

### KEY FEATURES

- Comprehensive site technologist training
- MSK dedicated project teams
- Multi-centered standardization of equipment
- 21 CFR and GCP compliance with full audit trail
- Global operations for 24/7 support
- Custom and standard real-time online reporting
- Network of Key Opinion Leaders

### INNOVATIVE IMAGING METHODOLOGIES

- Syn-X-RA™ frame: X-ray positioning device
- Syn-M-RA™ frame: Hand MRI positioning device
- Genant modification of the Sharp scoring method
- OMERACT RAMRIS MRI scoring method
- Quantitative analysis of MRI pulse sequences

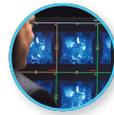
**Medical Imaging endpoints are proven to shorten the decision making process for musculoskeletal clinical trials.**



### Musculoskeletal Expertise

With more than 30 years of experience, Bioclinica offers clinical trial sponsors and research institutions, unmatched expertise, scientific insight and proven centralized imaging services necessary to make timely, critical go/no-go decisions.

Bioclinica's MSK expertise includes support for the latest developments in imaging endpoints and a deep background in Rheumatoid Arthritis, Osteoporosis, Osteoarthritis, and more. Our medical affairs group, technologists and dedicated MSK project teams have delivered quality service and independent image review in support of hundreds of MSK drug development and registration clinical trials.



### Customized Project Excellence

A thorough understanding of imaging endpoints allows us to assign the appropriate resources and scientific experts to match the needs of your study, from protocol design through to regulatory submission. Furthermore, Bioclinica's leading central independent image acquisition and analysis process improves image quality and standardization, providing for highly reproducible, clean data.



### Leadership

In addition to Bioclinica's network of internal and external sub-specialty trained physicians, Sponsors also benefit from our continued collaboration with renowned musculoskeletal key opinion leaders Drs. Ali Guerhazi, Charles Peterfy, Harry Genant and Desiree van der Heijde.

### THERAPEUTIC STRENGTHS

#### Rheumatic Diseases

**Ankylosing Spondylitis**  
**Psoriatic Arthritis**  
**Rheumatoid Arthritis**  
**Gout**

#### Pediatric Indications

**Bone Growth Factor**  
**Osteogenesis Imperfecta**  
**Pediatric Bone Age**

#### MSK Disease Integrity

**Bone Mineral Density**  
**Bone Repair**  
**Fracture Studies**  
**Osteoarthritis**  
**Osteoporosis**  
**Paget's Disease**

#### Bone Safety Assessments

**Diabetes**  
**COPD**  
**Hepatitis**  
**HIV**  
**Obesity**

### Advanced Imaging



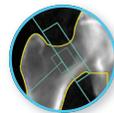
#### Radiography (X-ray)

Bioclinica is well-versed with the most common imaging modality used in the regulatory approval process around the globe for clinical indications such as rheumatoid arthritis. Our team understands that the proper acquisition technique for the assessment of cartilage, Joint Space Width (JSW) and Joint Space Narrowing (JSN) in osteoarthritis studies is critical and needs to be standardized to ensure the subtle changes are precisely measured.



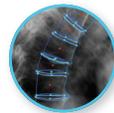
#### Magnetic Resonance Imaging (MRI)

Bioclinica has successfully completed numerous studies utilizing MRI and the MRI scoring systems recommended by OMERACT for both RA and PsA. Bioclinica collaborates with world experts for the Whole Organ MRI Score (WORMS) method to assist with image or 3-D reconstructions for cartilage volume and bone marrow edema. MRI images in Ankylosing Spondylitis (AS) can be read with methods developed by Spondyloarthritis Research Consortium of Canada (SPARCC).



#### Dual Energy X-Ray Absorptiometry (DXA)

From methodologies for cross-calibration and instrument quality control (IQC) to careful assessment of patient acquisition and analysis using GE Lunar or Hologic software, Bioclinica ensures all patient data is analyzed accurately and precisely.



#### Quantitative Computed Tomography (QCT)

Quantitative Computed Tomography is used to measure accurate three-dimensional Bone Mineral Density (BMD).

#### Bioclinica is highly conversant with numerous quantitative assessment criteria systems and techniques, including:

- Genant
- Joint Space Width (JSW)
- Joint Space Narrowing (JSN)
- Kellgren-Lawrence
- OARSI
- RAMRIS
- Sharp/van der Heijde
- Whole Organ MRI Score (WORMS)