HNRNPH2 Sleep Survey

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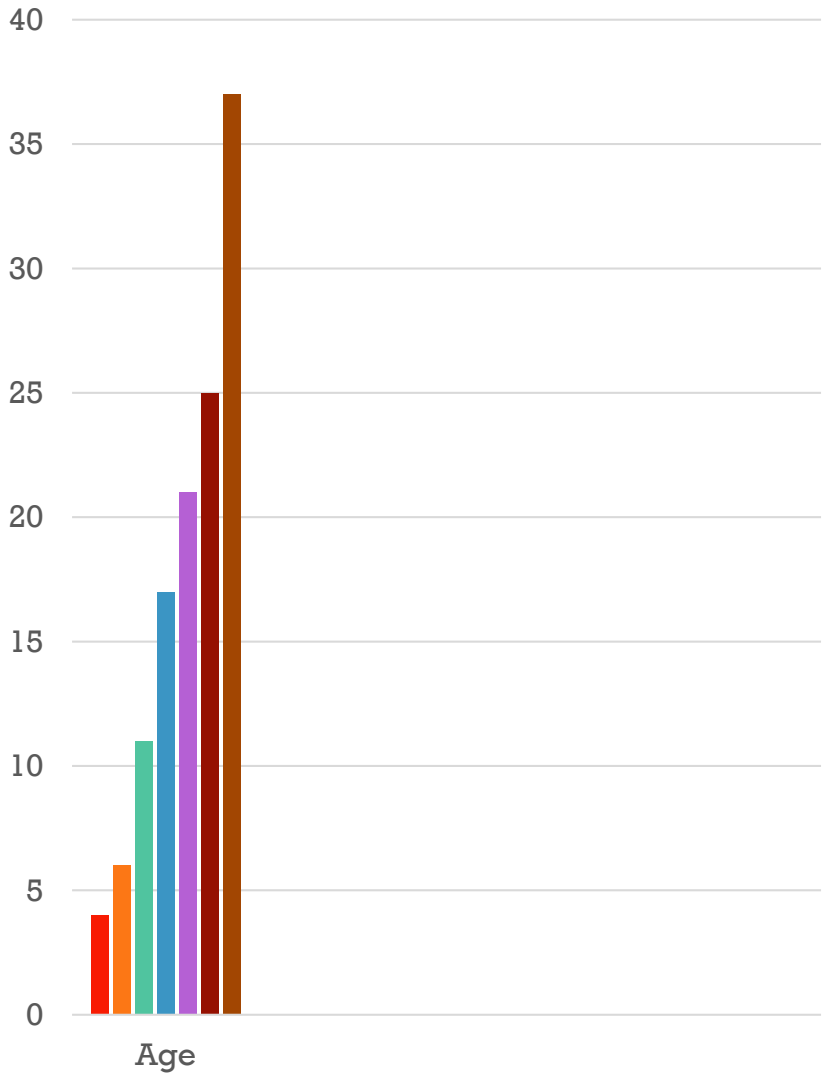
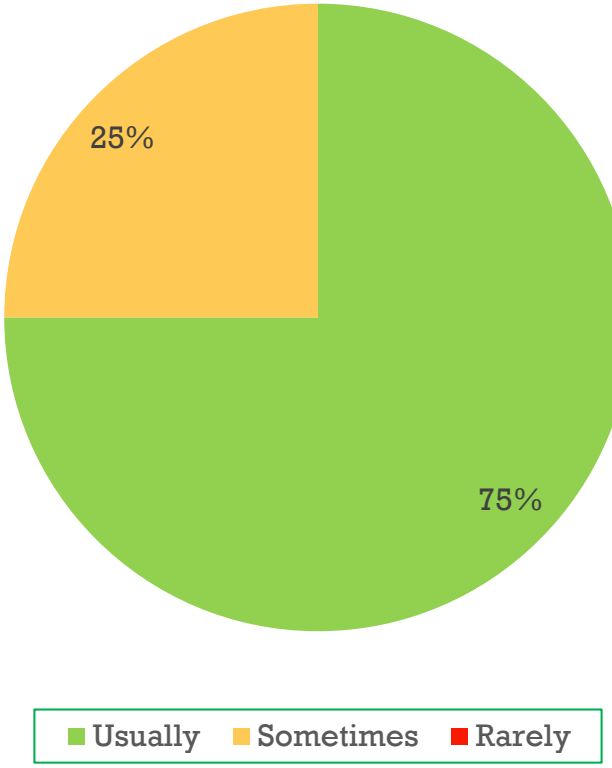
BEARS

- B, bedtime problems
- E, excessive daytime sleepiness
- A, awakenings during the night
- R, regularity and duration of sleep
- S, sleep-disordered breathing

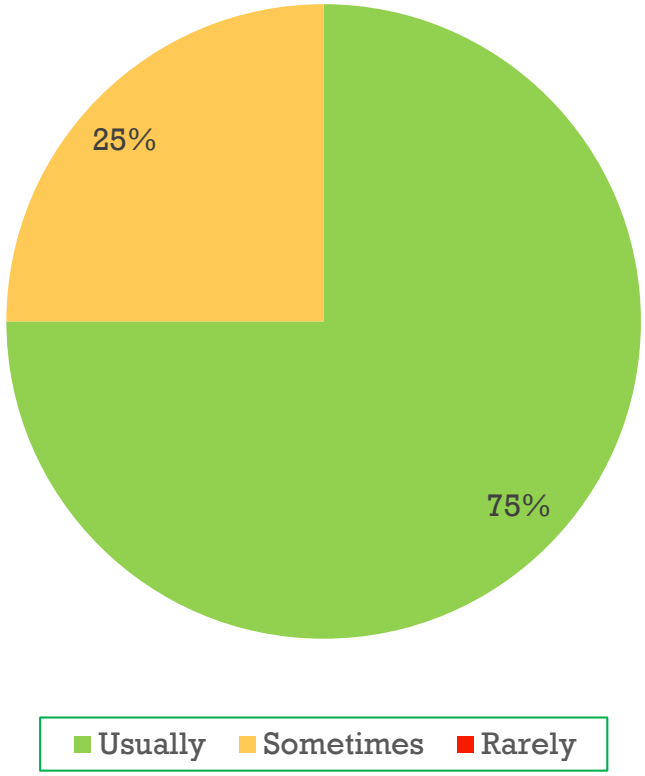
HNRNPH2 Sleep survery Age (4-37)



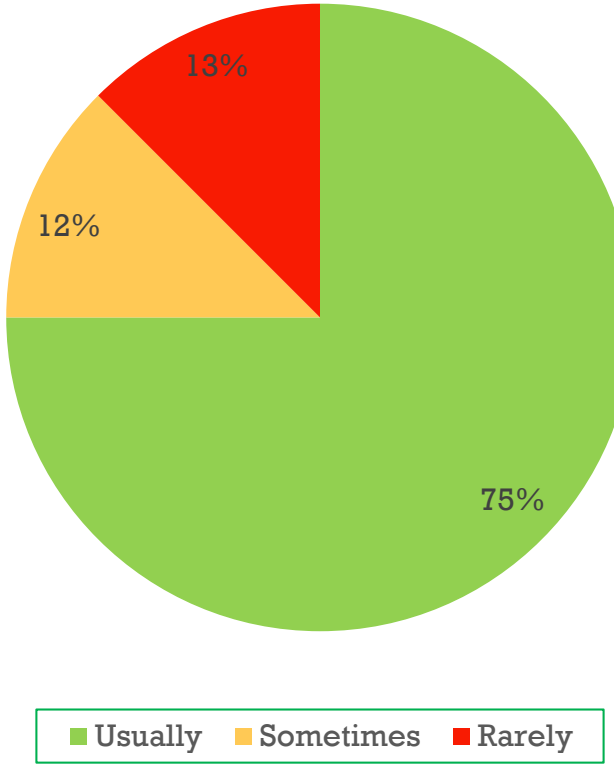
Child goes to bed at the same time at night



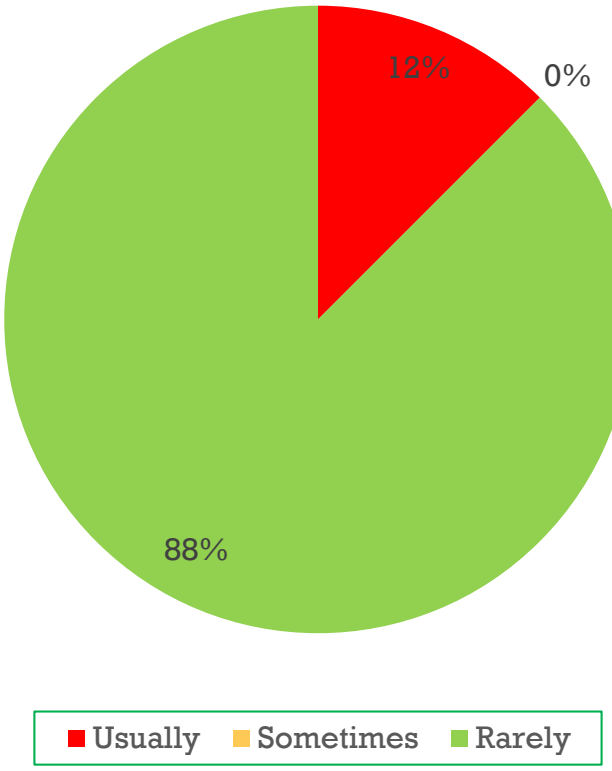
Child falls asleep within 20 minutes after going to bed



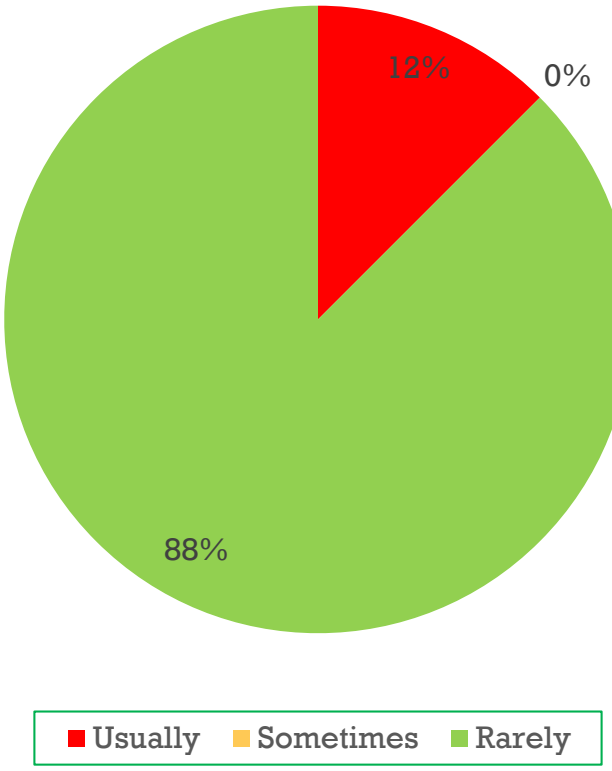
Child falls asleep alone in own bed



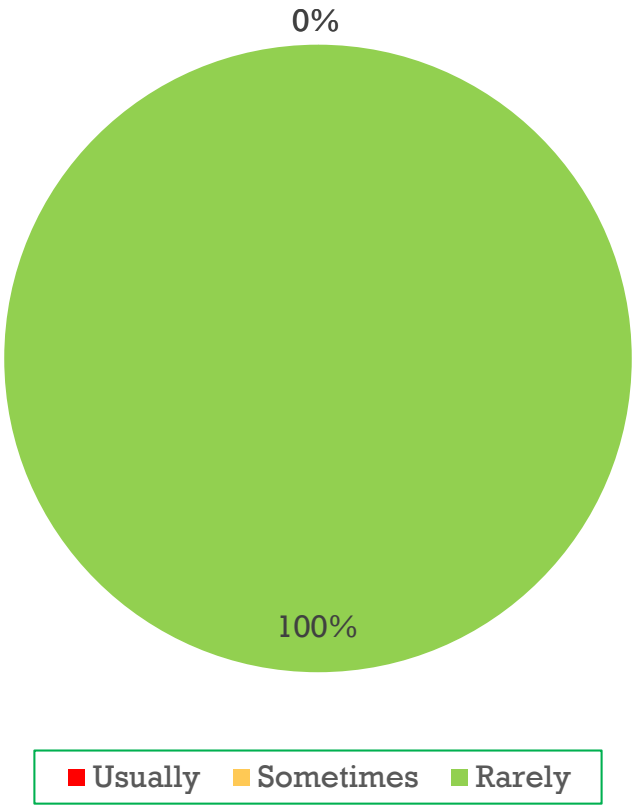
Child falls asleep in parent's or sibling's bed



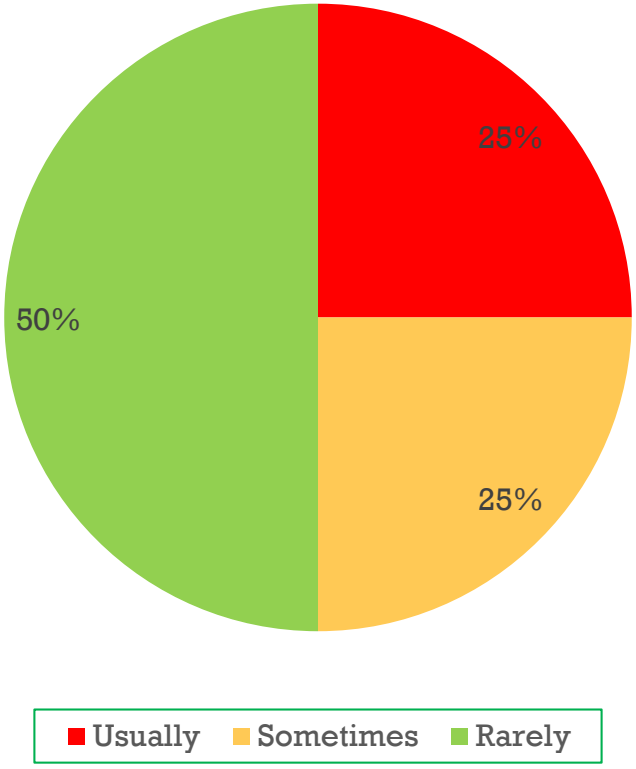
Child falls asleep in parent's or sibling's bed



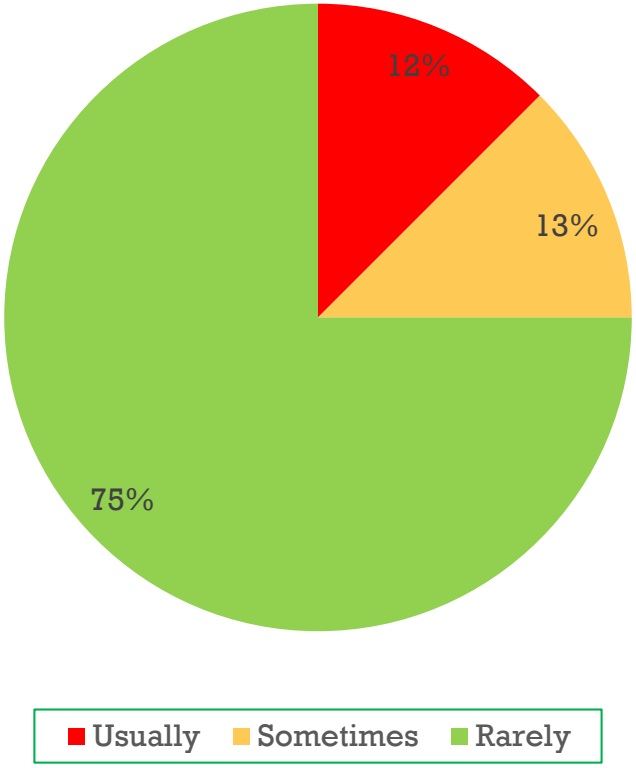
Child falls asleep with rocking or rhythmic movements



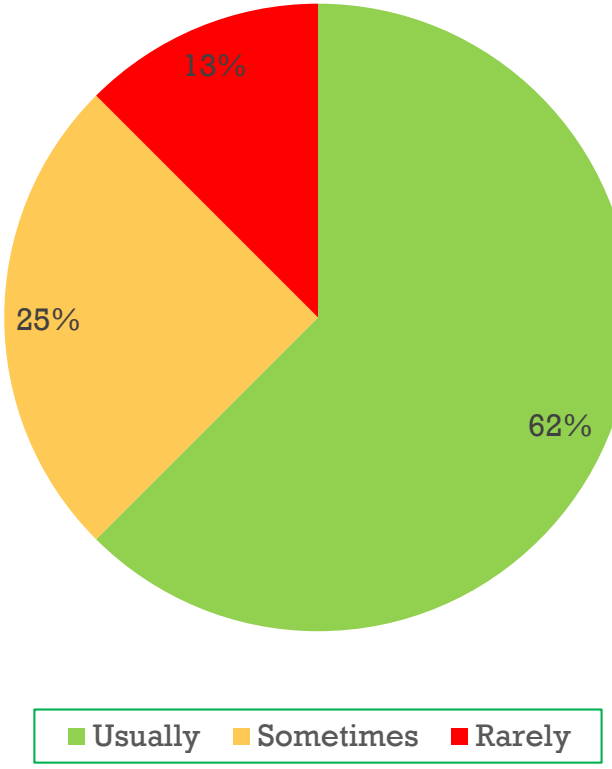
Child needs special object to fall asleep



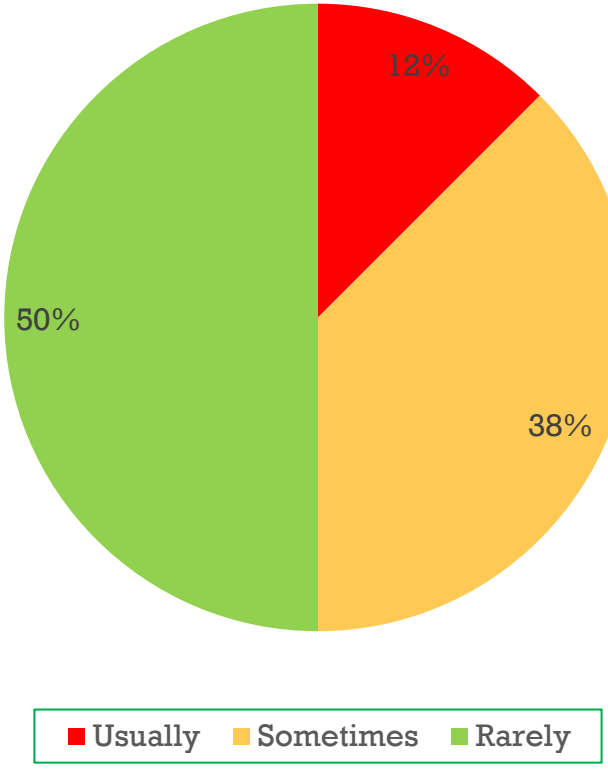
Child needs parent in the room to fall asleep



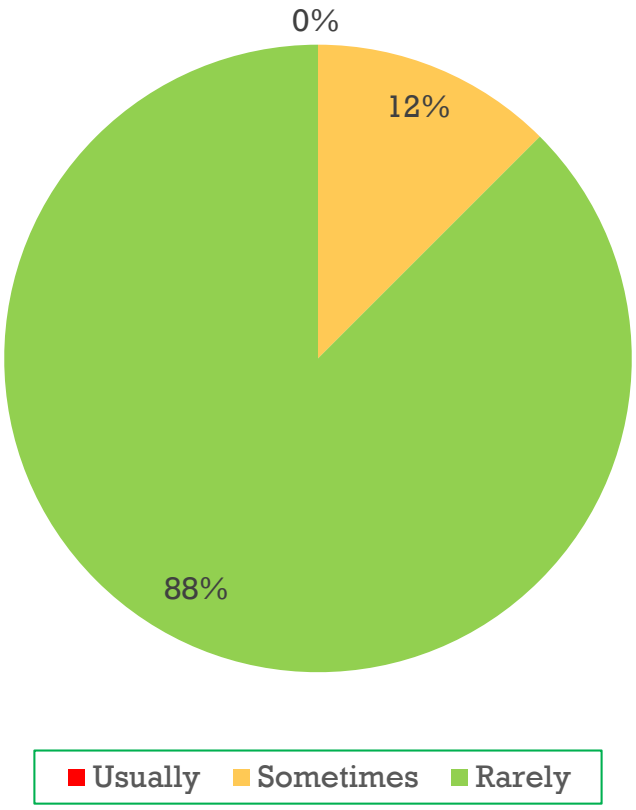
Child is ready to go to bed at bedtime



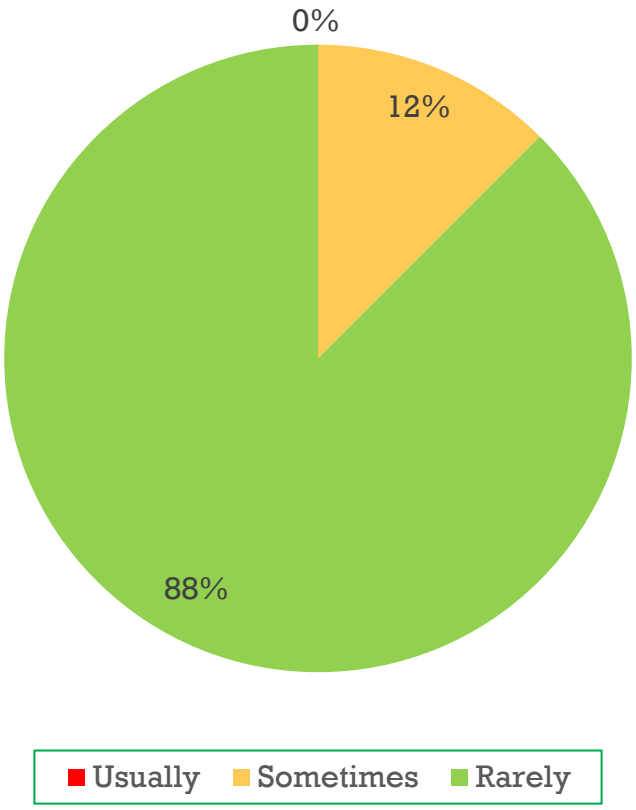
Child resists going to bed at bedtime



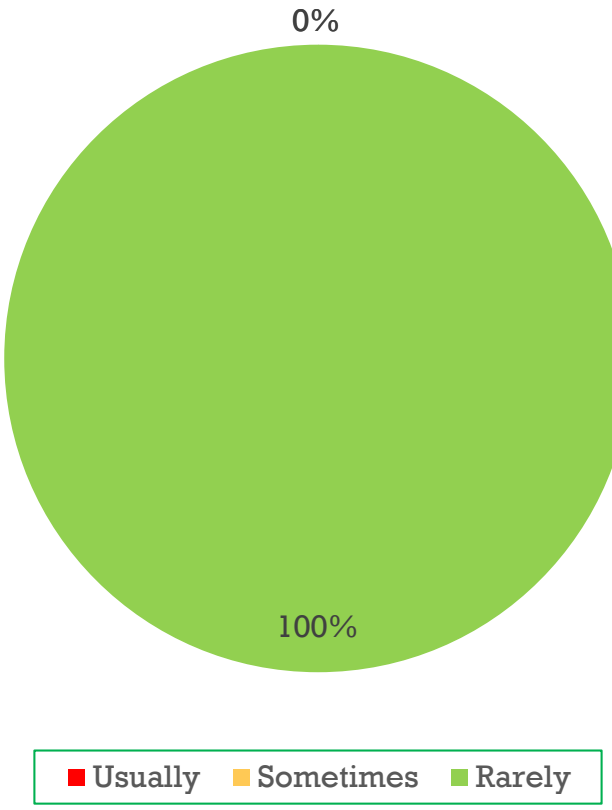
Child struggles at bedtime



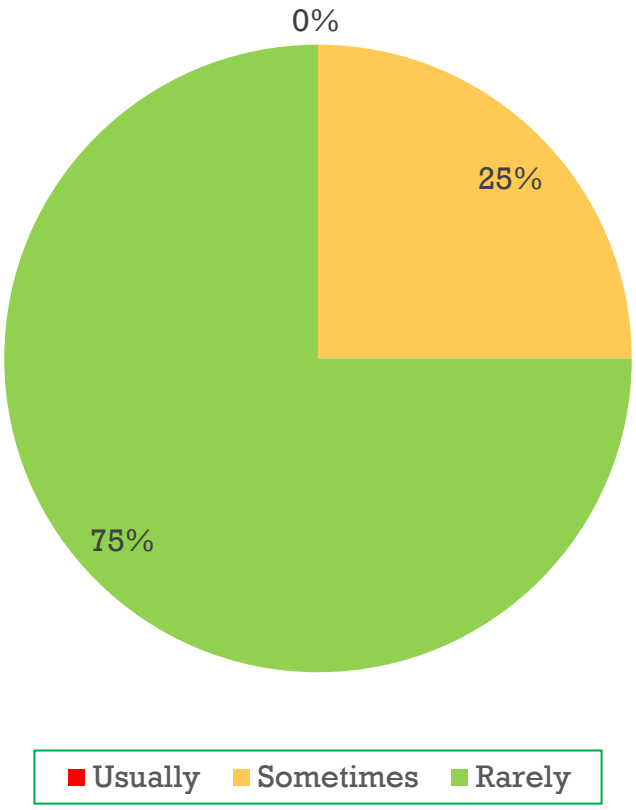
Child is afraid of sleeping in the dark



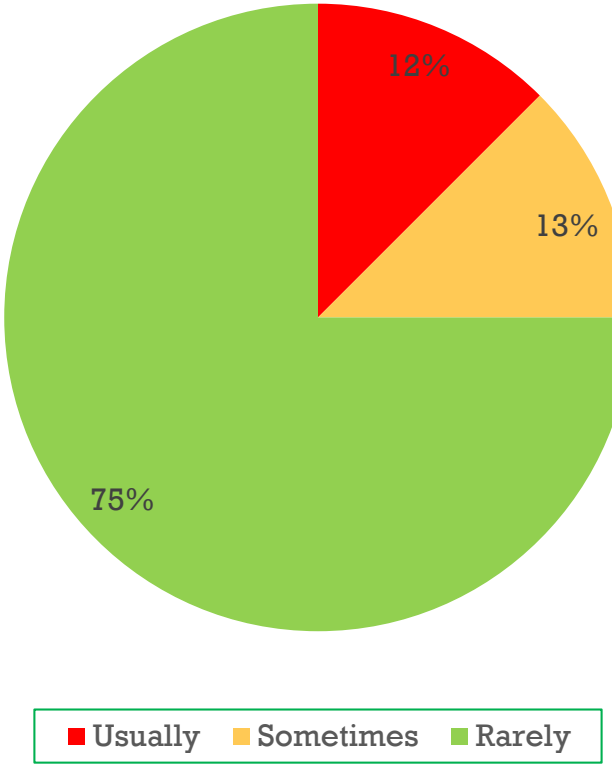
Child is afraid of sleep alone



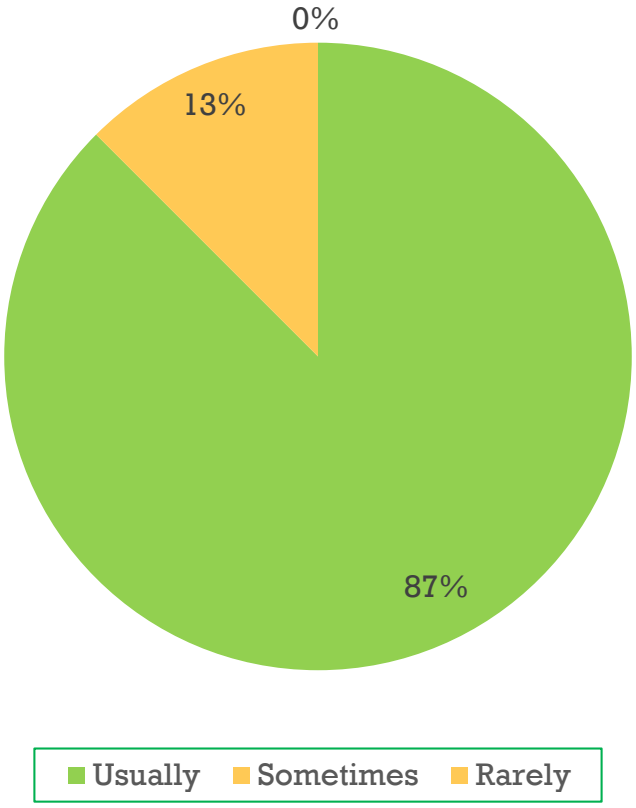
Child sleeps too little



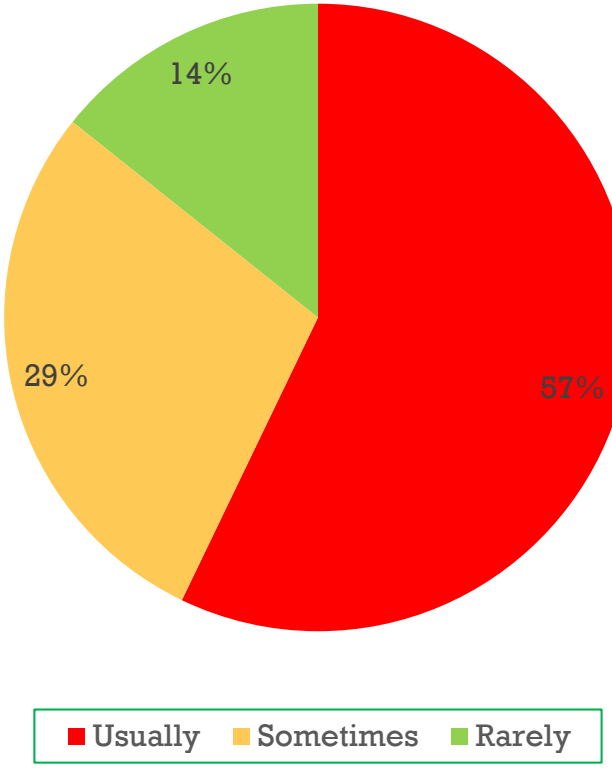
Child sleeps too much



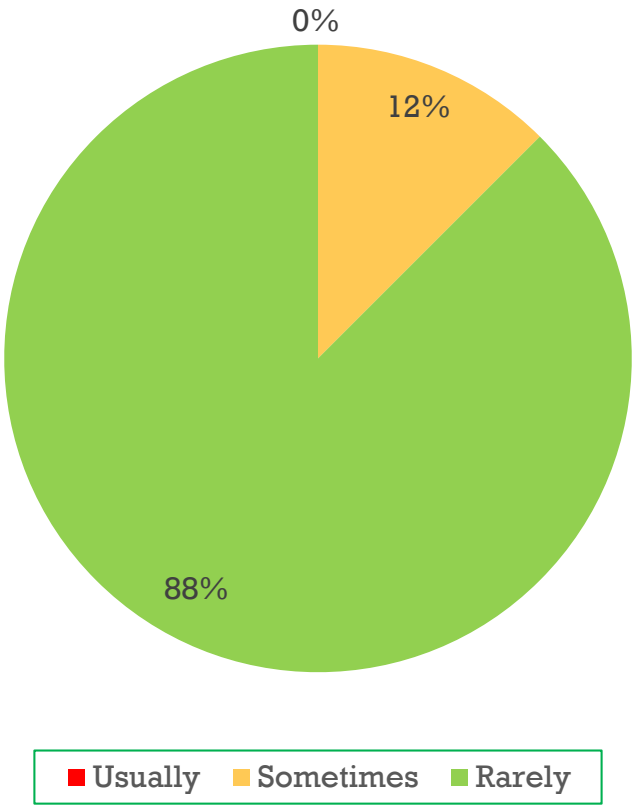
Child sleeps about the same amount each day



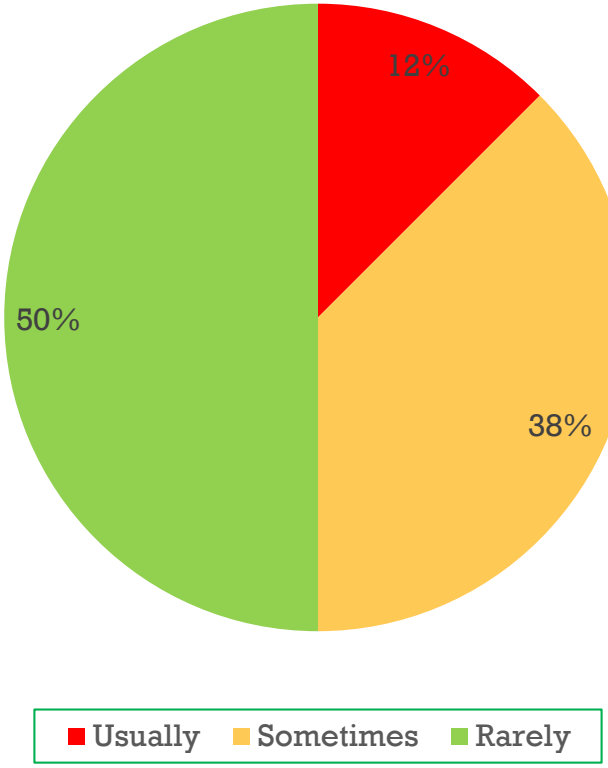
Child wets the bed at night



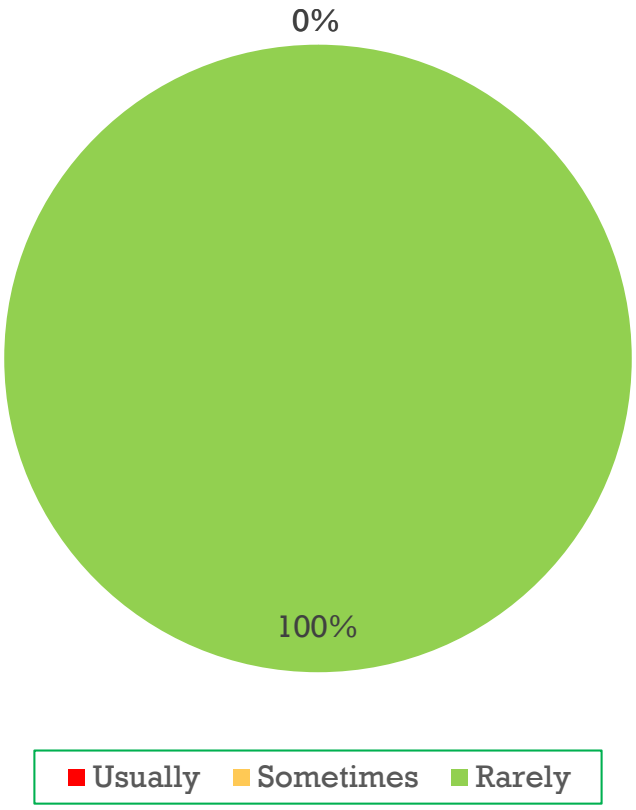
Child talks during sleep



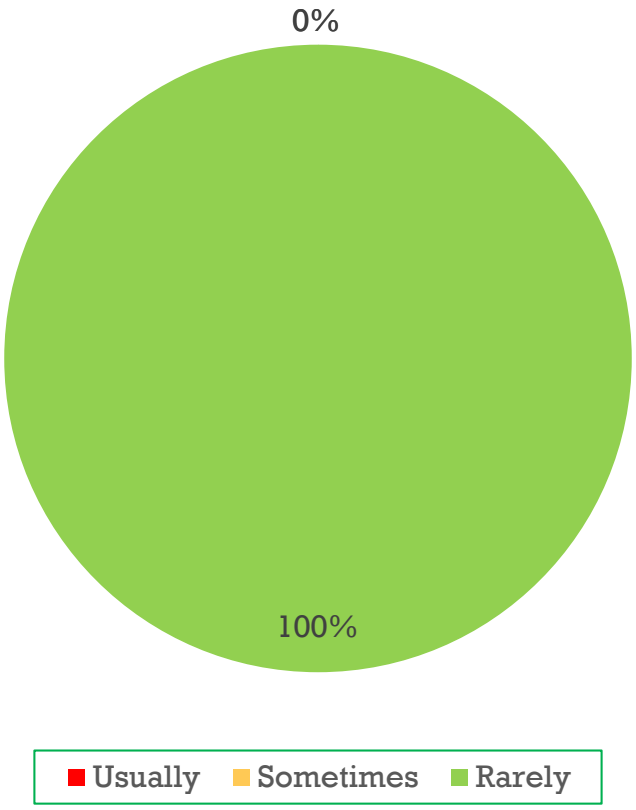
Child is restless and moves a lot during sleep



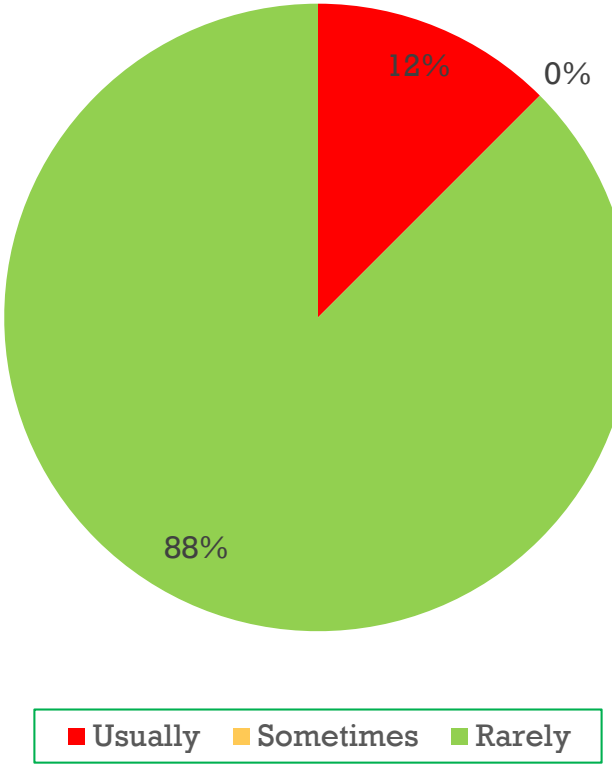
Child sleepwalks during the night



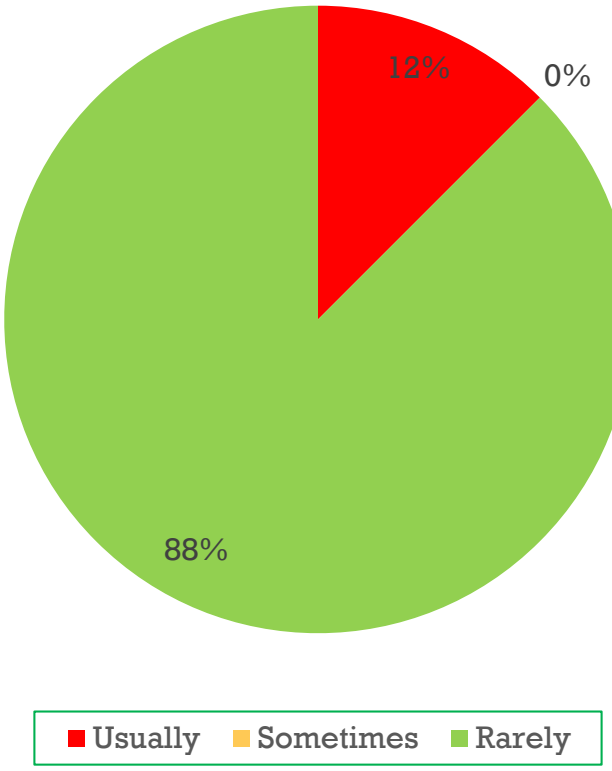
Child moves to someone else's bed during the night



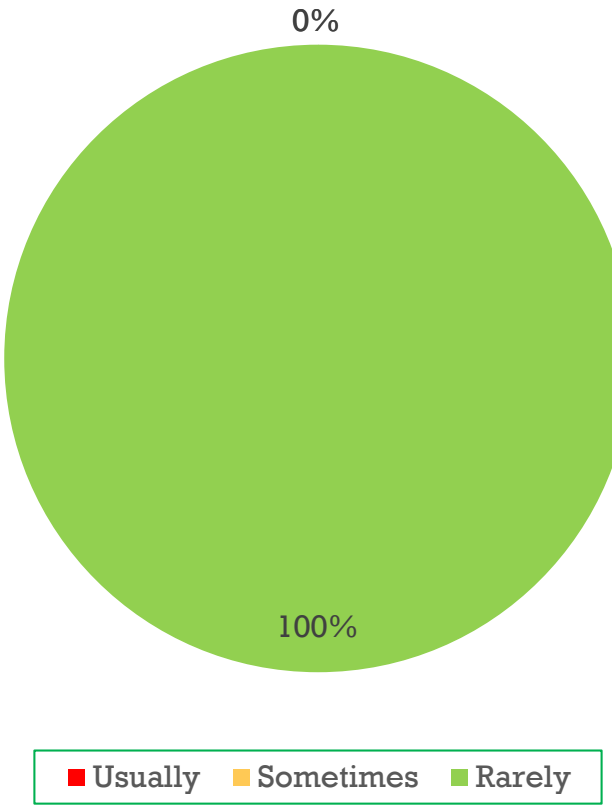
Child reports body pains during sleep.



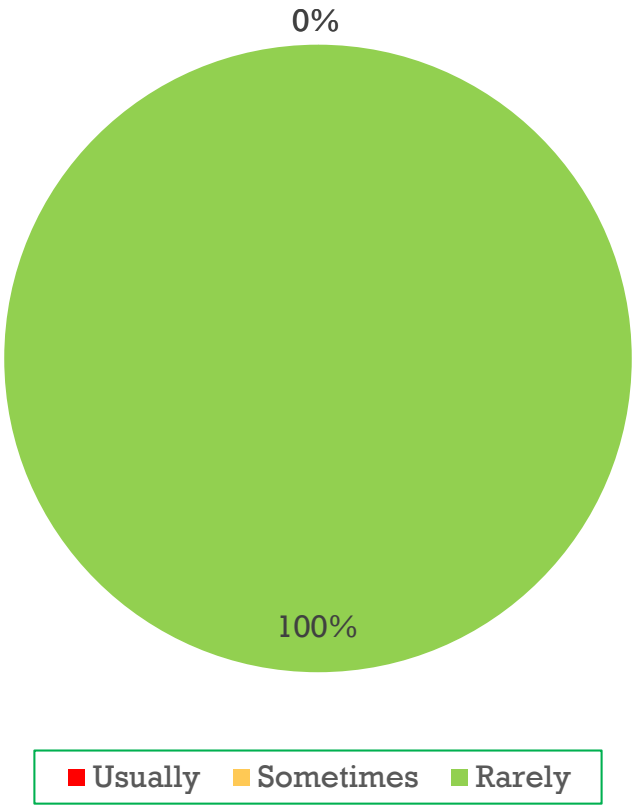
Child grinds teeth during sleep.



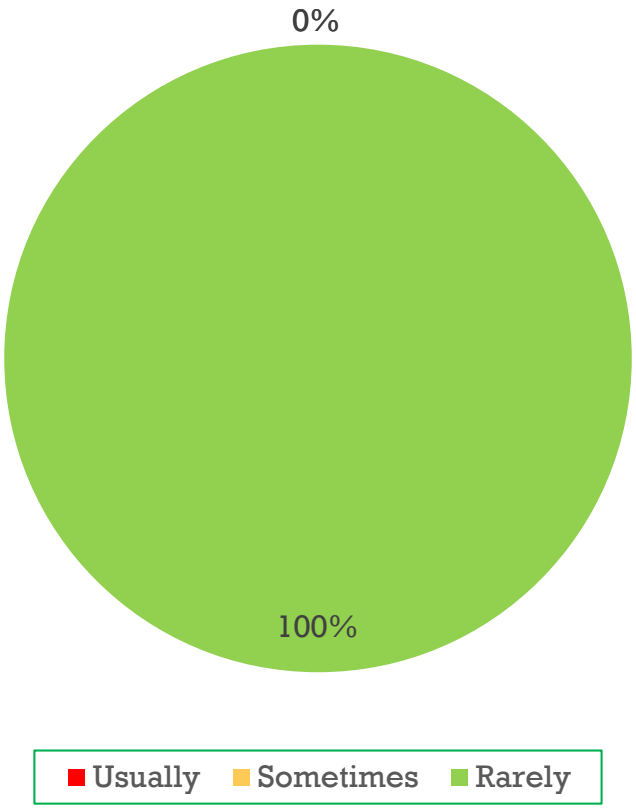
Child snores loudly



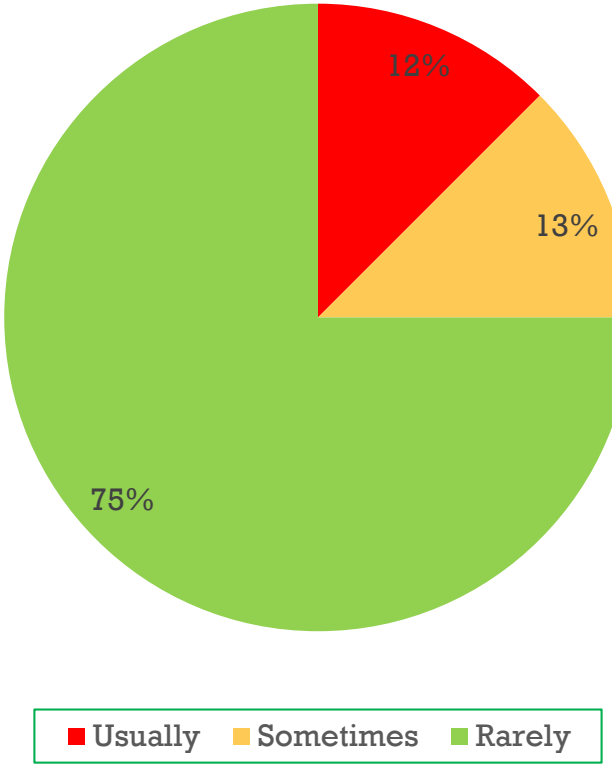
Child seems to stop breathing during sleep



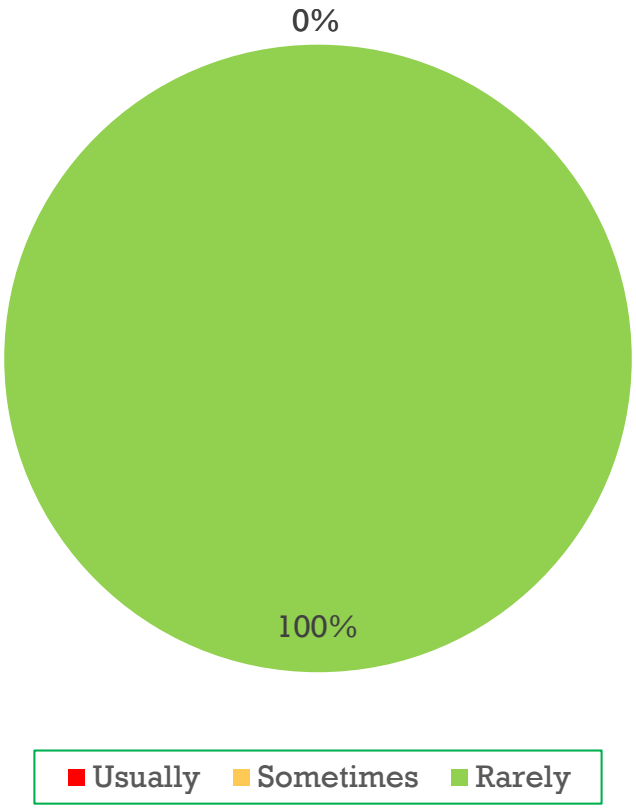
Child snorts and/or gasps during sleep



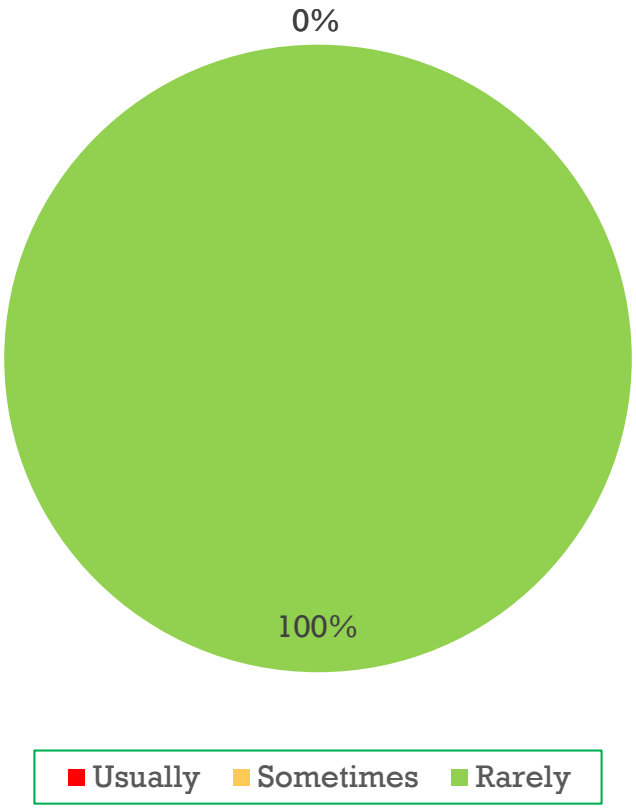
Child has trouble sleeping away from home



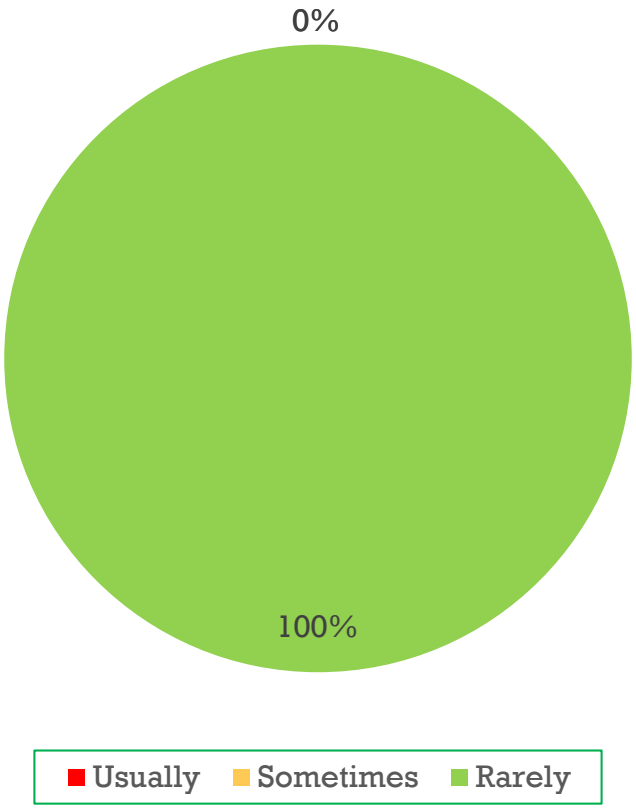
Child complains about problems sleeping



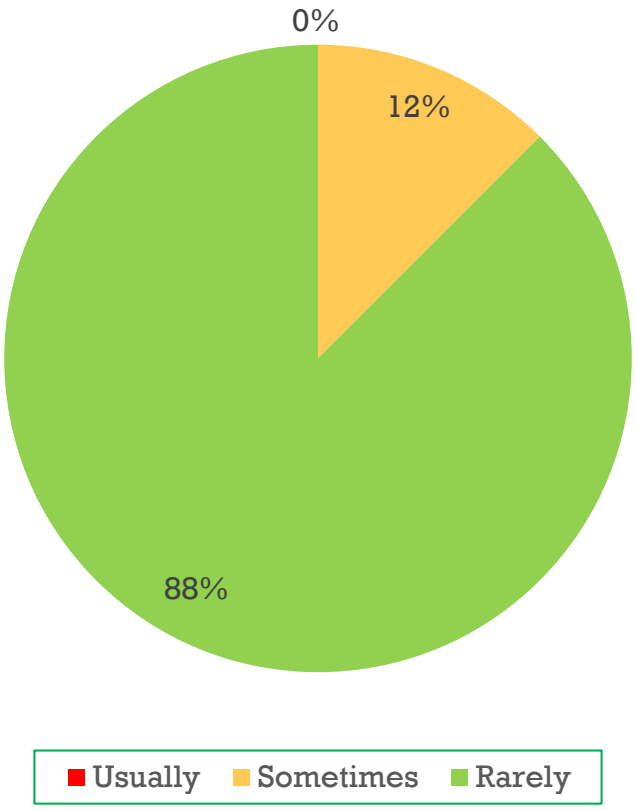
Child awakens during night screaming, sweating, and inconsolable



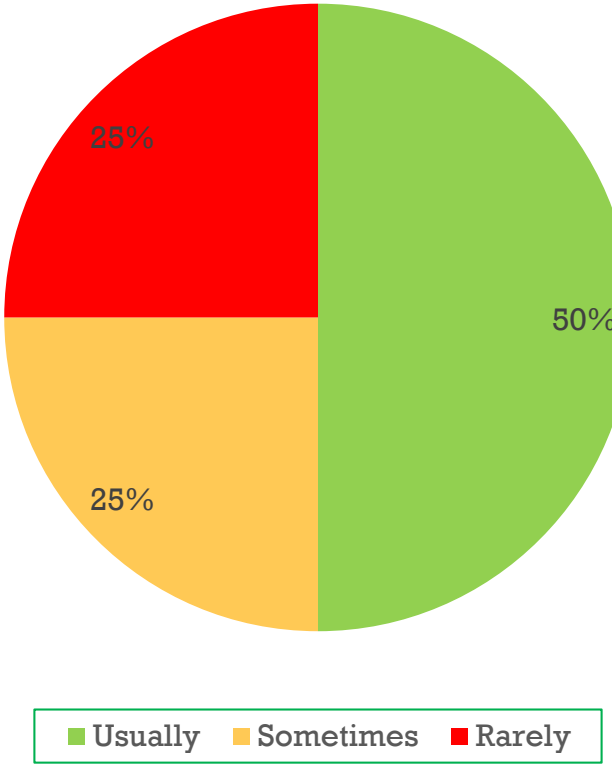
Child awakens alarmed by a frightening dream



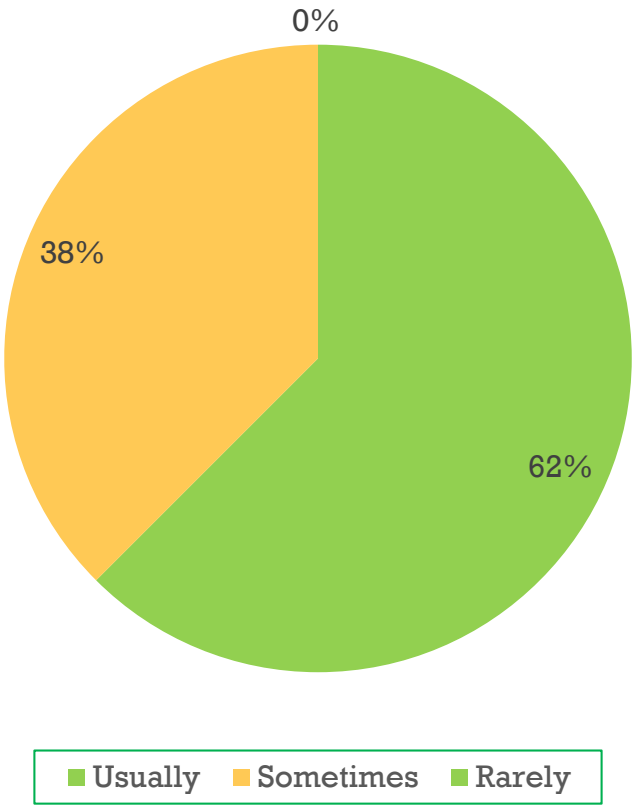
Child awakes more than once during the night



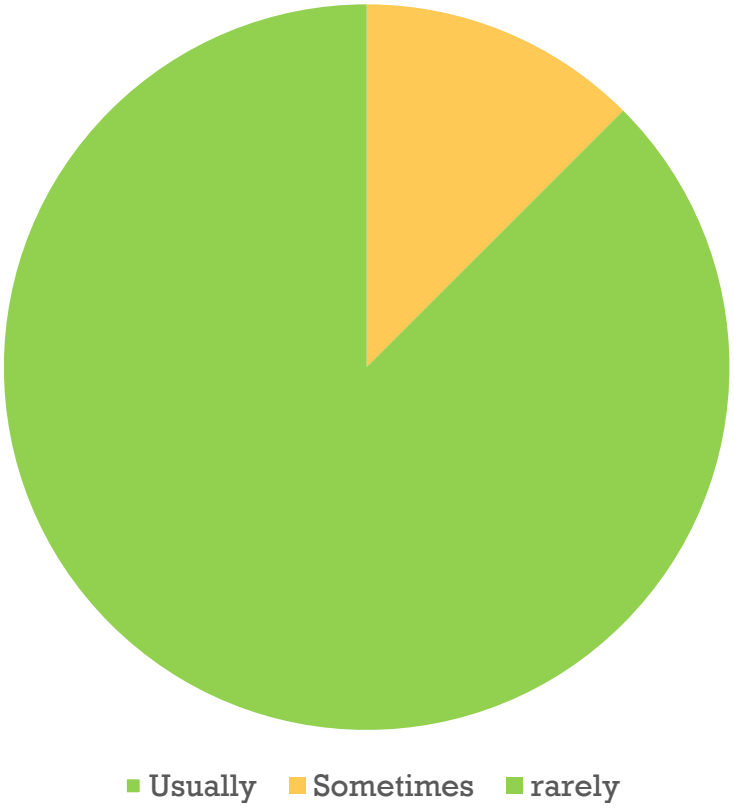
Child returns to sleep without help after waking



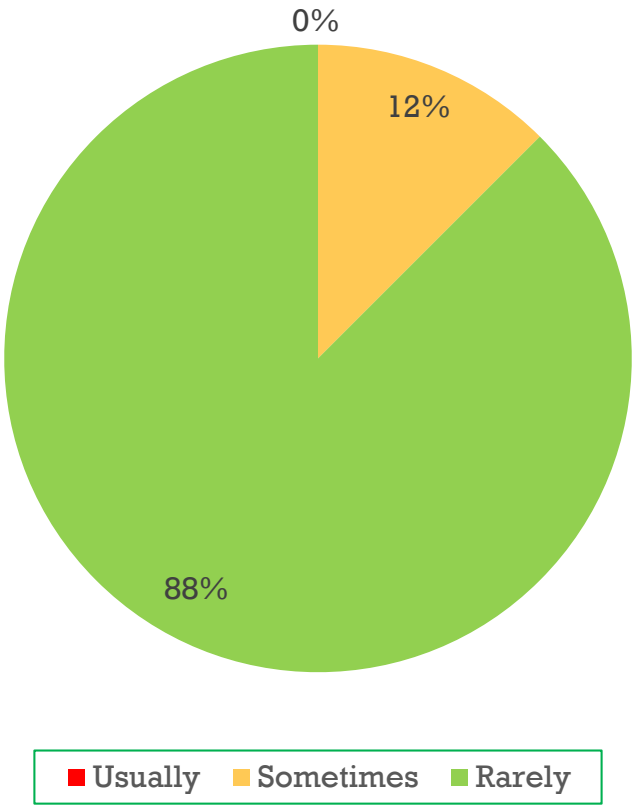
Child wakes up by him/herself



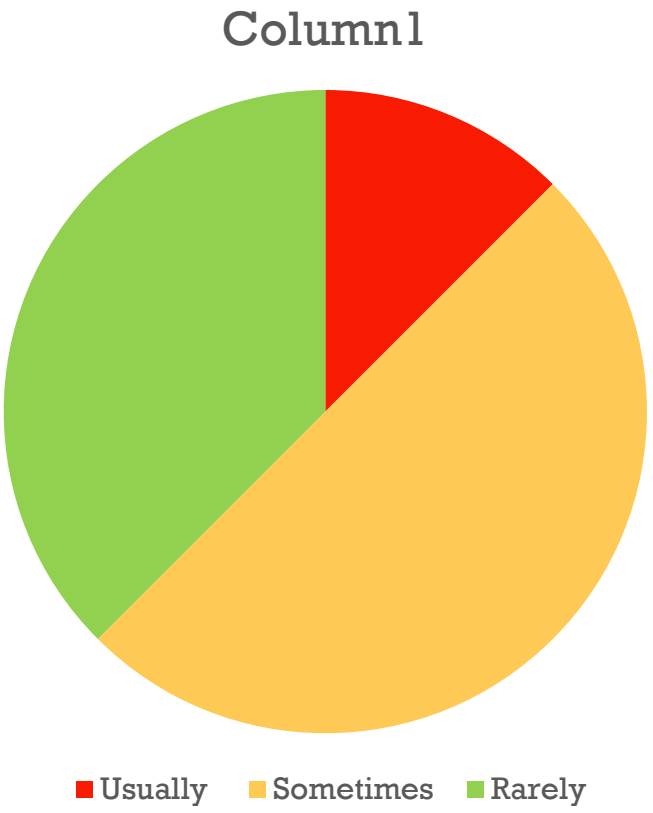
Child wakes up with alarm clock



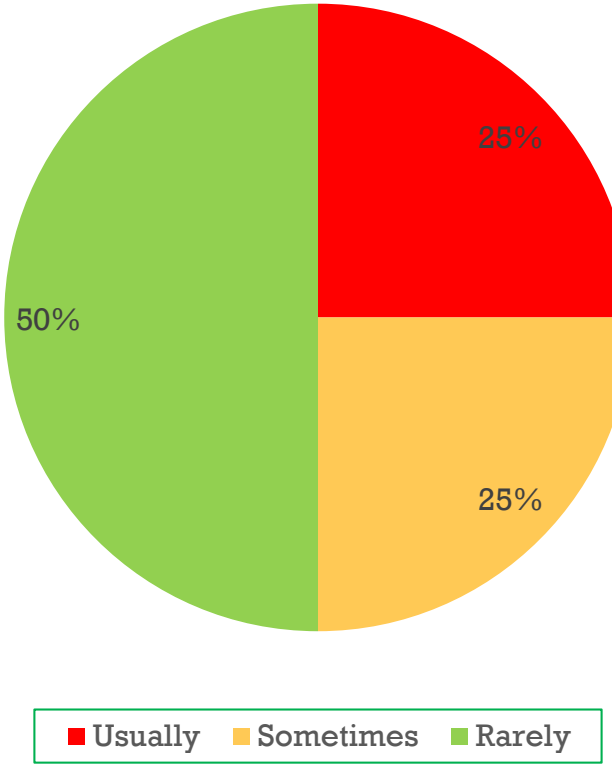
Child wakes up in negative mood



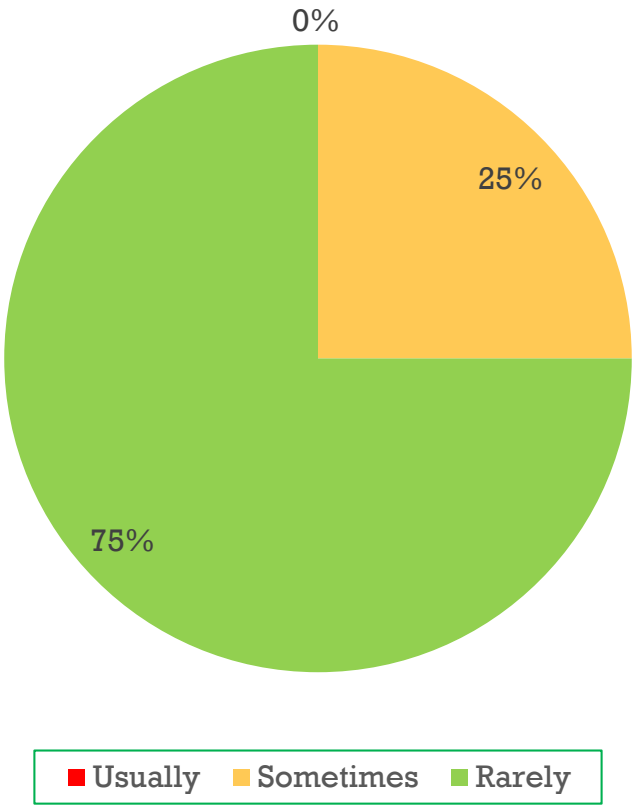
Adults or siblings wake up child



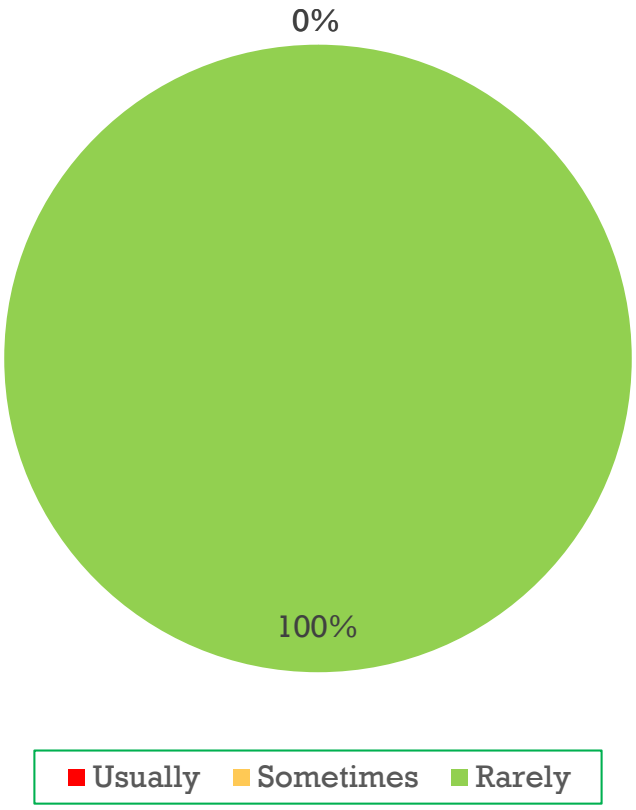
Child has difficulty getting out of bed in the morning



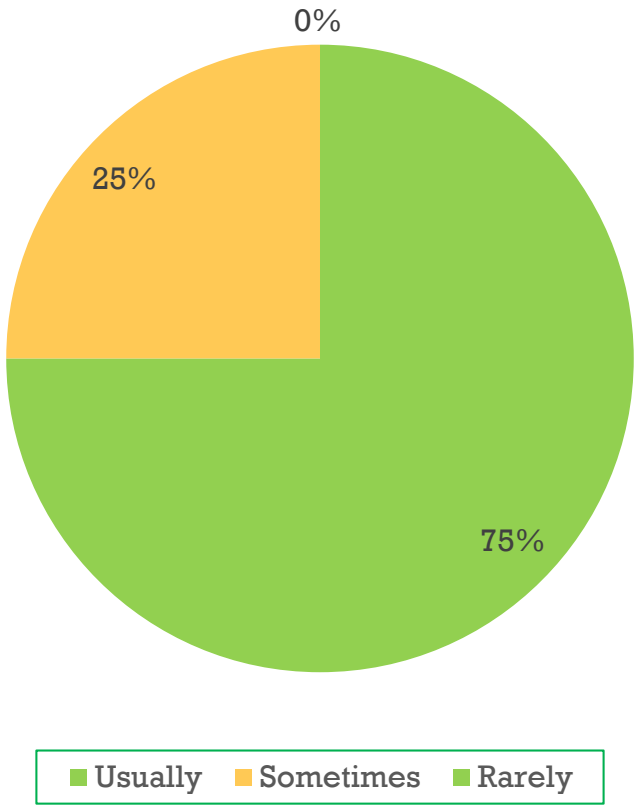
Child takes a long time to become alert in the morning



Child wakes up very early in the morning



Child has a good appetite in the morning

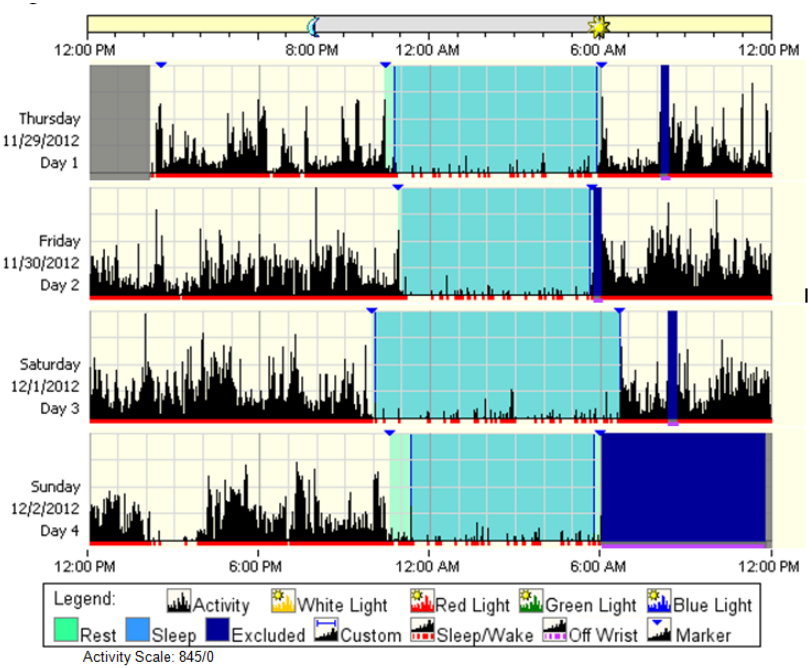


How do we study sleep?

- Questionnaire.
- Actigraphy.
- Polysomnography (sleep study).

Actigraphy

Actigraphy


12:00 PM
8:00 PM
12:00 AM
6:00 AM
12:00 PM
Thursday
11/29/2012
Day 1
Friday
11/30/2012
Day 2
Saturday
12/1/2012
Day 3
Sunday
12/2/2012
Day 4
12:00 PM
6:00 PM
12:00 AM
6:00 AM
12:00 PM
Legend:
Activity
White Light
Red Light
Green Light
Blue Light
Rest
Sleep
Excluded
Custom
Sleep/Wake
Off Wrist
Marker
Activity Scale: 845/0

PSG

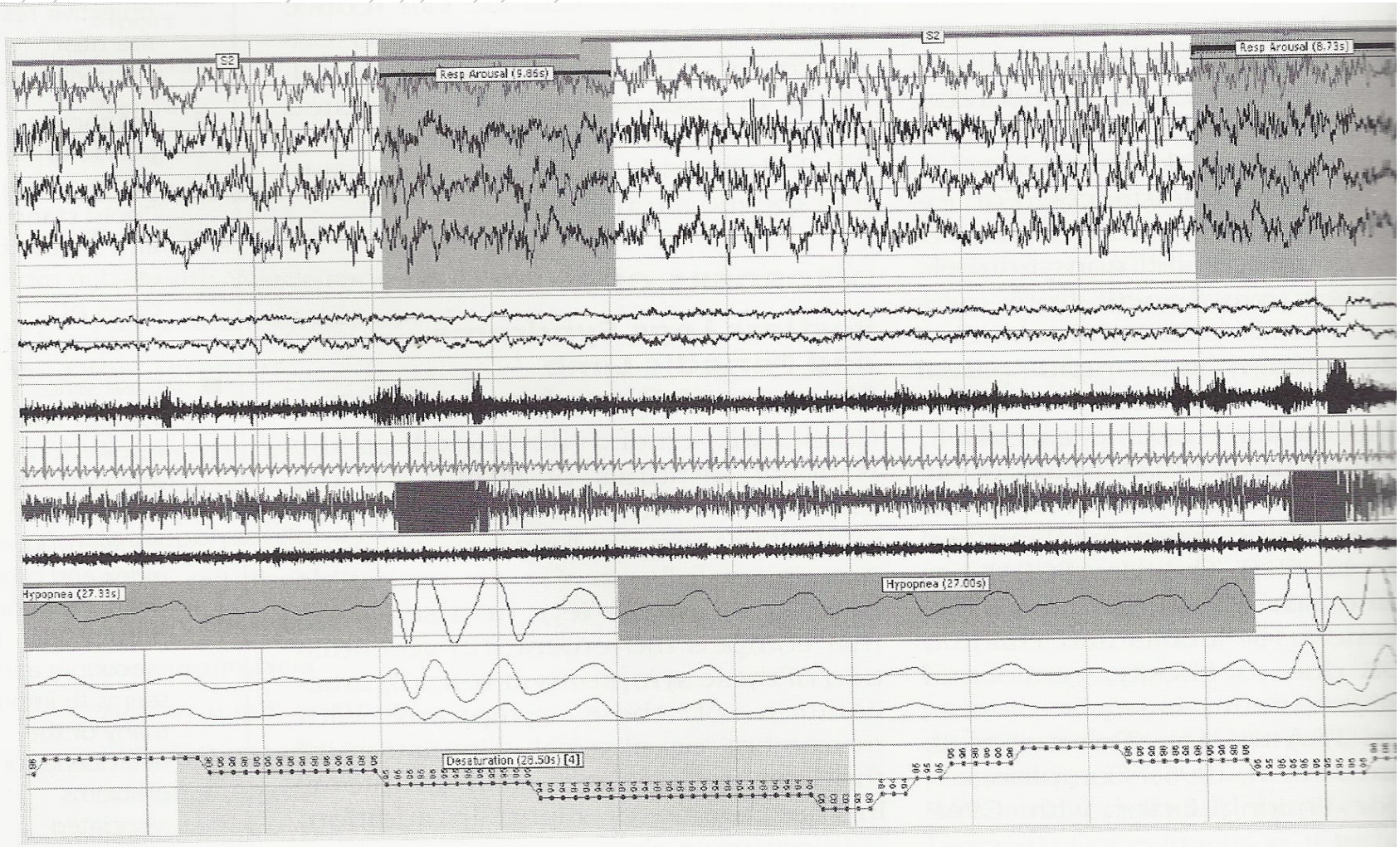


FIGURE 7-4 A 60-second epoch of polysomnography demonstrating the following channels from top to bott four EEG, two electrooculography, surface chin EMG, EKG, surface tibialis anterior EMG, snore microphone, nasal pressure flow signal, chest and abdominal excursions, and oxyhemoglobin saturation. Note episodic hypopneas as illustrated by decrements in nasal flow signal, continued respiratory effort chest and abdominal channels, oxyhemoglobin desaturations, increased heart rate, and EMG activity between eve EEG channels demonstrate cortical arousals associated with cessation of obstructive events.

continued on page

How much sleep child needs?

• 0-6 M	14-16H
• 6-12M	14-15 H
• 1 year	13.5 -14 H
• 2 year	12.75-13 H
• 3 year	12-12.5 H
• 4 year	11.5-12 H
• 5-7 year	11 H
• 8-9 year	10.5 H
• 10-11 year	10 H
• 12-14 year	9.5 H
• 15-20 year	9 H

Napping

- 3-6 months: 3 naps per day
- 6-12 months: 2 naps per day
- After one year: 1 nap
- Around age 3 : no nap

Bedtime routine

TV meant to be entertaining and stimulating.

Melatonin

Bedtime routine

Bedtime routine

- Food: no heavy meals before bed.
- Drinks: chocolate, chocolate milk, soda, tea.
- Medications:

Bedroom

Bedroom

- Clothing, bedding, pillow case, washing powder.
- Smell: toothpaste, smells form outside, cooking
- Light: from the window or reflected by a mirror
- Sound: dripping facet?

THREE P'S

- *Predisposing factors* are the innate tendencies towards being a poor sleeper. These include personality, biologic make-up, age, coping mechanisms etc.
- *Precipitating factors* are usually situational events, environmental or emotional stresses, or acute medical or psychological conditions that contribute to the insomnia.
- *Perpetuating factors* can be maladaptive behaviors.

Medications approved by FDA for use as Hypnotics in Children.

- **Zero**

Consistency is key

- Very very important in getting kids to sleep.

Consistency is key

- It has to be a family effort.

Consistency is key

No body should be watching TV.

Older children should engage in quite activity like doing homework.

Limit setting

- Limits are not set or reinforced.
- Only sporadically reinforced.

Limit setting

- Falling asleep while watching TV.
- Intermittently allowing the child to fall asleep in parents bed.

Limit setting can be difficult

- When child shares bedroom with another child or parent or grandparent.
- When child has medical problems.
- Disagreement between parents.
- Circadian timing.
- Difficulty with self soothing.
- Night time fears or separation anxiety.
- Restless leg syndrome.

Limit setting can be difficult

- Establish clear bedtime rules.
- Ignore protest or complaints about bedtime.
- Avoid discussing or arguing.
- Firmly and calmly say ‘it is time for bed”.
- Put the child to bed drowsy but awake.
- Brief check-ins as needed.

Limit setting can be difficult

- Return the child to bed or room.
- For some simply returning them to be multiple times work.
- For others close the bedroom door for one minute if the child gets out of bed.
- The time can be increased by one minute.
- Praise the child for positive behavior.
- Use sticker charts or reward system.

Limit setting can be difficult

- **Extinction burst:**
- **The behavior will get worse fpr several days.**

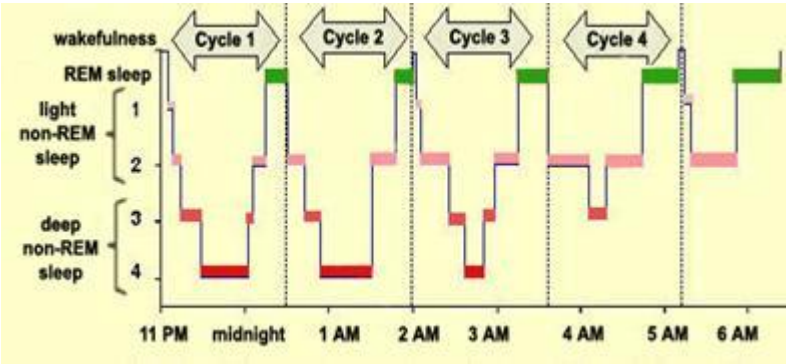
Visual schedule

Bedtime pass

Autismspeaks.org

Sleep association insomnia

Hypnogram


wakefulness
REM sleep
light non-REM sleep
1
2
deep non-REM sleep
3
4
Cycle 1
Cycle 2
Cycle 3
Cycle 4
11 PM
midnight
1 AM
2 AM
3 AM
4 AM
5 AM
6 AM

Parasmonias

(ICSD-3)

- Non-rapid eye movement sleep (NREM)
  - Confusional arousals
  - Sleep- walking disorder
  - Sleep terrors
  - Sleep-related eating disorder

- Rapid eye movement sleep (REM)
  - REM Sleep Behavior Disorder
  - Nightmares
  - Isolated sleep paralysis

Hypothesis

- Wakefulness and sleep are not mutually exclusive states:
  - arousal disorders: abnormal intrusion of wakefulness into (NREM)
  - REM sleep parasomnias and (RBD) : intrusion of wakefulness into REM
- Changes in brain organization across multiple states of being, and are particularly apt to occur during the incomplete transition or oscillation from one sleep state to another.

NREM parasomnias

- Recurrent episodes of incomplete awakening
- Absent or inappropriate responsiveness
- limited or no cognition of dream report
- Partial or complete amnesia for the episode

Confusional Arousals

- Disoriented behavior or slow mentation during an arousal from NREM sleep.
- This condition is the consequence of a partial or incomplete awakening, usually out of slow-wave or stage N3 sleep.
- Most of the episodes tend to occur at the same time every night and can be predictable.

Confusional Arousals

- The patient often displays vocalizations with occasional complex behaviors and typically has a poor recall of events the following day. Attempts to awaken the person are often unsuccessful and may be met with vigorous resistance; occasionally the patient can become aggressive and violent.

Confusional Arousals

- Prevalence ranges from 2.9% in adults to 17.3% in children.
- Even though this behavior is typically benign, sometimes the symptoms may persist into adulthood.

Confusional Arousals

- Treatment:
  - In children reassurance because the disorder tends to decline spontaneously with age.
  - Avoid any precipitating factors like sleep deprivation

Treatment

- Behavioral therapy:
  - Anticipatory awakening
  - Awakening the child 15 to 20 minutes before the usual time of occurrence of CA

Treatment

- An episode of CA should be allowed to run its course, unless an attempt to leave the bed or to harm the patient occurs, since efforts to restrain the behavior may lead to aggressiveness.
- When CA become frequent or do not respond to behavioral therapy, the possibility of a comorbid sleep disorder should be ruled out.

RLS

- Irresistible urge to move the legs.
- Accentuation with rest.
- Amelioration of the symptoms with movement.
- Increased symptoms in the evening or night.

RLS

RLS

- Prevalence 1-2%

RLS

- Low Ferritin < 50 mcg/L
- Peripheral neuropthy
- Pregnancy folate or iron deficiency
- Hyopthyroidism
- B12 deficiency
- Uremia
- Diabetes

Circadian Rhythm Sleep disorder

- Delayed Sleep phase syndrome.
- Prevalence 5-10% Adolescents.

- Obstructive sleep apnea

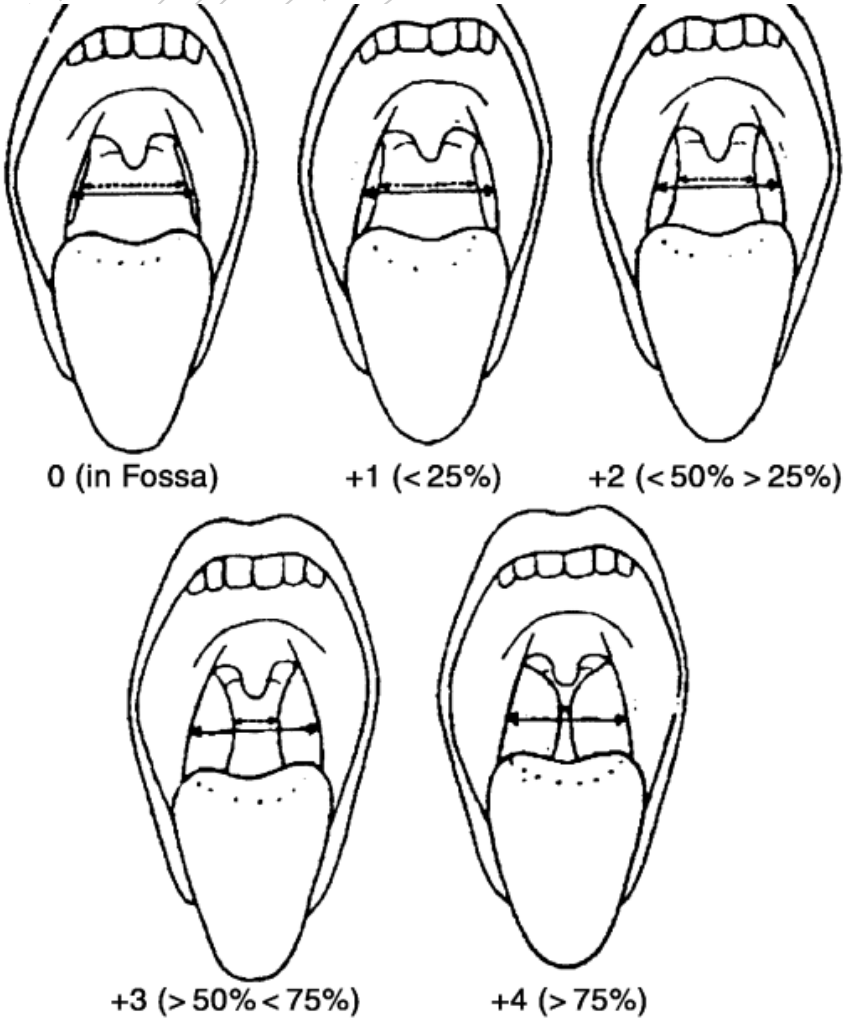


Figure 1. Tonsil size (Brodsky grade).