

# Foreword

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Low back pain is extremely common, with approximately 80% of adults suffering a memorable episode of low back pain. The vast majority of patients are treated successfully with physical therapy, nonsteroidal anti-inflammatory medications, and encouragement. Because of the magnitude of the problem, however, the minority of patients who fail to respond to these measures still represent a large number of patients. These patients, with back pain recalcitrant to conservative therapy for a period of months to years, are appropriately referred to spinal surgeons. The spine surgeon of the 21<sup>st</sup> century is faced with a dizzying array of options for the treatment of a patient with low back pain. Each new treatment is purported to be the latest and greatest cure for low back pain. As we have learned from our experience with pedicle screws and with interbody cage technology, nothing is as good as the industry sponsored initial studies seem to indicate. Furthermore, because of the rapid pace with which new devices and techniques are appearing on the market, the ability of the practicing physician to learn the particular indications for a particular treatment strategy is limited. The lack of reliable information regarding a new technology at its introduction into widespread use in combination with the large number of competing techniques/devices/companies

as well as variability and bias in physician training (neurosurgeon, orthopedic surgeon, anesthesiologist, rehabilitation physician) contribute to the confusion.

The text is intended to serve as an overview of new techniques for the diagnosis and management of medically refractory low back pain. Discussions of the pathophysiology and biomechanics of low back pain and its treatment serve as a rationale for later discussions of various fusion techniques, intradiscal electrothermy, spinal cord stimulation and facet rhizotomy. This information is useful for answering the real life questions that we encounter every day, such as: Which fusion technique, if any, is best for a 40-year-old athletic man with a collapsed L4/5 disc space? How about the 30-year old-laborer with a well-preserved disc space but a positive discogram? How about the 70-year-old man with stenosis and low grade spondylolisthesis? How does intradiscal electrothermy work and who are good candidates? How can I help patients with failed back surgery syndrome? How do we tell facet derived pain from discogenic pain and does it matter? It is hoped that this text will help provide a better understanding of the pathophysiology, biomechanics, and natural history of low back pain and the available treatments.