	22.4	15.6
2–4 times per week	27.2	31.1
0–1 times per week	50.3	53.3
Nightmares/night terrors		
How often does [name] awaken during the night and is sweating, screaming, and inconsolable?		
5–7 times per week	1.0	0.0
2–4 times per week	5.1	2.6
0–1 times per week	93.9	97.4
How often does [name] awaken alarmed by a frightening dream?		
5–7 times per week	0.7	0.0
2–4 times per week	12.2	7.8
0–1 times per week	87.1	92.2
Snoring		
How often does [name] snore loudly?		
5–7 times per week	5.4	6.7
2–4 times per week	15.3	15.6
0–1 times per week	79.3	77.8

SUPPLEMENTAL TABLE 5 Comparison of White and African American Children's Sleep Scores at 6, 12, 24, and 36 Months

Parent-report of sleep problem, %	6 mo		12 mo		24 mo		36 mo	
	White	Af Am	White	Af Am	White	Af Am	White	Af Am
Sleep domain scores	9.4	10.8	10.4	10.5	8.7	12.9	8.8	9.7
Sleep onset latency	0.29** (-0.23, 0.76)	-0.05 (-0.88, 0.48)	0.33*** (0.02, 0.81)	-0.22 (-0.84, 0.29)	0.40*** (-0.30, 0.76)	-0.31 (-1.1, 0.38)	0.26*** (-0.42, 0.88)	-0.37 (-1.1, 0.35)
Sleep maintenance	0.00 (-0.63, 0.88)	-0.21 (-0.63, 0.47)	0.03 (-0.76, 0.75)	-0.06 (-0.76, 0.75)	0.00 (-0.38, 0.66)	0.00 (-0.95, 0.66)	-0.12 (-0.12, 0.59)	0.59 (-0.64, 0.59)
24-h sleep duration	0.18** (-0.25, 0.18)	-0.68 (-1.1, 0.18)	0.19*** (-0.36, 0.74)	-0.36 (-1.5, 0.19)	0.31*** (-0.36, 0.64)	-0.36 (-1.4, 0.31)	0.20** (-0.60, 0.20)	-0.20 (-0.99, 0.20)
Naps	-0.24 (-0.24, 0.34)	-0.24 (-0.24, 0.34)	0.31 (-0.56, 0.31)	0.31 (-0.56, 0.31)	0.34 (0.34, 0.34)	0.34 (0.34, 0.34)	0.69 (-0.73, 0.69)	0.69 (-0.73, 0.69)
Sleep location	0.44*** (0.44, 0.44)	0.44 (-2.3, 0.43)	0.42*** (0.42, 0.42)	0.42 (-2.4, 0.42)	0.65*** (0.08, 0.65)	-0.84 (-1.8, 0.65)	0.68*** (0.05, 0.67)	-0.53 (-1.7, 0.68)
Restlessness and vocalization	0.09** (-0.31, 0.57)	-0.31 (-0.79, 0.57)	0.00 (-0.32, 0.55)	0.13 (-0.28, 0.55)	0.03 (-0.59, 0.78)	0.16 (-0.46, 0.78)	0.07 (-0.60, 0.75)	0.07 (-0.69, 0.75)
Nightmares/night terrors	0.38** (0.38, 0.38)	0.38 (0.38, 0.38)	0.37 (0.37, 0.37)	0.37 (0.37, 0.37)	0.31 (0.31, 0.31)	0.31 (0.31, 0.31)	0.23 (0.23, 0.23)	0.23 (0.23, 0.23)
Snoring	0.56*** (0.56, 0.56)	0.56 (-0.59, 0.56)	0.62*** (-0.43, 0.62)	-0.43 (-1.5, 0.62)	0.48*** (0.48, 0.48)	0.48 (-1.3, 0.48)	0.50*** (0.50, 0.50)	0.50 (-1.2, 0.50)

Af Am, African American. Parent-report of sleep problem is expressed as a percent of parents endorsing this item in each subsample. Sleep domain score items had differing response options, so we converted each item's response set to a common z score metric relative to the cohort mean and SD at each time point. Sleep domain scores are presented as median (25th percentile, 75th percentile) z scores for each subsample. Mann-Whitney U test significance values. **P* < .05. ***P* < .01. ****P* < .001 for significance between white and African American subsamples within each time point. White children were reported to display shorter sleep onset latency, more sleep in a 24-h period, greater proportion of sleep in the child's own crib/bed, and less snoring.

SUPPLEMENTAL TABLE 6 Correlations Between Family Income and Sleep Domain Scores at 6, 12, 24, and 36 Months

	6 mo	12 mo	24 mo	36 mo
Parent-report of sleep problem	0.01	0.01	-0.02	0.02
Sleep onset latency	0.26***	0.30***	0.30***	0.21**
Sleep maintenance	0.06	0.03	0.04	0.04
24-h sleep duration	0.36***	0.37***	0.17**	0.20**
Naps	-0.02	-0.04	0.21***	0.13*
Sleep location	0.40***	0.38***	0.40***	0.31***
Restlessness and vocalization	0.08	-0.02	-0.07	0.07
Nightmares/night terrors	0.20***	0.03	0.01	0.00
Snoring	0.18**	0.30***	0.31***	0.26***

Spearman rank-order correlations are presented, with * $P < .05$, ** $P < .01$, *** $P < .001$. Higher family income was associated with shorter sleep onset latency, more sleep in a 24-h period, greater proportion of sleep in the child's own crib/bed, and less snoring.