Aaron J Fields

List of Publications by Year
in descending order

51 papers	2,201 citations	218677 26 h-index	233421 45 g-index
53 all docs	53 docs citations	53 times ranked	2284 citing authors

#	Article	IF	Citations
1	Pathobiology of Modic changes. European Spine Journal, 2016, 25, 3723-3734.	2.2	253
2	The Role of the Vertebral End Plate in Low Back Pain. Global Spine Journal, 2013, 3, 153-163.	2.3	184
3	Innervation of pathologies in the lumbar vertebral end plate and intervertebral disc. Spine Journal, 2014, 14, 513-521.	1.3	136
4	Role of Trabecular Microarchitecture in Whole-Vertebral Body Biomechanical Behavior. Journal of Bone and Mineral Research, 2009, 24, 1523-1530.	2.8	102
5	Trabecular plates and rods determine elastic modulus and yield strength of human trabecular bone. Bone, 2015, 72, 71-80.	2.9	92
6	Mechanisms of initial endplate failure in the human vertebral body. Journal of Biomechanics, 2010, 43, 3126-3131.	2.1	87
7	Alterations in intervertebral disc composition, matrix homeostasis and biomechanical behavior in the UCDâ€T2DM rat model of type 2 diabetes. Journal of Orthopaedic Research, 2015, 33, 738-746.	2.3	85
8	Contribution of the Endplates to Disc Degeneration. Current Molecular Biology Reports, 2018, 4, 151-160.	1.6	81
9	Glucocorticoid suppression of osteocyte perilacunar remodeling is associated with subchondral bone degeneration in osteonecrosis. Scientific Reports, 2017, 7, 44618.	3.3	71
10	Nutrient supply and nucleus pulposus cell function: effects of the transport properties of the cartilage endplate and potential implications for intradiscal biologic therapy. Osteoarthritis and Cartilage, 2019, 27, 956-964.	1.3	71
11	Osteocyte dysfunction promotes osteoarthritis through MMP13-dependent suppression of subchondral bone homeostasis. Bone Research, 2019, 7, 34.	11.4	67
12	Influence of vertical trabeculae on the compressive strength of the human vertebra. Journal of Bone and Mineral Research, 2011, 26, 263-269.	2.8	66
13	Estrogen signaling in arcuate Kiss1 neurons suppresses a sex-dependent female circuit promoting dense strong bones. Nature Communications, 2019, 10, 163.	12.8	66
14	Contributions of Material Properties and Structure to Increased Bone Fragility for a Given Bone Mass in the UCD-T2DM Rat Model of Type 2 Diabetes. Journal of Bone and Mineral Research, 2018, 33, 1066-1075.	2.8	57
15	Dependence of mechanical properties of trabecular bone on plateâ€“rod microstructure determined by individual trabecula segmentation (ITS). Journal of Biomechanics, 2014, 47, 702-708.	2.1	56
16	The Relationship Between Endplate Pathology and Patient-reported Symptoms for Chronic Low Back Pain Depends on Lumbar Paraspinal Muscle Quality. Spine, 2019, 44, 1010-1017.	2.0	54
17	Cartilaginous End Plates: Quantitative MR Imaging with Very Short Echo Timesâ€”Orientation Dependence and Correlation with Biochemical Composition. Radiology, 2015, 274, 482-489.	7.3	48
18	Cartilage Endplate Thickness Variation Measured by Ultrashort Echo-Time MRI Is Associated With Adjacent Disc Degeneration. Spine, 2018, 43, E592-E600.	2.0	46

#	Article	IF	Citations
19	Measuring and reporting of vertebral endplate bone marrow lesions as seen on MRI (Modic changes): recommendations from the ISSLS Degenerative Spinal Phenotypes Group. European Spine Journal, 2019, 28, 2266-2274.	2.2	40
20	Vertebral fragility and structural redundancy. Journal of Bone and Mineral Research, 2012, 27, 2152-2158.	2.8	36
21	Influence of biochemical composition on endplate cartilage tensile properties in the human lumbar spine. Journal of Orthopaedic Research, 2014, 32, 245-252.	2.3	36
22	Structureâ€function relationships at the human spinal discâ€vertebra interface. Journal of Orthopaedic Research, 2018, 36, 192-201.	2.3	34
23	Matrix modification for enhancing the transport properties of the human cartilage endplate to improve disc nutrition. PLoS ONE, 2019, 14, e0215218.	2.5	34
24	Effects of knee simulator loading and alignment variability on predicted implant mechanics: A probabilistic study. Journal of Orthopaedic Research, 2006, 24, 2212-2221.	2.3	32
25	Micromechanics of the human vertebral body for forward flexion. Journal of Biomechanics, 2012, 45, 2142-2148.	2.1	32
26	Associations between vertebral body fat fraction and intervertebral disc biochemical composition as assessed by quantitative MRI. Journal of Magnetic Resonance Imaging, 2019, 50, 1219-1226.	3.4	32
27	FGF and TGFÎ² signaling link form and function during jaw development and evolution. Developmental Biology, 2018, 444, S219-S236.	2.0	26
28	Development of a standardized histopathology scoring system for human intervertebral disc degeneration: an Orthopaedic Research Society Spine Section Initiative. JOR Spine, 2021, 4, e1167.	3.2	25
29	Effects of dynamic loading on solute transport through the human cartilage endplate. Journal of Biomechanics, 2019, 83, 273-279.	2.1	24
30	Seeing Double. Spine, 2012, 37, E1310-E1317.	2.0	23
31	Trabecular Architecture and Vertebral Fragility in Osteoporosis. Current Osteoporosis Reports, 2012, 10, 132-140.	3.6	22
32	Automatic Vertebral Body Segmentation Based on Deep Learning of Dixon Images for Bone Marrow Fat Fraction Quantification. Frontiers in Endocrinology, 2020, 11, 612.	3.5	21
33	Comparison of vertebral and intervertebral disc lesions in aging humans and rhesus monkeys. Osteoarthritis and Cartilage, 2014, 22, 980-985.	1.3	19
34	Evaluation of human cartilage endplate composition using MRI: Spatial variation, association with adjacent disc degeneration, and in vivo repeatability. Journal of Orthopaedic Research, 2021, 39, 1470-1478.	2.3	17
35	The contributions of cartilage endplate composition and vertebral bone marrow fat to intervertebral disc degeneration in patients with chronic low back pain. European Spine Journal, 2022, 31, 1866-1872.	2.2	17
36	Theoretical effects of fully ductile versus fully brittle behaviors of bone tissue on the strength of the human proximal femur and vertebral body. Journal of Biomechanics, 2015, 48, 1264-1269.	2.1	16

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37	Serum Biomarkers for Connective Tissue and Basement Membrane Remodeling Are Associated with Vertebral Endplate Bone Marrow Lesions as Seen on MRI (Modic Changes). International Journal of Molecular Sciences, 2020, 21, 3791.	4.1	15
38	Tidemark Avulsions are a Predominant Form of Endplate Irregularity. Spine, 2018, 43, 1095-1101.	2.0	14
39	Measurement of vertebral endplate bone marrow lesion (Modic change) composition with waterâ€“fat MRI and relationship to patient-reported outcome measures. European Spine Journal, 2021, 30, 2549-2556.	2.2	13
40	Publication trends in spine research from 2007 to 2016: Comparison of the Orthopaedic Research Society Spine Section and the International Society for the Study of the Lumbar Spine. JOR Spine, 2018, 1, e1006.	3.2	10
41	Paraspinal Muscle in Chronic Low Back Pain: Comparison Between Standard Parameters and Chemical Shift Encodingâ€Based Waterâ€“Fat <scp>MRI</scp>. Journal of Magnetic Resonance Imaging, 2022, 56, 1600-1608.	3.4	9
42	Structural parameters determining the strength of the porcine vertebral body affected by tumours. Computer Methods in Biomechanics and Biomedical Engineering, 2015, 18, 890-899.	1.6	7
43	Role of Osteoblast Gi Signaling in Age-Related Bone Loss in Female Mice. Endocrinology, 2017, 158, 1715-1726.	2.8	5
44	Non-enzymatic glycation of annulus fibrosus alters tissue-level failure mechanics in tension. Journal of the Mechanical Behavior of Biomedical Materials, 2022, 126, 104992.	3.1	5
45	Spatial distribution of fat infiltration within the paraspinal muscles: implications for chronic low back pain. European Spine Journal, 2022, 31, 2875-2883.	2.2	5
46	Multi-scale modeling of the human vertebral body: comparison of micro-CT based high-resolution and continuum-level models. Pacific Symposium on Biocomputing Pacific Symposium on Biocomputing, 2009, , 293-303.	0.7	3
47	MULTI-SCALE MODELING OF THE HUMAN VERTEBRAL BODY: COMPARISON OF MICRO-CT BASED HIGH-RESOLUTION AND CONTINUUM-LEVEL MODELS. , 2008, , .		2
48	Influence of patientâ€specific factors when comparing multifidus fat infiltration between chronic low back pain patients and asymptomatic controls. JOR Spine, 2022, 5, .	3.2	2
49	Associations between vertebral body fat fraction and intervertebral disc biochemical composition as assessed by quantitative MRI. Journal of Magnetic Resonance Imaging, 2019, 50, spcone.	3.4	1
50	Using hierarchical unsupervised learning to integrate and reduce multi-level and multi-paraspinal muscle MRI data in relation to low back pain. European Spine Journal, 2022, 31, 2046-2056.	2.2	1
51	FGF and TGFÎ² Signaling are Required During Secondary Chondrogenesis in the Jaw Skeleton. FASEB Journal, 2015, 29, 347.3.	0.5	0