

PUBLICATIONS

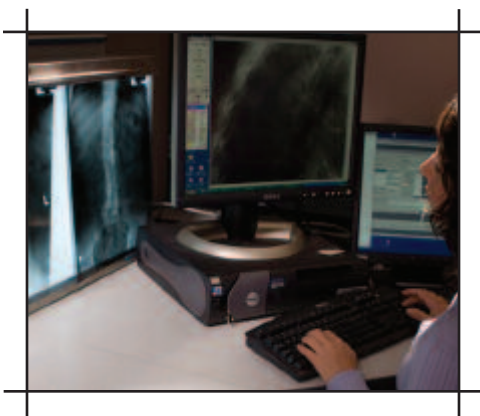
A. Brett, C.G. Miller, C. Yogmas, et. al. (2007). *Reproducibility of radiographic anatomical axis measurement of the knee using a software workflow tool.* Osteoarthritis and Cartilage, Vol 5; Suppl C p. 194

T.M. Link, G. Guglielmi, C. van Kuijk, J.E. Adams, (2005) *Radiologic assessment of osteoporotic vertebral fractures: diagnostic and prognostic implications.* European Radiology. 15(8):1521-32.

M. Berthiaume, J. Martel-Pelletier, J. Raynauld, et. al. (2005). *Meniscal Tear and Extrusion are Strongly Associated with the Progression of Knee Osteoarthritis as Assessed by Quantitative Magnetic Resonance Imaging.* Ann. Rheum. Dis. 64:556-563.

C.W.Hayes, D.A. Jamadar, G.W. Welch, et. al. (2005). *Osteoarthritis of the knee: comparison of MR imaging findings with radiographic severity measurements and pain in middle-aged women.* Radiology. 237(3):998-1007.

J. Berthiaume, J. Martel-Pelletier, J. Raynauld, et. al. (2004). *Quantitative Magnetic Resonance Imaging Evaluation of Knee Osteoarthritis Progression Over Two Years and Correlation with Clinical Symptoms and Radiologic Changes.* Arthritis Rheum. 50:476-487.



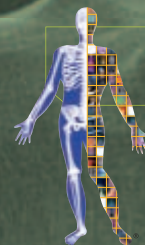
Osteoarthritis Expertise



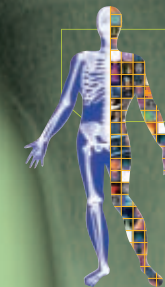
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MUSCULOSKELETAL

Osteoarthritis Expertise

BioClinica has extensive experience involving the management and analysis of images for musculoskeletal clinical trials. We have completed over 200 trials in a number of specialties including:

Ankylosing Spondylitis (AS)	Osteogenesis Imperfecta
Bone Density	Osteoporosis
Bone Growth Factor	Paget's Disease
Bone Repair	Pediatric Bone Age
Fracture Studies	Psoriatic Arthritis (PsA)
Osteoarthritis	Rheumatoid Arthritis (RA)



OSTEOARTHRITIS EXPERTISE

Clinical trials involving osteoarthritis present a number of challenges. Analysis of radiographs for Joint Space Width (JSW) and Joint Space Narrowing (JSN) require precise evaluation and appropriate experience utilizing validated scoring methods. BioClinica's experience includes follow-up with patients for DMOAD (disease modifying osteoarthritis drugs) assessment, management of large global trials, QC, analysis of image acquisition and processing of large data volumes. The assessment of MRI for cartilage measurements is another area BioClinica is routinely called upon to read and evaluate. BioClinica provides proven expertise in centralized image analysis in all required modalities and techniques for osteoarthritis trials.

Our expertise supports:

- Medical Imaging Consulting Services
- Site Standardization and Technical Support
- Image Management Services for X-Ray
- Image Management Services for MRI
- Eligibility Assessment Services
- Independent Blinded Reads

X-RAY

The proper acquisition technique for the assessment of JSW and JSN is critical and needs to be standardized to ensure the subtle changes are accurately measured. In order to provide the readers with optimal quality images for review, the radiograph must be extensively prepared for evaluation including QC and pre-quantification. For these measurements, BioClinica utilizes Optasia™, an advanced analysis program developed by Optasia™ Medical Ltd. This software employs a 100 point evaluation of each knee compartment to precisely identify JSW and has been validated against the Buckland-Wright software. Furthermore, there are a number of "research" endpoints that are also available within the package. The software is fully embedded within

BioClinica's process and linked to Bio-Track™ providing an integrated solution for the evaluation of osteoarthritis X-rays.

The independent blinded interpretation or radiological review utilizes BioClinica's Bio-READ™ system, our state-of-the-art radiological evaluation software for clinical trial data. The images can be displayed in a completely blinded fashion, eliminating all potential bias associated with the review.

The radiologists selected for these reads are licensed, board certified musculoskeletal experts and meet all FDA requirements as independent readers. The radiologists are selected by either the client, or from BioClinica's network of radiologists. BioClinica also has a team (Read Management Services) dedicated to managing the review process and ensure the success of the read.

MAGNETIC RESONANCE IMAGING (MRI)

The use of Magnetic Resonance Imaging (MRI) in osteoarthritis clinical trials is becoming more common and BioClinica has the experience and expertise to successfully manage studies utilizing this modality. At BioClinica, we work with external experts to combine the latest software technology along with our imaging expertise, process knowledge and regulatory experience to implement image management projects in the most time and cost-efficient manner possible.

LEADERSHIP

Colin G. Miller PhD, BioClinica's Sr. Vice President, Medical Affairs recently co-authored the book "Clinical Trials in Rheumatoid Arthritis and Osteoarthritis" published by Springer 2008. Additional chapters were authored by other members of the BioClinica staff as well as key luminaries in the field of osteoarthritis that we collaborate with.