WHAT IS IT?
Costochondritis is a condition in which the cartilage that attaches the ribs to the breastbone (sternum) becomes inflamed, leading to chest wall pain. Costochondritis is not a life-threatening condition but can sometimes cause significant discomfort and distress to patients. It can affect anyone but is seen more often in children, young adults, and women.

WHAT CAUSES IT?
Most cases of costochondritis have no apparent cause. However, identifiable causes can include:
- Direct injury to the chest wall (eg. from contact sports, a motor vehicle accident, even a tight bear hug)
- Repetitive strain of the ribs (eg. from frequent overhead activity, coughing, weight lifting)
- Bras that fit too tightly (especially those with underwire supports)
- Viral infections (eg. colds)
- Bacterial infections (eg. following chest surgery)

Costochondritis can also be associated with some forms of arthritis and other generalized inflammatory conditions (eg. fibromyalgia, Reiter’s disease, and inflammatory bowel disease).

WHAT ARE THE SYMPTOMS?
Inflammation of the cartilage around the sternum causes localized chest pain.
- **Chest wall pain** is typically:
  - Sharp but can also be dull and gnawing. Sometimes the pain radiates to the abdomen or back.
  - Located on one side of the sternum but can affect both sides.
  - Made worse by activities that stretch or put pressure on the inflamed cartilage.
  - Examples include taking a deep breath, sneezing, coughing, laughing, lying down, rolling over, bending, etc. **NOTE:** Some people report “difficulty breathing” because they can’t take a deep breath comfortably (not because they are having heart or lung problems).
- Costochondritis (or chest wall) pain can be confused with **heart pain**. Like heart pain, chest wall pain can be intense. Unlike heart pain,
  - The discomfort from costochondritis can often be reproduced by pushing on the chest wall.
  - Chest wall pain is usually not worsened by physical exertion (unless the rib cage is being stretched or compressed, as noted above).
  - Chest wall pain can last throughout the day (whereas heart pain usually improves after a few minutes or hours).
- Costochondritis can also be misdiagnosed or accompanied by **anxiety** about having chest pain.
- When the pain of costochondritis is associated with swelling of the injured area, it is referred to as **Tietze’s Syndrome**. This syndrome is treated in a similar manner to costochondritis.
HOW IS IT DIAGNOSED?
Costochondritis is usually diagnosed by a person’s symptoms and physical exam findings. Labs and chest x-rays are usually not necessary but can be used to rule out other causes of chest pain. Sometimes an electrocardiogram (a painless test measuring the electrical activity of the heart) is performed to rule out heart problems.

WHAT IS THE TREATMENT?
Costochondritis often resolves without treatment. However, symptoms can sometimes take weeks to months to go away.

Since the cause of costochondritis is frequently unknown, treatment is aimed at pain control.

❖ Behavioral Modifications
- Avoid activities and movements that intensify the pain. You may need to change your exercise routine or make adjustments to your work duties. Also avoid contact sports until symptoms have resolved.
- Gentle exercise such as stretching, walking, and swimming can help with symptoms. Stop the exercise if it is making the pain worse.
- A heating pad on a low setting, ice packs, or gentle massage applied to the affected area can also decrease symptoms. Do not apply ice or heat for more than 15-20 minutes at a time, as prolonged use can increase inflammation.

❖ Pain Medications
- Over-the-counter pills: Ibuprofen (Advil or Motrin), naproxen (Aleve), and acetaminophen (Tylenol) are commonly used to decrease pain. Follow the package instructions for safe use. Take ibuprofen or naproxen with food to prevent an upset stomach. Consult your medical provider first if you have a history of stomach ulcers, kidney disease, or liver disease.
- Over-the-counter creams: Products that contain capsaicin or salicylates can help relieve pain.
- Prescription medications: If symptoms are not responding to over-the-counter options, consult your medical provider about prescription treatments. Examples include diclofenac (Voltaren) pill or gel, amitriptyline (Elavil), and others.

In severe cases unresponsive to conservative management, injection of a steroid medication into the cartilage by a specialist may be considered.

RECOMMENDED WEBSITES:
- www.mayoclinic.org
- www.webmd.com