

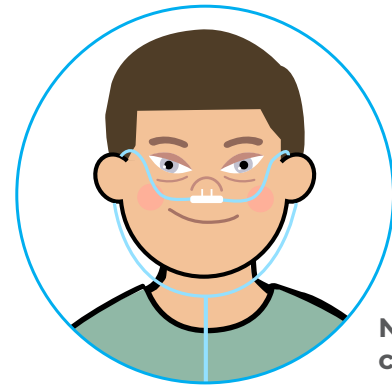
# Preparing for a Sleep Study

The American Academy of Pediatrics recommends that all children with Down syndrome have a polysomnography, also known as a sleep study, by age four. A sleep study is the most effective way to diagnose obstructive sleep apnea because it directly measures lapses in breathing. Sleep apnea is extremely prevalent in individuals with Down syndrome across all ages, but only half of individuals ever receive this test. This handout provides guidance and insight into how to prepare for a sleep study and what to expect upon arrival.

## Before the sleep study

Small electrodes (15-30) will be placed on your child during the sleep study. While not painful, this process may be overwhelming or uncomfortable. However, preparing your child ahead of time can help reduce anxiety during the sleep study.

- Individuals with Down syndrome often learn best visually, so showing examples of a sleep study will let your child know what to expect.
  - Video Examples can be found [here](#) and [here](#).
  - Reading [this story](#) is another way to show the process.
- Practice with materials ahead of time.
  - Ask the clinic or hospital if they can provide a practice nasal cannula before the study.
    - Allow your child to place the nose cannula on you, a stuffed animal, or a doll. Don't forget to sanitize between users!
  - Put skin safe tape or stickers where the technician will put sensors and electrodes during the study. This can be around their finger, near the hairline, and on their face. You can practice the chest band by wrapping an ace bandage around their chest, just make sure this is done under constant supervision and doesn't restrict breathing. Getting used to these sensations may make it easier for your child to tolerate them during the sleep study.
    - It can also be helpful to slowly increase the number of practice "sensors" and the length of time your child wears them.
    - It can also help your child feel in control if they also place practice sensors on themselves or a stuffed animal.
  - Practice with these materials while your child is doing a preferred activity such as watching a show or playing a game.
  - For safety reasons, please ensure your child is closely supervised while you are practicing for the sleep study.



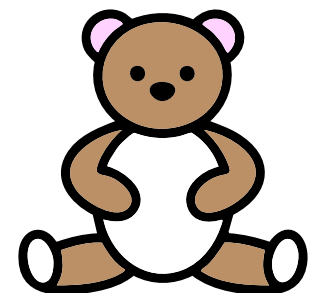
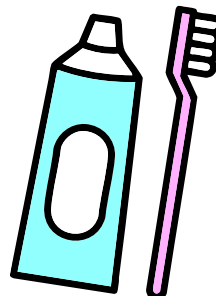
Nasal cannula



# Preparing for a Sleep Study

## On the day of the sleep study

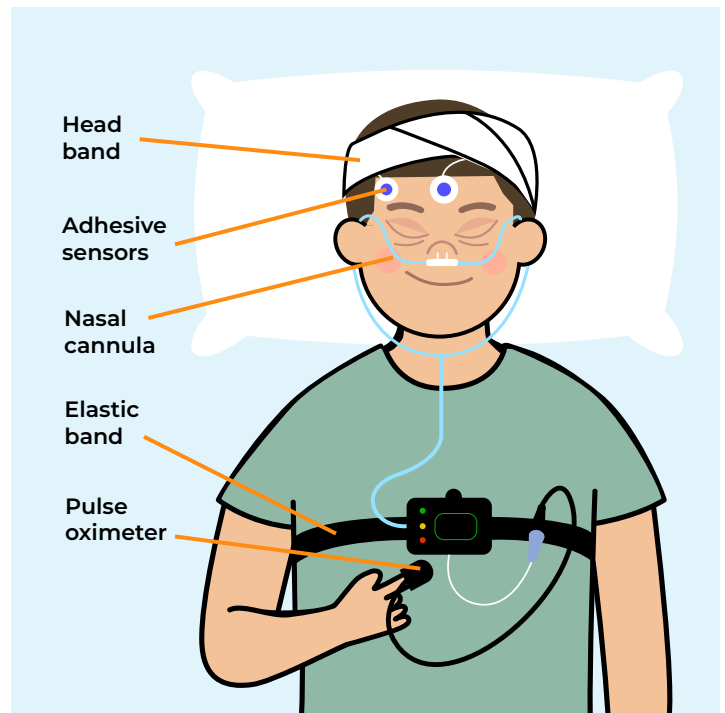
- Double check what time you are supposed to arrive. In most instances, you will have to arrive before your scheduled appointment time.
- Bathe and make sure your child has clean, dry hair. Do not apply any lotions or hair products.
- Eat dinner before.
- Pack like you are staying the night in a hotel and bring all the essentials for both you and your child:
  - Medications
  - Pajamas
  - Clothes for the next day
  - Comfort items such as blankets, sleep sack, or stuffed animals
  - Diapers or baby wipes, if necessary
  - A tablet or book for a distraction while the technician is placing the sensors/electrodes
  - White noise machine
  - Toiletries (toothbrush, comb, etc.)
  - Practice nasal cannula and sensor materials
- Try not to let your child take a nap the day of the sleep study.
- Don't let them have any caffeine the day of the study.



# Preparing for a Sleep Study

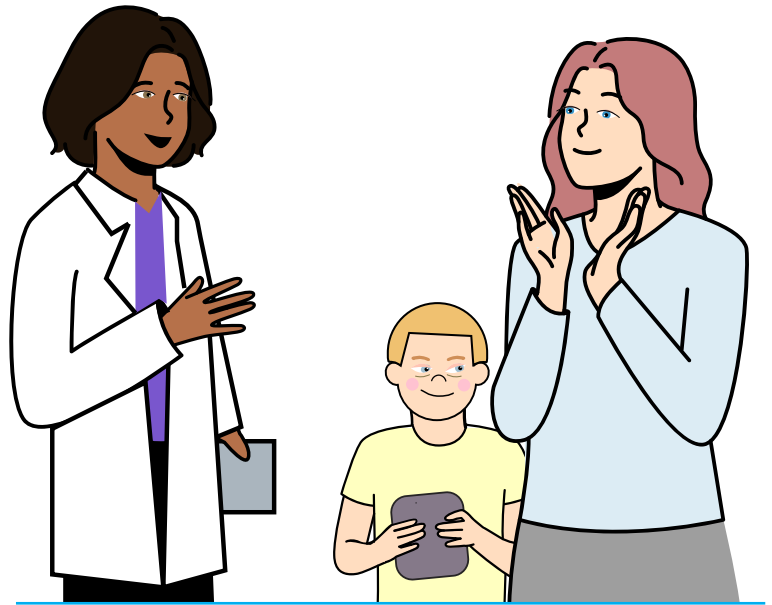
## During the sleep study

- After checking in, the technician will guide you to the room.
- You will then change into your sleeping clothes and complete your nighttime routine.
- The technician will then:
  - Place adhesive sensors on your child's head, face, legs, and chest. These measure heart rhythms, brain waves, and face, eye, and leg movements.
  - Wrap an elastic band around your child's chest and belly that measures breathing.
  - Place a pulse oximeter on your child's finger or toe that measures blood oxygen levels.
  - Setup the nasal cannula by placing it in your child's nose and taping it to their cheeks. This detects air movement through the nose and mouth.
  - Wrap a band around your child's head so that all the sensors stay in place during the night.
  - This whole process takes around 45 minutes.
- Having your child place the practice nasal cannula and stickers on a stuffed animal while the technician places it on them can help the process.
- Alternatively, your child can do a preferred activity such as watching a show while the technician is placing all the sensors.
- Your room will have video and audio monitoring at all times. This allows your provider to connect the data from the sensors to what your child is doing while asleep, for example, snoring.
- After the technician applies all the sensors, it is usually required that all electronics be turned off.
- If your child needs to get up in the middle of the night, you will need to alert the technician and they will be able to unplug all the wires while keeping all the sensors in place.



## After the sleep study

- Your healthcare provider will follow up with you about the results of the sleep study. When you schedule the sleep study, confirm how you will receive the results and if you need a follow-up appointment.
- Your child may have leftover adhesive from the sensors. Coconut oil or adhesive remover pads can help remove the residue.
- Sleep studies usually end around 6am. The technician will come into the room and remove the sensors, and you will be given time to dress. You may also be asked to answer a few short questions about your child's sleep during the study.
- You and your child may both be tired the next day and find it helpful to have a reduced schedule of activities.



**Thank you to Jamie Edgin, PhD, Professor and Department Chair, Virginia Tech, who reviewed this resource for accuracy.**

*The information provided herein is for informational purposes only. NDSS is not a health care provider, and this information should not be construed as medical advice or a substitute for it. Please consult with your or your family member's health care provider(s) to determine your/their personal health care needs (if any).*