

# Scoliosis Surgery. The Definitive Patient's Reference

by

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If you are facing the possibility of scoliosis surgery, this book is for you. Written in plain English by an adult who has been through it, this book explains everything you need to know about: What is involved in scoliosis surgery

How to decide whether surgery is the right course of action

What the surgical options are

What alternatives to surgery exist, and

How to prepare for surgery and the lengthy recovery process

Through detailed explanations of complex medical terminology and informative illustrations, this book will provide you with a solid understanding of scoliosis surgery, enabling you to better understand what your surgeon tells you and to empower you to ask more meaningful questions. It shows you what to expect throughout the process, from initially planning to have surgery to your recovery. It drills-in to topics not commonly addressed in detail, such as:

How to receive and interpret a second opinion

How to save money on your surgery

Things you should do before surgery to help ensure a better outcome

What you need to know about pain medications

Steps you should take to prepare your home for an easier recovery and much more...

Whether for you, a family member or a friend, anyone facing scoliosis surgery will find this book invaluable.

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## **APPENDIX A: Getting Your House And Life In Order**

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## **GLOSSARY Definitions of Common Scoliosis Terms**

**Adolescent scoliosis** A lateral spinal curvature that appears before the onset of puberty and before an individual is skeletally mature

### **AIS Adolescent Idiopathic Scoliosis**

**allograft Bone** for spine grafting taken from a human cadaver

**anterior** **The front**, or from the front. The opposite is posterior (back, or from the back).

**A/P Anterior/posterior**, in the context of (1) an A/P x-ray, which is taken with the patient facing the x-ray machine, or (2) scoliosis surgery in which incisions are made both from the front (anterior) and from the back (posterior).

**apex** The most deviated vertebra in a scoliotic spine; the “peak” of a curve. There may be more than one apex if there are multiple curves.

**autologous** In the context of donating blood, this means donating your own blood for use during your surgery

**autogenous** see autograft

**autograft Bone** for grafting material taken from your ribs or pelvis that will be used during your surgery

**bending films/x-rays X-rays** of your back taken while you are laying down and bending your torso as hard as you can to the right or left. These indicate how flexible your spine is and can be used to predict how much correction scoliosis surgery may achieve in your case. Also called stretch films.

**BMP Bone Morphogenetic Protein**, a natural material used to augment bone grafts. BMP may increase the likelihood of a successful fusion and can accelerate the rate at which the fusion process takes place.

**bone-on-bone** The bringing together of two vertebrae such that one rests directly on the other after the intervertebral discs between them are removed

**cervical** The section of spine in the neck, above the thoracic section. The cervical section of the spine comprises seven vertebrae.

**Cobb method or Cobb angle** The name of the method by which the severity of a scoliotic curve is measured (the Cobb Method). The resulting degree measurement is called the Cobb angle. Here's a sample chapter from the book about measuring a Cobb angle.

**coccyx** The lowest part of the spine, also called the tailbone

**compensation** In the context of scoliosis surgery, an individual is said to be compensated when his or her head is centered above the pelvis. The opposite of decompensation.

**compensatory curve** A secondary curve (there are sometimes two) that develops in order to help maintain normal body alignment (compensation)

**concave** The inside of a curve. Concave is the opposite of convex.

**congenital scoliosis** Scoliosis caused by a condition (typically, malformed vertebrae) with which one was born

**contraindicated** Not appropriate for—the opposite of indicated

**convex** **The outside of a curve** (the opposite of concave). A curve that bends to the right (from the perspective of the person with scoliosis) is said to have right convexity.

**crankshaft effect** A phenomenon that may affect individuals who have scoliosis surgery before reaching skeletal maturity in which the front (anterior) portion of the spine continues to grow and deform while the rear (posterior) portion remains held in place. This leads to a unique spinal deformation.

**DBM Demineralized Bone Matrix**, a variant of traditional allograft bone that uses extracted proteins taken from a human cadaver to enhance fusion

**decompensation** A potential outcome of scoliosis surgery in which the spine becomes imbalanced such that the head is not centered over the pelvis

**discectomy** The surgical removal of all or part of one or more intervertebral discs. Also spelled diskectomy.

**discs**, intervertebral Rings of cartilage surrounding a spongy core that separate two vertebrae and cushion impacts to the spine

**double major curve** Also called an “S” curve, this refers to a scoliotic spine with two major (structural) curves

**endoscopic** A surgical method in which an endoscope—an instrument with a tiny video camera inside it—is used to visually explore the chest cavity. Also called thoracoscopic.

**facet joints** The bony parts of a vertebra that connect it to other vertebrae

**flatback** A condition in which the normal lordosis (inward curve) of the lower back is lost and the lower back instead appears flat

**Foley catheter** The name of the tube inserted into one’s urethra to drain urine after surgery

**fusion** The surgical process of transforming two or more adjacent vertebrae into one solid, continuous piece of bone

**graft Fragments** of bone taken from one’s own body or from a cadaver and placed at the spinal fusion site to promote the fusion process

**Harrington rod** The name of the first instrument (rods) used in scoliosis surgery to stabilize a scoliotic curve

**hemothorax** A surgical complication involving the inadvertent drainage of blood into the lungs

**idiopathic** Unknown origin or cause. Most cases of scoliosis are idiopathic, though there is now a known genetic component to the disorder.

**indicated** Appropriate for (in the context of a particular medicine or procedure)

**instrumentation Hardware** (rods, screws, hooks, etc.) used to straighten and hold a scoliotic curve

**IV Acronym for intravenous.** An “IV” is a system that continuously delivers medicines, blood, or other fluids into your body through a needle inserted into a vein.

**kyphosis** This word has two somewhat conflicting meanings. It means both the normal curve of the upper back and it is sometimes used to describe an excess curvature (a condition commonly called hunchback or roundback). The implied meaning is usually clear in context. For example, a surgeon might say that he “can surgically restore normal kyphosis,” or that one has “moderate scoliosis with just mild kyphosis.”

**lateral Side-to-side.** A scoliotic spine has a lateral curvature as opposed to a front-to-back curvature (though an individual with scoliosis may also have the latter).

**level(s)** A number of vertebrae. Usually used in the context of discussing how many vertebrae will be fused or instrumented (“We need to fuse five levels”). Also called segment(s).

**levo scoliosis** A scoliosis curve that bends to the left. Opposite of dextroscoliosis, which is a curve that bends right.

**logrolling** A procedure used in hospitals while a patient is recovering in bed to turn the patient on either of his or her sides without bending or twisting the back. This is done by placing a sheet under the patient and then having one or two nurses carefully pull up one side of the sheet to roll the patient to the other side.

**lordosis** This word has two somewhat conflicting meanings. It means both the normal inward curve of the lower back and it is sometimes used to describe the absence of that normal curve (a condition commonly called flat back). The implied meaning is usually clear in context.

**lumbar** The lowest region of the spine, comprising five vertebrae. Above the lumbar region is the thoracic region, and below it is the sacrum.

**midline** A conceptual vertical line that indicates the true left-right midpoint of the spine

**morselized bone** Ground-up bone fragments used as grafts to promote fusion

**narcotic analgesic** A class of strong painkilling medications that may be addictive

**nonstructural curve** A curvature that is not fixed, or rigid. Often called a compensatory, secondary, or minor curve.

**nonstructural scoliosis** A generally mild, temporary case of scoliosis caused by poor posture, injury, or illness

**NSAID Non-Steroidal Anti-Inflammatory Drug.** Most commonly, these are known as over-the-counter painkillers like Advil, Aleve, and aspirin. Compared to narcotics, these are less powerful and have fewer side effects. Tylenol (acetaminophen) is not an anti-inflammatory drug and is not in this class. Some stronger NSAIDs require a prescription.

**orthopedics** The branch of medicine that deals with disorders of the skeletal system

**orthopedist** **Synonym** for orthopedic surgeon

**osteotomy** The separation of a fused portion of spine into distinct segments that approximate vertebrae. Essentially the reverse of spinal fusion.

**P/A Posterior/anterior,** usually in the context of a P/A x-ray, which is taken with the patient facing away from the x-ray machine

**PCA Patient Controlled Analgesia.** A PCA is a machine that administers a continuous dosage of painkilling medication intravenously to a patient and also allows the patient to augment the continuous dosage with extra bursts of medication as needed.

**pedicle** The part of a vertebra that connects the rear (posterior) elements of the vertebra to the anterior (front) of the vertebra, which is also called the vertebral body. Pedicle screws would be placed in this section of bone.

**pleura** The outer lining of the lung

**pneumothorax** A possible surgical complication of scoliosis surgery, a pneumothorax is air temporarily trapped between the lung and chest wall.

**posterior** **The back**, or from the back (rear). The opposite of anterior.

**pseudarthrosis** The failure of some or all of the vertebrae involved in a fusion to fuse successfully. Also spelled pseudoarthrosis.

**resection** The cutting away of a section of bone, such as one or more ribs as part of a thoracoplasty

**rib hump** The cosmetic deformity of ribs that results from the rotation of a scoliotic spine in the thoracic region. The rotation forces some ribs to curve outward, thereby creating a hump on an individual's back that is most visible when the individual bends forward.

**rotation** The twisting of a spine around its vertical axis. Most scoliotic spines have some degree of rotation in addition to a lateral (side-to-side) curvature.

**sacrum** A large section of bone at the bottom of the spine between the bottom-most lumbar vertebra (L5) and the coccyx (tailbone). In developing infants, the sacrum is actually five distinct vertebrae; these vertebrae fuse together as one grows. The sacrum is sometimes denoted S1.

**sagittal curves** The front-to-back curves of a normal spine in the upper back (kyphosis) and lower back (lordosis). One goal of scoliosis surgery is to restore these natural curves, though not all individuals with scoliosis have abnormal sagittal curves.

**segmental instrumentation** Used in almost every scoliosis surgery performed today, segmental instrumentation (screws and hooks) can be attached to rods at multiple vertebrae, or segments, to achieve optimal correction of the curve.

**selective fusion** A fusion and instrumentation of only the structurally-curved sections of a spine; the compensatory curves are not fused or instrumented in the hope that they will correct on their own once the structural curve is corrected.

**skeletal maturity** A person's body is "skeletally mature" when his or her bones are no longer growing. This usually occurs when a female is 14-16 or a male is around 16-18 years old. Skeletal maturity is determined by measuring the amount of bone that has formed on the upper edge of the pelvis, an indication called the Risser sign.

**stretch films** see bending films

**structural curve** Also called a primary curve, this is the "true" scoliotic curve. In contrast, a compensatory curve is a curve that is merely curving in reaction to the structural curve.

**structural scoliosis** Scoliosis caused by a presumably genetic or known medical condition

**thoracic** The section of spine in the middle back, between the cervical (neck) and lumbar (lower back) sections. The thoracic section of the spine comprises twelve vertebrae (T1-T12) and supports the rib cage.

**thoracolumbar curve** A structural curvature that spans both the thoracic and lumbar regions of the spine

**thoracoplasty** A surgical procedure to reduce the rib hump often associated with thoracic curves by removing sections of one or more protruding ribs. Here's a sample chapter from the book about thoracoplasty, which is also known as costoplasty.

**thoracoscopic surgery** A minimally-invasive surgical technique in which the spine is accessed through tiny incisions into which an endoscope is inserted

**TLSO Thoracic Lumbar Sacral Orthoses.** A fiberglass brace that some patients must wear for several months after scoliosis surgery.

**vertebrae** The 24 bones that, together with the sacrum and coccyx, comprise the spine

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