Spinal Deformities:
The Essentials

This textbook is written for residents and fellows in neurosurgery and orthopedic surgery. It includes contributions from more than 50 experts in these 2 fields. The book is divided into 2 sections: “Principles of Spinal Deformities” and “Treatment of Spinal Deformities.” The principles section consists of 11 chapters, including chapters on the natural history of spinal deformities, diagnosis, screening procedures for spinal surgery, surgical anesthesia, and intraoperative neuromonitoring. Chapter 1, “Overview of Spinal Deformity,” emphasizes the differences between adult and adolescent spinal deformities and provides a brief introduction to the concepts of fixed versus flexible deformities and the dynamic interaction of coronal plane and sagittal plane deformations. Chapter 5, “Anatomical Variants with Spinal Deformity,” discusses physical changes in the axial skeleton and associated vascular structures that occur in different spinal deformities; and chapter 7, “Principles of Sagittal Plane Deformity,” includes a brief introduction to normal spinal curvatures and the changes that occur with age.

The treatment section consists of 15 chapters—two thirds of the book—and focuses on surgical procedures that correct specific spinal deformities. Brief descriptions of the deformities are presented in the chapters on congenital scoliosis, infantile scoliosis, neuromuscular scoliosis, Scheuermann kyphosis, and spondylolisthesis. Some of these chapters also include short sections on nonoperative treatment, such as serial casting for infantile scoliosis and bracing for neuromuscular scoliosis. The last chapter, “Bracing and Nonoperative Treatment of Spinal Deformity,” concentrates on treatments using braces. It provides a summary of the biomechanical principles of spinal bracing, the different types of braces, and the spinal deformities for which bracing is indicated.

This is a well-written textbook intended for neurological surgery and orthopedic surgery fellows and residents. It contains numerous plain radiographic, computed tomographic, and magnetic resonance images of spinal deformities, as well as some photos of patients with deformities. The chapters are well referenced, but most references are to surgical journals. Physical therapy is mentioned in the first chapter as an integral part of a trial of conservative treatment prior to surgical intervention and again as a component of postoperative care; however, for the most part, references to physical therapy are scattered throughout the book and are brief, without discussions of specific techniques. This book contains interesting information on the anatomy, natural history, and surgical correction of spinal deformities, but the majority of the topics are likely to be of only academic interest to most physical therapists.

William A Roy
WA Roy, PT, PhD, is an Associate Professor of Basic Sciences in the College of Osteopathic Medicine, Touro University Nevada, Henderson, NV.