



Leon Lenchik

Professor of Radiology (Musculoskeletal Imaging)

CLINICAL OFFICE (PRIMARY)

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ACADEMIC CONTACT INFORMATION

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Bio

CLINICAL FOCUS

- Diagnostic Radiology

ACADEMIC APPOINTMENTS

- Professor - University Medical Line, Radiology

ADMINISTRATIVE APPOINTMENTS

- Division Chief, Musculoskeletal Imaging, Stanford University School of Medicine, Department of Radiology, (2025- present)
- Professor, Radiology, Stanford University School of Medicine, (2025- present)
- Associate Dean for Faculty Mentoring, Wake Forest University School of Medicine, (2020-2025)
- Assistant Dean for Faculty Mentoring, Wake Forest University School of Medicine, (2020-2021)
- Professor, Radiology, Wake Forest University School of Medicine, (2013-2025)
- Division Chief, Musculoskeletal Radiology, Wake Forest University School of Medicine, (2004-2025)
- Associate Professor, Radiology, Wake Forest University School of Medicine, (2002-2013)
- Assistant Professor, Radiology, Wake Forest University School of Medicine, (1996-2002)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Chair, MSK Refresher Course Track, Radiological Society of North America (2014 - 2019)
- Quantitative Imaging Biomarkers CT Volumetry Group, Radiological Society of North America (2013 - 2015)
- MSK Subcommittee of the Educational Exhibits Committee, Radiological Society of North America (2008 - 2011)
- Annual Meeting Presiding Officer, Scientific Session, Shoulder, Radiological Society of North America (2004 - 2004)
- Annual Meeting Presiding Officer, Scientific Session, Osteoporosis, Radiological Society of North America (1999 - 2014)
- MSK Radiology Subcommittee of the Program Committee, Radiological Society of North America (1999 - 2003)
- Distinguished Scientific Advisor, Radiological Society of North America (1999 - 2000)

- Member, American Roentgen Ray Society (1991 - present)

PROFESSIONAL EDUCATION

- Fellowship: UCSD Musculoskeletal Radiology Fellowship (1996) CA
- Board Certification: Diagnostic Radiology, American Board of Radiology (1995)
- Residency: Bridgeport Hospital (1995) CT
- Internship: Medical College of Virginia Hospitals (1991) VA
- Medical Education: Northwestern University Feinberg School of Medicine (1990) IL
- Fellowship, University of California, San Diego , Musculoskeletal Radiology (1996)
- Residency, Bridgeport Hospital-Yale School of Medicine, Bridgeport, Connecticut , Diagnostic Radiology (1995)
- Board Certification, American Board of Radiology , Diagnostic Radiology (1995)
- Internship, Medical College of Virginia, Department of Surgery Richmond, Virginia (1991)
- M.D., Northwestern University Medical School, Chicago, Illinois , Medicine (1990)
- B.S., Northwestern University, Evanston, Illinois , Honors Program in Medical Education (1986)

Publications

PUBLICATIONS

- **Association of radiomic features of skeletal muscle on CT images with muscle function and physical performance in older men. *Age and ageing***
Hetherington-Rauth, M., Mansfield, T. A., Lenchik, L., Weaver, A. A., Kado, D. M., Lane, N. E., Orwoll, E., Cawthon, P. M.
2026; 55 (3)
- **Authors' reply to comment on: Effect of protein supplementation on hip bone mineral density, cortical thickness, and bone strength in older adult participants during a caloric restriction and aerobic exercise weight loss intervention: a randomized controlled trial *OSTEOPOROSIS INTERNATIONAL***
Stapleton, J., Greene, K. A., Leng, X., Lenchik, L., Lyles, M. F., Nicklas, B. J., Baker, A. M., Helgason, B., Devane, K., Shapses, S. A., Houston, D. K., Weaver, A. A.
2026
- **ACR Appropriateness Criteria® Diagnosis and Monitoring of Sarcopenia. *Journal of the American College of Radiology : JACR***
Boutin, R. D., Lenchik, L., Baker, J. C., Allen, H., Banks, J., Kamel, S. I., Napier, K. B., Rhodes, N. G., Scott, J. A., So, C. C., Wessell, D. E.
2026
- **Weighted Vest Use or Resistance Exercise to Offset Muscle Loss in Older Adults: Secondary Findings from the INVEST in Bone Health RCT. *The journals of gerontology. Series A, Biological sciences and medical sciences***
Lynch, S. D., Howard, M., Beavers, D. P., Weaver, A. A., Lenchik, L., Barnard, R., Cawthon, P. M., Bon, J., Beavers, K. M.
2026
- **Effect of protein supplementation on hip bone mineral density, cortical thickness, and bone strength in older adult participants during a caloric restriction and aerobic exercise weight loss intervention: a randomized controlled trial *OSTEOPOROSIS INTERNATIONAL***
Weaver, A. A., Greene, K. A., Leng, X., Lenchik, L., Lyles, M. F., Nicklas, B. J., Baker, A. M., Helgason, B., Stapleton, J., Devane, K., Shapses, S. A., Houston, D. K.
2026
- **Association of computed tomography (CT)-derived muscle area and density at multiple sites with 10-year fracture risk in older men *JBMR PLUS***
Hetherington-Rauth, M., Mansfield, T. A., Lenchik, L., Weaver, A. A., Strotmeyer, E. S., Orwoll, E. S., Cawthon, P. M.
2026; 10 (1): ziaf169
- **Cost-effectiveness of opportunistic CT versus clinical methods for sarcopenia screening. *Skeletal radiology***
Padwal, J., Hanly, A., Johnston, A., Lenchik, L., Gyftopoulos, S., Boutin, R. D.
2025

- **Defining Reference Values for Skeletal Muscle Metrics on Abdominal CT Using Data From Healthy Young Adult Populations: A Systematic Review and Meta-Analysis.** *AJR. American journal of roentgenology*
Ju, C., Yao, L., Yoon, S. Y., Lenchik, L., Johnston, A., Derry, L. T., Hom, J., Svec, D., Chaudhari, A. S., Boutin, R. D.
2025
- **ACR Appropriateness Criteria® Suspected Primary Bone Tumors: 2024 Update.** *Journal of the American College of Radiology : JACR*
Ahlawat, S., Lenchik, L., Baker, J. C., Allen, H., Banks, J., Florou, V., Garner, H. W., Hammer, M. R., Hiniker, S. M., Kamel, S. I., Lu, Y., Peairs, K. S., Scott, et al
2025; 22 (5S): S440-S454
- **Sarcopenia Diagnosis Trends and Opportunistic Use of Abdominal CT Among Medicare Beneficiaries.** *Journal of the American College of Radiology : JACR*
Christensen, E. W., Drake, A. R., Lenchik, L., Boutin, R. D.
2025
- **Sarcopenia, Obesity, and Sarcopenic Obesity: Retrospective Audit of Electronic Health Record Documentation versus Automated CT Analysis in 17 646 Patients.** *Radiology*
Zambrano Chaves, J. M., Hom, J., Lenchik, L., Chaudhari, A. S., Boutin, R. D.
2025; 315 (1): e243525
- **Effect of baseline geriatric and quality of life assessments on treatment outcomes in ECOG-ACRIN EA2186 (GIANT): A randomized phase II study of gemcitabine and nab-paclitaxel compared with 5-fluorouracil, leucovorin, and liposomal irinotecan in older patients with treatment-naïve metastatic pancreatic cancer.**
Dotan, E., Catalano, P. J., Lenchik, L., Boutin, R., Yao, X., Ohr, J., Lim, K., Fisher Jr, G. A., Vijayvergia, N., Chandana, S. R., Kalyan, A., Dunne, R., Zhen, et al
LIPPINCOTT WILLIAMS & WILKINS.2025
- **Opportunistic Screening of Bone Fragility Using Computed Tomography.** *Seminars in musculoskeletal radiology*
Acevedo, J. B., Lenchik, L., Weaver, A. A., Boutin, R. D., Wuertzer, S.
2024; 28 (5): 620-627
- **A randomized phase II study of gemcitabine and nab-paclitaxel compared with 5-fluorouracil, leucovorin, and liposomal irinotecan in older patients with treatment-naive metastatic pancreatic cancer (GIANT): ECOG-ACRIN EA2186.**
Dotan, E., Catalano, P. J., Lenchik, L., Boutin, R., Yao, X., Ohr, J., Lim, K., Vijayvergia, N., Chandana, S. R., Kalyan, A., Dunne, R., Zhen, D., Li, et al
LIPPINCOTT WILLIAMS & WILKINS.2024
- **Abdominal CT metrics in 17,646 patients reveal associations between myopenia, myosteatosi, and medical phenotypes: a phenome-wide association study** *EBIOMEDICINE*
Chaves, J., Lenchik, L., Gallegos, I. O., Blankemeier, L., Liang, T., Rubin, D. L., Willis, M. H., Chaudhari, A. S., Boutin, R. D.
2024; 103
- **Abdominal CT metrics in 17,646 patients reveal associations between myopenia, myosteatosi, and medical phenotypes: aphenome-wide association study.** *EBioMedicine*
Zambrano Chaves, J. M., Lenchik, L., Gallegos, I. O., Blankemeier, L., Rubin, D. L., Willis, M. H., Chaudhari, A. S., Boutin, R. D.
2024; 103: 105116
- **Body composition measurements and clinical outcomes in patients with resectable pancreatic adenocarcinoma - analysis from SWOG S1505.** *Journal of gastrointestinal surgery : official journal of the Society for Surgery of the Alimentary Tract*
Sohal, D. P., Boutin, R. D., Lenchik, L., Kim, J., Beg, M. S., Wang-Gillam, A., Wade, J. L., Guthrie, K. A., Chiorean, E. G., Ahmad, S. A., Lowy, A. M., Philip, P. A., Chang, et al
2024; 28 (3): 232-235
- **Biomarkers of Body Composition.** *Seminars in musculoskeletal radiology*
Chang, C. Y., Lenchik, L., Blankemeier, L., Chaudhari, A. S., Boutin, R. D.
2024; 28 (1): 78-91
- **Skeletal Muscle Area on CT: Determination of an Optimal Height Scaling Power and Testing for Mortality Risk Prediction.** *AJR. American journal of roentgenology*
Blankemeier, L., Yao, L., Long, J., Reis, E. P., Lenchik, L., Chaudhari, A. S., Boutin, R. D.
2023

- **Clinical, functional, and opportunistic CT metrics of sarcopenia at the point of imaging care: analysis of all-cause mortality** *SKELETAL RADIOLOGY*
Yao, L., Petrosyan, A., Chaudhari, A. J., Lenchik, L., Boutin, R. D.
2023
- **Clinical, functional, and opportunistic CT metrics of sarcopenia at the point of imaging care: analysis of all-cause mortality.** *Skeletal radiology*
Yao, L., Petrosyan, A., Chaudhari, A. J., Lenchik, L., Boutin, R. D.
2023
- **Muscle Steatosis and Fibrosis in Older Adults, From the AJR Special Series on Imaging of Fibrosis.** *AJR. American journal of roentgenology*
Lenchik, L., Mazzoli, V., Cawthon, P. M., Hepple, R. T., Boutin, R. D.
2023
- **Association of CT-Derived Skeletal Muscle and Adipose Tissue Metrics with Frailty in Older Adults.** *Academic radiology*
Bunch, P. M., Rigdon, J., Niazi, M. K., Barnard, R. T., Boutin, R. D., Houston, D. K., Lenchik, L.
2023
- **The GIANT trial (ECOG-ACRIN EA2186) methods paper: A randomized phase II study of gemcitabine and nab-paclitaxel compared with 5-fluorouracil, leucovorin, and liposomal irinotecan in older patients with treatment-naïve metastatic pancreatic cancer - defining a new treatment option for older vulnerable patients.** *Journal of geriatric oncology*
Dotan, E., Catalano, P., Lenchik, L., Boutin, R., Yao, X., Marques, H. S., Ioffe, D., Zhen, D. B., Li, D., Wagner, L. I., Simon, M. A., Wong, T. Z., O'Dwyer, et al
2023; 14 (3): 101474
- **Improving Data-Efficiency and Robustness of Medical Imaging Segmentation Using Inpainting-Based Self-Supervised Learning.** *Bioengineering (Basel, Switzerland)*
Dominic, J., Bhaskhar, N., Desai, A. D., Schmidt, A., Rubin, E., Gunel, B., Gold, G. E., Hargreaves, B. A., Lenchik, L., Boutin, R., Chaudhari, A. S.
2023; 10 (2)
- **Ageism in Society and Its Health Impact.** *AJR. American journal of roentgenology*
Lenchik, L., Steinbach, L., Boutin, R. D.
2023
- **Imaging of Sarcopenia.** *Radiologic clinics of North America*
Boutin, R. D., Houston, D. K., Chaudhari, A. S., Willis, M. H., Fausett, C. L., Lenchik, L.
2022; 60 (4): 575-582
- **A randomized phase II study of gemcitabine and nab-paclitaxel compared with 5-fluorouracil, leucovorin, and liposomal irinotecan in older patients with treatment-naïve metastatic pancreatic cancer (GIANT): ECOG-ACRIN EA2186-Trials in progress**
Dotan, E., Catalano, P. J., Lenchik, L., Boutin, R., Yao, X., Beg, S., Vijayvergia, N., Gatsonis, C., Zhen, D., Li, D., Wagner, L. I., Simon, M. A., Wong, et al
LIPPINCOTT WILLIAMS & WILKINS.2022
- **Sarcopenia in rheumatic disorders: what the radiologist and rheumatologist should know.** *Skeletal radiology*
Manzano, W., Lenchik, L., Chaudhari, A. S., Yao, L., Gupta, S., Boutin, R. D.
2021
- **Body composition measurements and overall survival in patients with resectable pancreatic adenocarcinoma receiving neoadjuvant chemotherapy: Analysis from SWOG S1505.**
Sohal, D., Duong, M. T., Boutin, R., Lenchik, L., Kim, J., Gandhi, N., Beg, M., Wang-Gillam, A., Wade, J., Guthrie, K. A., Chiorean, E., Ahmad, S. A., Lowy, et al
LIPPINCOTT WILLIAMS & WILKINS.2021
- **Reply to "Sarcopenia and Osteoporosis: A Practical Approach to Obtaining Valuable Information With CT".** *AJR. American journal of roentgenology*
Boutin, R. D., Lenchik, L. n.
2021: W1
- **Diagnosing sarcopenia at the point of imaging care: analysis of clinical, functional, and opportunistic CT metrics.** *Skeletal radiology*
Yao, L., Petrosyan, A., Fuangfa, P., Lenchik, L., Boutin, R. D.

2020

- **Computed Tomography (CT) Measurements of Sarcopenia Predict Length of Stay in Older Burn Patients.** *Journal of burn care & research : official publication of the American Burn Association*
Romanowski, K. S., Fuanga, P., Siddiqui, S., Lenchik, L., Palmieri, T. L., Boutin, R. D.
2020
- **Association of adipose tissue and skeletal muscle metrics with overall survival and postoperative complications in soft tissue sarcoma patients: an opportunistic study using computed tomography.** *Quantitative imaging in medicine and surgery*
Boutin, R. D., Katz, J. R., Chaudhari, A. J., Yabes, J. G., Hirschbein, J. S., Nakache, Y. P., Seibert, J. A., Lamba, R., Fananapazir, G., Canter, R. J., Lenchik, L.
2020; 10 (8): 1580-1589
- **Value-Added Opportunistic CT: Insights Into Osteoporosis and Sarcopenia.** *AJR. American journal of roentgenology*
Boutin, R. D., Lenchik, L.
2020: 1–13
- **Marrow uptake on FDG PET/CT is associated with progression from smoldering to symptomatic multiple myeloma.** *Skeletal radiology*
Amini, B., Nakache, Y. N., Nardo, L., Manasanch, E. E., Sun, J., Lenchik, L., Boutin, R. D.
2020
- **Accurate prediction of lumbar microdecompression level with an automated MRI grading system.** *Skeletal radiology*
Roller, B. L., Boutin, R. D., O'Gara, T. J., Knio, Z. O., Jamaludin, A., Tan, J., Lenchik, L.
2020
- **Opportunistic muscle measurements on staging chest CT for extremity and truncal soft tissue sarcoma are associated with survival.** *Journal of surgical oncology*
Phan, E. N., Thorpe, S. W., Wong, F. S., Saiz, A. M., Taylor, S. L., Canter, R. J., Lenchik, L., Randall, R. L., Boutin, R. D.
2020
- **Automated Muscle Measurement on Chest Computed Tomography (CT) Predicts All-cause Mortality in Older Adults from the National Lung Screening Trial.** *The journals of gerontology. Series A, Biological sciences and medical sciences*
Lenchik, L., Barnard, R., Boutin, R. D., Kritchevsky, S. B., Chen, H., Tan, J., Cawthon, P. M., Weaver, A. A., Hsu, F.
2020
- **Association of adipose tissue and skeletal muscle metrics with overall survival and postoperative complications in soft tissue sarcoma patients: An opportunistic study using computer tomography of the abdomen** *Quant Imaging Med Surg*
Boutin, R. D., Katz, J., Chaudhari, A., et al
2020: [Epub ahead of print]
- **CT Phantom Evaluation of 67,392 ACR Accreditation Examinations: Implications for Opportunistic Screening of Osteoporosis Using CT.** *AJR. American journal of roentgenology*
Boutin, R. D., Hernandez, A. M., Lenchik, L. n., Seibert, J. A., Gress, D. A., Boone, J. M.
2020
- **Opportunistic body composition evaluation in patients with esophageal adenocarcinoma: association of survival with 18F-FDG PET/CT muscle metrics.** *Annals of nuclear medicine*
Zhou, C., Foster, B., Hagge, R., Foster, C., Lenchik, L., Chaudhari, A. J., Boutin, R. D.
2019
- **The Official Positions of the International Society for Clinical Densitometry: Cross Calibration, Least Significant Change, and Quality Assurance in Multiple Dual-Energy X-Ray Absorptiometry Scanner Environments.** *Journal of clinical densitometry : the official journal of the International Society for Clinical Densitometry*
Jankowski, L. G., Warner, S. n., Gaither, K. n., Lenchik, L. n., Fan, B. n., Lu, Y. n., Shepherd, J. n.
2019