

# STAR™

## Spine Tumor Ablation with Radiofrequency

Procedure for Painful  
Metastatic Spinal Tumors



A new minimally invasive treatment option for patients needing rapid relief from the pain of metastatic spinal tumors.

# Spine Tumor Ablation with Radiofrequency

Now there's a new minimally invasive treatment option for patients with painful metastatic spinal tumors. It's called Spine Tumor Ablation with Radiofrequency, also known as the STAR Procedure. STAR provides your physician unparalleled control in ablating tumors of the vertebral body using radiofrequency energy to locally destroy tumor cells. You may continue to receive chemotherapy or radiation therapy for your primary cancer. STAR may also provide a treatment option for patients who have already reached their maximum radiation dosage or have radiation-resistant tumors.

If your back pain from metastatic spine tumors is affecting your quality of life, ask your doctor if the STAR procedure is right for you.

# The STAR Procedure for Pain Relief

The STAR procedure is a simple, minimally invasive procedure, usually performed in an outpatient setting and does not interrupt your primary chemotherapy or radiation therapy. Through the use of radiofrequency ('RF') energy, STAR offers both rapid and sustained palliative relief of painful vertebral body tumors.<sup>1</sup>

It is a novel treatment option which has been clinically shown to dramatically reduce pain, reduce dependency on pain medication and improve one's quality of life to regain freedom and independence.<sup>2,3</sup>



<sup>1</sup> Hillen et al. Radiology. 2014 Oct; 273(1):261-7

<sup>2</sup> Anchala et al. Pain Physician. 2014 Jul-Aug; 17(4):317-27

<sup>3</sup> Bagla et al. J Vasc Interv Radiol 2015; 26: e86

# The STAR Procedure

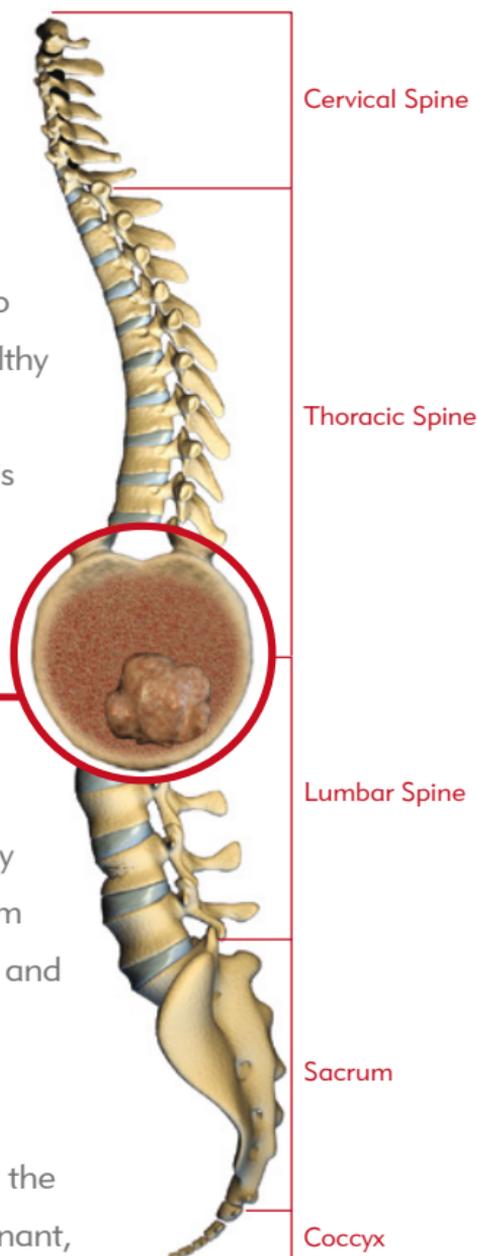
## What are Metastatic Spinal Tumors?

As a cancer progresses, it may spread, or metastasize, from the site in the body where it originated (e.g., primary tumor) to secondary sites including the spine. When this occurs, the cancer is described as metastatic. It is not uncommon to find multiple metastatic spine tumors due to higher life expectancy. In fact it is estimated that metastatic spine tumors may occur in over 70% of people diagnosed with cancer.

When cancer metastasizes to the spine, it disrupts the healthy process of new bone cells regeneration. Existing bone is often destroyed, with soft tissue tumors growing in the place of new bone.

As the tumor grows and bone is destroyed it causes both biologic pain, caused by irritation of spinal nerves from neurostimulating chemicals, and mechanical pain due to spinal instability.

Metastatic spinal tumors are the most common type of malignant, or invasive, lesions in the spine.

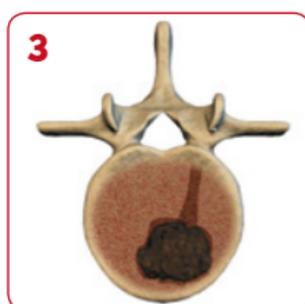
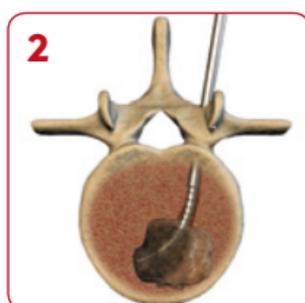
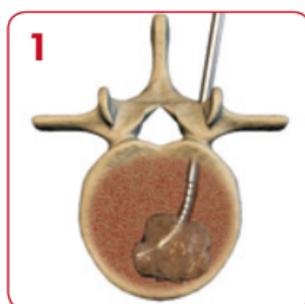


The STAR procedure uses a small steerable instrument that enters the vertebra through a tiny incision. The STAR procedure allows your doctor to precisely target the area of the tumor using radiographic imaging called fluoroscopy.

RF energy is then applied using heat to destroy the tumor cells. Special temperature sensors provide your doctor with continuous feedback on the temperature levels for added safety.

The device is removed once the tumor has been ablated. Sometimes, if the tumor has caused a fracture of the surrounding vertebrae, the doctor may also inject bone cement to stabilize the fracture through the same set of instruments.

A small bandage covers the incision following the procedure.



**Get rapid relief from painful spinal tumors. Ask your physician about the STAR procedure.**

Note: Individual results may vary.

## Contact Us to Learn More

As with most surgical procedures, serious adverse events, some of which may be fatal can occur. Although, the STAR systems are designed to minimize these risks as much as possible, potential serious risks of the procedure include, but are not limited to:

- Infection
- Bleeding
- Pain
- Anaphylaxis (life threatening allergic reaction) and death
- Pulmonary embolism (blood clots in the lungs)
- Thermal damage to surrounding tissues
- Nerve injury resulting in radiculopathy, paresis or paralysis
- Pneumothorax or Hemothorax
- Unintended puncture wounds

Please consult your physician for a discussion of these and other risks to determine if this procedure is right for you.

**Indications for Use:** The STAR™ Tumor Ablation System is indicated for palliative treatment in spinal procedures by ablation of metastatic malignant lesions in a vertebral body.

**Risks and Contraindications:** As with most surgical procedures, there are risks associated with the STAR procedure, including serious complications. For complete information regarding risks, contraindications, warnings, precautions and adverse events please review the System's Instruction for Use.



Merit Medical Systems, Inc.

1600 West Merit Parkway  
South Jordan, Utah 84095  
1.801.253.1600  
1.800.35.MERIT