

THE JOURNAL *of the* AMERICAN OSTEOPATHIC ASSOCIATION



The Journal of the American Osteopathic Association

(JAOA) encourages osteopathic physicians, faculty members and students at colleges of osteopathic medicine, and others within the health care professions to submit comments related to articles published in the JAOA and the mission of the osteopathic medical profession. The JAOA's editors are particularly interested in letters that discuss recently published original research.

Letters must be submitted online at <http://www.osteopathic.org/JAOAsubmit>. Letters to the editor are considered for publication in the JAOA with the understanding that they have not been published elsewhere and are not simultaneously under consideration by any other publication. All accepted letters to the editor are subject to editing and abridgment.

Although the JAOA welcomes letters to the editor, these contributions have a lower publication priority than other submissions. As a consequence, letters are published only when space allows.

Osteopathic Graduate Medical Education: New Research Standards Needed

To the Editor:

The American Osteopathic Association (AOA) Council on Research, in their *2013-22 Research Strategic Plan for the Osteopathic Medical Profession*¹ and their subsequent article in *The Journal of the American Osteopathic Association (JAOA)*,² has called for setting research standards, vigorously encouraging research, and enforcing research standards at every college of osteopathic medicine (COM) and osteopathic postdoctoral training institution (OPTI). In light of this challenge, our group embarked on a review of the current state of research requirements in both osteopathic and allopathic graduate medical education (GME).

We compiled and reviewed the following items:

1. all current specialty postdoctoral research basic standards approved by the Council on Osteopathic Postdoctoral Training (COPT) (available at <http://www.osteopathic.org/inside-aoa/accreditation/postdoctoral-training-approval/postdoctoral-training-standards/Pages/default.aspx>)
2. the *Common Program Requirements*³ of the Accreditation Council for Graduate Medical Education (ACGME)
3. the *2013-22 Research Strategic Plan for the Osteopathic Medical Profession*¹
4. *The Basic Documents for Postdoctoral Training*,⁴ and specifically the mission statement

for postdoctoral training regarding research

5. the special report published in the September 2013 issue of the JAOA, titled "2013-2022 Strategic Plan for Research: A Role for Everyone in Promoting Research in the Osteopathic Medical Profession"²
6. the recent JAOA letter to the editor from Robert A. Cain, DO, "Relighting the Fire in Our Bellies"⁵
7. "Defining Scholarly Activity in Graduate Medical Education"⁶ in the December 2012 issue of the *Journal of Graduate Medical Education*

On the basis of our work, we have concluded that individual specialty-specific research requirements exist in the specialty-specific basic standards but not in the AOA's *The Basic Documents for Postdoctoral Training*⁴ or to any degree in the ACGME's *Common Program Requirements*.³ By incorporating information from the aforementioned documents with our own ideas, we propose that such overriding research standards be adopted for inclusion *The Basic Documents for Postdoctoral Training* and the *Common Program Requirements*. Our proposal includes separate standards for internships and residencies and fellowships, as outlined in the remainder of our letter.

Residents and Interns: Research and Scholarly Activity

1. Each research project must demonstrate its relevance to osteopathic medicine.

2. The project must be approved by and overseen by the program director with input from faculty members.
3. The research topic must be pertinent to the specialty of the intern or resident.
4. Each program will have a written research curriculum for each year of the internship or residency.
5. The internship or residency curriculum must be in conjunction with *The Basic Documents for Postdoctoral Training* and the internship or residency specialty-specific basic standards research requirements.
6. Each program and its OPTI shall provide administrative and institutional review board support for the research project, including ready access to mentoring, literature searching, editing, statistical assistance, and presentation production.
7. Each intern or resident will complete 1 approved project for each year of internship or residency.
8. A resident cannot do a single type of approved project more than once during his or her residency.
9. Residents will provide a narrative description of the scholarly activity (eg, research paper, poster, community education/service) with documentation as necessary. This narrative should be more detailed than the narrative provided in the program directors annual evaluation of the resident and should be signed

by the program director. Scholarly activity will be filed and subject to review by site visitors during their review of a program for continuing approval.

10. The base institution should allocate adequate time and educational resources to facilitate intern or resident involvement in research and scholarly activity.

Fellows: Research and Scholarly Activity

1. Each research project must demonstrate its relevance to osteopathic medicine.
2. The project must be approved and overseen by the program director with input from faculty members.
3. The research topic must be pertinent to the specialty of the fellow.
4. Each program will have a written research curriculum for each year of the fellowship.
5. The fellowship curriculum must be in conjunction with *The Basic Documents for Postdoctoral Training* and the fellowship specialty-specific basic standards research requirements.
6. The base institution should allocate adequate time and educational resources to facilitate the fellow's involvement in research and scholarly activity.
7. Each program and its OPTI shall provide administrative and institutional review board support for the research projects, including

ready access to mentoring, literature searching, editing, statistical assistance, and presentation production.

8. Each fellow will do 1 approved project for each year of fellowship.
9. The fellow must submit a research or scholarly paper each year during their fellowship to the *JAOA* or another appropriate scientific journal for publication.
10. The fellow must submit 1 scientific paper for presentation at a suitable state, national, or international meeting once during their fellowship, and that presentation should be approved by the program director.
11. An original scientific study can be conducted over several years or throughout the entire fellowship as long as goals are met annually and the paper is completed before the fellow completes training. The format of the paper will be determined by the instructions to authors listed on the journal's website.
12. The fellow must present his or her research paper to the program faculty in the first 6 months of his or her last year of fellowship training.

Types of Research Allowed

Clinical Research

Examples of clinical research include, but are not limited to, an original scientific paper, poster session, literature review, case study, or new procedure report. For a

scientific paper, the requirements would be as follows:

1. The AOA requires all residents to demonstrate the ability to synthesize and apply medical research data in their training. Writing an original scientific research paper is 1 method to evidence this training. Through this process, the resident may improve cognitive skills and learn to manage and communicate medical information more effectively.
2. An original scientific paper can be completed over several years or throughout the entire residency as long as goals are met annually and the paper is completed before the resident completes training. The format of the paper would be determined by the instructions to authors listed on the journal's website.
3. The scientific paper must be suitable for publication and submitted to the *JAOA* or another appropriate scientific journal.
4. Scholarly activity must be approved by the program director and a narrative of the activity must be completed and submitted. Credit will be allocated among the resident authors according to the program director's recommendation.

For a *poster session*, the requirements would be as follows:

1. Poster sessions are an in-depth exchange of information on a one-to-one basis, providing a medium for unusual or multiple clinical case presentations prepared with photographs and laboratory

or radiologic information.

Documentation of this activity requires a photograph of the poster session and written statement that the poster was exhibited by the resident who prepared the poster. A resident's folder for this activity should also include a written description of at least 250 words of the objective, methods, and summary of outcomes of the clinical case presented.

2. The poster must be submitted for presentation at a state, national, or international meeting.

Community-Based Effort

For all community-based activities, written documentation of the resident's community-based efforts will be available and kept in the resident's file. Examples of community-based activities include quality improvement programs, community education, and community service.

In quality improvement programs, residents may select a specific health improvement or disease prevention issue or need within a community. The resident must identify a population of interest within a community, summarize the problem and the population, review the current literature, perform a needs assessment, and design, implement, and evaluate an intervention to address the issue or need.

Community education may consist of a well-planned lecture to a locally recognized community group or a presentation at a state, national, or international level. Community service may consist of implementing a program and subsequently delivering medical care to an underserved or impoverished area or population. Medical mission trips would fall into this category.

Medical Education Quality Initiative

Residents who wish to pursue medical education research projects must identify a process or program need, review the current literature, perform a needs assessment, and design, implement, and evaluate the proposed improvement project. An example of a Medical Education Quality Initiative would include, but would not be not limited to, preparing 3 lectures to be given in 3 different venues to the house staff, evaluating the resident's effectiveness as a lecturer, and testing the knowledge retained by the attendees. Written documentation of the resident's community-based efforts will be available and kept in the resident's file.

Practice Improvement Outcome

For research related to a practice improvement outcome, the resident should obtain a grant for a scientific project or scholarly activity and should serve 1 year on the program's institutional review board. In addition, practice improvement outcomes may include, but are not limited to, designing and completing a project for presentation at grand rounds focusing on the root-cause analysis of a systems error occurring in the care of the patient. Another example might be for the resident to review a published clinical practice guideline using an evidence-based approach and audit office charts to compare treatment, screening, or diagnostic testing of patients with the recommendations of the guideline.

Implementing Change

Although these standards would be included in *The AOA Basic Documents for Postdoctoral Training*, each specialty college would continue to define the scope of research performed in their programs se-

lected from the ones listed. The osteopathic medical profession should then recommend that these or similar standards be incorporated in the ACGME's *Common Program Requirements*.

We believe that only by setting high standards for our trainees can we instill in the next generation of osteopathic and allopathic physicians the rigor and values that have made our profession great and expand the quality and quantity of osteopathic medical research. (doi:10.7556/jaoa.2014.068)

Howard M. Shulman, DO

Midwestern University Osteopathic Postdoctoral Training Institution (MWU/OPTI); Osteopathic Graduate Medical Education Committee; Midwestern University/Arizona College of Osteopathic Medicine, Glendale

Kimbal Cooper, PhD

Biomedical Sciences, Midwestern University, Glendale, Arizona

William Devine, DO

Midwestern University Multispecialty Clinic Plus One Residency; Midwestern University Osteopathic Training Institute, Glendale, Arizona

Marc Trzeciak, DO

Valley Consortium for Medical Education, Doctors Medical Center, Orthopedic Residency, Modesto, California

Umema Burney, DO

Internal Medicine Resident, Verde Valley Medical Center, Flagstaff, Arizona

Wai Phan Chan, DO

Dermatology Resident, Sierra Vista Regional Health Center, Arizona

Adrian Gomez, DO

Emergency Medicine Resident, Kingman Regional Medical Center, Arizona

Joseph Humpherys, DO

Orthopedic Resident, Valley Consortium for Medical Education, Doctors Medical Center, Modesto, California

Hadi Safavi, DO

Family Medicine Resident, Sierra Vista Regional Health Center, Arizona

Miho Yoshida, DO

Midwestern University Multispecialty Clinic Plus One Residency, Glendale, Arizona

References

1. AOA Council on Research. *2013-22 Research Strategic Plan for the Osteopathic Medical Profession*. Chicago, IL: American Osteopathic Association; 2013.
2. Degenhardt BF, Standley PR. 2013-2022 strategic plan for research: a role for everyone in promoting research in the osteopathic medical profession. *J Am Osteopath Assoc*. 2013;113(9):654-659. doi:10.7556/jaoa.2013.029.
3. *Common Program Requirements*. Chicago, IL: Accreditation Council for Graduate Medical Education; 2011. http://www.acgme.org/acgmeweb/Portals/0/dh_dutyhoursCommonPR07012007.pdf. Accessed April 1, 2014.
4. *The Basic Documents for Postdoctoral Training*. Chicago, IL: American Osteopathic Association; 2013. <http://www.osteopathic.org/inside-aoa/accreditation/postdoctoral-training-approval/postdoctoral-training-standards/Documents/aoa-basic-document-for-postdoctoral-training.pdf>. Accessed April 1, 2014.
5. Cain RA. Relighting the fire in our bellies. *J Am Osteopath Assoc*. 2013;113(8):598-599. doi:10.7556/jaoa.2013.020.
6. Grady EC, Roise A, Barr D, et al. Defining scholarly activity in graduate medical education. *J Grad Med Educ*. 2012;4(4):558-561. doi:10.4300/JGME-D-12-00266.1.

An Unexpectedly Progressed Lumbar Herniated Disk

To the Editor:

After reading the case report by Lipton and McLeod¹ in the December 2013 issue of *The Journal of the American Osteopathic Association*, I have some concerns. I believe the history and physical examination findings in this patient are consistent with that of a patient who has pain and dysfunction in the left lower extremity and back caused by somatic dysfunctions

in the lumbar spine, pelvis, and lower extremity. In my experience, the findings of Lipton and McLeod¹ are not consistent with a patient who has nerve damage in the spinal canal that caused pain of a perceived radicular nature in the foot. The injury to the left foot, which caused the fracture of the fifth metatarsal bone, could have caused somatic dysfunction of the ankle and lower leg and may have caused or exacerbated somatic dysfunction of the sacroiliac region.

The authors¹ explain that the patient was treated 6 months before presentation for a fracture of the left fifth metatarsal bone and that she wore a boot and walked with crutches for 8 weeks after the injury. However, details as to how this injury occurred are lacking. The physical examination findings are incomplete and, I believe, do not support a diagnosis of the clinical syndrome of lumbar spinal stenosis. A posteriorly rotated left anterior superior iliac spine (ASIS) and a physiologic short left leg were palpated. A right-on-right sacral torsion was noted. Physical findings that would corroborate the diagnosis of pain radiating into the foot from a proximal source are nonexistent. A lower extremity that has been locked in a boot for 8 weeks that occurred 6 months before presentation would be worthy of a detailed physical examination.

The posteriorly rotated left ASIS (classically described as a superior ASIS in osteopathic literature) is most commonly seen in the diagnosis of a left posterior innominate somatic dysfunction.² This diagnosis would require the finding of an inferior left PSIS (posterior superior iliac spine). During the normal walking cycle, when the left leg is forward, the left innominate is rotated posteriorly and the sacrum is in a right-on-right torsion.³

Patients who have diagnoses of a combination of these somatic dysfunctions have been shown to have a gait abnormality in which the stride length is reduced and the left step length is significantly longer than the right step length.⁴ It has also been shown that osteopathic manipulative treatment can result in not only a lengthened stride length but also in an equalization of the step length in a patient with these diagnoses.⁴

A patient whose sacroiliac region is stuck in this position has several restrictions to overcome when attempting to move the right leg forward. A left posterior innominate somatic dysfunction does not allow the left innominate to rotate anterior sufficiently to close the left sacroiliac joint. Similarly, with right-on-right sacral somatic dysfunction, the left sacral base has rotated rightward about a right oblique axis; it is stuck in this position and therefore cannot rotate posteriorly about this axis to close the left sacroiliac joint.⁴ When the patient tries to step forward with the right leg, the left sacroiliac joint is unable to contribute to this motion of the body. Therefore, the patient cannot shift the center of gravity physiologically to the left and efficiently swing the right leg forward maximally.

I have found that in patients with these somatic dysfunctions, the left lower extremity often has somatic dysfunctions involving the normal motions of the bones in the positions found physiologically with this forward position of the leg. The ankle may have a plantar somatic dysfunction, the tibia is often internally rotated, and the fibular head is posterior, which can cause hypertonicity of the lateral head of the biceps femoris muscle and the iliotibial band on the affected side. In my experience, this condition is

frequently misdiagnosed as sciatica.

The overall management of the case described by Lipton and McLeod¹ raises several questions. The authors state that during the first 45 days of follow up in the physical medicine and rehabilitation department, the patient experienced relief of pain after osteopathic manipulative treatment sessions (changing from 7 to 0 on a 10-point scale). In late February 2012, they reported that she was “now aware that she had had a disk herniation at L4-5 2 years earlier that was diagnosed by [magnetic resonance (MR) imaging].”¹ Because of this revelation, a repeat MR image of the lumbar spine was ordered. The authors provide a figure that lists 10 reasons to order an MR image in a patient with low back pain. None of these include a patient having a prior MR image of the lumbar spine that demonstrates a herniated disk. Another reference cited by Lipton and McLeod to support ordering this test clearly states, “Decisions about repeated imaging should be based on development of new symptoms or changes in current symptoms.”⁵

This patient’s condition was diagnosed as “severe stenosis” and was “successfully referred for surgical treatment despite her apparently unremarkable presentation.” A review of the medical literature suggests that the diagnosis of severe spinal stenosis is dependent on the history and physical examination before radiographic findings. Akuthota et al state, “The conundrum of spinal stenosis, like many spinal conditions, is that putative ‘pathologic’ anatomy does not equate with pain.”⁶ The diagnosis of the clinical syndrome of lumbar spinal stenosis requires specific history and physical examination findings.⁷ The classic presenting symptom is leg pain with walking, spinal extension, or standing,

which is termed neurogenic intermittent claudication (NIC). A patient may also have radicular pain, which is a sharp band-like pain that radiates in a dermatomal distribution correlating with the nerve root that is being compressed and radiculopathy; the pain occurs when the compression is sufficient to cause objective signs such as weakness, sensation loss, and reflex loss.^{6,7} Binder et al⁸ stated, “surgical decompression is indicated when back and leg pain initiated and exacerbated by standing and walking becomes disabling or intolerable or when progressive neurologic deficits develop.” In a meta-analysis of the diagnosis of lumbar spinal stenosis in asymptomatic adults, Kent et al⁹ found abnormalities on computed tomographic or MR images in 4% to 28% of cases. The decision to send a patient with spinal stenosis for surgical intervention is clearly dependent on the history and physical examination findings, not on the radiographic findings alone.

I believe the history and physical examination in this patient are consistent with a patient who has pain in the low back and left lower extremity caused by somatic dysfunctions in the lumbar spine, pelvis, and lower extremity. They are not consistent with a patient who has nerve damage in the spinal canal causing perceived pain of a radicular nature in the foot. I believe that as osteopathic physicians we should agree that conservative measures primarily in the form of osteopathic manipulative medicine must be thoroughly exhausted before a patient is subjected to the extensive trauma and subsequent loss of normal body function inherent in the use of invasive spinal surgery. (doi:10.7556/jaoa.2014.070)

Adam C. Gilliss, DO

Private practice, Merchantville, New Jersey; Clinical Assistant Professor, Department of Osteopathic Manipulative Medicine, Rowan University School of Osteopathic Medicine, Stratford, New Jersey

References

1. Lipton JA, McLeod GA. An unexpectedly progressed lumbar herniated disk [case report]. *J Am Osteopath Assoc.* 2013;113(12):926-929. doi:10.7556/jaoa.2013.072.
2. Schiowitz S, DiGiovanna EL, DiGiovanna JA. Gait and postural considerations. In: DiGiovanna EL, Schiowitz S, Dowling DJ, eds. *An Osteopathic Approach to Diagnosis and Treatment.* Philadelphia, PA: Lippincott Williams & Wilkins; 2004:293-303.
3. Mitchell FL. Structural pelvic function. In: Barnes M, ed. *1965 Year Book of Elected Osteopathic Papers.* Vol 2. Carmel, CA: Academy of Applied Osteopathy; 1965:178-199.
4. Gilliss A, Swanson RL II, Janora D, Venkataraman V. Use of osteopathic manipulative treatment to manage compensated trendelenberg gait caused by sacroiliac somatic dysfunction [published correction appears in *J Am Osteopath Assoc.* 2010;110(3):210]. *J Am Osteopath Assoc.* 2010;110(11):81-86.
5. Chou R, Qaseem A, Owens DK, Shekelle P; Clinical Guidelines Committee of the American College of Physicians. Diagnostic imaging for low back pain: advice for high-value health care from the American College of Physicians. *Ann Intern Med.* 2011;154(3):181-189.
6. Akuthota V, Lento P, Sowa G. Pathogenesis of lumbar spinal stenosis pain: why does an asymptomatic stenotic patient flare? *Phys Med Rehabil Clin N Am.* 2003;14(1):17-28.
7. Suri P, Rainville J, Kalichman L, Katz JN. Does this older adult with lower extremity pain have the clinical syndrome of lumbar spinal stenosis? *JAMA.* 2010;304(23):2628-2636. doi:10.1001/jama.2010.1833.
8. Binder DK, Schmidt MH, Weinstein PR. Lumbar spinal stenosis. *Semin Neurol.* 2002;22(2):157-166.
9. Kent DL, Haynor DR, Larson EB, Deyo RA. Diagnosis of lumbar spinal stenosis in adults: a metaanalysis of the accuracy of CT, MR, and myelography. *AJR Am J Roentgenol.* 1992;158(5):1135-1144.

Response

We appreciate Dr Gilliss' comments regarding our case report.¹ The opportunity to share ideas and common zeal for the use of osteopathic manipulative medicine for the management of somatic dysfunction is welcomed.

After a thorough medical history, physical examination, and appropriate workup, we believe that focusing on the impressive imaging was important because the patient did not present with classic signs. The eventual moot point of the patient's somatic dysfunction, perhaps being caused by her boot and use of crutches, was addressed conservatively by correction of her gait and use of osteopathic manipulative treatment (OMT). As indicated by our title, the patient's disk herniation was an unexpected finding. A heightened index of suspicion after the patient's revelation and persistent condition led to imaging, and thankfully so.

Having coauthored the guidelines for the osteopathic medical profession on the management of low back pain,² I (J.A.L.) can say the word guideline is self-explanatory. Dr Gilliss' comments seem to suggest that one should use OMT in some other fashion, perhaps using high-velocity, low-amplitude technique on the lumbar spine and that such use would best be performed without knowing of the presence of this massive lumbar herniated disk. Or, his comments suggest that OMT might be performed knowingly, even after imaging documented a large herniated disk, and if so, we then defer to his expertise. However, Dr Gilliss' position that spinal stenosis should present a certain way is yet another reason to have published our case report, as it is clear in this image that spinal stenosis presented in a nonclassic fashion.

Dr Gilliss' opinions regarding surgery are not lost upon our esteemed surgical colleagues, those who have undergone successful surgical procedures, or the surgeon who operated in this case. Although it is our duty as osteopathic physicians to choose which of our abilities we employ in treating a patient, this patient's herniation was quite large and did require surgical evaluation. Expert surgical evaluation led to a successful surgical outcome, which speaks to the effect of the removed disk as a remaining source of the patient's somatic dysfunction.

We thank Dr Gilliss for his comments, and we hope our experience and this discussion will be educational for our colleagues and of benefit to our patients. (doi:10.7556/jaoa.2014.071)

James A. Lipton, DO

Staff Physiatrist, Veterans Administration Medical Center, Hampton, Virginia; Clinical Track Professor of Physical Medicine and Rehabilitation/Osteopathic Manipulative Medicine, Edward Via College of Osteopathic Medicine—Virginia Campus, Blacksburg; Adjunct Professor of Osteopathic Manipulative Medicine, New York Institute of Technology College of Osteopathic Medicine, Old Westbury

2nd Lt Geoffrey A. McLeod, DO, USAF, MC

Edward Via College of Osteopathic Medicine—Virginia Campus, Blacksburg

References

1. Lipton JA, McLeod GA. An unexpectedly progressed lumbar herniated disk [case report]. *J Am Osteopath Assoc.* 2013;113(12):926-929. doi:10.7556/jaoa.2013.072.
2. Clinical Guideline Subcommittee on Low Back Pain. American Osteopathic Association guidelines for osteopathic manipulative treatment (OMT) for patients with low back pain. *J Am Osteopath Assoc.* 2010;110(11):653-666. <http://www.jaoa.org/content/110/11/653.full>. Accessed March 13, 2014.

© 2014 American Osteopathic Association