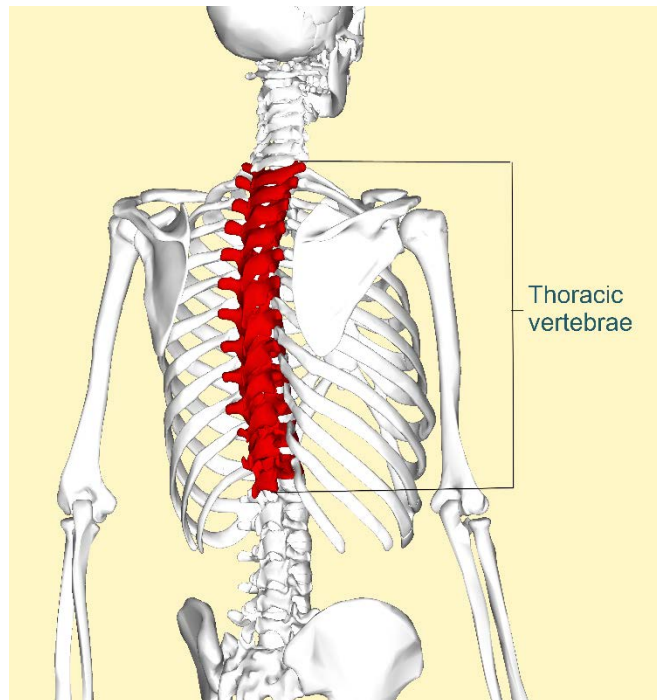


# Intercostal Nerve Block and Cryoablation

## What is the purpose of this procedure?

Intercostal nerve blocks are used to evaluate and manage chest wall pain. The **chest wall** is the skin, fat, muscles, bones, and other tissues that form a protective structure around vital organs in the area between the neck and the abdomen, including the heart, major blood vessels, lungs, and liver. The bones in the chest wall include the ribs, sternum (breastbone), and spine.



The **intercostal nerves** exit the spine at each thoracic vertebrae. They travel underneath the ribs to carry sensory information from the skin over the chest and chest wall, and supply small muscles between the ribs. Injecting numbing medicine (local anesthetic) around these nerves can temporarily block or disrupt painful signals originating from the chest wall. Sometimes this can be helpful in finding out if a pain is coming from the chest wall or from within the chest itself. Some common causes of chronic chest wall pain include shingles (herpes zoster), past lung or chest surgery, past breast surgery, and past trauma or rib fracture.

Once the painful area is identified, you may benefit from repeat injections. For some people pain relief may last weeks to months. For others the pain may return as the local anesthetic wears off. If this occurs, a procedure called

cryoablation, which involves freezing the nerve can be effective at producing longer lasting relief.

### **What are the risks associated with this procedure?**

The risks are infrequent. They include:

- Allergic reaction to medication
- Nerve damage
- Collapsed lung or air pockets in lung or chest tissue (pneumothorax)
- Bleeding and bruising at the injection site
- Infection
- Injection of medication into a vessel
- No improvement or worsening of your pain in some cases

If cryoablation is performed, pain may temporarily worsen before numbness occurs in the area the nerve connects to.

### **How should I prepare for the procedure?**

- You must have a driver with you at the time of check in and check out. Your driver must accompany you to the clinic for your procedure. You can be discharged only to the care of a responsible adult driver 18 or older.
- Do not eat within 6 hours before the procedure. Small amounts of clear liquids are ok up to 2 hours before the procedure. If you have diabetes discuss eating and medication schedule with your doctor.
- You may need to stop taking certain medications several days before the procedure. Please remind the doctor of all prescription and over-the-counter medications you take, including herbal and vitamin supplements. The doctor will tell you if and when you need to discontinue the medications.
- It is very important to tell the doctor if you have asthma or had an allergic reaction to the injected dye for a previous radiology exam (CT scan, angiogram, etc). An allergic reaction has symptoms such as hives, itchiness, difficulty breathing, or any treatment which required hospital stay.

- Tell the doctor if you develop a cold, fever, or flu symptoms before your scheduled appointment, or if you have started taking antibiotics for an infection.
- It is important that you have some pain on the day of the procedure (at least 4/10) so we can assess if the injection helps your pain. If you take an as needed pain medication, you may skip it the morning of your procedure.
- If it turns out you do not have much pain the day of the procedure, think about calling ahead to reschedule.

### **What will happen during the procedure?**

The procedure is performed on an outpatient basis with an ultrasound machine or a special x-ray called fluoroscopy.

1. While lying on your stomach you will be connected to monitoring equipment (EKG monitor, blood pressure cuff, and blood oxygen monitoring device). The skin over your back is cleansed with an antiseptic soap. Ultrasound gel will then be applied and the doctor scans for the ribs and intercostal nerves. Sometimes the fluoroscope will be used to identify the level of the ribs.
2. Numbing medicine will be injected into your skin. This will cause a burning sensation for a few seconds. The doctor then directs a small needle toward the nerve. Once it is correctly positioned the anesthetic medication is injected.
3. For a cryoablation, you will likely have an IV started in the preoperative area for fluid and sedation. **Cryoablation** is a procedure in which an extremely cold liquid, or an instrument called a cryoprobe is used to freeze and destroy abnormal tissue. The same process for finding the nerves is used as is for the intercostal blocks. Once the nerves are identified, the skin is numbed, and a special cannula (tube) is directed to the area. A probe is inserted through this cannula. This probe cools at the tip and freezes the target nerve.

## What should I do after the procedure?

You will be in the recovery area for 20-30 minutes after the procedure. If the procedure is meant to be a test we would like you to do things that would bring about your usual pain. Please do not go home and take a nap. Be active and attempt to trigger your usual pain. This will help us determine if the areas injected are the ones causing your pain.

You may be given a pain diary to record your response the procedure. This will help your doctor determine the effectiveness of the injection and how to proceed. Please mail the diary with the envelope provided. **If you have not heard from our office within one week after mailing in your diary, please call (734) 615-7246.** Many people have immediate relief following the procedure, but occasionally some soreness will occur at the procedure site. This should improve over the next 2-3 days.

Although unlikely, the most feared complication of an intercostal block is a collapsed lung. **If you develop shortness of breath following the procedure, please call the clinic or proceed directly to the nearest emergency room where a chest x-ray can be performed.**

If you would like further information including videos of procedures, please visit our website: <http://www.umpain.com/>

Image source: "BodyParts3D, © The Database Center for Life Science licensed under CC Attribution-Share Alike 2.1 Japan."

Disclaimer: This document contains information and/or instructional materials developed by Michigan Medicine for the typical patient with your condition. It may include links to online content that was not created by Michigan Medicine and for which Michigan Medicine does not assume responsibility. It does not replace medical advice from your health care provider because your experience may differ from that of the typical patient. Talk to your health care provider if you have any questions about this document, your condition or your treatment plan.

Patient Education by [Michigan Medicine](#) is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License](#). Last Revised: 08/2018