I'm not a robot

health centersneurology center A lumbar puncture or spinal tap procedure provides lifesaving information in disease diagnosis. A lumbar puncture (LP) is the insertion of a needle into the spinal canal to collect and examine the fluid that surrounds the brain and spinal cord (cerebral spinal fluid). It is termed a "lumbar puncture" because the needle is placed in the lumbar portion of the back and used to puncture through tissues to enter the spinal canal.Other names for a lumbar puncture (an LP) include spinal tap, spinal puncture, thecal puncture, and rachiocentesis. An LP is most commonly performed to obtain a sample of the fluid that surrounds the brain and spinal cord. Examination of the fluid can be crucial in diagnosing diseases such as meningitis, neurologic diseases, or effects of systemic disease on the brain and spinal fluid. An LP can also be done to treat diseases, and as a way of administering antibiotics, cancer drugs, or anesthetic agents into the spinal canal. Spinal fluid is sometimes removed by LP for the purpose of decreasing spinal fluid pressure in patients with uncommon conditions (such as, normal-pressure hydrocephalus and benign intracranial hypertension, for example).Sometimes a lumbar puncture is performed in patients with migraines to assure that no other underlying pathology exists. Patients typically lie on their side for the procedure. Less often, the procedure is performed while the patient is sitting up and leaning slightly forward. After local anesthesia is injected into the lumbar area of the back, a long needle is inserted in between the bones of the spine (vertebrae) into the spinal canal. (The needle is most commonly placed between the third and fourth lumbar vertebrae.) Spinal fluid pressure can then be measured and cerebrospinal fluid (CSF) removed for testing. The CSF circulates around the brain and spinal cord (central nervous system). This "water bath" acts as a support of buoyancy for the brain and spinal cord. The support of the CSF helps to protect the brain from injury.The normal CSF appears clear and contains various substances, such as protein and sugar (glucose), and few if any cells. The spinal fluid also has a normal pressure when first removed. Normal values for spinal fluid examination are as follows:Protein (15-60 mg/dl)Glucose (50-80 mg/dl)Cell count (0-5 mononuclear cells)Initial pressure (70-180 mm)These normal values can be altered by injury or disease of the brain, spinal cord, or adjacent tissues. The values are routinely evaluated during examination of the spinal fluid obtained from the lumbar puncture. Additionally, spinal fluid is tested for infection in the microbiology laboratory.A health care professional will usually review and interpret the test results with the patient. These results often will need to be evaluated in relation to other blood and radiologic test results. Spinal fluid obtained from the lumbar puncture can be used to diagnose many important diseases such as bleeding around the brain; increased pressure from hydrocephalus; inflammation of the brain, spinal cord, or adjacent tissues (encephalitis, meningitis); tumors of the brain or spinal cord, etc. Sometimes spinal fluid can indicate diseases of the immune system, such as multiple sclerosis. When spinal fluid is removed during an LP, the risks include headache from a persistent spinal fluid leak, brain herniation, bleeding, and infection. Each of these complications are uncommon with the exception of headache, which can appear from hours to up to a day after a lumbar puncture. Up to 25% of patients will get headaches after the procedure. Headaches occur less frequently when the patient remains lying flat several hours after the procedure. The benefits of the LP depend upon the exact situation for which it is performed, but a lumbar puncture can provide lifesaving information. Lower Back Pain: Symptoms, Stretches, Exercise for Pain Relief See Slideshow Medically Reviewed on 4/25/2025 Kasper, D.L., et al., eds. Harrison's Principles of Internal Medicine, 19th Ed. United States: McGraw-Hill Education, 2015. Spinal tap, pe sili ona lauiloa o Lumbar Tusitusiga, o se togafitiga fa'afoma'i e faia i luga o le lumbar region o le tui. Ole Spinal Tap e faia e su'esu'e ai fa'ama'i po'o fa'afitauli o le neura e pei ole Meningitis, Epilepsy, Guillain-Barre syndrome, ma Multiple Sclerosis. E mafai fo'i ona tu'uina atu e tu'uina atu ai vaila'au fa'ama'i po'o vaila'au o le chemotherapy i totonu ole sua ole cerebrospinal. O le lumbar region e faasino i le pito i lalo pito i tua, lea e aofia ai ponaivi vertebral, intervertebral discs, ligaments, neura, toto toto, ma maso. E fa'ai'u i le lumbar spin, ma ona fa'ai'uga o neura o totoe e lala atu i le pito o le alavai. O a tala fa'atusa e feso'ota'i ma Spinal Tap? O talafatu ma manatu sese e uiga i le tui ivi e mafua mai i le fefe ma le le iloa. O nisi oi latou o lo'o fa'amatalaina i lalo: Talafatu: Spinal Tap e matua tiga lava. Talu ai o le fa'atinoga o le Spinal Tap e aofia ai le fa'aofiina o nila i le pito i lalo, e masani lava ona fa'afeso'ota'i e tagata ma le tiga. Ae ui i lea, o le mea moni o lenei faiga e aofia ai le fa'aogaina o fa'ama'i fa'apitonu'u, lea e fa'avaivaia ai le pito i lalo. O le faiga o nisi taimi e fai sina tiga, ae e mafai ona gafatia. Talafatu: Spinal Tap e mafai ona pe ai se tagata. O se manatu sese masani lea. Ole Spinal Tap e faia ile tusa ma le 5 inisi i lalo ole mea e muta ai le taula'au, ma fa'aitiitia ai le avanoa e fa'aleagaina ai neura. O le Spinal Tap, o le mea lea, o le a le tuua ai oe e pipili. Talafatu: Spinal Tap e mafai ona mafua ai fa'ama'i pipisi Ole Spinal Tap o lo'o fa'atinoina i se si'osi'omaga saogalemu ma fa'amama. E matua fa'aeteete e fa'amama mea uma. O le mea lea, ole Spinal Tap e le mafua ai fa'ama'i pipisi. Talafatu: Spinal Tap e mafua ai le tiga ulu. 25 mai le 100 mataupu e mafai ona o'o i le tiga o le ulu pe a uma le Spinal Tap. E masani lava e le fa'alavelave ma fa'ato'a i ni nai itula. Ua iloa e tagata su'esu'e o le ogaoga o le ulu e fa'alagolago tele i le tele o le nila fa'aaoga. Talafatu: Spinal Tap e mafua ai le tele o le toto. Pe a gau se tama'i a'a toto i le taimi o lenei faiga, e ono mafua ai ona itiiti le toto. E masani lava, e leai se togafitiga e mana'omia. O afea e Fa'atino ai Ta'otoga Tula'au? A Spinal Tap or Lumbar Tusitusiga e fa'atino ina ia fa'ate'a ai le a'afiaga o so'o se fa'ama'i po'o isi fa'afitauli e feso'ota'i ma le va'ai po'o le fai'ai. E masani ona faia mo mafuaaga nei: E aoina ai le sua o le cerebrospinal mo su'esu'ega. E faatautaia togafitiga vaila'au, fa'ama'i fa'ama'i, po'o isi vaila'au. E fua ai le mamafa i le fai'ai ma le va'ai. Tu'i vali i se myelography po'o mea fa'a leitio i totonu ole sua ole cerebrospinal. O fa'amatalaga na aoina mai fa'ata'ita'iga na aoina e se Spinal Tap e fesoasoani e su'esu'e fa'ama'i siama, fai'ai afaina, tulaga fa'ama'i e pei ole Multiple Sclerosis ma Guillain-Barre syndrome i le fatugalemu o le tino, po'o le ulu le iloa. Tulaga pei Encephalitis (o le fulafula o le fai'ai e mafua mai i se siama), Reye syndrome, Myelitis (flammation of spinal cord and brain), Neurosyphilis (o se siama siama o le Central Nervous System), ma le Pseudotumor Cerebri e mafai foi ona su'esu'eina e le CSF su'esu'ega e ala i se Lumbar Tusitusiga. O le a le fa'agasologa o le tui ivi? O le faiga mo a Spinal popo or Lumbar Tusitusiga e aofia ai le fa'aofiina o se nila manifinifi ma ga'o i totonu o le lumbar eria e aveese ai le sua o le cerebrospinal o lo'o siomia ai le Spinal cord o lo'o siomia ai le va'a ma le fai'ai. O le CSF a e fesoasoani i le tu'uina atu o mea'ai i le fai'ai ma le aveesea o mea leaga. O le fa'agasologa masani e faia i ni vaega se tolu. E amata lea i ni nai aso a'o le'i faia le faiga tonu. I le la'asaga lea, o le a fesiligia e lau foma'i po'o le foma'i tausi soifua maloloina e uiga i lou tala'aga fa'afoma'i, su'esu'e fa'aletino oe, ma fautua mai nisi o su'ega toto e siaki ai so'o se fa'aletonu o le toto. O se CT scan po'o se MRI e mafai foi ona okaina. I le la'asaga lea, e ono fautuaina fo'i e lau foma'i se mea'ai fa'apitoa. I le taimi o le fa'agasologa. Ole Spinal Tap e masani ona faia i totonu o se falema'i fa'apipi'i lelei. O le taimi lava e amata ai le faiga, e te taoto i lou itu ma ou tulivae e tosoina i lou fatafata. O lenei tulaga e tatala ai avanoa i le va o lou vetebra, e faigofie ai i le foma'i ona tu'uina le nila. O le fa'amasani fa'apitonu'u o le a tu'uina i lou tua e fa'atete ai le vaega. O le a tu'uina se nila manifinifi ma 'ō'ō pe a ma le 5 inisi i lalo ifo o le pito o le taula'au. O le nila e ulu atu i le vaega i le va o le vertebrae pito i lalo e lua (lumbar region), e ui atu i le sela (dura), ma ulu atu i totonu o le alavai. A mae'a ona tu'uina le nila, e fuaina le mamafa o le sua o le cerebrospinal, ma fa'aputuina se fa'ata'ita'iga la'ititi. A mae'a loa le fa'agasologa, e mana'omia lou ta'oto mafolafola mo sina taimi. O fa'amalositino malosi e matua fa'atapula'a mo le itiiti ifo i le 36 itula pe a mae'a le fa'atinoga. O le a fautuaina oe e lau foma'i ia lava le vai ma ia fa'asusu. O le fa'atinoga e le fa'atapulaaina oe mai le faia o au gaioiga i aso uma. O a Fa'ai'uga o le Ta'otoga Tula'au? O le taimi lava e tu'uina atu ai fa'ata'ita'iga o le sua o le cerebrospinal lea na aumai i le falesu'esu'e mo su'esu'ega. O le a iai ni fa'ata'ita'iga e su'esu'e lelei ai le fa'ata'ita'iga. O nisi oi latou o: O le i ai o le sili atu ma le lima sela pa'epa'e (mononuclear leukocytes) i le microliter ole sua o le ivi'ai atonu o se fa'ailoga ole fa'ama'i. O le iai o fa'ama'i, siama, ma isi meaola ninii i totonu ole sua ole ivi ole fa'ailoga ole fa'ama'i. O le iai o se tuma po'o sela fa'aletonu i totonu o le sua o le ivi e ta'u mai ai le kanesa. O le fa'atupula'ia o le maualuga o le porotini i totonu o le sua o le ivi e ono fa'ailoa mai ai le mumū i totonu o le fatugalemu. O le maualalo ole kulukose ile sua ole ivi e ono fa'ailoa mai ai fa'ama'i. Afai e foliga lanu piniki le sua e leai se lanu ma le ivi, e ono ta'u mai ai se toto e le masani ai. Afai e lanumeamata le sua o le tui, e ta'u mai ai fa'ama'i pipisi. O a ni fa'alavelave e feso'ota'i ma fa'a'opo'opoga? E ui o le Spinal Tap o se faiga saogalemu, e iai ni nai fa'alavelave e feso'ota'i ma ia. O nei lamatiaga e aofia ai E na'o le 25% o fa'ama'i na lipotia mai le tiga o le ulu ae e le o se popolega. O le tiga o le ulu pe a mae'a se paipa tu'ulafoa'i atonu e mafua mai i le tafe atu o le vai i totonu ole a'amea lata ane. O se lagona o le le to'a po'o le tiga i le pito i lalo pito i tua e ono tupu pe a uma le fa'atinoga. O lenei tiga e mafai foi ona alu agai i vae. Ae, o lenei agavaivai e tumau mo na o ni nai itula. O se vaega itiiti o le tafe toto e ono mafua ona o le Spinal Tap, aemaise lava pe a tui e le nila o lo'o fa'aaogaina i le gaioiga so'o se alātoto. O lenei tulaga e fa'aalia i le fa'atupula'ia o le mamafa i totonu o le ulupo'o e mafua ona o se tuma o le fai'ai po'o se manu'a. Ina ia aloese mai sea tulaga, e fautuaina oe e lau foma'i e fai se CT scan po'o le MRI e iloa ai so'o se tuma. O afea e te mana'omia ai le va'ai i se foma'i? E tatau ona e siaki lau foma'i pe a e maua ni fa'aletonu e pei o nei. Fa'avavale po'o le fa'alogoina o vae. O le tafe toto le masani i le nofoaga o tui. Le mafai ona mimi. Tugā ma faifai pea le ulu. Tusi se Tofiga ma le Foma'i tipitipi vala'au 1860-500-1066 e tusi se taimi atofaina. Ole Spinal Tap e masani lava ose faiga saogalemu lea e fa'atinoina i lalo ole va'aiga fa'apitoa ma se si'osi'omaga e matua'i mama. E itiiti lava fa'alavelave e feso'ota'i ma lenei faiga, ma o lea, e le mana'omia se popolega. Fesili e masani ona fesiligia (FAQs) E umi le faiga ole Spinal Tap poo le Lumbar Puncture? O taualumaga mo Lumbar Tusitusiga e tumau i se mea e tusa ma le 40 i le 50 minute, e fa'atatau i le ma'i. O le a le umi e toe malosi mai ai le tui ivi? O le toe fa'aleleia mai se fa'agasologa o le ta'oto'otoga e eseese mai lea tagata i lea tagata. E ono alu ni nai itula i ni nai aso mo le toe fa'aleleia. Mo le vave fa'aleleia, aua le faia se gaioiga mamafa. E tutusa ea le Spinal Tap ma le epidural? Leai, e le tutusa. I le faiga ole Spinal Tap, ole nila e fa'aaoga e aveese mai ai le sua ole tui. I totonu o le epidural, e tu'u i totonu se tui i totonu o se nila, ma tu'u le paipa i le avanoa epidural i tua. Tusi se Tofiga ma le Foma'i tipitipi vala'au 1860-500-1066 e tusi se taimi atofaina. Spinal tap, or most commonly known as Lumbar Puncture, is a medical procedure that is performed on the lumbar region of the spine. The Spinal Tap is done to diagnose infections or neurological disorders like Meningitis, Epilepsy, Guillain-Barre syndrome, and Multiple Sclerosis. It can also be administered to provide anesthetic medications or chemotherapy drugs into the cerebrospinal fluid. The lumbar region refers to the lower back area, which consists of vertebral bones, intervertebral discs, ligaments, nerves, blood vessels, and muscles. The spinal cord ends at the lumbar spine, and its remaining nerve endings branch out towards the end of the spinal canal. What Are the Myths Associated with Spinal Tap? Myths and misconceptions about the spinal tap stem from fear and unawareness. A few of them are debunked below: Myth: Spinal Tap is extremely painful. Since the procedure of Spinal Tap includes a needle insertion in the lower back, people almost generally associate it with pain. However, the reality is that this procedure involves the administration of local anesthesia, which numbs the lower back. The procedure sometimes does sting a little, but it is bearable. Myth: Spinal Tap can leave a person paralyzed. This is a common misconception. A Spinal Tap is done at about 5 inches below the spot where the spinal cord ends, hence reducing the chances of any nerve damage. A Spinal Tap, therefore, will not leave you paralyzed. Myth: Spinal Tap can cause infections A Spinal Tap is administered in a very safe and sterilized environment. Utmost care is taken to clean everything. Thus, a Spinal Tap will not cause infections . Myth: Spinal Tap causes headaches. 25 out of 100 cases may experience mild headaches after a Spinal Tap. It is usually not bothersome and resolves in a couple of hours. Researchers have found that the severity of headaches depends mostly on the size of the needle used. Myth: Spinal Tap causes excessive bleeding. When a small blood vessel is ruptured during this procedure, it may cause minimal bleeding. Usually, no treatment is required. When Are Spinal Taps Performed? A Spinal Tap or Lumbar Puncture is performed to rule out the risk of any infections or other disorders related to the spinal cord or brain. It is usually performed for the following reasons: To collect cerebrospinal fluid for analysis. To administer chemotherapy drugs, anesthetics, or other drugs. To measure the pressure around the brain and spinal cord. To inject dyes in a myelography or radioactive materials into the cerebrospinal fluid. The information gathered from the samples collected by a Spinal Tap help diagnose bacterial infections, brain hemorrhage, inflammatory conditions such as Multiple Sclerosis and Guillain-Barre syndrome in the central nervous system, or unknown headaches. Conditions like Encephalitis (a brain inflammation caused by a virus), Reye syndrome, Myelitis (inflammation of spinal cord and brain), Neurosyphilis (a bacterial infection of the Central Nervous System), and Pseudotumor Cerebri also can be diagnosis by CSF analysis through a Lumbar Puncture. What Is the Procedure of a Spinal Tap? The procedure for a Spinal tap or Lumbar Puncture involves the insertion of a thin and hollow needle in the lumbar region to extract cerebrospinal fluid surrounding the Spinal cord that surrounds the spinal cord and brain. CSF a helps in the supply of nutrients to the brain and the removal of waste products. The procedure usually takes place in three stages. This starts a few days before the actual procedure. In this stage, your doctor or health care professional would inquire about your medical history, physically examine you, and suggest some blood tests to check for any blood clotting disorders. A CT scan or an MRI may also be ordered. In this stage, your doctor might suggest a special diet as well. The Spinal Tap is usually done in a well equipped medical facility. Once the procedure starts, you would be lying down on your side with your knees drawn towards your chest. This position opens up the spaces between your vertebrae, making it easier for the doctor to insert the needle. Local anesthesia will be administered to your back to numb the area. A thin and hollow needle will be inserted about 5 inches below the end of the spinal cord. The needle enters the area between the two lower vertebrae (lumbar region), passes through the spinal membrane (dura), and enters into the spinal canal. Once the needle is inserted successfully, the pressure of the cerebrospinal fluid is measured, and a small sample is collected.. This complete procedure lasts for about 50 minutes. Once the procedure is complete, you will be required to lay flat for a while. Strenuous exercise is strictly restricted for at least 36 hours post the procedure . Your doctor will advise you to drink an adequate amount of water and remain hydrated. The procedure does not restrict you from doing your daily activities though. What Are the Results of a Spinal Tap? Once the samples of the extracted cerebrospinal fluid are sent to a laboratory for examination. There will be parameters to examine the sample appropriately. A few of them are: Presence of white blood cells. The presence of more than five white blood cells (mononuclear leukocytes) per microliter of spinal fluid may be a sign of infection. The presence of viruses, bacteria, and other microorganisms in the spinal fluid is a sign of infection. The presence of a tumor or abnormal cells in the spinal fluid indicates cancer. An increase in the level of protein in the spinal fluid may indicate inflammation in the central nervous system. Low glucose levels in the spinal fluid may indicate infections. If the colorless and spinal fluid seems pink in color, it might suggest abnormal bleeding. If the spinal fluid is greenish, it indicates infections. What Are the Complications Associated with Spinal Taps? Although Spinal Tap is a relatively safe procedure, there are a few risks associated with it. These risks include Only 25% of the cases have reported headaches but these are not of concern . Headaches after a spinal tap might be due to the leakage of fluids into the nearby tissues. A sense of discomfort or pain in the lower back region may occur after the procedure. This pain might also travel towards the legs. But, this tenderness lasts for a few hours only. A small amount of bleeding might be caused due to a Spinal Tap, especially when the needle used in the procedure punctures any blood vessels. This condition is characterized by the increase in pressure within the skull caused due to a brain tumor or lesion. To avoid such a situation, your doctor would advise you to go through a CT scan or MRI to identify any tumors. When Do you Need to See a Doctor? You must check with your doctor if you find any anomalies like the following. Numbness or tingling sensation in the legs. Abnormal bleeding in the injection site. Inability to urinate. Severe and persistent headaches. Book an Appointment with Orthopaedic Surgeon Call 1860-500-1066 to book an appointment. A Spinal Tap is generally a safe procedure that is administered under expert supervision and an extremely sterile environment. There are very few complications related to this procedure, and thus, there is no need for any concern . Frequently Asked Questions (FAQs) Does the Spinal Tap or Lumbar Puncture procedure last long? The procedure for Lumbar Puncture lasts somewhere around 40 to 50 minutes, depending on the patient. How long does it take to recover from a spinal tap? The recovery from a spinal tap procedure varies from person to person. It may take a couple of hours to a few days for recovery. For a speedy recovery, do not do any strenuous activity. Is a Spinal Tap the same as an epidural? No, they are not the same. In the Spinal Tap procedure, a needle is used to extract spinal fluid. In an epidural, a catheter is inserted through a needle, and the tube is left in the epidural space in the back. Book an Appointment with Orthopaedic Surgeon Call 1860-500-1066 to book an appointment. Lumbar punctures, cerebrospinal fluid, and biomarkers—these are three terms that form the horizon of our center's research. Biomarkers are biological indicators that may lead us to a prevention or cure for Alzheimer's disease, cerebrospinal fluid is the substance in which some of these biomarkers are found, and a lumbar puncture is the method used to access cerebrospinal fluid. Often, when we tell people that lumbar punctures are a common part of our research, we are met with a bit of reservation. That reservation is understandable, but we hope that by providing clear information about the procedures and answering some common questions about the procedures, we can help make lumbar punctures seem less invasive and risky. What is a lumbar puncture? A lumbar puncture (also called a spinal tap or an LP) is a common medical procedure in which doctors remove a small sample of cerebrospinal fluid (CSF) from a person's lower back ("lumbar" region). During an LP, participants lie on their side, which allows doctors to easily access the area of the lower back where the LP will occur. Once participants are in position, doctors use a local anesthetic to numb the area and then use a thin needle to draw out a small amount of spinal fluid. Because the anesthetic numbs the area, the LP should not be particularly uncomfortable or painful. After an LP, participants occasionally feel mildly sore as a result of staying in an unfamiliar position during the procedure. If participants are sore after an LP, they can take a standard pain reliever like Tylenol. Are lumbar punctures safe? Yes. Our center has improved the procedures for research lumbar punctures and has created safety guidelines that are followed throughout the field. To read more about the safety and acceptability of lumbar punctures, please click here. Will I have a spinal headache after the LP? We have performed over 2,000 LPs at the UW ADRC and have improved the procedure to reduce discomfort and to minimize the chance of LP-related headaches (known as spinal headaches). In fact, less than one percent of our participants experience significant spinal headaches. However, when they do occur, these headaches can be quite painful. If someone gets a mild headache following an LP, we treat it with Tylenol and beverages that are high in caffeine. In the rare case of a severe headache, we perform a simple medical procedure called an epidural blood patch to relieve the pain. Most spinal headaches can be avoided by following the instructions and follow-up care provided by our physicians. What is CSF and why is it so important? CSF is a clear, colorless liquid that is in direct contact with the brain. It provides a cushion to the brain and spinal cord and may serve some purpose in the chemistry of the brain (which is not clear to us at this point). Importantly, since the CSF interacts very closely with the brain, many researchers believe that it can provide a more direct window into changes that may be occurring there. CSF contains a variety of proteins that researchers measure and analyze. The goal of this analysis is to identify markers (biomarkers) for Alzheimer's disease that will improve with accurate diagnosis, "preclinical" diagnosis in persons with no memory symptoms who are destined to have Alzheimer's in the future, and monitoring response to therapies. This type of monitoring will be particularly important as we try to develop new treatments. What happens to my CSF after it is collected? At the ADRC, CSF samples are kept within a collection called the ADRC Research Repository. This repository has the largest collection of CSF samples from individuals with no memory complaints (control participants) in the world, and is utilized by a large research community. These samples are particularly important as a group because the collection can be studied for specific research questions related to Alzheimer's disease. The Lumbar Puncture Myth Buster As published in Dimensions Dr. Elaine Peskind, UW Professor of Psychiatry and former director of the UW ADRC Clinical Core, reinvented the way research lumbar punctures, or spinal taps, are done, making them safer and less painful for research participants. But urban legends and myths of pain, meningitis, and paralysis are still associated with the procedure. Dr. Peskind, who has performed more than a thousand lumbar punctures during her work at the ADRC, takes a look at a handful of these fables and reveals the truth about research lumbar punctures. MYTH: Lumbar punctures are really painful. The discomfort associated with a lumbar puncture seems to vary from person to person. Most people report that the only painful or uncomfortable part of the procedure is a very brief sting they experience when the local anesthetic or numbing medicine is injected. This local anesthetic is similar to the one you would receive at the dentist, and it is used to prevent pain during the lumbar puncture. As the needle for the lumbar puncture is positioned to collect spinal fluid, most people describe the feeling as a pressure sensation. In a study we did at the ADRC, we found that, overall, anxiety and pain ratings were low among the research participants who had lumbar punctures. Most people are surprised at how comfortable the procedure is, and occasionally a person will sleep through the procedure. MYTH: There is a chance that a person could get meningitis by participating in have a lumbar puncture. People cannot develop meningitis from a lumbar puncture that is conducted properly. The worry over meningitis and lumbar punctures perhaps arose because bacterial meningitis, which is a condition where bacteria makes its way into the spinal canal, is diagnosed by using a lumbar puncture to collect spinal fluid for testing. MYTH: If a person gets a lumbar puncture, that person will have a bad headache afterwards. When doctors perform a lumbar puncture, they puncture a fluid-filled sac that surrounds the brain and spinal cord. Spinal headaches occur when the spinal fluid continues to leak (under the skin) from this puncture. A true spinal headache worsens when a person is sitting or standing and improves when that person lies down. After a lumbar puncture that is conducted for medically necessary reasons, 10 to 30 percent of people develop a spinal headache. However, for research lumbar punctures at the ADRC, we use techniques that make the headache rate much lower—less than 1 percent of our subjects report having spinal headaches. This difference is mainly caused by the gauge (thickness) of the lumbar puncture needle and the shape of the needle tip. In the ADRC research lumbar punctures, the needle inserted into the sac has a smaller gauge and duller tip than the needles that are commonly used during medically necessary lumbar punctures. This difference means that in a research lumbar puncture at the ADRC, the tip of the research needle slides between the fibers of the sac that contains the spinal fluid rather than cutting through it. Because those fibers are not cut and because the hole left by the needle is smaller, the puncture site seals quickly and prevents the spinal fluid from leaking out. MYTH: If the doctor sneezes while someone is undergoing the procedure, that person will become paralyzed. The spinal cord ends about five inches above the spot where the lumbar puncture needle is inserted. Because the needle is inserted well below where the spinal cord ends, there is almost no chance of nerve damage or paralysis. Nerves branch off the spinal cord and dangle loosely down through the lower part of the spine. Sometimes the needle may brush against one of these nerves, which may cause a brief "electric" twinge to go down the person's leg but results in no other symptoms, particularly not paralysis. This feeling usually goes away quickly, but if the twinge returns while spinal fluid is being withdrawn, our doctors will quickly readjust the needle, which usually stops this brief discomfort. A lumbar puncture (LP), which is also called a spinal tap, is a common neurological test that's done to examine the cerebrospinal fluid (CSF)—the protective fluid that surrounds your brain and spinal cord. During the procedure, a needle is carefully inserted between the bones of the lumbar spine, which is in the lower back. A small amount of CSF is typically collected so it can be studied thoroughly in a lab. This procedure is used to help diagnose a wide variety of disorders, and it can be a treatment for certain conditions too. Illustration by Emily Roberts, Verywell Usually, an LP is performed to run diagnostic tests on the CSF. This helps with the diagnosis of certain diseases and with following the progression of some neurological disorders. A spinal tap is commonly used to diagnose potentially life-threatening infections of the central nervous system. Diagnosing meningitis (inflammation of the membranes around the brain and spinal cord) is the most common reason for a lumbar puncture. Meningitis causes a stiff neck, sudden high fever, severe headache, confusion, seizures, sleepiness, nausea, vomiting, and loss of appetite. Bacterial meningitis needs to be treated promptly to prevent serious complications. Diagnosing a subarachnoid hemorrhage, which is bleeding in between the meninges, is another common reason for an LP. A computed tomography (CT) scan is normally performed first, but it may not always show the hemorrhage. When this is the case, a lumbar puncture is usually ordered next to look for blood. This condition can lead to brain damage or death and needs to be treated as soon as possible. Other conditions that a lumbar puncture can help diagnose include: This procedure may also be done to measure the CSF pressure around the spinal cord and brain, which helps with the diagnosis of pseudotumor cerebri, a condition that causes increased pressure around the brain. For treatment of this condition, CSF fluid is removed to decrease the pressure. For people with problems such as severe scoliosis, arthritis, or obesity, an LP might require fluoroscopic guidance, which means that it is done while the doctor is using X-ray technology to visualize the spine. Some healthcare providers prefer to use fluoroscopic guidance with every patient to assist them in viewing the needle as it's placed. The side effects and risks associated with a lumbar puncture include: Headache: Up to one-third of people who get a lumbar puncture will later develop a spinal headache due to CSF leaking from the puncture site. The more leakage there is, the more severe the headache. Back pain: You might feel mild and temporary aching in your back where the needle was placed. Bleeding: There is a risk of bleeding from a lumbar puncture in the area that was punctured. Bleeding into the spinal canal is rare. Infection: There's a slight risk of developing an infection in the site, but this rarely happens. Tingling or numbness: Sometimes, the needle may brush against one of the peripheral nerves, which can cause temporary numbness or pain. If this happens, you may feel an uncomfortable but brief electric twinge that goes down your leg. Brain compression or herniation: If there's a brain mass, such as an abscess or tumor, the pressure change caused by removing CSF can lead to dangerous shifting of brain tissue, which can cause compression or herniation of the brainstem. Usually, a CT scan or magnetic resonance imaging (MRI) scan of the brain is done prior to the procedure to rule out any mass. Despite many people's fears, there is almost no chance of spinal cord damage or paralysis from an LP because the needle is inserted in the spinal canal well below where the spinal cord ends. The spine (backbone) is longer than the spinal cord, so there is plenty of space in your spinal canal that is not near your spinal cord. Fluoroscopy is not recommended for women who are pregnant or think they could be pregnant. Special precautions may be taken or a different kind of test may be done instead. Skin infection near the site of the lumbar punctureUncorrected bleeding disordersAcute spinal cord traumaSuspicion of increased intracranial pressure due to a mass in the brain Sometimes an LP is done as an emergency procedure, such as when there is concern about meningitis or cancer metastasis. For conditions such as MS or chronic headaches, the procedure is usually scheduled in advance. Before your procedure, your healthcare provider will order blood tests to make sure that your blood clots as it should and that your kidneys are functioning well. You may also have a CT scan or MRI beforehand. Be sure to tell your healthcare provider if you're allergic to any medications, especially local or general anesthesia. An LP normally takes around 15 minutes, and you'll be asked to lie down for another hour or two afterward to avoid a spinal headache. The procedure can be done on an outpatient basis at a hospital or clinic. If you're already in the hospital or emergency room, it may be performed at your bedside. You'll be given a gown to wear for this procedure and you'll be asked to take off any jewelry, piercings, or accessories that could interfere with the test. Your healthcare provider will talk to you about food and drink restrictions before the procedure. If you will need to have general anesthesia, you will have to refrain from eating or drinking anything for several hours or more before the procedure. In an emergency situation or if you will only need to have numbing medication placed in the skin around your back, these restrictions won't apply. If you take blood-thinners like warfarin, clopidogrel, or heparin or nonsteroidal anti-inflammatory drugs (NSAIDs) like aspirin, ibuprofen, or naproxen, you may need to stop these several days beforehand to reduce the risk of bleeding. Let your healthcare provider know about any other medications, supplements, or herbal remedies you're taking. The price of an LP can range from $400 to $4000 or more, depending on factors like where you'll have it and what tests will be run. If you have health insurance, the cost should be covered, but you may want to check with your insurance provider to make sure and to find out about any co-pay or co-insurance for which you may be responsible. If you are going in for a scheduled test, bring your insurance card and a form of identification with you. If you are having this test as an outpatient, you will need someone to drive you home after the procedure, so be sure to bring along a friend or family member, or arrange for a service to pick you up when you're done. A neurologist or a radiologist will perform your lumbar puncture and there may be an assistant there as well. You may need to fill out a consent form before you have this procedure. You'll need to change out of your clothes into a gown and then lie on your side on a table or your hospital bed in a fetal position with your knees tucked up toward your chest. If you will have your CSF pressure measured, this is done while you are lying on your side. Alternatively, you may be asked to sit on the edge of the table or bed and bend forward, leaning on something stable with your back to the healthcare provider. These positions widen the area between your lumbar bones (vertebrae), allowing for easier access. If your child is the one having the lumbar puncture, they may have intravenous (IV) sedation at this time. The spinal tap takes about 15 minutes, plus recovery time. Your lower back will be cleaned with a sterilizing agent such as iodine.A local anesthetic, usually lidocaine, will be injected into your skin to numb the area. The injection of the numbing medication can cause a sharp poke and a slight burning sensation.Once the skin on your back is numb, the neurologist or radiologist will insert a thin, hollow needle into your skin, between two of your vertebral bones, and advance the needle through the meninges and into the thecal sac. You will need to hold very still for this.You may feel pressure or a twinge of pain or numbness down your leg when the needle is inserted. Sometimes the needle has to be repositioned to find the right spot. The discomfort level during an LP can vary, but it's usually mild to moderate. Once the needle is in place, what happens depends on why you're having the LP. The doctor may measure the pressure of your CSF using a gauge called a manometer. A small amount of your CSF may be collected in test tubes to be sent to the lab. The doctor may measure the pressure of your CSF again after the fluid has been collected. The needle is removed and a bandage is placed over the puncture site. A similar procedure is used to inject chemotherapy, contrast dye for an imaging test, antibiotics, or anesthetics for surgery. When anesthetics are injected, it's called spinal anesthesia. During these procedures, the needle is not inserted into the meninges and remains above this protective tissue without puncturing it. You may be asked to lie down flat for an hour or two after this procedure. You'll also be given fluids to help prevent a low-pressure headache. If you're being discharged home, you'll be able to go home with your driver. You'll need to take it easy for the rest of the day, and it's a good idea to lie down if possible. Keep drinking water to make sure you stay hydrated. Your healthcare provider may give you more specific instructions. You may notice some back pain, numbness, or soreness that can feel like it's radiating down your legs for a few days. If it's bothersome, but mild, try over-the-counter pain relievers such as Tylenol (acetaminophen) to help relieve the discomfort. Headaches can begin a few hours up to two days after your spinal tap. They're often minor, but sometimes they're accompanied by nausea, vomiting, dizziness, and a stiff neck. If you experience a headache after a spinal tap, Tylenol (acetaminophen) or caffeine can help. Try lying down since being upright can make the pain worse. Sometimes the headache is severe or persists for a few days to a week after the lumbar puncture—this may mean that the needle has left a hole in your thecal sac and fluid is still leaking out. In this case, a procedure called an epidural blood patch—in which your own blood is injected into the spinal canal—may relieve your headache as it slows down the leakage. If a severe headache persists a day or two despite treatmentIf you experience numbness or tingling in your legsIf you have a high fever (over 100.4 F)If there is bleeding or discharge from the injection site If you are unable to urinate Your test results may take several days or weeks to come back, depending on the type of test that's being done. If you are having a CSF culture, the results will take days or longer. Simple test results, such as a white blood cell (WBC) count or red blood cell (RBC) count, may be available within an hour. The CSF can be tested for: Color and clarity: CSF is normally clear with no color, like water. If it's pink, yellow, or cloudy, this may signify bleeding or inflammation in the brain.Composition: An increased number of WBCs suggests infection or inflammation. A high number of RBCs is indicative of bleeding. Elevated levels of protein can also be an indicator of infection or an inflammatory disease like MS. A low level of glucose is most often due to a bacterial infection, and it can also occur with a tumor, inflammation, or other conditions. Pathogens: CSF is checked for bacteria, viruses, and fungi.Cancer cells: Abnormal cells in CSF can point to certain types of cancer. When combined with other test results, as well as your symptoms, medical history, and physical exam, the information from an LP can help pinpoint a diagnosis. In cases where you have an infection like meningitis or encephalitis, testing your CSF can tell your healthcare provider whether your infection is bacterial, viral, or fungal. This helps them know which treatment you need to take. You may need additional testing to figure out the specific cause of your symptoms. For possible MS, an LP alone can't diagnose this, so you may also have an MRI. If you already had additional tests and the LP test result helped to confirm a specific diagnosis, your healthcare provider will discuss a treatment plan with you. If your healthcare provider thinks you have leptomeningeal disease, a rare condition in which late-stage cancer has spread to the membranes around your brain and spinal cord, you will need at least three separate lumbar punctures to rule this out. Treatment may include radiation, chemotherapy, immunotherapy, and medications to help control your symptoms. Be sure to talk to your healthcare provider about any questions or concerns you have regarding this test or your diagnosis. An LP, while uncomfortable, is not as bad as most people's fear. In most cases, the worst part is the pinch felt with the injection of the numbing medicine. While complications can occur, they are very infrequent. The benefits of obtaining the fluid for testing usually outweigh the risks and discomfort of the procedure. Posted 5 years ago, 12 users are following. Last month I went to the hospital with a continuous headache and fever for a couple days, they wanted to check for meningitis. So I agreed to do spinal tap (guess what they call blind spinal tap, no xray used). I didn't have a headache at first from the procedure, but about two days later they came on the back of my head. It lasted about a week or less, I was able to function with Tylenol. Then the headaches went away. I thought a post spinal tap headache were completely normal? Especially since it stopped. That's why I didn't run back to the hospital. But now I'm learning I should have went back for a blood at first sign of headaches? Now a month later I'm left with no headache, but debilitating vertigo and motion sickness And nausea I didn't have before spinal tap. My gp thinks there's no correlation, and that if I was having a csf leak I would have an excruciating headache which I don't. From what I researched it's very rare but one can have a leak without headache. And I also read low csf pressure can cause vertigo and nausea. Am I overreacting, that I want to look into to spinal tap as cause of vertigo? My worries are CSF leak or aquired chiari. I got some blood work done Friday and saw my primary and told then about this. I got standard blood work done, results were fine, so i guess isnt something that will kill me anytime soon. Its really debillitating, I can barly stand without cane and when I move my head to fast while standing. I can fall. Can you have csf leak without headache? 0 likes, 18 replies A spinal tap, also known as a lumbar puncture, is a procedure in which a sample of cerebrospinal fluid is removed through