



Understanding Obstructive Sleep Apnea

.....

This booklet is yours to use and write in.

Please bring it to appointments, and use it to ask questions with your doctor and care staff.

My Information

Name: _____

Emergency Contact Name: _____ Emergency Contact Number: _____

Medications I take (include prescription pills, over-the-counter medicines, supplements, inhalers, liquid medicines, and patches):

My Insurance Company

Insurance Company: _____ Insurance ID Number: _____

Insurance Company Phone Number: _____ Insurance Company Fax Number: _____

My Primary Care Doctor

Primary Care Doctor's Name: _____ Office Phone Number: _____

Address: _____

My Sleep Specialist

Sleep Specialist's Name: _____ Office Phone Number: _____

Address: _____

My Home Medical Equipment Company

HME Company Name: _____ Phone Number: _____

Equipment Name / Model: _____ Equipment Serial Number: _____

Notes: _____

What's Inside:

.....

IMPORTANCE OF SLEEP	4
WHAT IS OBSTRUCTIVE SLEEP APNEA?	5
HOW DO I KNOW IF I HAVE OSA?	6
STOP-BANG screening tool	7
A warning about alcohol, pain killers, sedatives, and sleep aids	8
TESTING FOR OSA	10
Home oximetry	10
Sleep studies.....	10
IN-LAB SLEEP STUDY (PSG).....	12
TREATING OSA	14
POSITIVE AIRWAY PRESSURE (PAP) THERAPY	15
CPAP.....	17
Getting Started with CPAP.....	18
Living with CPAP.....	19
Troubleshooting common problems with CPAP	20
BEHAVIORAL THERAPIES	23
ALTERNATIVE THERAPIES	25
RESOURCES.....	27

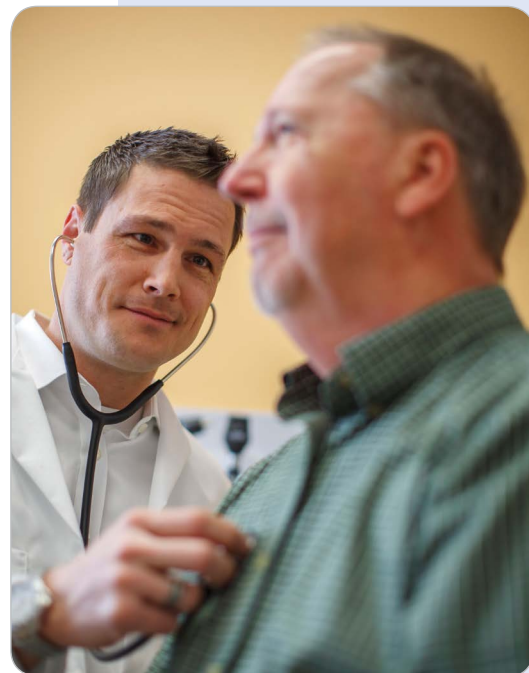
“I HAD NO IDEA...”

“I hadn’t been sleeping well for years. I’d always thought it was stress or the late nights or a dozen other reasons. My doctor suggested I might have OSA, and it made sense.

“Now, with treatment, I sleep through the night and wake up feeling rested. It’s been years since I’ve had this kind of energy.

“It’s also helped with my high blood pressure. And my wife no longer wakes to my snoring or coughing fits. Having to use a CPAP machine can sometimes be inconvenient, but it’s definitely been worth it.”

— Robert M., OSA patient



Importance of Sleep

Sleep is more than just a time to rest and recharge. Our bodies use sleep to heal and grow, and our brains learn and make memories. Good sleep along with exercise and a healthy diet are key to good health.

Sleep Deprivation

The human body needs sleep. But, the amount of sleep needed is different for each person. Many people don't get the sleep they need. When you don't get enough sleep (or if your sleep is interrupted), you become **sleep deprived**. Common problems caused by sleep deprivation include:

- Lack of energy
- Tiredness
- Headache
- Poor judgement
- Forgetfulness
- Bad mood
- Decreased sex drive
- Slowed metabolism (it's easier to gain weight)
- Lowered immunity (it's easier to get sick)

Sleep disorders

If you regularly feel sleep deprived, you may have a **sleep disorder**. In fact, millions of Americans suffer from sleep disorders that **make it hard to fall asleep, stay asleep, or feel rested after sleeping**. Long term, these disorders have serious consequences on our health.

Sleep disorders are strongly linked to:



High blood pressure



Stroke



Heart attack



Diabetes



Obesity



Accidents



Memory loss



Depression

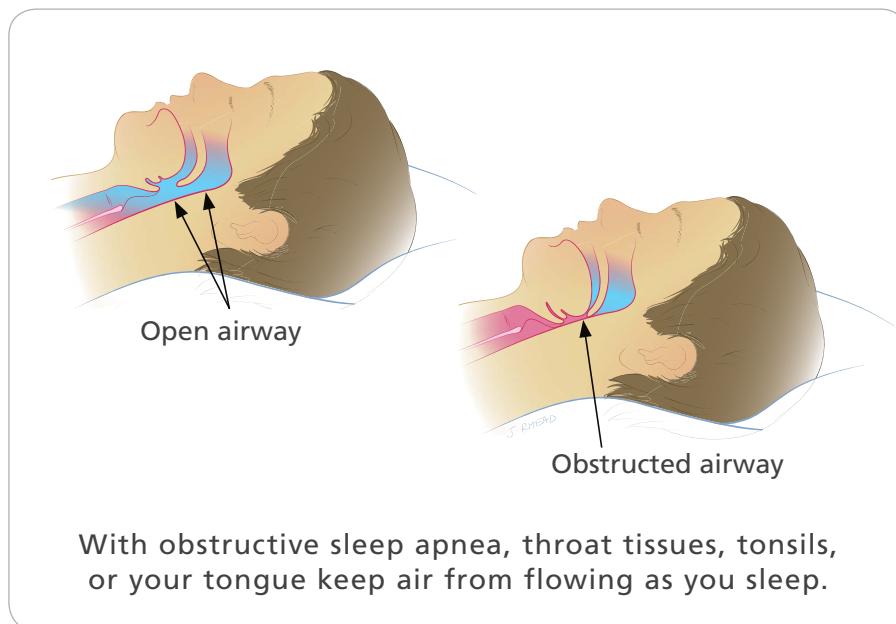
This booklet addresses one type of sleep disorder called **obstructive sleep apnea or OSA**. If you feel you're not sleeping well, or if you have any of the symptoms or risk factors listed in this booklet, talk with your doctor. Getting treatment will not only help you feel better, it may save your life.

What is Obstructive Sleep Apnea?

Obstructive sleep apnea (OSA) is a sleep disorder that affects how you breathe when sleeping.

What causes OSA?

When you sleep, the body relaxes and muscles and tissues in the mouth, throat, and neck begin to close off the airway. This causes you to breathe very shallow or even stop breathing for a few seconds to a minute. (When we're awake, these muscles help us speak, chew, and swallow.)



What does OSA do to the body?

OSA will keep you from getting necessary oxygen while you sleep.

As oxygen levels go down, carbon dioxide levels in the body rise. This tells your brain that something is wrong. To fix the problem, the body wakes up to open the airway and start breathing again. You may startle, choke, cough, or snort and then take a few deep breaths. Often, you fall asleep again without remembering waking up.

This happens over and over throughout the night: the body relaxes, the airway closes, and the body fights to breathe again. Not only is your sleep continually being interrupted, but without enough oxygen, cells in the body begin to die or can't function properly. This is one reason why OSA is linked to so many serious health conditions.

OSA BASICS

Obstructive sleep apnea is:

- A sleep disorder.
- Very common. More than 12 million adults have it.
- Treatable.

Untreated, OSA can lead to:

- Car accidents
- Dementia
- Depression
- Diabetes
- Heart attack
- High blood pressure
- Obesity
- Stroke
- Higher healthcare costs
- Longer hospital stays
- Earlier deaths

DON'T DRIVE DROWSY

Driving while drowsy is dangerous. Research shows that drowsy driving is similar to drunk driving. It slows reaction times and impairs judgment. Drowsy driving causes more than 70,000 car accidents every year and is a factor in 1 out of every 5 deaths on the road.

KEEPING TRACK OF YOUR SLEEP

Smart technology can help track your sleep. Some smartphone apps record movements and sounds. Others can log heart rate and breathing using wearable technology.

This type of technology can help you improve your sleeping habits, or it can help identify sleep problems, especially if you sleep alone.

How Do I Know if I Have OSA?

The best way to know if you have OSA is to learn about the symptoms, signs, and risk factors. If you have signs or risk factors for OSA, your doctor can help set up medical tests. The tests will show if you have OSA and help you and your doctor decide on a treatment plan (see page 10 for information on medical tests).

What are the signs and symptoms of OSA?

Signs and symptoms are indications of a health problem. **Symptoms** are things you feel but only you can describe. Symptoms of OSA may include:

- Daytime tiredness
- Morning headaches
- Sore throat or dry mouth when you wake up
- Feeling unrested or groggy, especially after a long night's sleep

Signs are things that can be seen or observed by others. The most common signs of OSA are:

- Loud snoring
- Restless sleep—waking over and over throughout the night
- Long pauses between breaths while sleeping.
- Suddenly waking and choking or gasping for air.

You can have OSA and not notice any symptoms. It may be easy to overlook symptoms especially if you live a busy or stressful life, or if you sleep alone. Often times, a person's bed partner will first notice problems. They may hear you snore or see you stop breathing.

What are the risk factors of OSA?

Risk factors are things that raise your chances of having or developing a health problem. The most common risk factors of OSA are:

- **Age.** OSA is most common in adults who are 50 years or older.
- **Sex.** Men are 2 times more likely to have OSA than women.
- **Weight.** You are more likely to have OSA if you are overweight or obese.
- **High blood pressure (hypertension).** Nearly 7 out of 10 people with severe OSA have high blood pressure.
- **Alcohol, pain medicine, sedatives, or sleep aid use.** Some substances, such as alcohol, pain medicine, sedatives, or sleep aids, relax the body. This makes it easier for the airway to collapse and harder for the body to wake. The results can be deadly (see [page 8](#) for more information).
- **Abnormal airways.** Some people naturally have narrow airways, or they may have differences in their mouth, throat, nose, or neck that cause OSA.

STOP-BANG screening tool

The **STOP-BANG** screening tool can help you find out if you're at risk for OSA. Read each question and mark the box for 'yes' or 'no.' At the end, add the number of 'yes' answers to get a score.

Do any of these apply to you?

YES **NO** **Snoring?** Answer "YES" if you snore loudly (louder than talking or loud enough to be heard through closed doors)?

YES **NO** **Tired?** Answer "YES" if you often feel tired, fatigued, or sleepy during the day time, even after a "good" night's sleep.

YES **NO** **Observed?** Answer "YES" if anyone has ever observed you stop breathing during your sleep.

YES **NO** **Pressure?** Answer "YES" if you have or are being treated for high blood pressure (hypertension).

YES **NO** **Body mass index over 35?** Answer "YES" if you weigh more for your height than is shown in the table at right.

YES **NO** **Age older than 50?** Answer "YES" if you are older than 50 years.

YES **NO** **Neck size large?** Answer "Yes" if:
 • You are male and your neck is more than 17 inches around.
 • You are female and your neck is more than 16 inches around.

YES **NO** **Gender = male?** Answer "YES" if you are a man.

Number of
YES
answers

Score 3 or more: You are at **HIGH RISK** for obstructive sleep apnea (OSA). Talk with your doctor.

Score 1–2: You could be at risk for obstructive sleep apnea (OSA). Talk with your doctor if you're concerned or have questions.

Questionnaire adapted with permission from Chung F, Yegneswaran B, Liao P, Chung SA, Vairavanathan S, Islam S, Khajehdehi A, Shapiro CM. *Anesthesiology*. 2008;108(5):812-821.

→ STOP-BANG

screenings are given before some hospital procedures. This is to keep you or your loved one safe during surgery.

BMI TABLE

BMI stands for *body mass index*.

Find your height in the table below. If you weigh more than the weight listed next to it, your BMI is 35 or higher.

Height	Weight (lb)
4'10"	167
4'11"	173
5'	179
5'1"	185
5'2"	191
5'3"	197
5'4"	204
5'5"	210
5'6"	216
5'7"	223
5'8"	230
5'9"	237
5'10"	243
5'11"	250
6"	258
6'1"	265
6'2"	272
6'3"	279
6'4"	287
6'5"	295

If your BMI is over 35, you are more likely to have OSA. You are also at **very high risk** for type 2 diabetes, hypertension, cardiovascular disease, and other serious health problems.

When should I call my doctor?

Did you score a 3 or more?

Talk to your doctor right away if any of the following apply to you:

- You have a medical condition that can be made worse by OSA:
 - Cardiovascular disease
 - Type 2 diabetes
 - Neurological disease
 - History of stroke or TIA
 - COPD
- You've ever fallen asleep while driving
- You use opioid-based pain medicines, sedatives, or sleep aids
- You're a commercial driver or pilot, or work in a hazardous job environment

TIPS FOR BETTER SLEEP

- **Stick to a schedule.**
 - Go to bed and wake up at the same time each day, even on weekends or days off work.
 - Create a relaxing bedtime routine. Start about 30 minutes before going to bed.
- **Avoid screen time before bed.** Light from smart phones, tablets, and TVs can trick your brain into staying awake.
- **Be active during the day.**
 - Regular exercise can improve sleep. Try for 30 minutes everyday.
 - Avoid heavy exercise 2 to 4 hours before bedtime.
- **Make your bedroom the place for sleep.**
 - Use your bedroom only for sleep.
 - Make your bedroom quiet and dark.
 - Make sure your bed and pillow are comfortable.
 - Keep the bedroom temperature comfortable but on the cool side.
- **Watch what you eat and drink.**
 - Avoid alcohol and caffeine within 6 hours of bedtime.
 - Don't go to bed hungry, but don't eat a large meal. Have a small snack.
 - Avoid eating spicy foods before bedtime.

➔ A warning about alcohol, pain killers, sedatives, and sleep aids

Alcohol, pain killers, sedatives, and sleep aids—these are all examples of depressants that affect the central nervous system.

Depressants slow brain activity and relax the body, which can cause sleepiness, difficulty breathing, and slowed heart rate. These side effects are serious and can be deadly—especially for people with OSA.

Here are some important questions to consider:

- **Do you regularly use alcohol?**
- **Do you use prescription narcotic pain medication?**
Examples include:
 - fentanyl (Duragesic, Subsys, Abstral)
 - hydrocodone (Lortab, Norco, Vicodin)
 - oxycodone (Oxycontin)
 - morphine (Roxanol, MS Contin)
- **Do you use prescription sedatives?** Examples include:
 - alprazolam (Xanax)
 - diazepam (Valium)
 - lorazepam (Ativan)
- **Do you use prescription sleep aids?** Examples include:
 - eszopiclone (Lunesta)
 - mephobarbital (Mebaral)
 - pentobarbital (Nembutal)
 - phenobarbital (Luminal)
 - temazepam (Restoril)
 - zaleplon (Sonata)
 - zolpidem (Ambien)

If you answered yes to any of these questions and think you might have OSA, call your doctor today. Treating your OSA can lower the risk of serious side effects. Treatment can also help some medicines work better so you can take less and feel better.

Discussion Guide

It's OK to have questions.

OSA is complex, and it can be hard to understand. Your healthcare team expects you to have questions and will be happy to answer them. Before moving on, take a moment and ask yourself the following questions:

- What is OSA?
- What causes OSA?
- What signs and symptoms should I look for?
- What are my personal risk factors?
- What are the risks of drowsy driving?
- What are the risks of using alcohol, pain medication, sedatives, or sleep aids?
- What do I need to do next?

If there's something you're not sure about, please ask.

Your healthcare team is here to help.

Questions for my doctor:

Testing for OSA

Diagnosing OSA requires special medical tests. Two commonly used tests are **home oximetry** and **sleep studies**.



Home oximetry

Home oximetry uses a small device that fits over your finger. The device monitors and records the oxygen in your blood while you sleep. If your oxygen repeatedly dips below a certain level, you might have OSA.

A home oximetry test is easy, inexpensive, and can be done in a timely manner. It is only a screening test, which means it can't be used to diagnose OSA, but it can show if you need urgent care or additional testing.

For more information about testing your blood oxygen levels at home, see Intermountain's *Overnight Home Oximetry* fact sheet.

Sleep studies

In order to diagnose OSA, you will need to do a sleep study. During the sleep study, sensors placed on your body measure and record detailed information while you sleep, including:

- Breathing rate and effort
- Heart rate and rhythm
- Oxygen level
- Eye movements
- Brain activity
- Muscle activity

The doctor uses all the information to accurately diagnose OSA. If you have OSA, a second sleep study may be needed to set up and adjust your treatment. Sleep studies are safe and don't require any special preparation. You'll be back to your normal activities in the morning.

There are 2 types of sleep studies: **Home sleep studies** and **in-lab sleep studies**.

My sleep-lab study appointment

To schedule a sleep study, you will need a referral from you doctor.

I am having the (circle one): **Home Sleep Study** / **In-Lab Sleep Study**

Date/Time: _____

Place: _____

Doctor: _____

Home sleep study

A home sleep study is done in your home using portable monitors. The monitors are picked up and returned to your doctor who will then analyze the results. Home studies usually cost less compared to an in-lab study. However, they may not be an option for everyone. Your doctor can explain any restrictions or requirements.

In-lab sleep studies

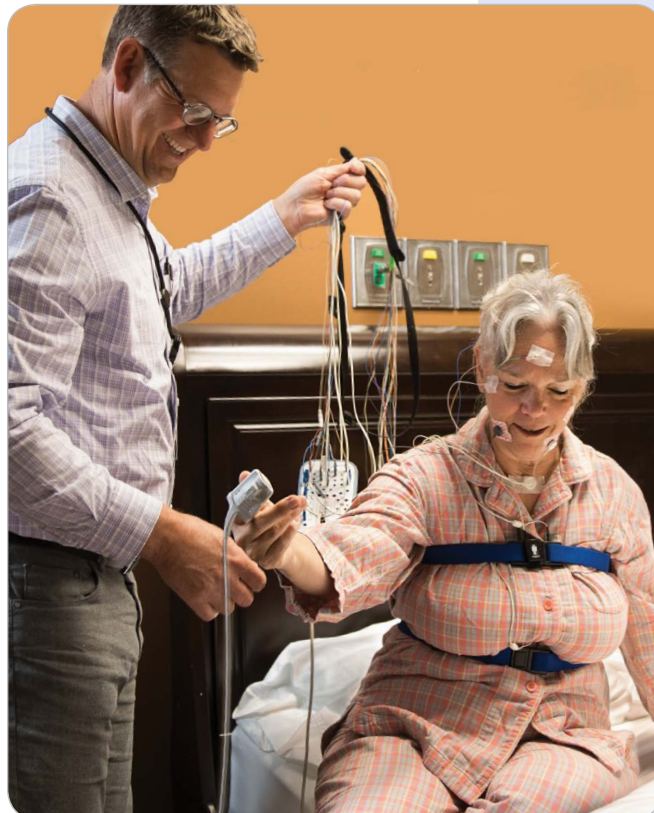
In-lab sleep studies are performed in a sleep lab or medical facility. The most common sleep study is called a **PSG** or **polysomnogram** [pall-ee-SOM-nuh-gram]. Compared to home sleep studies, in-lab studies are different in the following ways:

- In-lab studies use extra sensors that make the test more accurate and better for diagnosing certain sleep disorders.
- Medical staff place the sensors and make sure they're working throughout the study.
- Medical staff monitor you while sleep and watch for any signs of OSA or other problems.
- You may have a chance to try CPAP treatment during the study (see [page 16](#)).

For detailed information on what to expect and how to prepare for a sleep study, please see [page 12](#).



Home Sleep Study Kit



In-lab Sleep Study (PSG)

This section gives detailed information about PSG in-lab sleep studies. It will explain how to prepare and what to expect before, during, and after.

Prepare for a sleep study

Follow these tips to prepare for your sleep study:

- Talk with your health insurance company.** Some things you should ask:
 - What do I have to pay?
 - Which tests are covered?
 - Do I need preauthorization or permission?
- Take your usual medicines, and bring them with you, including sleep aids.** If you usually need a sleep aid (such as Ambien) to fall asleep, bring it with you so you can take it as usual.
- Don't drink alcohol** or take any other stimulants or sedatives on the day of the test.
- Don't drink or eat anything that contains caffeine** after 3:00 PM on the day of the test.
- Don't nap on the day of the test.**
- Shower before arriving at the sleep lab.** Hair and skin needs to be clean and dry so that sensors stay in place. Do not use rinses, conditioners, or oils in your hair. Clean all make-up and lotions off of your face. Shave as usual. Beards and mustaches are okay if clean and dry.
- Bring modest sleepwear or pajamas.** Sleepwear should be 2-piece (have a top and bottom) and fit loosely so technicians can attach sensors around your chest and stomach. Also note that all studies are video recorded.
- Bring an item that helps you unwind before bedtime.** This can be a book, a magazine, knitting, or crossword puzzles.
- Bring other items as needed,** such as your toothbrush, toiletries, or clothes for the next day. Feel free to bring your own pillow.
- Eat dinner before you arrive.**
- Bring your sleep diary, if you have one.**
- Follow any special instructions from your doctor.**

Arriving at the sleep lab

Here's what happens when you arrive for your study:

- 1** When you first arrive, you'll be admitted to the facility. You may have paperwork to complete.
- 2** You'll meet the sleep technician. The technician will explain the study and answer your questions.
- 3** You'll be taken to your room and bed. You'll change into your sleepwear and get ready for bed, following your usual routine.
- 4** The sleep technician will hook up various sensors, including:
 - **Sticky patches (sensors)** on your face, scalp, chest, and legs. These will record your brain activity, heart activity, and body movements.
 - **Sensors by your nose.** These measure breathing.
 - **Straps around your chest and abdomen (belly).** This is to measure the effort it takes to breathe.
 - **A finger clip.** The clip records your blood oxygen levels.The sensors are securely attached and the wires are bundled together so you can sleep in any position and turn over as you sleep.

Commonly asked questions

Will it be hard to fall asleep?

For some it may take a bit longer, but don't worry — people usually fall asleep pretty quickly.

What if I need to use the bathroom in the night?

Let the technician know if you need to get out of bed for any reason. Unplugging and reconnecting the sensors is fairly quick and easy.

What if I change positions a lot when I sleep?

Changing positions is not a problem. You will be able to roll over and move around in bed during the study.

Can family members stay overnight?

Usually no, but there are exceptions.

- Patients under 18 years of age must have a parent or guardian stay overnight.
- Patients who need help from a caretaker for medical reasons may contact the sleep lab. Please make arrangements before the study.

In-lab Sleep Study (continued)

During the sleep study

Here's what happens during the sleep study:

- 1 The technician will take initial readings from the sensors while you are awake.
- 2 You'll fall asleep. You'll have time to relax—read a book or watch TV—but at some point the room will be darkened. At least 6 hours of sleep are needed for good test results.
- 3 The sensors attached to your body will send signals to equipment in another room. A technician monitors the signals. If the sensors show that you repeatedly stop breathing, you have sleep apnea.
- 4 You might try PAP treatment. OSA can sometimes be diagnosed early in the test. If this happens, a technician will enter your room to set you up with a trial treatment of positive airway pressure (PAP).
- 5 After PAP is started and you're back asleep, the technician will continue to check your readings and make adjustments to the airflow to find the best settings. The settings are recorded and used for PAP treatment at home.

After the sleep study

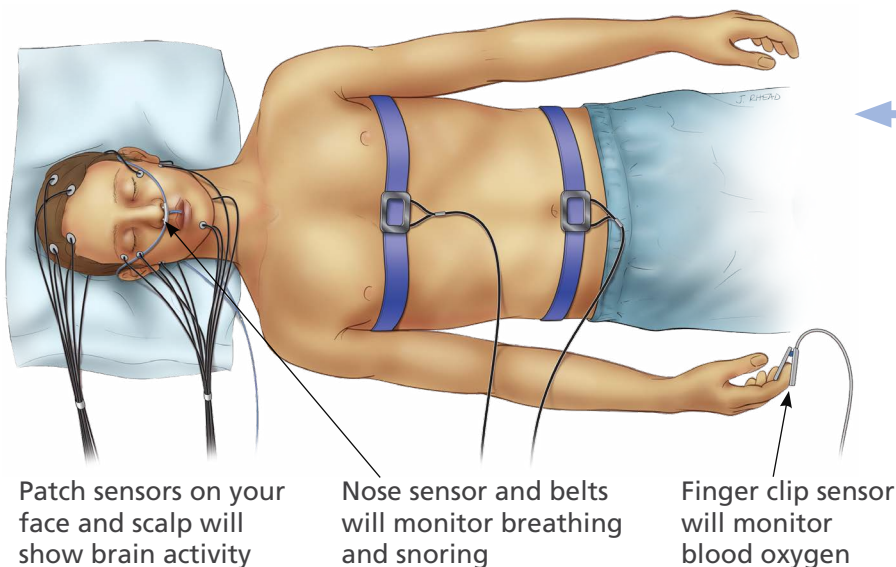
Here's what happens after the sleep study:

- 1 A technician will wake you, usually at about 6:00 AM. Most people are ready to leave the sleep lab by 7:00 AM.
- 2 The technician will remove the sensors. Some sensors stick to your skin and removing them may cause redness or mild irritation. The sensors will also leave sticky gel in your hair. A shower is available to wash your hair.
- 3 You will get results in about 2 weeks. A report is also sent to your doctor. Make an appointment with your doctor or sleep specialist to review the results and discuss treatment options.

What do I need to do next?

After your sleep study:

- 1 **Review your results** with your doctor. Results are ready in about 2 weeks.
- 2 **Discuss treatment** plans and options with your doctor if you are diagnosed with OSA. See [pages 14–25](#) for more information on treatments.
- 3 **Lower your risk factors.** For example, losing weight can help with OSA and other conditions such as hypertension. Talk with your doctor to learn more.



← During an in-lab sleep study, sensors measure data that will help your doctor diagnose your sleep problem.

Treating OSA

Why treat OSA?

Obstructive sleep apnea is a treatable sleep disorder. By treating OSA you will likely:

- **Feel better.** Many people immediately begin to feel the effects of a restful night's sleep. Over time, you'll find you have improved energy, mood, and memory.
- **Be healthier.** Treating OSA can lower your risk of stroke and cardiovascular disease by as much as half. Treatment can also help lower high blood pressure and improve the body's ability to use insulin.
- **Live longer.** Untreated OSA alone increases your risk of a death. For people with other serious health conditions, OSA will make those conditions worse or harder to treat.
- **Be safer.** Treating OSA significantly reduces your chances of causing an automobile accident. The people around you will be safer too.
- **Save money.** People who treat their OSA spend less money on doctor visits and other healthcare related costs. They also spend a lot less time in the hospital because of other problems.

➔ REMINDER

OSA is considered a chronic or long-term health problem. Even as you begin to feel better, you'll need to stay committed to your treatment plan — otherwise your sleep apnea will come back.

Treatment options

There are 3 types of treatment options — or therapies — for OSA:

- 1 Positive airway pressure therapy (PAP).** A special machine pushes air through a mask. The air pressure keeps your airway open and helps you breathe while sleeping. **PAP is the most common and effective treatment therapy** (see [pages 15–21](#)).
- 2 Behavioral therapy.** Also known as **lifestyle management therapy**, this includes losing weight, changing sleep positions, and not drinking alcohol before bed (see [page 23](#)).
- 3 Alternative therapy.** Some people need a more specialized approach, especially if other therapies don't work or aren't a good option. Alternative therapies include dental appliances and surgery. It's important to work with a sleep specialist when considering alternative therapies (see [page 25](#)).

Positive airway pressure (PAP) therapies

With **Positive airway pressure therapy (PAP)**, a special machine pushes air through a mask and into your airway while you sleep. The extra air pressure holds your airway open so you can breathe while sleeping.

PAP is the most common and effective treatment therapy. PAP can often be combined with other therapies for even better results.

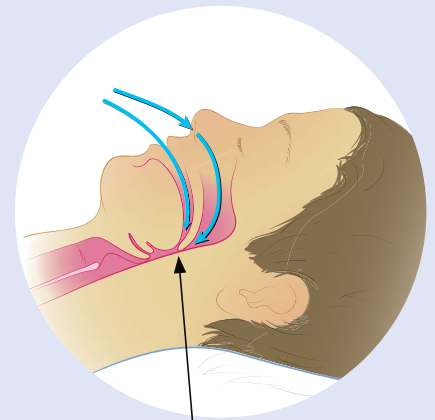
Why choose PAP	Why NOT choose PAP
<ul style="list-style-type: none"> • It helps most people control OSA. • It works fast. Symptoms can stop with the first use. • Health insurance will usually cover the costs. • You may not need to do another sleep study for 5 to 10 years. • There are many types of masks available for comfort. 	<ul style="list-style-type: none"> • It may be uncomfortable. Even with professional help finding the best mask, you might feel PAP interferes with your lifestyle too much. • Your insurance may not pay for certain types of machines.

PAP therapy options

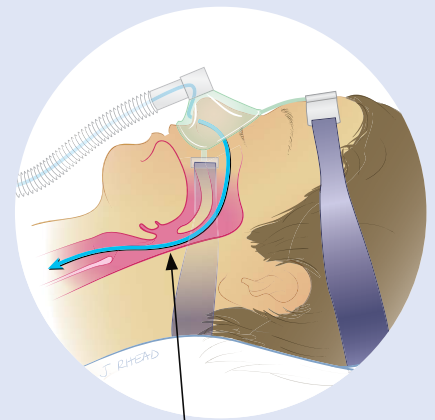
There are 3 main types of PAP therapy:

- **CPAP (continuous positive airway pressure):** With CPAP, air flows to the mask continuously and the air pressure does not change. This works well for most people.
- **APAP (autotitrating [ah-tow-TIE-tray-ting] positive airway pressure):** APAP or autoPAP machines automatically adjust air flow throughout the night. You get only the amount of air pressure you need, which can change during the night.
- **BiPAP (bilevel positive airway pressure):** BiPAP machines switch between 2 levels of pressure — high pressure when you breathe in and low pressure when breathing out. BiPAP works well for people who need high pressure for PAP to work.

While CPAP is the most common type of PAP therapy, your doctor may recommend APAP or BiPAP if you have a hard time adjusting to CPAP or for other reasons.



Without PAP therapy, air is blocked from getting to your lungs.



With PAP therapy, a stream of air pushes your airway open so you can easily breathe.

CPAP

What is CPAP?

Continuous positive airway pressure, or **CPAP**, is the most common type of PAP therapy. CPAP uses a small machine to send a continuous flow of air into your airway while you sleep. The pressure from the air flow helps keep your airway open.

Why choose CPAP?

CPAP is the treatment of choice for all levels of OSA. Using CPAP every time you sleep will help you get more restful sleep. Your body will get the oxygen it needs, and you won't be waking to breathe. Other benefits include:

- Better concentration
- More energy
- Less daytime drowsiness
- Improved mood, and fewer symptoms of depression
- Less snoring
- Reduced risk of serious health conditions, including heart disease, stroke, and diabetes

I FELT LIKE A NEW PERSON

"I decided to try CPAP. It took a couple nights to get used to it, but I soon started to feel like a new person. I won't sleep without it now."

— Dan H.,
OSA patient



How does CPAP work?

A CPAP system has 3 main parts:

- **A flow generator**, which filters room air and produces positive air pressure. The flow generator is about the size of a tissue box and sits next your bed.
- **A mask or nasal piece** that delivers the filtered air to your nose.
- **An airflow hose** that connects the nasal piece or mask to the flow generator.

Getting started with CPAP

Talk to your insurance company

Before you begin CPAP, talk to your insurance company. Some things you should ask include:

- Which home medical equipment (HME) suppliers are in my network?
- Which CPAP machines are covered?
- What's the cost for the CPAP machine?
- Do I buy the machine or do I rent it?
- What are the costs on replacement supplies (masks, tubings, straps)?

Meet with an HME provider

After your doctor prescribes CPAP, you will meet with an **HME provider**. The equipment provider helps you fit your new equipment and answers questions about using it.

When you meet with the HME provider, be sure to:

- **Ask about equipment features (see right).**
- **Tell them if you sleep on your back, side, or stomach.** The HME provider can choose tubing that makes it easier for you to sleep comfortably.
- **Get a good seal between your face and the mask.** It's important that the pressurized air doesn't leak out of the mask. If it does, it can irritate your eyes.
- **Ask questions.** You might ask how to adjust the mask and tubing, or how to use the features of the equipment. You may also want to know who to call for service or replacement parts. The more you know, the more comfortable you'll be as you start the new therapy.

Have a second sleep study

In some cases, you may need to have a second sleep study in order to find and test the best settings for your CPAP machine. Follow-up sleep studies may also be needed if:

- Signs or symptoms of OSA return.
- You lose more than 10% of your body weight.

CHOOSING A FLOW GENERATOR

Some flow generators have extra features that can make CPAP more pleasant, such as:

- **Heaters and humidifiers.** These make the air comfortable.
- **Pressure ramp.** This slowly increases air pressure as you fall asleep.
- **Exhalation pressure relief (also called C-flex or A-flex).** This lowers the air pressure when you breathe out.

CHOOSING A MASK

When choosing a mask, think about how you move and breathe while you sleep. The three most common mask types are:

- **Nose masks.** Covers just the nose.
- **Nose and mouth masks.** Covers the nose and mouth.
- **Nasal pillows.** A small nosepiece with ends that fit inside each nostril. These may work if you have trouble sleeping with a mask.

CPAP RISKS AND POTENTIAL COMPLICATIONS

CPAP therapy is very safe. Complications are usually minor and can be fixed by making adjustments to the equipment. Complications include:

- Skin irritation, eye irritation, or air leaks if the mask doesn't fit well or rubs your face
- Nasal congestion
- Dry or sore throat
- Swallowed air, which can lead to gassiness or bloating

See [page 20](#) for troubleshooting common problems.

Living with CPAP

The only way to get the full benefit of CPAP therapy is to use it every time you sleep. It can take time to adjust to CPAP. But as you do, you'll feel better. You'll also need to learn to clean and maintain your CPAP equipment.

Equipment maintenance and cleaning

When cleaning your equipment, use warm, soapy water and rinse thoroughly. For a deeper clean, use a solution of vinegar and water (1 part vinegar to 3 parts water). Let the part soak for 30 minutes and then rinse completely.

To disinfect, use a mixture of hydrogen peroxide and water (3 capfuls hydrogen peroxide to 1 cup water). Let the part soak for 30 minutes and then rinse completely. **Do not use cleaning chemicals, alcohol, or bleach.**

Cleaning schedule

Daily:

Clean the mask and mask seal using a damp, soapy cloth.

Weekly:

- **Disinfect the mask** by soaking it in a mixture of water and hydrogen peroxide.
- **Empty and clean the humidifier** for the flow generator. Wash with warm, soapy water and rinse. Disinfect using a mixture of hydrogen peroxide and water. Refill with distilled water only.
- **Wash mask straps** and headgear. Machine wash delicate in cold water, or hand wash. Use a mild detergent and let air dry.
- **Clean the hose** by soaking it in warm, soapy water for 30 minutes. Rinse it and hang it to dry.
- **Check the flow generator air filter** to see if it looks dirty. If a filter is blocked, call for a replacement.

Replacement parts

Pieces of the CPAP system should be replaced regularly. Follow the manufacturers recommendations or replace your supplies as follows:

How often?	Replace:
Every month	<ul style="list-style-type: none">• Nasal pillow or mask cushion• Air filter
Every 3–6 months	<ul style="list-style-type: none">• Mask• Tubing
Every 6–12 months	<ul style="list-style-type: none">• Headgear• Chin strap• Water chamber

Contact your insurance company to find how often they will pay for replacements.

Special Situations

If you're traveling, having surgery, or getting over a cold, follow these guidelines while using CPAP:

- **If you travel**, take the equipment with you. You should keep using CPAP therapy even if you're away from home for just one night.
When flying, it's best to take the CPAP unit as a carry-on item. Check with the airline—some do not count medical equipment against your carry-on limit.
- **If you have surgery**, bring your CPAP equipment with you to the hospital. Healthcare providers in the recovery room will put it on you to help you breathe as you come out of the anesthesia.
- **If you have a cold or sinus infection**, try to continue the CPAP—using an oral decongestant or antihistamine can help. And make sure to clean and disinfect your CPAP equipment (see [page 18](#)) to avoid getting sick again from the same germs.

Tips for Adjusting to CPAP

To treat your sleep apnea, you need to use CPAP every night and every time you take a nap. As with any treatment, **CPAP helps only if you use it consistently**.

If you run into problems at first, don't give up. There are many ways to make things better. Use the tips on the next page to troubleshoot common problems, complications, and concerns.

Notes or questions about CPAP:

CPAP ALTERNATIVES

Alternatives to CPAP therapy include:

- Autotitrating positive airway pressure (APAP)
- Bilevel positive airway pressure (BPAP)
- Lifestyle and alternative treatments

Troubleshooting Common Problems with CPAP

Problem / concern	Possible cause	Tips
Mask is new and uncomfortable; I'm afraid I won't be able to sleep with it.	You need time to get used to the mask.	Wear the mask for short periods in the evening for a few days before you start wearing it to bed.
My mask isn't sealing or is leaking.	<ul style="list-style-type: none"> • Mask doesn't fit well. • Mask is dirty. 	<ul style="list-style-type: none"> • Refit the mask. Follow the instructions of the mask user-guide. • Clean the mask seal daily. Wash your face before bed. • Use a fabric mask liner. The liner sits between the mask and your face for a better seal.
The flow generator is noisy. I don't like the sound it makes.	<ul style="list-style-type: none"> • The flow generator is too close to you. • Air filter is blocked. 	<ul style="list-style-type: none"> • Get a longer hose and move the flow generator further away, or place it lower than your bed. • Check that the air filter is clean and not blocked by outside items.
I get skin irritation, pressure sores, or blisters.	<ul style="list-style-type: none"> • The headgear straps are too loose or tight. • Mask doesn't fit well. • Your mask is worn out or dirty. 	<ul style="list-style-type: none"> • Readjust your headgear straps. The mask should be as loose as possible while still creating a seal. • Check the mask for stiffness or cracks. Replace if needed. • Wash your face nightly. Clean the mask seal daily. • Use a fabric mask liner. • Talk to your HME provider about the mask fit or changing mask type. A full face mask or nasal pillow may give a better fit.
My throat gets dry, or I get a stuffy or runny nose or nosebleeds.	The air is dry.	<ul style="list-style-type: none"> • Get a heated humidifier for your CPAP equipment. • Try a saline nose spray at bedtime and when you wake up. • Ask your doctor about using nasal sprays, such as fluticasone (Flonase), flunisolide (Nasarel), mometasone furoate (Nasonex), or ipratropium bromide (Atrovent). • Ask your doctor about using an oral antihistamine. • This problem may go away naturally over time. If not, call your doctor.

Troubleshooting Common Problems with CPAP (continued)

Problem / concern	Possible cause	Tips
My mouth gets dry.	You sleep with your mouth open.	<ul style="list-style-type: none"> • Try a chin strap, or consider a full face mask. • Get a heated humidifier for your CPAP equipment.
My eyes get sore, dry, red, or swollen.	<ul style="list-style-type: none"> • Air might be leaking from your mask into your eyes • Your mask might be too tight. 	<ul style="list-style-type: none"> • Try adjusting your headgear straps. Make sure the mask has a good seal with your face, without being too tight. • Wash your face nightly. Skin oil or cosmetics can cause the mask to leak. • Check the mask for stiffness or cracks. Replace it if needed.
I'm swallowing air and my stomach is bloated.	<ul style="list-style-type: none"> • The air pressure might be too high as you go to sleep. • You sleep with your mouth open. 	<ul style="list-style-type: none"> • If your CPAP equipment has a pressure ramp feature, use it. • Consider using a chin strap. • This problem may go away naturally over time. If not, talk to your doctor about bilevel positive airway pressure (BPAP) or autotitrating positive airway pressure (APAP) equipment.
My sinuses or chest hurts, or I have trouble breathing out.	The air pressure might be more than you can breathe in as you first go to sleep.	<ul style="list-style-type: none"> • If your CPAP equipment has a pressure ramp feature or exhalation pressure relief (C-flex or A-flex), use it. • If this problem doesn't go away over time, talk to your doctor about BPAP or APAP equipment.
My bed partner doesn't like the equipment.	Your bed partner might not understand how important CPAP is to your health.	<ul style="list-style-type: none"> • Share this book and other materials that explain sleep apnea and CPAP. • Get your partner involved in a patient support group • Ask your bed partner to be patient. As you begin to use CPAP regularly, he or she will see positive changes that make up for any inconvenience caused by the equipment.

Discussion Guide

It's OK to have questions.

OSA is complex, and it can be hard to understand. Your healthcare team expects you to have questions and will be happy to answer them. Before moving on, take a moment and ask yourself the following questions.

- What do my sleep lab study results mean, and how serious is my OSA?
- What is PAP therapy is and how does it works?
- How can I benefit from PAP therapy?
- When do I make follow-up appointments?
- Do I understand my PAP treatment plan and:
 - How to use my equipment (hoses, masks, humidifier)?
 - How to care for and clean my equipment?
 - How to troubleshoot common problems?
 - Who to call for service or parts?
 - How to travel with PAP?

If there's something you're not sure about, please ask.

Your healthcare team is here to help.

Questions for my doctor:

Behavioral Therapies

Behavioral therapies, also known as **lifestyle management therapies**, involve making changes to behaviors or lifestyle choices in order to improve OSA symptoms. Behavioral therapies include losing weight, changing sleep positions, and avoiding alcohol before bed.

Weight loss

Losing weight is one of the best ways to improve your OSA. Losing as little as 15 to 20 lbs can lower your **AHI score** and help you sleep better and snore less.

Losing weight can be hard. Not only does OSA leave you feeling tired from lack of sleep, it often causes problems with metabolism (the body's ability to change food into energy).

For many, the first step to losing weight is getting OSA under control with PAP therapy. As your body begins to feel better, you can focus more on diet and exercise. And remember, healthy weight loss takes time.

➔ **AHI stands for Apnea Hypopnea [hi-POP-nee-uh] Index.** It's a measure of how serious your apnea is. **A higher score means the apnea is severe.**

Why choose weight loss	Why NOT choose weight loss
<ul style="list-style-type: none"> • It is a natural way to treat OSA. • It may improve your overall health and manage other health conditions. • There are many different ways to lose weight with diet and exercise. • It can be a low-cost option. 	<ul style="list-style-type: none"> • Weight loss takes time. • It may be difficult because of your health, work, or lifestyle. • Some weight management programs suggest weight loss surgery, which may not be covered by your insurance.

Sleeping position

Sleeping on your back can make snoring and sleep apnea worse, while sleeping on your side can help these problems. Special pillows may better position your head and neck while sleeping. Before relying on this type of treatment, talk with your doctor because it's not as simple as it sounds.

Why choose a sleeping position	Why NOT choose a sleeping position
<ul style="list-style-type: none"> • It can reduce snoring and sleep apnea if done properly. • It can be a low-cost option. 	<ul style="list-style-type: none"> • May only work in mild to moderate OSA. • It may be difficult to stay off your back all night.

Drink less alcohol

Regardless of which therapy you choose, consider drinking less alcohol.

Alcohol acts as a sedative and causes the body to relax more than it normally would. Research shows that with alcohol, breathing is interrupted more often, and it takes longer for the body to wake up and breathe again. Your body has to work even harder to get the oxygen it needs. By drinking less, and drinking less often (especially before bed), you can help your OSA.

If you choose to drink alcohol

Stop drinking 2-3 hours before bedtime. Have no more than 1 drink a day for a woman or 2 drinks a day for a man. **What is 1 drink?** Each of these counts as 1 drink:

5 ounces
of wine



12-ounce can or
bottle of beer
(light or regular)



1.5 ounces (one shot)
of hard liquor
(vodka, whiskey,
gin, etc.)



4 ounces sherry
or liqueur



Notes or questions about behavioral therapies:

Alternative Therapies

Some people need a more specialized approach to their care, especially if other therapies don't work. **Alternative therapies** include dental appliances and surgery.

Dental appliance

Dental appliances (also called oral appliances) are fitted to your teeth and hold your jaw slightly forward and open while you sleep. An appliance works best for people who have mild to moderate sleep apnea.

Only get a dental appliance from an experienced dentist. Do-it-yourself devices are not recommended because they don't work as well and may cause pain and problems with your teeth, gums, and bite.

Why choose a dental appliance	Why NOT choose a dental appliance
<ul style="list-style-type: none">• You have mild to moderate OSA (oral appliances help about half the time).• It can reduce snoring and sleep apnea.• It can be a good alternative to CPAP therapy.	<ul style="list-style-type: none">• You have moderate to severe OSA.• It may be uncomfortable.• You can't find an experienced dentist to make the appliance.• You don't have enough healthy teeth to support the appliance.• Your health insurance doesn't cover the cost.

Surgery

Surgery is used to make the airway larger by removing tissues in the throat. In some cases, it can involve changes to the nose or jaw, or fixes to other physical (anatomical) problems. Talk with a doctor who is very experienced in this type of surgery to find out if this might be a good option for you.

Why choose surgery	Why NOT choose surgery
<ul style="list-style-type: none">• It can reduce snoring and sleep apnea.• You haven't responded well to other treatment options.	<ul style="list-style-type: none">• Surgery has potential risks and complications.• Recovery can take several weeks.• Surgery may not improve your OSA symptoms.

Notes or questions about alternative therapies:

Discussion Guide

It's OK to have questions.

OSA is complex, and it can be hard to understand. Your healthcare team expects you to have questions and will be happy to answer them. Before moving on, take a moment and ask yourself the following questions.

- Are there other treatment options besides PAP?
- What treatment options interest me?
- Will losing weight help my symptoms?
- What are my next steps?
- When do I call my doctor?

If there's something you're not sure about, please ask.

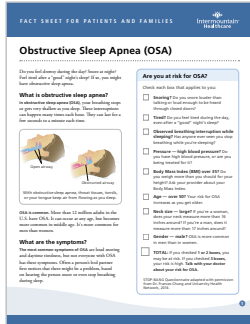
Your healthcare team is here to help.

Questions for my doctor:

Resources

Dealing with OSA may feel overwhelming at times, but your care team is here to help. This section lists additional tools to help.

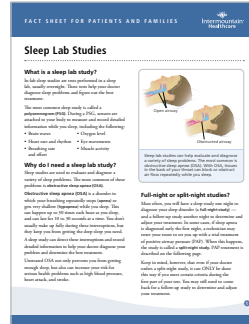
Intermountain fact sheets and handouts



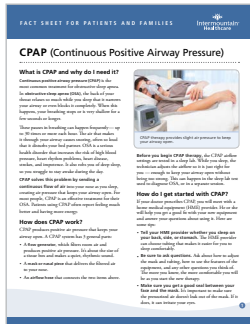
Obstructive Sleep Apnea (OSA)



Overnight Home Oximetry



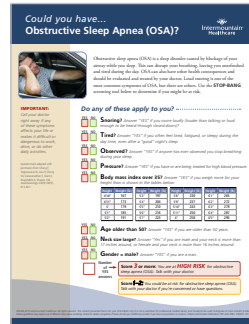
Sleep Lab Studies



CPAP



Live Well, Sleep Well



STOP-BANG handout

Websites

Intermountain Sleep Services:

intermountainhealthcare.org/locations/intermountain-medical-center/medical-services/sleep-services

Sleep Education (by the American Academy of Sleep Medicine):

sleepeducation.org

Intermountain Nutrition Services:

intermountainhealthcare.org/services/nutrition-services/services

To find these and other resources, go to:
intermountainhealthcare.org



Intermountain Healthcare complies with applicable federal civil rights laws and does not discriminate on the basis of race, color, national origin, age, disability, or sex. Se proveen servicios de interpretación gratis. Hable con un empleado para solicitarlo. 我們將根據您的需求提供免費的口譯服務。請找尋工作人員協助。

©2018 Intermountain Healthcare. All rights reserved.

The content presented here is for your information only. It is not a substitute for professional medical advice, and it should not be used to diagnose or treat a health problem or disease. Please consult your healthcare provider if you have any questions or concerns. More health information is available at intermountainhealthcare.org. Patient and Provider Publications OSA002 – 12/18