This manual provides technical protocols for musculoskeletal research on a translational basis, i.e. a disease-orientated approach.

The manual offers guidance on various laboratory techniques, including cell culture and molecular biology, histology and histomorphometry, microscopy and bioimaging, laboratory animal models, CT- and MRI-based densitometry and microarchitectural analysis, biomechanics and functional analysis of orthopedic kinesiology, etc.

The content is simple and straightforward, with illustrations and step-by-step procedures as an easy experimental reference for personnel in basic and clinical musculoskeletal research and education. This book will provide a unique multidisciplinary platform for various professions — not only orthopedics, but also biomedical engineering and biomaterial sciences — involving both basic and clinical medicine.