

# Magnetic Resonance Imaging (MRI) for Spinal Cord Stimulation (SCS)

## *Media Backgrounder*

### What is MRI?

MRI uses a powerful magnetic field, radio frequency pulses and a computer to produce detailed pictures of organs, soft tissues, bone and virtually all other internal body structures. An MRI scan can be used to examine almost any part of the body, including the brain and spinal cord, bones and joints, breasts, heart and blood vessels.<sup>1</sup>

### Spinal Cord Stimulation (SCS) and the role of MRI

Up until now, there has been a common misconception that patients implanted with Spinal Cord Stimulation (SCS) devices to treat chronic pain were not able to undergo an MRI scan. It is true that the strong magnetic fields and radio waves used during an MRI procedure can interfere with implanted SCS devices. However, with the right device and the correct scan conditions, an MRI scan is possible for patients who have an SCS device. In these situations and with the appropriate SCS device, this is known as being MR conditional.

Studies have suggested that up to 70% of people who have an SCS device will need an MRI scan within five years.<sup>2,3</sup> However this data is misleading as an analysis of people with an SCS has estimated that the prevalence of MRI related explants (removal) is low; between 0.5 and 1.5%. Results from a study by Case Western Reserve University School of Medicine have shown an MRI related explant rate of six out of 214 patients over seven years.<sup>2,3</sup>

### Precision™ Plus, Precision™ Spectra and Precision Montage™

The Boston Scientific Precision™ Plus and Precision™ Spectra systems are both MR Conditional devices, and patients with these devices have access to head-only MRI scans under specific system conditions. The Precision Montage™ Spinal Cord Stimulation system offers safe access to full body MRI scans under specific system conditions.<sup>4</sup>



## MRI and other diagnostic tools

MRI is an excellent imaging tool, but there are also other good diagnostic alternatives. Advances in CT scans and other imaging techniques mean that all patients can access alternatives for virtually any part of the body, including soft tissue.

Other imaging options include:

- A computerised tomography (CT) scan uses X-rays and a computer to create detailed images of the inside of the body.<sup>5</sup>
- An X-ray is a quick and painless procedure commonly used to produce images of the inside of the body.<sup>6</sup>

These alternative imaging options also mean that SCS patients do not have to choose between good pain management now and a possible need for MRI in the future.



## Media contact

Rosie Ireland  
Corporate Communications  
Specialist Europe  
Boston Scientific  
+44 7585 403359  
[rosie.ireland@bsci.com](mailto:rosie.ireland@bsci.com)

## References

- 1 NHS Choices, MRI scan <http://www.nhs.uk/conditions/MRI-scan/Pages/Introduction.aspx> Accessed: May 2017
- 2 Gold et al. Low prevalence of MRI related explants in US spinal cord stimulation (SCS) patients. Presented at the 2013 North American Neuromodulation Society (NANS) Annual Meeting. (Analysis of Medicare claims data and BSC complaints data)
- 3 Hanes/Hyek. Spinal Cord Stimulation Complications: Review of 7 years of Experience from an Academic Center Database. Case Western University School of Medicine. Presentation NANS, 2013.
- 4 Boston Scientific Receives U.S. FDA Approval for Precision Montage™ MRI Spinal Cord Stimulator System, May 2016, accessible here: <http://news.bostonscientific.com/2016-05-19-Boston-Scientific-Receives-U-S-FDA-Approval-for-Precision-Montage-MRI-Spinal-Cord-Stimulator-System> Accessed: May 2017
- 5 NHS Choices. CT scan <http://www.nhs.uk/conditions/CT-scan/Pages/Introduction.aspx>. Accessed: May 2017.
- 6 NHS Choices. X-Rays. <http://www.nhs.uk/Conditions/X-ray/Pages/Introduction.aspx>. Accessed: May 2017



The Precision Spectra™ SCS System with Image Ready™ MRI Technology is "MR-Conditional" only when exposed to the MRI environment under the specific conditions defined in the Image Ready™ MRI Guidelines for Precision Spectra Spinal Cord Stimulator System.

The Precision Montage™ MRI SCS System provides safe access to Full-Body MRI Scans only when used with the Avista MRI Leads and exposed to the MRI environment under the specific conditions defined in the Image Ready MRI Full Body Guidelines for Precision Montage MRI Spinal Cord Stimulator System.

*CAUTION: The law restricts these devices to sale by or on the order of a physician. Indications, contraindications, warnings and instructions for use can be found in the product labeling supplied with each device. Information for use only in countries with applicable health authority registrations. Material not intended for use in France.*