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CLINICAL PRACTICE

**Orthopedic Spine Surgeon – Deerpath Spine Institute / Rezin Orthopedics & Sports
Medicine**

- 7/1/2013 – present
- Director, Deerpath Spine Institute
- Specializing in conservative and surgical treatment of back and neck disorders
- Orthopedic Spine Surgery
- General Orthopedic Surgery
- Interventional & Diagnostic Pain Management
- Outpatient Clinic Locations:
 - o Morris, IL
 - o Ottawa, IL
 - o Joliet, IL

Attending Orthopaedic Spine Surgeon

- Morris Hospital, Morris, IL
- Deerpath Orthopedic Surgery Center, Morris, IL
- Center for Minimally Invasive Surgery, Mokena, IL
- Preferred Surgery Center, Orland Park, IL

Society Memberships

- American Board of Orthopaedic Surgery – Board Certified July 2012
- North American Spine Society
- American Academy of Orthopaedic Surgeons
- Society of Interventional Spine Physicians
- Mid-American Orthopaedic Society

Orthopaedic Spine Surgeon – OAD Orthopaedics / Cadence Physician Group

- 8/1/2010 – 4/1/2013
- Specializing in conservative and surgical treatment of neck and back disorders
- Outpatient Clinic Locations:
 - o Warrenville, IL
 - o Naperville, IL
 - o Glen Ellyn, IL
 - o Carol Stream, IL

Attending Orthopaedic Spine Surgeon

- 8/1/2010 – 5/1/2013
- Central DuPage Hospital, Winfield, IL
- Edward Hospital, Naperville, IL
- DuPage Orthopedic Surgery Center, Warrenville, IL

EDUCATION

Rush University Medical Center – Midwest Orthopedics

- Fellowship training in Spine Surgery – Completed July 2010
- Rush University Medical Center/Midwest Orthopedics at Rush
- Program Director: Howard S. An, M.D.
- Program Co-Director: Frank S. Phillips, M.D.
- Illinois State License: 036.122446

Mayo Clinic

- Residency training in Orthopedic Surgery – Completed June 2009
- Mayo Clinic College of Medicine – School of Graduate Medical Education
- Residency Program Director: Arlen D. Hanssen, M.D.
- Residency Advisor: Mark W. Pagnano, M.D.
- Department Chair: Daniel J. Berry, M.D.
- Board Eligible 9/2009; Board Certified: 7/2012; Expiration 12/2022
- Successfully passed Part II of ABOS Certification Exam 7/2012
- USMLE Scores: Step 3 = 227/94
- 2007 OITE Score: 87th percentile
- Minnesota State License #47601 – Expired 2011
- Basic Life Support/Advanced Cardiac Life Support/Pediatric Advanced Life Support/Advanced Trauma Life Support Certifications
- AAOS Clinician Scientist Development Program 2008
- AOA/Zimmer Orthopaedic Resident Leadership Forum 2008
- American Medical Association/Minnesota Medical Association

The University of Chicago

- M.D. June 2004 – Pritzker School of Medicine
- Ph.D. June 2002 – BSD / Department of Pathology
- Lab: Paul Schumacker, Ph.D. Dept. of Medicine – Pulmonary & Critical Care
- Thesis Title: Endothelial Responses to Environmental Stimuli: the Role of Mitochondrial Reactive Oxygen Species in Response to Mechanical Strain and Hypoxia
- USMLE Scores: Step 1 = 259/99 Step 2 = 246/99
- Graduated with Honors
- Alpha Omega Alpha
- John Van Prohaska Award for outstanding potential in teaching, research, and clinical medicine
- Association of Academic Surgery Student Research Award, for outstanding performance in research in the general field of surgery
- Senior Scientific Research Symposium Participant
- General Surgery Club
- MD/PhD Students' Advisory Committee
- Physicians for Social Responsibility
- American College of Physicians – American Society of Internal Medicine
- American Medical Student Association
- American Medical Association – Medical Student Section
- Illinois State Medical Society & Chicago Medical Society
- American College of Surgeons – Student member

The University of Chicago

- B.A. June 1996 - Biological Sciences with Honors
- Grade Point Average: 3.96 / 4.00 Science GPA: 3.97 / 4.00
- Phi Beta Kappa (Illinois Chapter) in Junior Year of College
- Student Marshal at The University of Chicago

RESEARCH PUBLICATIONS

- **Characterization of Degenerative Human Facet Joints and Facet Joint Capsular Tissues**
Kim JS, MH Ali, F Wydra, HJ Im. *Osteoarthritis Cartilage*. 2015 Jun 25. pii: S1063-4584(15)01217-0.
- **Long Term Outcome of Proximal Row Carpectomy – Minimum Fifteen Year Follow-up.**
Ali MH, M Rizzo, AY Shin, and SL Moran. *Hand (NY)*;7(1):72-8. March 2012.
- **Donor-Site Complications of Autogenous Nonvascularized Fibula Strut-Graft Harvest for Anterior Cervical Corpectomy and Arthrodesis—Experience With 163 Consecutive Cases**
Nassr, AN, MH Khan, MH Ali, MT Espiritu, SE Hanks, JY Lee, WF Donaldson, and JD Kang. *Spine Journal*; 9 (11):893-8. November 2009.
- **Inflammatory Laboratory Markers in Periprosthetic Hip Fractures**
Chevillotte CJ, MH Ali, RT Trousdale, DR Larson, RE Gullerud, and DJ Berry. *J Arthroplasty*; 24 (5):722-7. August 2009.
- **Variability in Hip Range of Motion on Clinical Examination**
Chevillotte CJ, MH Ali, RT Trousdale, and MW Pagnano. *J Arthroplasty*; 24 (5):693-7. August 2009.
- **The Microbiology and Risk of Infection Following Open Agricultural Upper Extremity Agricultural Injuries**
Ali, MH, NA Hoekzema, M Bakleh, AY Shin and DR Osmon. *The Journal of Hand Surgery*; 33 (1); 87-93. January 2008.
- **A Comprehensive Anesthesia Protocol That Emphasizes Peripheral Nerve Blockade for Total Knee and Total Hip Arthroplasty**
Hebl, JH, SL Kopp, MH Ali, TT Horlocker, JA Dilger, RL Lennon, BA Williams, AD Hanssen, MD and MW Pagnano. *The Journal of Bone and Joint Surgery (American)*; 87: 63-70. 2005.
- **Stretch-induced Phosphorylation of Focal Adhesion Kinase in Endothelial cells: role of Mitochondrial Oxidants**
Ali, MH, PT Mungai, and PT Schumacker. *Am J Physiol Lung Cell Mol Physiol* 291(1): L38-45. 2006.
- **Mitochondria are Required for Endothelial Responses to Cyclic Strain: Implications for Mechanotransduction**
Ali, MH, NS Chandel, DP Pearlstein, CE Mathieu, and PT Schumacker. *Am J Physiol Lung Cell Mol Physiol* 287(3): L486-96. 2004.
SEE EDITORIAL: Waters. *Am J Physiol Lung Cell Mol Physiol* 287(3): L484-5. 2004.
- **The Role of Mitochondrial Oxidant Generation in Endothelial Cell Responses to Hypoxia**
Pearlstein, DP, MH Ali, CE Mathieu, KL Hynes, BL Gewertz, and PT Schumacker. *Arterioscler Thromb Vasc Biol* 22:566-573, 2002.
SEE EDITORIAL: Warnholtz, et al. *Arterioscler Thromb Vasc Biol* 22:525-527, 2002.
- **Endothelial Permeability and IL-6 Production during Hypoxia: the Role of Reactive Oxygen Species in Signal Transduction**
Ali, MH, SA Schlidt, NS Chandel, KL Hynes, PT Schumacker, and BL Gewertz. *Am J Physiol* 277:L1057-L1065, 1999.

- Quenching of Reactive Oxygen Species Prevents Endothelial Permeability Changes during Hypoxia

Schlidt SA, MH Ali, NS Chandel, KL Hynes, PT Schumacker, and BL Gewertz. *Surgical Forum* 49:343-344, 1998.

- Prolonged Hypoxia Alters Endothelial Barrier Function

Ali, MH, SA Schlidt, KL Hynes, BC Marcus, and BL Gewertz. *Surgery* 124: 491-497, 1998.

CURRENT RESEARCH PROJECTS

- Effect of Osseous Posterolateral Lumbar Fusion with Vesuvius Corticocancellous Bone Fibers; a Retrospective Case Series Review

ACADEMIC CHAPTERS & REVIEWS

- Cervical Disc Herniation: Anterior Cervical Discectomy and Fusion versus Replacement

Ali, MH and FM Phillips. *Best Evidence for Spinal Surgery*. 1st Edition. Jandial, R and SR Garfin, Eds.

- Cervical Spine Imaging in Trauma.

Ali, MH, AN Nassr, and JY Lee. *The Cervical Spine*, 5th Edition. Benzel, EC, Ed.

- ‘Shockingly Low’ Fusion Rate for Patients with Early Implant-associated Infections

Ali, MH and PM Huddleston. *Orthopedics Today*; 28(2); 63. February 2008.

- Heterotopic Ossification about the Elbow

Ali, MH and SP Steinmann. *Orthopaedic Sports Medicine: Principles and Practice*. DeLee, Drez, and Miller, Eds.

- Minimally Invasive Total Hip Arthroplasty

Ali, MH and MW Pagnano. *Minimally Invasive Total Hip Arthroplasty*. Hozack, WJ, Ed. 2007.

- Minimally Invasive Hip Replacement: Two-Incision Approach.

Ali, MH and MW Pagnano. *Journal of Academy of Orthopaedic Surgeons Monograph*. 2006.

- How I Manage Pain after Total Hip Arthroplasty.

Pagnano, MW, MH Ali, TT Horlocker, and RL Lennon. *Seminars in Arthroplasty*. 2008.

- Endothelial Responses to Mechanical Stress: Where is the Mechanosensor?

Ali, MH and PT Schumacker. *Crit Care Med*; 30(5 Suppl):S198-206. Review. May 2002.

RESEARCH PRESENTATIONS & AWARDS

Minnesota Orthopaedic Society

Minneapolis, MN

May 2009

Title: Long-Term Outcomes of Proximal Row Carpectomy: Fifteen Year Results

Title: Donor-Site Complications of Autogenous Nonvascularized Fibula Strut-Graft Harvest for Anterior Cervical Corpectomy and Arthrodesis—Experience With 163 Consecutive Cases

Title: Analysis of Patellar Crepitus in Two Contemporary Posterior Stabilized Knee Designs

OREF and MOS Award: Best Clinical paper (Long-Term Outcomes of Proximal Row Carpectomy: Fifteen Year Results)

Mid-America Orthopaedic Association

Amelia Island, FL April 2009

Title: Long-Term Outcomes of Proximal Row Carpectomy: Fifteen Year Results
Title: Analysis of Patellar Crepitus in Two Contemporary Posterior Stabilized Knee Designs

American Academy of Orthopaedic Surgeons

Las Vegas, NV February 2009

Title: Long-Term Outcomes of Proximal Row Carpectomy: Fifteen Year Results
Title: Analysis of Patellar Crepitus in Two Contemporary Posterior Stabilized Knee Designs

North American Spine Society

Toronto, ON October 2008

Title: Clinical Outcomes in Early-Onset Spine Implant Associated Infections

The Knee Society

Denver, CO October 2008

Title: Analysis of Patellar Crepitus in Two Contemporary Posterior Stabilized Knee Designs

American Society of Surgery for the Hand

Chicago, IL September 2008

Title: Long-Term Outcomes of Proximal Row Carpectomy: Fifteen Year Results

Current Concepts in Joint Replacement

Las Vegas, NV June 2008

Title: Patellar Clunk is Gone, but Patellar Crepitus Persists

Minnesota Orthopaedic Society

Minneapolis, MN May 2007

Title: Clinical Outcomes in Early-Onset Spine Implant Associated Infections

American Association of Plastic Surgeons

Boston, MA April 2008

Title: Long-Term Outcomes of Proximal Row Carpectomy: Fifteen Year Results

Mid-America Orthopaedic Association

Orlando, FL April 2008

Title: Clinical Outcomes in Early-Onset Spine Implant Associated Infections
Title: Variability in Hip Range of Motion on Clinical Examination
Title: Does Higher Patient Activity Account for UKA Failures? A Note for High-Performance TKA Designs
Title: Inflammatory Laboratory Markers in Periprosthetic Hip Fractures
Award: MAOA Resident Travel Award

American Academy of Orthopaedic Surgeons

San Francisco, CA March 2008

Title: Inflammatory Laboratory Markers in Periprosthetic Hip Fractures
Title: Does Higher Patient Activity Account for UKA Failures? A Note for High-Performance TKA Designs

Orthopaedic Trauma Association

Boston, MA October 2007

Title: Head to Head Comparison of Six Locking Tibial Plateau Plates

Musculoskeletal Infection Society
San Diego, CA August 2007
Title: Clinical Outcomes in Early-Onset Spine Implant Associated Infections

Minnesota Orthopaedic Society
Minneapolis, MN May 2007
Title: Patient-reported Activity Level after Unicompartamental Knee Arthroplasty
Award: Best Overall Podium Presentation

Musculoskeletal Infection Society
Lake Tahoe, CA August 2006
Title: The Microbiology of Upper Extremity Agricultural Trauma

American Academy of Orthopaedic Surgeons
Chicago, IL March 2006
Title: The Microbiology of Upper Extremity Agricultural Injuries
Award: Best Presentation in Hand/Wrist category

Minnesota Orthopaedic Society
Minneapolis, MN May 2005
Title: A Comprehensive Anesthesia Protocol That Emphasizes Peripheral Nerve Blockade for Total Knee and Total Hip Arthroplasty

Mid-America Orthopaedic Association
Amelia Island, FL April 2005
Title: A Comprehensive Anesthesia Protocol That Emphasizes Peripheral Nerve Blockade for Total Knee and Total Hip Arthroplasty

Chicago Signal Transduction Symposium
Chicago, IL May 2002
Title: Mitochondrial Reactive Oxygen Species Mediate Changes in Endothelial Nitric Oxide Production during Cyclic Stretch

American Thoracic Society 2002: Pulmonary Vascular Symposium
Atlanta, GA May 2002
Title: Mitochondrial Reactive Oxygen Species Mediate Changes in Endothelial Nitric Oxide Production during Cyclic Stretch

Experimental Biology 2002: Endothelial Cell Biology Symposium
New Orleans, LA April 2002
Title: Reactive Oxygen Species as Signaling Molecules in Hypoxia and Mechanical Strain

American Thoracic Society 2001: Endothelium Symposium
San Francisco, CA May 2001
Title: Mechanotransduction in Lung Endothelial Cells: Role of Mitochondrial Reactive Oxygen Species in Signal Transduction

Experimental Biology 2001: Cellular Mechanotransduction Symposium
Orlando, FL April 2001
Title: The Role of Mitochondria in Mechanotransduction: Reactive Oxygen Species as Transducers of Cyclic Strain

American Thoracic Society 2000: Student Research Award – Endothelial Physiology
Toronto, Ontario May 2000
Title: Mitochondrial Reactive Oxygen Species Mediate Changes in Endothelial Permeability and IL-6 Production during Prolonged Hypoxia

Experimental Biology 2000: American Physiological Society / Proctor & Gamble Professional Award – Cardiovascular Section

San Diego, CA April 2000

Title: A Novel Mechanism of Mechanotransduction: The Role of Mitochondrial Reactive Oxygen Species as Transducers of Cyclic Strain

Lifeline Foundation: 1998 Student Fellowship Award

Boston, MA March 1998

Title: Mitochondrial ROS Mediate Hypoxic Alterations in Endothelial Physiology

Lifeline Foundation: Forum on Vascular Disease

Washington DC February 1998

Title: Hypoxic Alteration of Endothelial Barrier Function is Mediated by IL-6

Society of Vascular Surgery/International Society of Cardiovascular Surgery

Boston, MA June 1997

Title: Prolonged Hypoxia without Reoxygenation Alters Endothelial Barrier Function

Chicago Vascular Society Research Forum

Chicago, IL May 1997

Title: Prolonged Hypoxia Alters Endothelial Barrier Function

American Medical Association National Medical Student Research Forum

Galveston, TX April 1997

Title: Prolonged Hypoxia Alters Endothelial Barrier Function

Award: Edward S. Reynolds Award for Research in Physiology

The University of Chicago - Pritzker School of Medicine Research Forum

Chicago, IL September 1996

Title: Prolonged Hypoxia Alters Endothelial Barrier Function

Award: Outstanding Research Honor in Department of Surgery

GRANTS & FUNDING

- Orthopaedic Research and Education Foundation Resident Award

Mentor: Stephen A. Sems, MD

Department Chair: Daniel J. Berry, MD

March 2007 – March 2008

- National Institutes of Health Training Grant in Growth and Development

Administrator/Director: Nancy B. Schwartz, Ph.D.

Department of Pediatrics and Biochemistry

June 1998 – June 2004

- National Institutes of Health Training Grant in Pulmonary Biology

Administrator/Director: Julian P. Solway, M.D.

Department of Medicine – Section of Pulmonary & Critical Care Medicine

November 2000 – November 2001

- American Heart Association Student Research Fellowship

Administrator/Director: Bruce L. Gewertz, M.D.

Department of Surgery – Section of Vascular Surgery

August 1997 – June 1998

- Lifeline Foundation Student Research Fellowship

Administrator/Director: Bruce L. Gewertz, M.D.

Department of Surgery – Section of Vascular Surgery

August 1996 – June 1997

TEACHING EXPERIENCE

K2M Clinical Educator - Spine Surgery	September 2012 - present
Ross University School of Medicine: Visiting Professor - USMLE Step 1 Course	2004 – 2012
The University of Chicago: Instructor and Lecturer - USMLE Step 1 Course	2004
The University of Chicago: Teaching Assistant - General & Cellular Pathology - Human Developmental Biology - Human Morphology I - Regulation of Physiological Systems - Mammalian Biology - Cell & Molecular Biology	1999 – 2001 1996 – 2004 1997 1996 1996 1995 – 1996
The Princeton Review: Instructor - USMLE Instructor - MCAT Instructor - Master MCAT Trainer (Biology, Verbal Reasoning) - SAT II Science Master Tutor (Physics, Chemistry, Biology)	1999 – 2004 1997 – 2005 1999 – 2007 2000 – 2002

MEDICAL/RESEARCH EXPERIENCE

Laboratory Research Fellow University of Chicago, William J. Danforth Laboratory, Department of Surgery: Used monolayer cell culture model to study the effects of prolonged hypoxia on endothelial permeability, cytokine production, and reactive oxygen species generation. Principal Investigator: Bruce L. Gewertz, M.D.	March 1996 – June 1998 Chairman, Department of Surgery
Clinical Research Assistant Wyler Childrens' Hospital: Clinical study analyzed the predictors of development of sensorineural hearing loss in patients with Neurofibromatosis type I. Principal Investigator: M. Patricia Short, M.D.	August 1995 – August 1996 Department of Pediatrics and Neurology
Research Laboratory Technician Wyler Childrens' Hospital: Performed organic acid analyses for clinical patients (via extraction and trimethylsilylation using gas chromatography) checking for abnormalities. Basic research consisted of determining whether or not hippocampal neurons utilized the Ω -oxidation metabolic pathway for fatty acid breakdown. Principal Investigator: James H. Tongsgard, M.D.	April 1994 – August 1995 Department of Pediatrics and Neurology
Research Laboratory Assistant The University of Chicago Hospitals' Blood Bank: Assisted in a laboratory studying the BCL-2 14:21 translocation and the subsequent cellular processes responsible for causing B-cell lymphomas. Principal Investigator: Beverly W. Baron, M.D.	June 1993 – April 1994 Department of Pathology
Medical & Laboratory Assistant North American Emergency Medical Center, Downers Grove, Illinois	May 1992 – October 1992