*A Patient's Guide to*

# Pain Management: Piriformis Muscle Injections




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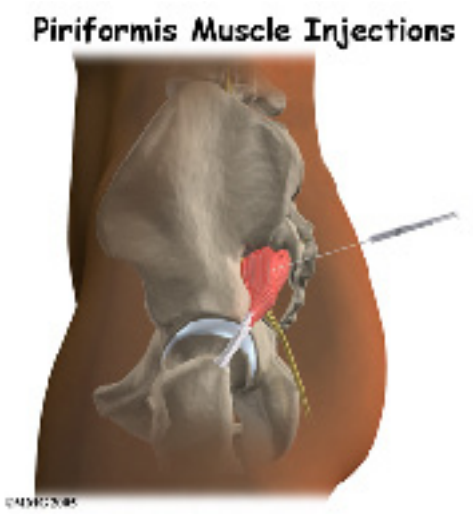
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## Introduction

*Piriformis muscle injections* are commonly used to determine what is causing buttock and sciatica type pain. Piriformis muscle injections are both *diagnostic injections* and *therapeutic injections*,meaning that they help your doctor determine the cause of your back pain and may or may not provide you with relief from the pain. These injections eliminate pain temporarily by paralyzing the piriformis muscle and stopping spasm in the muscle. If the piriformis muscle is injected and your pain goes away for several days, then it is very likely that a portion of your pain is caused by piriformis syndrome. Once you and your doctor know what structure is causing your pain, you can begin to explore options for treating the condition.

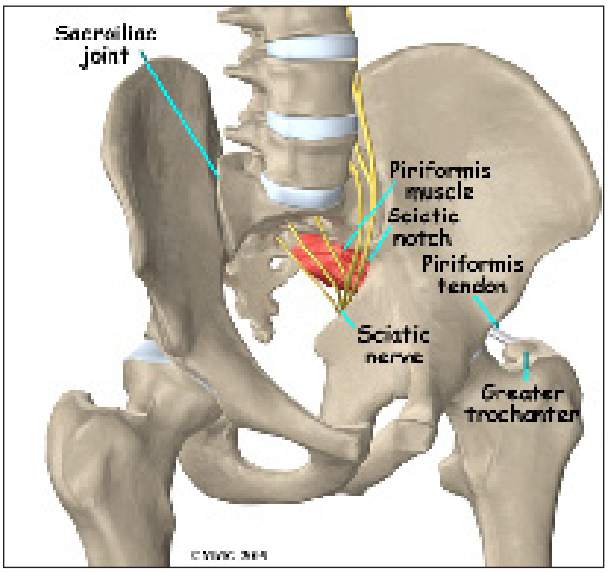
**This guide will help you understand**

- **where the injection is given**
- **what your doctor hopes to achieve**
- **what you need to do to prepare**
- **what you can expect from the injection**
- **what might go wrong**

## Anatomy

What parts of the body are involved?

To perform a piriformis muscle injection, your doctor inserts a needle into the piriformis muscle. The piriformis muscle begins inside the pelvis where it attaches to the sacrum and travels out of the pelvis to attach to the top of the femur or thigh bone. The sacrum is a triangular-shaped bone that connects the pelvic bones at the base of the spine.



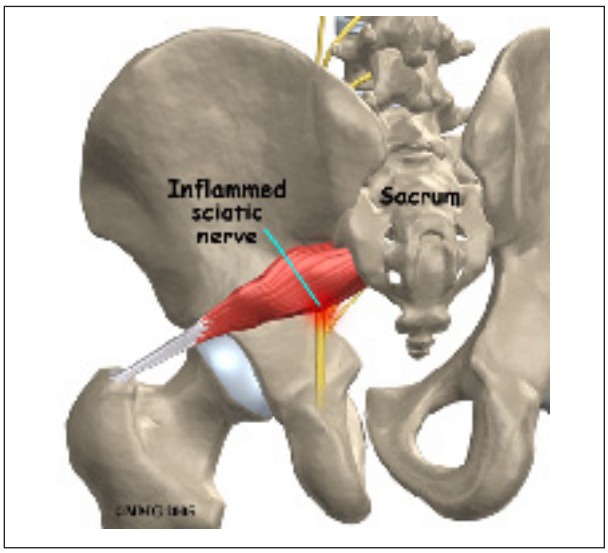

The piriformis muscle is one of the *external rotators* of the hip and leg. This means that as the muscle works, it helps to turn the foot and leg outward. The piriformis muscle can cause problems when spasm of the muscle irritates the sciatic nerve. The lower lumbar spinal nerves leave the spine and join to form the sciatic nerve. The sciatic nerve leaves the pelvis through an opening called the sciatic notch. The sciatic nerve runs under (and sometimes through) the piriformis muscle on its way out of the pelvis.

## Rationale

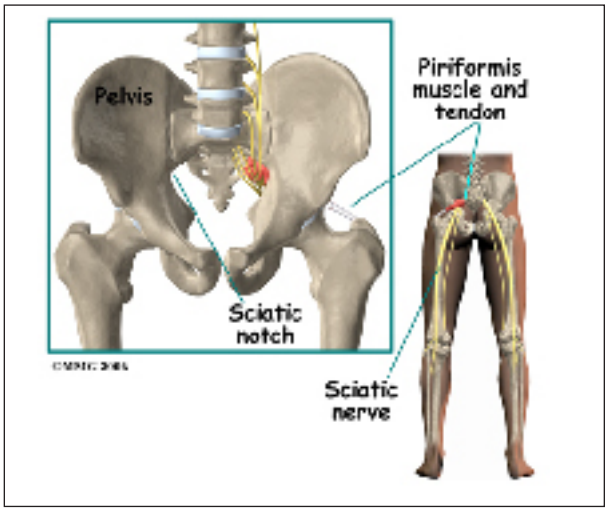
What does my physician hope to achieve?

Your doctor is recommending a *piriformis muscle injection* to try and determine if piriformis muscle spasm is the cause of your

pain. This type of injection is primarily a diagnostic injection. The injection may only help your pain temporarily, sometimes just for a few hours. Once your doctor is sure that it is the piriformis muscle causing your pain, other procedures may be recommended to reduce your pain for a longer period of time.




The piriformis muscle and tendon travel over the top of the sciatic nerve as the nerve leaves the pelvis at the sciatic notch. Spasm in the piriformis muscle can cause pain by squeezing against the sciatic nerve. This causes the nerve to become irritated and inflamed - resulting in pain in the buttock and leg. This condition is referred to as *piriformis syndrome*.




If the spasm continues, the muscle may become contracted (or shortened). This increases the pain and inflammation. To reverse the contracture, the muscle and tendon need to be stretched and lengthened back to normal. Paralyzing the muscle temporarily with an injection can make the stretching less painful, more effective, and speed up the process of lengthening the muscle and tendon.

If the stretching program fails to correct the problem, surgery to lengthen the tendon is an option. Before considering surgery, it is necessary to confirm the diagnosis as best as possible, so the information from the injection is important. If the injection temporarily relieves your symptoms, then the surgeon is more comfortable that the surgery is indicated and has a good chance of helping your problem. If the injection does not help, then some other cause of your symptoms may need to be considered.

During a piriformis muscle injection, the medications that are normally injected include a local anesthetic and cortisone. The anesthetic medication, such as lidocaine or bupivicaine, is the same medication used to numb an area when you are having dental work or having a laceration sutured. The medication causes temporary paralysis of the piriformis muscle lasting one hour to six hours, depending on which type of anesthetic is used.

Cortisone is an extremely powerful anti-inflammatory medication. When this medication is injected into a painful, inflamed muscle, it can reduce the inflammation and swelling. Reducing the inflammation reduces pain. If cortisone is also injected into the piriformis muscle at the same time, you may get several weeks' worth of relief from your pain. This can allow you to get started in a physical therapy program, strengthening and stretching the piriformis muscle to reduce the contracture and the spasm in the muscle.

## Preparations

How will I prepare for the procedure?

Your doctor may tell you to be ***NPO*** for a certain amount of time before the procedure. This means that you should not eat or drink ***anything*** for the amount of time before your procedure. This means no water, no coffee, no tea - not anything. You may receive special instructions to take your usual medications with a small amount of water. Check with your doctor if you are unsure what to do.

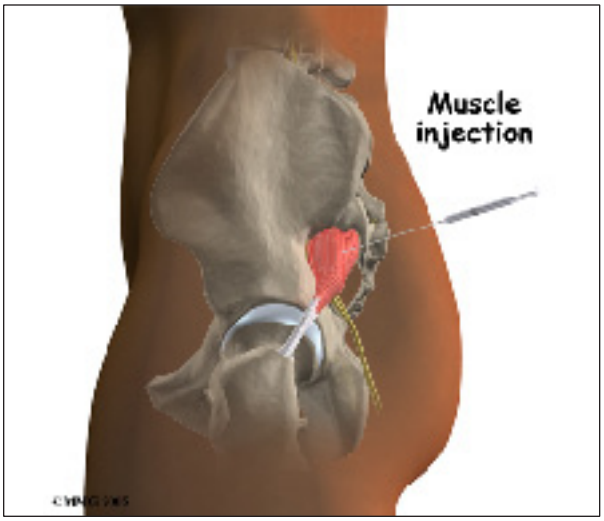
You may be instructed to discontinue certain medications that affect the clotting of your blood several days before the injection. This reduces the risk of excessive bleeding during and after the injection. These medications may include the common Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) such as aspirin, ibuprofen, naproxen and many other medications that are commonly used to treat arthritis. If you are taking any type of blood thinning medication you should let your doctor know. You will most likely need to have this medication regulated or temporarily discontinued prior to the injection. Your doctor will need to determine if it is safe to discontinue these medications in order to have the injection.

You may need to arrange to have transportation both to and from the location where you will undergo the injection. Wear loose fitting clothing that is easy to take off and put on. You may wish to take a shower the morning of the procedure, using a bactericidal soap to reduce chances of infection. Do not wear jewelry or any type of scented oils or lotions.

## Procedure

What happens during the procedure?

When you are ready to have the injection, you will be taken into the procedure area and an IV will be started. The IV allows the




nurse or doctor to give you any medications that may be needed during the procedure. The IV is for your safety because it allows a very rapid response if you have a problem during the procedure, such as an allergic reaction to any of the medications injected. If you are in pain or anxious, you may also be given medications through the IV for sedation during the procedure.




Piriformis muscle injections are done with the help of *fluoroscopic* guidance. The *fluoroscope* is an x-ray machine that allows the doctor to actually see an x-ray image while doing the procedure. This allows the doctor to watch where the needle goes as it is inserted. This makes the injection much safer and much more accurate. Once the needle is in the right location, a small amount of radiographic dye is injected. This liquid dye shows up on the x-ray

image, and the doctor can watch where it goes. The anesthetic medication and the cortisone will go in the same place. The doctor wants to make sure the injection will put the medication where it can do the most good. Once the correct position is confirmed, the anesthetic and cortisone are injected, and the needle is removed.

You will then be taken out of the procedure room to the recovery area. You will remain in the recovery area until the nurse is sure that you are stable and you do not have an allergic reaction to the medications. The anesthetic may cause some temporary numbness and weakness. You will be free to go when these symptoms have resolved.

## Complications

What might go wrong?

There are several complications that may occur during or after the piriformis muscle injection. Injection procedures are safe and unlikely to result in a complication, but no procedure is 100% foolproof. This document doesn't provide a complete list of the possible complications, but it does highlight some of the most common problems. Complications are uncommon, but you should know what to watch for if they occur.

### Allergic Reaction

Like most procedures where medications are injected, there is always a risk of allergic reaction. The medications that are commonly injected include lidocaine, bupivicaine, radiographic dye, and cortisone. Allergic reactions can be as simple as developing hives or a rash. They can also be life threatening and restrict breathing. Most allergic reactions will happen immediately while you are in the procedure room so that help is available immediately. Most reactions are treated and cause no permanent harm. You should alert your doctor if you have known allergies to any of these medications.

### Infection

Several types of infections are possible complications of piriformis injections. Any time a needle is inserted through the skin, there is a possibility of infection. Before any injection is done, the skin is cleansed with a disinfectant and the health care provider doing the injection uses what is called *sterile technique*. This means that the needle and the area where the needle is inserted remains untouched by anything that is not sterile. The provider may also use sterile gloves.

Infections can occur just underneath the skin, in a muscle, or in the deep tissues of the buttock. You should watch for signs of increasing redness, swelling, pain, and fever. Almost all infections will need to be treated with antibiotics. If an abscess forms, then a surgical procedure may be necessary to drain the pus in the abscess. Antibiotics will also be necessary to treat the infection.

### Increased Pain

Not all injections work as expected. Sometimes, injections cause more pain. This may be due to increased spasm in the muscles around the injection. The increased pain is usually temporary, lasting a few hours or a few days. Once the medication has a chance to work, the injection may actually perform as expected and reduce your pain. Increased pain that begins several days after the injection may be a sign of infection. You should alert your doctor if this occurs.

## After Care

What happens after the procedure?

If everything goes as planned, you will be able to go home soon after the injection, probably within one hour. After most types of pain injections, you will probably not have any restrictions on activity or diet following the procedure.

When the pain injection is a diagnostic injection, your doctor will be interested in how much the pain is reduced while the anesthetic, or the numbing medication, is working. You may be given a pain diary to record what you feel for the next several hours. This is important for making decisions, so keep track of your pain.

Most doctors will arrange a follow-up appointment, or phone consult, within one or two weeks after the procedure to see how you are doing and what effect the procedure had on your symptoms.

And remember, injections are not usually a cure for your pain; they are only a part of your overall pain management plan. You will still need to continue working with the other recommendations from your pain management team.

## Notes