

J O H N M. B E I N E R, MD

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EDUCATION

Undergraduate: University of California at San Diego, La Jolla, CA. Bachelor of Science, General Biology. 1988-1992

Medical School: Yale University School of Medicine, New Haven, CT. (Medical Doctor). 1992-1997

Internship: Yale University School of Medicine, New Haven, CT, Department of General Surgery. 1997-1998

Residency: Yale University School of Medicine, New Haven, CT, Department of Orthopaedics and Rehabilitation. 1997-2002

Fellowship: Spine Surgery, Rothman Institute, Thomas Jefferson University, Philadelphia, PA. 2002-2003

HONORS

Cum laude, University of California at San Diego, La Jolla, CA. 1992

Phi Beta Kappa, University of California at San Diego, La Jolla, CA. 1992

AOA, Yale University School of Medicine, New Haven, CT. 1997

MEMBERSHIPS

North American Spine Society

American Academy of Orthopaedic Surgeons

LICENSURE / CERTIFICATION

Connecticut Medical License, Physician / surgeon, 2003-present.

American Board of Orthopaedic Surgery, board certified.

APPOINTMENTS

Clinical Instructor, Department of Orthopaedics and Rehabilitation, Yale University School of Medicine, New Haven, CT, 0701-present.

Attending Surgeon, Department of Orthopaedics, Hospital of St. Raphael's and Yale New Haven Hospital.

RESEARCH

University of California, San Diego Department of Biology, La Jolla, CA, Laboratory of Immo E. Scheffler. Used site-directed mutagenesis to alter the 5'-untranslated region of the Iron protein subunit of succinate dehydrogenase in a *Saccharomyces cerevisiae* model to demonstrate its role in repression and derepression of the mRNA in differential media with the presence or absence of a fermentable carbon source. Offered as a model for post-transcriptional gene regulation. 1991-1992

Yale University School of Medicine Department of Physiology, and the John B. Pierce Foundation, New Haven, CT, Laboratory of Arthur B. DuBois. Described the role of cerebral blood flow, as measured by laser Doppler, in regulating the systemic blood pressure response to intracranial pressure, also known as Cushing's reflex. Devised an animal model using the teleost bluefish. 1993

Harvard Medical School Department of Neurosurgery, Boston, MA, Laboratory of Christopher S. Ogilvy. Extended earlier research on cerebral blood flow to compare the results in the teleost bluefish model with those from a mammalian model using the white New Zealand rabbit. 1993

Thesis for degree of Doctor of Medicine: Yale University School of Medicine Department of Orthopaedics and Rehabilitation, Sections of Sports Medicine and Biomechanics, Laboratory of Peter Jokl and Manohar Panjabi. Modified and adapted a model for muscle contusion injury of the rat gastrocnemius muscle. Studied the effects of increasing levels of constraint of the muscle on the type and severity of injury. Studied the effects of anabolic steroids and corticosteroids on the healing process and on the biomechanical properties of the muscle. 1995-1996

Yale University School of Medicine, Department of Orthopaedics and Rehabilitation and the Keggi Orthopedic Foundation, Waterbury, CT. Clinical study on outcomes and intraoperative variables affecting second-generation ceramic-on-ceramic total hip arthroplasty. 2000-2002

Yale University School of Medicine & School of Epidemiology and Public Health, Departments of Orthopaedics and Rehabilitation & Endocrinology, Laboratory of Peter Jokl and Manohar Panjabi. Redesigned a model for the production of a standardized torque to a rat femur in order to quantitatively measure the strength of the bone in the various stages of fracture healing. Currently studying the effects of systemic stress on the rate of fracture healing in a femur fracture model in the rat. Possible future studies involve administration of local or systemic mediators of bone healing. 1999-2002

Thomas Jefferson University and the Rothman Institute, Philadelphia, PA. Comparing the quality and quantity of osteoprogenitor cells present in the vertebral bodies with the iliac crest. Potential for use of vertebral bodies as a source of osteoprogenitor cells to aid in arthrodesis of the spine. 2002-2003

PUBLICATIONS

1. Beiner JM, Ogilvy CS, and DuBois AB: Cerebral Blood Flow and Ventral Aortic Blood Pressure Response During Elevation of Intracranial Pressure in Bluefish (*Pomatomus saltatrix*). *Biological Bulletin* 185:323-324, October 1993 (abstract).
2. Cereghino GP, Atencio DP, Saghbini M, Beiner J, Scheffler IE: Glucose-dependent turnover of the mRNAs encoding succinate dehydrogenase peptides in *Saccharomyces cerevisiae*: sequence elements in the 5' untranslated region of the *Ip* mRNA play a dominant role. *Molecular Biology of the Cell* 6(9):1125-43, September 1995.
3. Beiner JM, Ogilvy CS, DuBois AB: Cerebral blood flow changes in response to elevated intracranial pressure in rabbits and bluefish: a comparative study. *Comparative Biochemistry & Physiology, Part A. Physiology*. 116(3):245-52, Mar. 1997.
4. Beiner JM: Muscle Contusion Injuries: Impact Biomechanics, Healing, and Treatment Aspects. Yale University School of Medicine Thesis Dissertation, 1997.
5. Beiner, JM, Jokl P, Cholewicki J, Panjabi MM: Anabolic Steroids and Corticosteroids in the Treatment of Muscle Contusion Injury. American Academy of Orthopaedic Surgeons, 64th Annual Meeting 1997 (abstract).
6. Beiner, JM, Jokl P, Cholewicki J, Panjabi M: The effect of corticosteroids and anabolic steroids on healing of muscle contusion injury. *Am J Sports Med*: 27(1), pp.2-9, 1999.
7. Beiner JM, Jokl P: Muscle contusion injuries: Current Treatment Options. *JAAOS*, 9(4):227-237, 2001.

8. Beiner JM, Jokl P: Muscle contusion injury and myositis ossificans traumatica: research models, prevention, and treatment strategies. *CORR*,
9. Kwon BK, Vaccaro AR, Grauer JN, Beiner J. Indications, techniques, and outcomes of posterior surgery for chronic low back pain. *Orthop Clin of North Am* 2003; 34: 297-308.
10. Kwon BK, Berta S, Daffner SD, Vaccaro AR, Hilibrand AS, Grauer JN, Beiner J, Albert TJ. Radiographic analysis of transforaminal lumbar interbody fusion for the treatment of adult isthmic spondylolisthesis. *J Spinal Disorders and Techniques* 2003; 16: 469-476.
11. Grauer JN, Beiner JM, Kwon BK, Vaccaro AR. Bone graft alternatives for spinal applications. *Biodrugs* 2003; 17: 391-394.
12. Beiner JM, Grauer J, Kwon BK, Vaccaro AR. Postoperative wound infections of the spine. *Neurosurgical Focus* 2003; 15.
13. Kwon BK, Vaccaro AR, Grauer JN, Beiner J. Indications, techniques, and outcomes of posterior surgery for chronic low back pain. *Orthop Clin of North Am* 2003; 34: 297-308.
14. Grauer JN, Vaccaro AR, Beiner JM, Kwon BK, Hilibrand AS, Harrop JS, Anderson G, Hurlbert J, Fehlings MG, Ludwig SC, Hedlund R, Albert TJ, Arnold PM, Bono CM, Brodke DS, Dvorak MF, Fisher CG, Sledge JB, Schaffrey CI, Schwartz DG, Sears WR, Dickman C, Sharan A, Rechtine GR. Similarities and differences in the treatment of spine trauma between surgical specialties and location of practice. *Spine* 2004; 29: 685-696.
15. Kwon BK, Song, F, Morrison WB, Grauer JN, Beiner JM, Vaccaro AR, Hilibrand AS, Albert TJ. Morphologic evaluation of cervical spine anatomy with computed tomography: anterior plate fixation considerations. *J Spinal Disorders and Techniques* 2004; 17: 102-107.
16. Kwon BK, Tetzlaff W, Grauer JN, Beiner J, Vaccaro AR. Review article: pathophysiology and pharmacologic treatment of acute spinal cord injury. *The Spine Journal* 2004; 4: 451-464.
17. Grauer JN, Vaccaro AR, Kato M, Kwon BK, Beiner JM, Patel TC, Hilibrand AS, Chiba K, Albert TJ. Development of a New Zealand white rabbit model of spinal pseudarthrosis repair and evaluation of the potential role of OP-1 to overcome pseudarthrosis. *Spine* 2004; 29: 1405-1412.
18. Grauer JN, Vaccaro AR, Brusovanik G, Girardi FP, Silveri CP, Camissa FP, Kwon BK, Beiner JM, Albert TJ, Hilibrand AS, Scuderi GJ. Evaluation of a novel pedicle probe for the placement of thoracic and lumbosacral pedicle screws. *J Spinal Disord and Tech* 2004; 17: 492-497.
19. Grauer JN, Shafi B, Hilibrand AS, Harrop JS, Kwon BK, Beiner JM, Albert TJ, Fehlings MG, Vaccaro AR. Proposal of a modified, treatment-oriented classification of odontoid fractures. *The Spine Journal* 2005; 5: 123-129.
20. Grauer JN, Beiner JM, Kwon B, Vaccaro AR. The evolution of allograft bone for spinal applications. *Orthopedics* 2005; 28: 573-577.
21. Beiner JM, Sastry A, Berchuck M, Grauer JN, Kwon BK, Ratliff JK, Stock GH, Brown AK, Vaccaro AR. An anerysmal bone cyst in the cervical spine of a 10 year old girl: a case report. *Spine* 2006; 31: E475-479.
22. Kwon BK, Grauer JN, Beiner JM, Albert TJ. Cervical Radiculopathy. *Orthopedics Hyperguide*, <http://www.ortho.hyperguides.com> , 2003.

23. Kwon BK, Beiner JM, Grauer JN, Albert TJ. Cervical Facet Dislocations. Orthopedics Hyperguide, <http://www.ortho.hyperguides.com> , 2003.
24. Grauer JN, Beiner JM, Kwon BK, Hilibrand AS, Albert TJ. Metastatic spine disease. Orthopedics Hyperguide, <http://www.ortho.hyperguides.com> , 2003.
25. Grauer JN, Kwon BK, Beiner JM, Hilibrand AS, Albert TJ. Lumbar Stenosis. Orthopedics Hyperguide, <http://www.ortho.hyperguides.com> , 2003.
26. Beiner JM, Kwon BK, Grauer JN, Albert TJ. Odontoid fractures. Orthopedics Hyperguide, <http://www.ortho.hyperguides.com> (User ppg, Password ppg, Posted 1/03).
27. Beiner JM, Kwon BK, Grauer JN, Albert TJ. Degenerative lumbar spondylolisthesis. Orthopedics Hyperguide, <http://www.ortho.hyperguides.com> (User ppg, Password ppg, Posted 1/03).
28. Beiner JM, Kwon BK, Grauer JN, Albert TJ. Degenerative lumbar scoliosis. Orthopedics Hyperguide, <http://www.ortho.hyperguides.com> (User ppg, Password ppg, Posted 1/03).
29. Beiner JM, Kwon BK, Grauer JN, Albert TJ. Thoracolumbar fractures. Orthopedics Hyperguide, <http://www.ortho.hyperguides.com> (User ppg, Password ppg, Posted 2/03).

INVITED REVIEWS AND CHAPTERS

1. Kwon, BK, Berta S, Beiner JM, Grauer JN, Vaccaro AR. Pediatric spinal injuries. Pan Arab Journal of Neurosurgery (submitted 9/02).
2. Grauer JN, Beiner JM, Albert TJ. Cervical disk disease. In: Orthopaedic Knowledge Update- 8 (general). Vaccaro AR ed. Am Acad Orthop Surgeons, Rosemont, 2005, Ch 42, 527-534
3. Grauer JN, Beiner JM, Albert TJ. Evaluation and management of cervical spine deformities. In: Adult and Pediatric Spine, 3rd ed. Frymoyer J, Weisel S eds. Lippincott, Williams & Wilkins, Philadelphia (Submitted 9/02).
1. Fisicaro MD, Grauer JN, Beiner JM, Kwon BK, Vaccaro AR. Basic anatomy of the cervical, thoracic, lumbar, and sacral spine. In: Spine Textbook for residents and fellows. Vaccaro AR ed. Elsevier Mosby, Philadelphia, 2005, Ch 1, 1-13.
4. Beiner JM, Rosen M, Kwon BK, Grauer JN, Vaccaro AR. Herniation of the nucleus pulposus in the cervical, thoracic, and lumbar spine. In: Spine Textbook for residents and fellows. Vaccaro AR ed. Elsevier Mosby, Philadelphia, 2005, Ch 6, 66-82.
5. Shafi B, Beiner JM, Grauer JN, Kwon BK, Vaccaro AR. Lumbar spondylolisthesis. In: Spine Textbook for residents and fellows. Vaccaro AR ed. Elsevier, Philadelphia , 2005, Ch 7, 83-90.
6. Grauer JN, Beiner JM, Kwon BK, Vaccaro AR, Albert TJ. Cervical postlaminectomy kyphosis. In: Complications of Pediatric and Adult Spinal Surgery. Vaccaro AR ed. Marcel Dekker New York, 2004, Ch 17, 259-270.
7. Kwon BK, Au CL, Beiner J, Grauer JN, Sanfilippo JA, Vaccaro AR. Anesthetic considerations and operating room set-up for minimally invasive endoscopic spine surgery. In: Endoscopic Spine Surgery and Instrumentation. (Submitted 11/02).

8. Lugo R, Grauer JN, Beiner JM, Kwon BK, Vaccaro AR, Albert TJ. Kyphosis of the cervical, thoracic, and lumbar spine. In: Core Knowledge in Orthopaedic Surgery: Spine. Vaccaro AR ed. Elsevier Mosby, Philadelphia, 2005, Ch 10, 124-136
9. Beiner JM, Grauer JN, Albert TJ. Lumbar spondylolisthesis. In: Essentials in Orthopaedics: Spine. Bono CM, Garfin SR eds., Lippincott, Williams & Wilkins, Philadelphia, 2004, Ch 18, 146-155.
10. Grauer JN, Beiner JM, Albert TJ. Evaluation and management of cervical instability and kyphosis. In: The Adult and Pediatric Spine, 3rd ed. Frymoyer JW, Weisel SW eds. Lippincott, Williams & Wilkins, Philadelphia, 2004, Ch 36, 713-729.
11. Shafi B, Beiner JM, Grauer JN, Kwon BK, Vaccaro AR. Lumbar Spondylolisthesis. In: Core Knowledge in Orthopaedic Surgery: Spine. Vaccaro AR ed. Elsevier Mosby, Philadelphia, 2005, Ch 12, 157-171.
12. Austin LS, Grauer JN, Beiner JM, Kwon BK, Hilibrand AS. Primary and metastatic spinal tumors. In: Core Knowledge in Orthopaedic Surgery: Spine. Vaccaro AR ed. Elsevier Mosby, Philadelphia, 2005, Ch 17, 226-240.

EDITORIALS

1. Beiner JM, Grauer JN, Vaccaro AR. Literature review: Bed rest or normal activity for patients with acute low back pain: a randomized controlled study. *Spine Line*, Sept/Oct 2002: 17-18.
2. Kwon BK, Beiner JM, Grauer JN, Devitt A, Vaccaro AR. Literature review: Mechanism of internal disc degeneration caused by nicotine in rabbits to explicate intervertebral disc disorders caused by smoking. *Spine Line*, Nov/Dec 2002: 22-23.
3. Beiner JM, Kwon B, Grauer J, Devitt A, Vaccaro AR. Literature review: Anterior dynamic plates in complex cervical reconstructive surgery. *Spine Line*, Jan/Feb 2003: 22-23.
4. Grauer JN, Beiner JM, Kwon B, Devitt A, Vaccaro AR. Literature review: Surgery for solitary metastases of the spine: rationale and results of treatment. *Spine Line*, March/April 2003: 21-22.
5. Devitt A, Grauer JN, Beiner JM, Kwon BK, Vaccaro AR. Literature review: Posterior atlantoaxial fixation biomechanical in vitro comparison of six different techniques. *Spine Line*, May/June 2003, 22-23.
6. Kwon BK, Grauer JN, Beiner JM, Vaccaro AR. Literature review: Neuroprotective effects of GYKI52466 on experimental spinal cord injuries in rats. *Spine Line*, July/August 2003, 32-34.
7. Beiner JM, Kwon B, Grauer J, Vaccaro AR. Literature review: Management of isthmic spondylolisthesis with posterolateral endoscopic decompression. *Spine Line*, September/October 2003, 29-30.
8. Grauer JN, Kwon BK, Beiner JM, Vaccaro AR. Literature review: Morphometric evaluation of screw fixation in atlas via posterior arch and lateral mass. *Spine Line* November/December 2003, 28-29.

PRESENTATIONS

1. Cerebral blood flow during elevation of intracranial pressure in bluefish. Marine Biological Laboratories, Annual Scientific Meetings, Woods Hole, MA, August 1993.

2. Beiner, JM, Jokl P, Cholewicki J, Panjabi MM: Are Steroids the right treatment for muscle contusion injury? Grand Rounds, Department of Orthopaedics and Rehabilitation, Yale University School of Medicine, New Haven, CT, May 1996.
3. Beiner, JM, Jokl P, Cholewicki J, Panjabi MM: Anabolic Steroids and Corticosteroids in the Treatment of Muscle Contusion Injury. American Academy of Orthopedic Surgeons, Specialty Day Meeting (American Orthopaedic Society for Sports Medicine), San Francisco, CA, February 1997.
4. Beiner JM: Sir John Charnley's Low Friction Arthroplasty of the Hip: Lessons from the Past. Grand Rounds, Department of Orthopaedics and Rehabilitation, Yale University School of Medicine, New Haven, CT.
5. Beiner JM: Chiropractic: A Subluxation of Science? Grand Rounds, Department of Orthopaedics and Rehabilitation, Yale University School of Medicine, New Haven, CT.
6. Jokl, P, Beiner, J: Muscle contusion injuries: clinical and research perspectives. The Association of Bone and Joint Surgeons, Florida, November 2001.

PROFESSIONAL CERTIFICATIONS

1. National Association of Underwater Instructors, San Diego, CA. Open water I SCUBA, 1990
2. County of Los Angeles, Department of Health Services, Los Angeles, CA. Emergency Medical Technician, 1A (Ambulance), 1990 American Red Cross: Advanced Cardiac Life Support (ACLS), 1998
3. Professional Association of Diving Instructors, Cairns, Australia. Advanced Open Water SCUBA, 1998
4. Hyperbaric and Underwater Medical Society, New Orleans, LA. Diving Medical Technician, Emergency Diving Accident Management and Chamber Operations, 1991