General Information about Sleep Studies and “What to Expect”

Why do I need a sleep study?
Your doctor has ordered a sleep study because your doctor is concerned you may have a sleep disorder that is impacting your health. The goal of the study is to obtain data that can help the physician determine the next steps in your care. Some sleep problems are associated with important health conditions and treating these disorders may improve your health. The most common type of sleep problem, sleep apnea, is a problem in which your breathing is not regular at night. This causes stress on your heart and can lead to low oxygen levels and hypertension. Sometimes this can also be associated with causing heart rhythm problems. The stress on your body caused by abnormal breathing at night can 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 but some people may have other symptoms such as morning headache, fatigue, weight gain or worsening memory. If your problem is mainly that you do not sleep well, even if you are not aware of breathing problems, this may be causing sleep problems and be leading to health risks.

What are the basic things that are measured during a sleep study and why do we measure these things?
While you are sleeping your body physiology is different than when you are awake, and many different factors can affect your sleep. Therefore we need to measure several different things in the sleep study. These include your heart rate, your breathing, your level of sleep by measuring the EEG on your scalp, your level of oxygen, and your movement. This allows us to best determine the causes of your problems sleeping. Some people have abnormal breathing during sleep, but this has to be carefully characterized to see what the breathing problem is caused
Some people have abnormal movements during sleep. Some people have abnormal brain waves during sleep and do not reach the expected types of sleep stages. It is also important to know how movements affect the brain waves, and how respiration affects movements, and how these different factors interact in order to know how best to treat your sleep problem.

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

All the sensors used in a sleep study are connected to the skin or on the surface of your body. There are no invasive measurements required during the sleep study unless specifically ordered by your physician. Sensors prongs are placed in your nose like an oxygen cannula to measure the air flow coming in and out of your nose. All the other sensors are on the skin surface. EKG patches – to measure heart rate -- are placed on your chest. Similar patches are placed on your legs and arms to measure movement. About 10 electrode patches are attached to your head with glue to detect your brain waves and whether you are asleep. You may have some glue residue in your hair after the study that will be removed with cleansing solution in the morning. Be prepared that some residual glue may remain in your hair until you have shampooed it a few times. To measure your breathing we will also have you put on 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 and you wear this while you are sleeping. Naturally, you may find sleeping with all these sensors less comfortable than sleeping in your normal bed at home. We expect that your sleep will not be quite as good at home, but even if your sleep is poorer, as long as you sleep a few hours, we can get 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 your own private sleeping room to sleep in for the night of the sleep study. Attached to your room is also your own private bathroom and shower. You will also have a television in your room which you can use prior to the start of the sleep study. Although you are having the sleep study 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 the sleep laboratory suite in the
sleep laboratory in a separate part of the hospital.
If you need anything during the night while you are in your room, there is a
technician who can help you get what you need, or help you if you go to the
bathroom. You only need to call out. The technician can hear you on the intercom
and he or she will be in to help you.

**Will the bed and pillows be comfortable?**
The beds are standard beds that are designed to meet the qualifications for
hospitals. Pillows, blankets, and sheets are also standard. If you are particularly
sensitive to a particular pillow type, you may want to bring your own pillow and
comforter with you and you are welcome to do this.

**What if I am too hot or too cold in by 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, and that can be adjusted.

**Will I sleep as well in the sleep study as I do at home?  Does it matter if I don’t
sleep well during the sleep study?**
We try to make your experience as comfortable as possible, but the sensors and the
bedroom environment are likely to make you feel less comfortable than you are at
home. Thus, it is unlikely that you will sleep as well in the sleep lab as you do at
home. *Even if you sleep only a few hours, however, this is likely to give us a great
deal of information. So you do not need to worry if you do not sleep as many hours
or as restfully as you usually do at home.* For example, if you have a breathing
disturbance such as apnea, this will usually show up on the study even if you sleep
only a few hours and it will show up even when your sleep is not as restful.

**Will the technician wake me up during the study?**
It is possible that the technician will have to wake you up to fix some cables or
replace some sensors that might fall off during the study. We will try to avoid
waking you up, but sometimes sensors may need to be moved or sometimes
replaced during the study. As mentioned, we do not expect this night in the
laboratory to be entirely typical for you. Even if you have only a few hours of sleep this gives us a great deal of information. Sometimes the issues may be obvious early in the study. If you are found to have a severe breathing disturbance that meets the criteria for severe apnea in the first two hours of sleep, the technician may try to give you some treatment after a few hours. The technician will wake you up and place on a mask that will help blow air on your nose or your mouth. This intervention only occurs if you meet certain criteria and that we are certain that you do not have other options for therapy. If you tend to breathe through your mouth, it is likely that you will be more comfortable with a mask that also blows air into your nose and mouth.

**Should I take my usual medications on the night of the sleep study?**
Unless otherwise indicated by your doctor, you should take your usual medications on the night of the sleep study. You will need to bring any medications you take at night with you to the sleep study. We will not be able to order medications from the pharmacy for the night you are at the laboratory. If your doctor orders any special medication for you to take on the night of the sleep study, then also bring this with you to the study.

**What position should I sleep in during the night of the study, and does it matter?**
Our goal is to get the best data we can about you in your sleep. For this we want to be able to detect any sleep problems as best as possible. We will want to see you sleep in your usual positions. We may also ask you to sleep in a certain position, for instance sleeping on your back because this may show more sleep apnea. There are some people who have severe problems with apnea on their back, but none when sleeping on their side. *If you have only been sleeping on your side, 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 cannot sleep on your back you do not need to do this in the 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 so that we can best measure how your sleep is disturbed. You should not drink and drive. If you drink semi-regularly, then drink this same amount, and have a friend or family member drive you to the sleep study.

When will I get the results of the sleep study?

*The results of the sleep study are not available immediately after it is done.* The study has to be carefully reviewed to determine how your heart rate, breathing, and movements are affecting sleep. When you finish your sleep study and return home, you should make sure to call the clinic to make an appointment to see your care provider, if you do not already have an appointment scheduled. Your clinic doctor will discuss the results of the study with you when your return to clinic. This usually occurs about 2 weeks after your study. *Please call your care provider to make sure you have a follow-up appointment to discuss the results of the study.* *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 clinic number for the doctor who sent you for the study. If you do not already have an appointment scheduled, you should try to schedule your appointment for about 2 weeks after the sleep study.

I have heard that I might be able to get a “split night” study if I have apnea. This would save me 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 2 hours of sleep in order to be able to be sure that no other therapy will be available to you. In addition the technologists needs to have at least 4 more hours of sleep after starting the therapy in these studies to try to adjust the pressure on the mask and machine. This is important because otherwise there is not enough time left to fully evaluate treatment or determine the correct pressure. When it is possible we will try to do a split- night study, in order to save you another visit to the laboratory for a treatment trial. But, you should also be aware that approximately
one in four patients who have a split night study will need their study repeated, since the information was not fully adequate. Typically your breathing is worse in the last third of the night and this period of sleep gives us the best clues as how to approach your sleep disorder. When apnea is not as apparent in the early part of the night, it can thus be important to evaluate the latter part of the night.

I am being evaluated for Narcolepsy. Are there any special instructions that I should be aware of?

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. You should follow the instructions given to you by your physician. If the physician did not tell you to stop any medications, then continue taking them as usual. If you have stopped some medications because your physician told you to, then please let the technician know which medicines you have stopped, and how long they have been stopped when you come in for you sleep study.

If you are being evaluated for narcolepsy it is extremely important that you also allow yourself to sleep as long as possible and let yourself sleep in as long as possible in the morning in order to have a more reliable assessment. It is fine if you do not sleep very well on the night study, but try to let yourself sleep as late as possible in the morning. You should also keep a diary of when you go to sleep and when you get up for the two weeks prior to your sleep study.

If you are being evaluated for narcolepsy, then you should also be aware that you are probably going to be expected to stay during the day following your overnight study for a nap study. In the nap study, called the “multiple sleep latency test” (MSLT) you are given 5 nap opportunities spread out over the day. If you undergoing evaluation for narcolepsy, then you should expect to stay the entire day following the overnight study for this second MSLT daytime test.

What type of foods and beverages contain caffeine?
The technician in the laboratory will ask you if you have had any caffeine during the daytime prior to the study. You should remember that caffeine is contained not only in coffee, but also in tea, iced tea, sweet tea, soda, diet sodas, as well as in chocolate, and in coffee ice cream. There is also caffeine in decaffeinated coffee
and some medicines, including Excedrin. Be sure to tell the technician in the laboratory about all the sources of caffeine that you had on the day of the study.

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

Please bring a list of your medications and your medications in their prescribed bottles. The technician will ask you about these medications and you will need to review all of your medications and supplements. This is very important because the medications and supplements may affect your sleep and it needs to be included in the study report. Your medications include any over the counter medications that you take as well as prescription medications. You may want to bring an up to date list of these medications and supplements with you to the sleep study, to make it easier to remember them.