

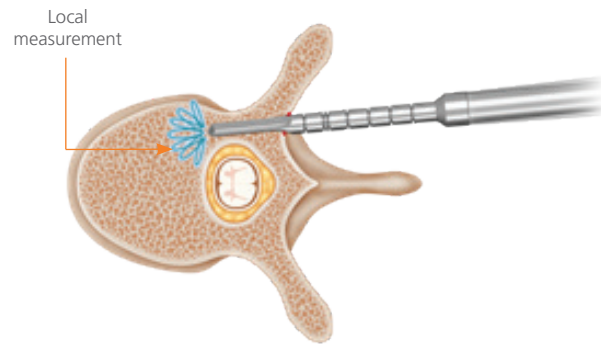


## How does the **PediGuard** probe with DSG Technology work?

The **DSG Technology** is based on the differences in electrical conductivity of various tissue types. It has been determined that blood, neural and vascular tissue have the most conductivity, cancellous bone has medium conductivity, and cortical bone has the least conductivity of all tissues that are encountered during a typical spinal fusion procedure.

A sensor embedded at the tip of the **PediGuard** probe measures local tissue conductivity. The surgeon is continuously informed in real time of the type of tissue by changes in the audio signal and the flashing LED light.

**PediGuard** devices are sterile and disposable (single-use).



Learn more about the DSG Technology at [www.spineguard.com](http://www.spineguard.com).

SpineGuard does not endorse any treatments, procedures or physicians referenced herein. This information is provided as an educational service and is not intended to serve as medical advice. Anyone seeking specific orthopedic advice or assistance should consult his or her orthopedic surgeon.

# SpineGuard®

Making spine surgery safer

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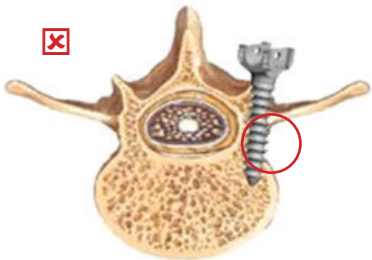
Caution: See package insert for labeling limitations, intended uses, relevant warnings, precautions, side effects and contraindications. Federal (USA) law restricts the sale and use of this device to a prescription of a physician.

GPIPAT/216E

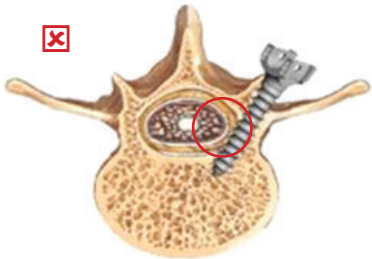
# Patient Information



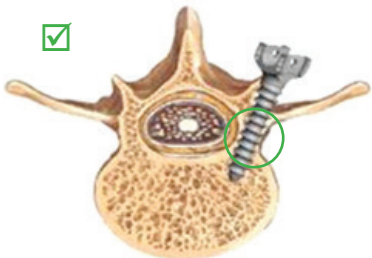
## The Challenge



**Lateral Breach**  
Pedicle screw placement is too lateral and can damage soft tissue or nerves.



**Medial Breach**  
Pedicle screw placement is too medial and can damage the spinal cord.



**Accurate Placement**  
Pedicle screw is correctly placed within the pedicle.

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# How the PediGuard® device can help

## Spinal Fusion Surgery Risk of Complications

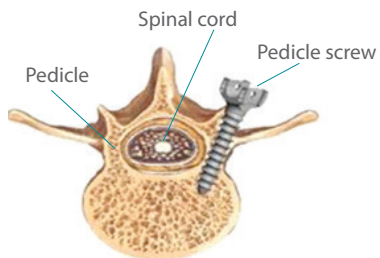
Your doctor has recommended **spinal fusion surgery** using a **pedicle screw system** to correct a problem with your spine.

Spinal fusion surgery using a pedicle screw system is designed to stabilize your spine; giving you the ability to move more easily and with less pain.

This common surgical technique joins two or more vertebrae.

Pedicle screw insertion is a frequent technique to anchor implants to the bone. The exact positioning of these implants is necessary in order to avoid complications and reach a successful outcome.

Vertebrae  
(Top view)



Typically, surgeons will use fluoroscopy (x-rays) to check the placement of pedicle screws. However, repeated use of x-rays can lead to excessive radiation exposure and could have consequences on your health.

Inserting **pedicle screws** during a spinal fusion procedure is considered **very safe** when performed by an **experienced surgeon**. Complications are rare. Those associated with the use of pedicle screws include infection, screw or rod breakage, and complications related to misplaced pedicle screws such as nerve damage, spinal cord injury, and vascular injury.

Approximately **15% of pedicle screws** placed using conventional techniques are reported as **misplaced**<sup>1,2</sup>, but fortunately most of them do not cause any harm.

The chance that any of these complications will occur during your surgery or follow-up rehabilitation is usually very small. Discuss these complications with your doctor before surgery if you have any questions.

Several techniques to improve pedicle screw placement have been developed in the last decades. Those include intraoperative monitoring techniques, intraoperative navigation systems, and the **PediGuard®** devices with **DSG™** (Dynamic Surgical Guidance) Technology.

Talk with your doctor about the most appropriate technique for your surgery.

The benefits of the DSG Technology have been demonstrated in a wide number of clinical studies.

**The PediGuard devices enhance spinal fusion surgery, improves surgical workflow and maximizes screw placement efficiency by:**

- **Increasing screw placement accuracy, therefore minimizing immediate and late complications** related to screw misplacement
- **Reducing** the use of **X-ray imaging controls** thus decreasing exposure to ionizing radiation, that could be dangerous especially for young patients

The **PediGuard** devices with DSG Technology have assisted orthopedic spine surgeons and neurosurgeons in over 47,000 surgeries worldwide – **ask your surgeon** about the DSG Technology today.

<sup>1</sup>Mason A et al. Spine. 2014

<sup>2</sup>Shin BJ et al. J Neurosurg Spine. 2012