

MINIMALLY INVASIVE *neurosurgery*

Robotic Spinal Surgery, Explained

by Bishop Magehee, PA-S

Overview

Robotic spinal surgery is one of the latest advances in neurosurgery and spinal surgery. Traditionally, Dr. Baker would perform complex spinal surgeries by placing screws in the spinal bones, aiming them either 'freehand' (using his judgement to feel), or using a series of X-rays taken during the procedure. Robotic spinal surgery negates the need for either approach, using its own special guidance system to place surgical screws and rods with unparalleled precision.



The Details

During a traditional spinal procedure, Dr. Baker uses X-rays to make sure he's in the right spot when drilling into bone and placing screws, bone grafts and rods. X-rays are radiation—too many of them can expose you (and Dr. Baker) to significant amounts of said radiation, which could potentially be harmful. Furthermore, there is a small but significant risk of placing the screws in the wrong place, rendering the surgery ineffective. And without any x-rays at all, this misplacement risk increases.



Robotic spinal surgery was created to dramatically boost surgical accuracy and reduce the risk of screw misplacement. Dr. Baker still places the screws with his or her hands—however, the robot (called The Mazor Robotics system) creates a computerized tomography (CT), which essentially gives him a blueprint for the surgery. By uploading this blueprint into a 3D planning program, Dr. Baker can plan every aspect of the procedure before he even enters the operating room. This system allows Dr. Baker to perform all sorts of spinal surgeries, whether simple or complex – all more safely, efficiently, and accurately. It reduces radiation exposure, and potentially lowers complication rates, postoperative pain, and recovery time.