

Why do I need a sleep study?

Your doctor has ordered a sleep study due to a concern that you may have a sleep disorder that is impacting your health. The goal of the study is to obtain data that will help the physician determine the next steps in your care. The most common type of sleep problem, sleep apnea, is a disorder in which your breathing is irregular at night. This causes stress on your heart which can lead to low oxygen levels, hypertension, and heart rhythm problems. It may also lead to increased plaque build-up in your arteries of the heart and brain, and is associated a higher risk of stroke and heart attack.

Not all people with apnea have sleepiness during the day or insomnia at night. Some people may have other symptoms such as morning headache, fatigue, weight gain or worsening memory. Even if you are unaware of any breathing problems, you may still have sleep apnea if you do not sleep well.

What is measured during a sleep study and why?

While you are sleeping, your body physiology is different than when you are awake. As a result, we need to take several different measurements during the sleep study including heart rate, breathing, sleep level (as measured by the EEG on your scalp), oxygen levels, and movement. These measurements help us determine the causes of your sleeping problem. For example, some people may have abnormal brain waves during sleep that prevent them from reaching the expected types of sleep stages. Their brain waves may be affected by movement, which in turn may be affected by respiration. It is important to evaluate how each of these different factors interact.

What kind of sensors will be used to measure my sleep during the study?

There are no invasive measurements required during the sleep study unless something is specifically ordered by your physician. Most of the sensors used in a sleep study are attached to the skin or on the surface of your body. An exception is the sensor prongs that are placed in your nose to measure the air flow coming in and out.

EKG patches are placed on your chest to measure your heart rate. Similar patches are placed on your legs and arms to measure movement. About ten electrode patches are attached to your head with glue to detect your brain waves and sleep level. You may have some glue residue in your hair after the study that will be removed with a cleansing solution in the morning.

We will have you wear some elastic bands around your chest to measure how your chest moves while you breathe. Oxygen levels are measured by a sensor that is taped on your finger. Naturally, you may find sleeping with all these sensors is not as comfortable as sleeping in your normal bed. We expect that your sleep will be somewhat disturbed while being tested, but even if you sleep for only a few hours, we will be able to gather a great deal of information that will be useful.

What kind of room will I be in for the sleep study? What if I have to go to the bathroom during the sleep study?

You will be given a private sleeping room with a private bathroom and shower for the night of the sleep study. You will have a television in your room which you can use prior to the start of the sleep study. Although the study is inside the hospital, you will not be sleeping in a regular hospital room. The room in the sleep laboratory is more private than most hospital rooms, and is in a separate part of the hospital. If you need anything during the night, there is a technician who can assist you—you need only to call out and the technicians will hear you on the intercom. They can also assist you if you need to use the bathroom.

Will the bed and pillows be comfortable?

The lab has standard beds that are designed to meet the qualifications for hospitals. Pillows, blankets and sheets are also standard. If you are particularly sensitive to pillows and bedding, you are welcome to bring your own pillow and comforter.

What if I am too hot or too cold in my room?

Each room is equipped with its own thermostat which can be adjusted according to your request. Please let the technician know if you prefer to have the room hotter or cooler.

Will I sleep as well during the sleep study as I do at home? Does it matter if I don't sleep well during the study?

We try to make your experience as comfortable as possible, but the sensors and the new environment are likely to make you feel less comfortable than when you are at home and you may not sleep as well. However, even if you sleep for only a few hours we should be able to gather a great deal of information. It only takes a few hours of sleep for a breathing disturbance such as apnea to be detected, even with less restful sleep.

Will the technician wake me up during the study?

We will try to avoid waking you, but it is possible that the technician may need to do so in order to fix some cables or replace some of the sensors that might fall off. As mentioned previously, we do not expect this night to be entirely typical for you, but we can collect a lot of information within a few hours and sometimes the issues may be obvious early in the study. If you are found to have a breathing disturbance that meets the criteria for severe apnea within the first two hours of sleep, the technicians may try to give you some treatment. They will wake

you up and place a mask on your face that will help blow air into your nose or your mouth. This intervention only occurs if you meet certain criteria and if we are certain that you do not have other options for therapy.

Should I take my usual medications on the night of the sleep study?

Yes, you should take your usual medications on the night of the sleep study unless otherwise indicated by your doctor. You will need to bring any medications you take at night since we will not be able to order them from the pharmacy. If your doctor orders any special medication for you to take on the night of the sleep study, please bring it with you.

Does it matter what position should I sleep in during the night of the study?

Our goal is to collect the best data we can about you while you sleep. To do this, we will want to see you sleep in your usual positions, but we may also ask you to sleep in other positions as well. Some people have severe problems with apnea when they sleep on their back, but none when sleeping on their side. If you have only been sleeping on your side during the study, the technician may come into the room at some point and ask you to try to sleep on your back. If you never sleep on your back or can't sleep in that position, we will not require it for this study.

Should I drink alcohol on the night of the sleep study?

If you usually drink alcohol more than twice a week, then it is probably a good idea to drink the same amount of alcohol on the night of your study. Alcohol affects nighttime breathing and it is best for us to be able to measure your sleep in its most vulnerable state to determine how it is disturbed. If you drink semi-regularly, then drink your usual amount, and have a friend or family member drive you to the sleep study. You should not drink and drive to the lab.

When will I get the results of the sleep study?

The results of the sleep study are not immediately available. The data has to be carefully evaluated to determine how your heart rate, breathing and movements are affecting sleep. When you finish your sleep study and return home, you should call the clinic to schedule an appointment to see your care provider if you do not already have an appointment scheduled. Try to schedule your appointment for about two weeks after the sleep study. Your clinic doctor will discuss the results of the study with you at your return visit. The number to make your appointment if you are being seen in the UNC Neurology Sleep Clinic at UNC Hospitals is (919) 966-4401. If you have not been seen in that clinic, then call the doctor who sent you for the study.

I have heard that I might be able to get a “split-night” study if I have apnea. This would save me from having to come back for a second night study if I have apnea and require treatment. Is it true that I can get this kind of study?

Some patients who have apnea will be able to try treatment on the same night of their first study which is called a split-night study. In order to qualify for this type of study, you must demonstrate severe obstructive sleep apnea within two hours of sleep in order to be sure that no other therapy will be available to you. In addition, the technologists will need you to have at least four more hours of sleep after starting the therapy in order to try to adjust the pressure on the mask and to fully evaluate treatment.

When warranted, we will try to do a split-night study in order to save you another visit to the laboratory for a treatment trial, but be aware that about one in four patients will need to return for another night due to insufficient information from the split-night study. Typically, an apnea patient’s breathing is worse during the last third of the night which in turn gives us the best clues as how to approach your sleep disorder.

I am being evaluated for narcolepsy. Do you have any special instructions for my sleep study?

In terms of medications, you should follow the instructions given to you by your physician. Many patients who are being evaluated for narcolepsy are asked by their clinicians to stop taking some of their medications for several weeks prior to the study. If the physician did not give you special instructions, then continue taking your medications as usual. If you do stop, then please let the technician know which medicines you have stopped taking and for how long.

If you are being evaluated for narcolepsy, it is extremely important that you allow yourself to sleep for as long as possible in order to have a more reliable assessment. It is fine if you do not sleep very well on the night of the study, but try to let yourself sleep late in the morning. Immediately following the overnight study, you will probably need to stay for the entire day for a nap study. During the nap study—the multiple sleep latency test (MSLT)—you will be given five nap opportunities spread out over the course of the day.

In addition to the instructions above, you should keep a diary of what time you go to sleep and what time you get up for the two weeks prior to your sleep study.

What type of foods and beverages contain caffeine?

The technician in the laboratory will ask if you have had any caffeine during the daytime prior to the study. Please remember that caffeine is contained not only in coffee, but also in tea (hot, iced and sweet), soda (regular and diet), chocolate and coffee ice cream. There is also caffeine in decaffeinated coffee and in some medicines, including Excedrin. Be sure to tell the technician in the laboratory about all of the sources of caffeine that you have had on the day of the study.

Will I need to tell someone about all of the medications I am taking when I come in for the sleep study?

Yes, please bring a list of all of your medications and supplements as well as your prescription bottles to review with the technician. This review is very important since these substances may affect your sleep and need to be included in the study report. Please include any over-the-counter medications that you take as well as prescription medications.