Vijay K Goel

List of Publications by Year in descending order

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136 papers	5,474 citations	40 h-index	91712 69 g-index
137	137	137	3059
all docs	docs citations	times ranked	citing authors

#	Article	IF	CITATIONS
1	Lumbar Disc Degeneration Affects the Risk of Rod Fracture Following PSO; A Finite Element Study. Global Spine Journal, 2023, 13, 2336-2344.	1.2	2
2	Current benchtop protocols are not appropriate for the evaluation of distraction-based growing rods: a literature review to justify a new protocol and its development. European Spine Journal, 2022, , 1.	1.0	1
3	Biomechanical analysis of stand-alone lumbar interbody cages versus 360° constructs: an in vitro and finite element investigation. Journal of Neurosurgery: Spine, 2022, 36, 928-936.	0.9	2
4	Soft tissue injury in cervical spine is a risk factor for intersegmental instability: a finite element analysis World Neurosurgery, 2022, , .	0.7	6
5	Biomechanical analysis of laminectomy, laminoplasty, posterior decompression with instrumented fusion, and anterior decompression with fusion for the kyphotic cervical spine. International Journal of Computer Assisted Radiology and Surgery, 2022, 17, 1531-1541.	1.7	4
6	Effects of rod diameter on kinematics of posterior cervical spine instrumented constructs: an ex vivo study. Journal of Neurosurgery: Spine, 2022, 37, 749-757.	0.9	0
7	FDA public workshop: Orthopaedic sensing, measuring, and advanced reporting technology (SMART) devices. Journal of Orthopaedic Research, 2021, 39, 22-29.	1.2	10
8	Biomechanical Analysis of the Tuning Fork Plate Versus Dual Pelvic Screws in a Sacrectomy Model: A Finite Element Study. Global Spine Journal, 2021, , 219256822098379.	1.2	3
9	Towards a validated patient-specific computational modeling framework to identify failure regions in traditional growing rods in patients with early onset scoliosis. North American Spine Society Journal (NASSJ), 2021, 5, 100043.	0.3	2
10	High Prevalence of Biofilms on Retrieved Implants from Aseptic Pseudarthrosis Cases. Spine Surgery and Related Research, 2021, 5, 104-108.	0.4	4
11	Biomechanical evaluation of a novel decompression surgery: Transforaminal full-endoscopic lateral recess decompression (TE-LRD). North American Spine Society Journal (NASSJ), 2021, 5, 100045.	0.3	2
12	Sacroiliac joint stabilization using implants provide better fixation in females compared to males: a finite element analysis. European Spine Journal, 2021, 30, 2351-2359.	1.0	1
13	Tibiofemoral Cartilage Contact Pressures in Athletes During Landing: A Dynamic Finite Element Study. Journal of Biomechanical Engineering, 2021, 143, .	0.6	6
14	latrogenic muscle damage in transforaminal lumbar interbody fusion and adjacent segment degeneration: a comparative finite element analysis of open and minimally invasive surgeries. European Spine Journal, 2021, 30, 2622-2630.	1.0	22
15	Biomechanical Analysis of Posterior Ligaments of Cervical Spine and Laminoplasty. Applied Sciences (Switzerland), 2021, 11, 7645.	1.3	11
16	P9. A distraction-based bench top protocol for the evaluation of growing rod concepatients. Spine Journal, 2021, 21, S144-S145.	0.6	1
17	A Comparative Biomechanical Analysis of Various Rod Configurations Following Anterior Column Realignment and Pedicle Subtraction Osteotomy. Neurospine, 2021, 18, 587-596.	1.1	10
18	Design Rationale for Posterior Dynamic Stabilization Relevant for Spine Surgery., 2021,, 293-314.		0

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19	Finite Element Comparison of the Spring Distraction System and the Traditional Growing Rod for the treatment of Early Onset Scoliosis. Spine, 2021, Publish Ahead of Print, .	1.0	1
20	A new lumbar fixation device alternative to pedicle-based stabilization for lumbar spine: In vitro cadaver investigation. Journal of Spinal Cord Medicine, 2020, 43, 98-105.	0.7	2
21	Clinically relevant finite element technique based protocol to evaluate growing rods for early onset scoliosis correction. JOR Spine, 2020, 3, e1119.	1.5	9
22	Biomechanics of the Sacroiliac Joint: Anatomy, Function, Biomechanics, Sexual Dimorphism, and Causes of Pain. International Journal of Spine Surgery, 2020, 14, S3-S13.	0.7	96
23	Biomechanics of the Sacroiliac Joint: Surgical Treatments. International Journal of Spine Surgery, 2020, 14, 355-367.	0.7	13
24	Updates on Evidence-Based Practices to Reduce Preoperative and Intraoperative Contamination of Implants in Spine Surgery: A Narrative Review. Spine Surgery and Related Research, 2020, 4, 111-116.	0.4	6
25	Spinal Balance/Alignmentâ€"Clinical Relevance and Biomechanics. Journal of Biomechanical Engineering, 2019, 141, .	0.6	22
26	Effects on hip stress following sacroiliac joint fixation: A finite element study. JOR Spine, 2019, 2, e1067.	1.5	24
27	Quantitative Characteristics of Consecutive Lengthening Episodes in Early-onset Scoliosis (EOS) Patients With Dual Growth Rods. Spine, 2019, 44, 397-403.	1.0	21
28	Mechanical performance of traditional distraction-based dual growing rod constructs. Spine Journal, 2019, 19, 744-754.	0.6	7
29	Optimal satellite rod constructs to mitigate rod failure following pedicle subtraction osteotomy (PSO): a finite element study. Spine Journal, 2019, 19, 931-941.	0.6	47
30	Regulation of RANKLâ€induced osteoclastogenesis by RING finger protein RNF114. Journal of Orthopaedic Research, 2018, 36, 159-166.	1.2	11
31	Sex Specific Sacroiliac Joint Biomechanics During Standing Upright. Spine, 2018, 43, E1053-E1060.	1.0	53
32	Development of a finite element model of the ligamentous cervical vertebral column of a Great Dane. Research in Veterinary Science, 2018, 118, 97-100.	0.9	2
33	Patient-specific Distraction Regimen to Avoid Growth-rod Failure. Spine, 2018, 43, E221-E226.	1.0	15
34	A Paradigm Shift Toward Terminally Sterilized Devices. Clinical Spine Surgery, 2018, 31, 308-311.	0.7	9
35	Single-Phase, Antibacterial Trimagnesium Phosphate Hydrate Coatings on Polyetheretherketone (PEEK) Implants by Rapid Microwave Irradiation Technique. ACS Biomaterials Science and Engineering, 2018, 4, 2767-2783.	2.6	44
36	Sacroiliac joint stability: Finite element analysis of implant number, orientation, and superior implant length. World Journal of Orthopedics, 2018, 9, 14-23.	0.8	27

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37	Prediction of clinically relevant initiation and progression of tears within annulus fibrosus. Journal of Orthopaedic Research, 2017, 35, 113-122.	1.2	7
38	Outcomes of Optimal Distraction Forces and Frequencies in Growth Rod Surgery for Different Types of Scoliotic Curves: An In Silico and InÂvitro Study. Spine Deformity, 2017, 5, 18-26.	0.7	24
39	Optimizing Vancomycin Release from Calcium Phosphate-Based Cement by Carboxymethyl Cellulose for Prevention of Osteomyelitis. Surgical Infections, 2017, 18, 221-222.	0.7	5
40	Letter to the Editor concerning "Rod fracture and lengthening intervals in traditional growing rods: is there a relationship?―by P. Hosseini et al. Eur Spine J (2016). doi:10.1007/s00586-016-4786-8. European Spine Journal, 2017, 26, 1696-1697.	1.0	7
41	A novel 3D approach for determination of frontal and coronal plane tibial slopes from MR imaging. Knee, 2017, 24, 207-216.	0.8	11
42	Lumbar-Sacral Destruction Fixation Biomechanics: A Finite Element Study. Spine Journal, 2017, 17, S335.	0.6	5
43	Automated Measurement of Patient-Specific Tibial Slopes from MRI. Bioengineering, 2017, 4, 69.	1.6	13
44	Biomechanical Testing., 2017,, 293-304.e2.		0
45	Computational Modeling of the Spine. , 2017, , 305-311.e2.		0
46	Computational Modeling and Finite Element Analysis. Spine, 2016, 41, S6-S7.	1.0	12
47	Adjacent-Level Hypermobility and Instrumented-Level Fatigue Loosening With Titanium and PEEK Rods for a Pedicle Screw System: An In Vitro Study. Journal of Biomechanical Engineering, 2016, 138, 051004.	0.6	11
48	Strain Response of the Anterior Cruciate Ligament to Uniplanar and Multiplanar Loads During Simulated Landings. American Journal of Sports Medicine, 2016, 44, 2087-2096.	1.9	100
49	Inherent Strength of the osteo-WEDGEâ,,¢ Bone Plate Locking System forÂArthrodesis of the First Metatarsocuneiform Joint: AÂBiomechanicalÂStudy. Journal of Foot and Ankle Surgery, 2016, 55, 444-449.	0.5	0
50	Novel Measurement of Multi-planar Proximal Tibial Slope. Medicine and Science in Sports and Exercise, 2016, 48, 803.	0.2	2
51	Development of nanosilica bonded monetite cement from egg shells. Materials Science and Engineering C, 2015, 50, 45-51.	3.8	26
52	Distraction magnitude and frequency affects the outcome in juvenile idiopathic patients with growth rods: finite element study using a representative scoliotic spine model. Spine Journal, 2015, 15, 1848-1855.	0.6	20
53	Effects of Flexion and Extension on the Diameter of the Caudal Cervical Vertebral Canal in Dogs. Veterinary Surgery, 2015, 44, 459-466.	0.5	14
54	On the Use of Biaxial Properties in Modeling Annulus as a Holzapfelââ,¬â€œGasserââ,¬â€œOgden Material. Frontiers in Bioengineering and Biotechnology, 2015, 3, 69.	2.0	22

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55	Morphological changes of the caudal cervical intervertebral foramina due to flexion-extension and compression-traction movements in the canine cervical vertebral column. BMC Veterinary Research, 2015, 11, 184.	0.7	8
56	Uni-directional coupling between tibiofemoral frontal and axial plane rotation supports valgus collapse mechanism of ACL injury. Journal of Biomechanics, 2015, 48, 1745-1751.	0.9	47
57	Sacroiliac Joint Fusion Minimally Affects Adjacent Lumbar Segment Motion: A Finite Element Study. International Journal of Spine Surgery, 2015, 9, 64.	0.7	49
58	Foreword, Biomechanics Special Issue. International Journal of Spine Surgery, 2015, 9, 31.	0.7	0
59	A Computational Biomechanical Investigation of Posterior Dynamic Instrumentation: Combination of Dynamic Rod and Hinged (Dynamic) Screw. Journal of Biomechanical Engineering, 2014, 136, 051007.	0.6	25
60	Sustained release of small molecules from carbon nanotube-reinforced monetite calcium phosphate cement. Materials Science and Engineering C, 2014, 43, 92-96.	3.8	14
61	Smaller Interval Distractions May Reduce Chances of Growth Rod Breakage Without Impeding Desired Spinal Growth: A Finite Element Study. Spine Deformity, 2014, 2, 430-436.	0.7	33
62	Effect of Distraction Force on Growth and Biomechanics of the Spine: A Finite Element Study on Normal Juvenile Spine With Dual Growth Rod Instrumentation. Spine Deformity, 2014, 2, 260-269.	0.7	23
63	A unique modular implant system enhances load sharing in anterior cervical interbody fusion: a finite element study. BioMedical Engineering OnLine, 2014, 13, 26.	1.3	11
64	Timing sequence of multi-planar knee kinematics revealed by physiologic cadaveric simulation of landing: Implications for ACL injury mechanism. Clinical Biomechanics, 2014, 29, 75-82.	0.5	50
65	Biomechanical Evaluation of an Endplate-Conformed Polycaprolactone-Hydroxyapatite Intervertebral Fusion Graft and Its Comparison With a Typical Nonconformed Cortical Graft. Journal of Biomechanical Engineering, 2013, 135, 61005-9.	0.6	21
66	The Effect of Ligament Modeling Technique on Knee Joint Kinematics: A Finite Element Study. Applied Mathematics, 2013, 04, 91-97.	0.1	31
67	The Endplate Morphology Changes with Change in Biomechanical Environment Following Discectomy. International Journal of Clinical Medicine, 2013, 04, 8-17.	0.1	9
68	Kinematic effects of a pedicle-lengthening osteotomy for the treatment of lumbar spinal stenosis. Journal of Neurosurgery: Spine, 2012, 17, 314-320.	0.9	21
69	Necrosis of Staphylococcus aureus by the Electrospun Fe- and Ag-Doped TiO2 Nanofibers. ISRN Orthopedics, 2012, 2012, 1-11.	0.7	2
70	Commentary: Biomechanics of various surgical procedures for the treatment of multilevel cervical spine. Spine Journal, 2012, 12, 409-410.	0.6	0
71	Adjacent level effects of bi level disc replacement, bi level fusion and disc replacement plus fusion in cervical spine- a finite element based study. Clinical Biomechanics, 2012, 27, 226-233.	0.5	55
72	Relationship between limb length discrepancy and load distribution across the sacroiliac joint—a finite element study. Journal of Orthopaedic Research, 2012, 30, 1577-1580.	1.2	56

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73	Do design variations in the artificial disc influence cervical spine biomechanics? A finite element investigation. European Spine Journal, 2012, 21, 653-662.	1.0	57
74	Parameters that effect spine biomechanics following cervical disc replacement. European Spine Journal, 2012, 21, 688-699.	1.0	33
75	Models that incorporate spinal structures predict better wear performance of cervical artificial discs. Spine Journal, 2011, 11, 766-776.	0.6	18
76	Kinematic Motion Patterns of the Cranial and Caudal Canine Cervical Spine. Veterinary Surgery, 2011, 40, 720-727.	0.5	38
77	Biomechanical rationale of sacral rounding deformity in pediatric spondylolisthesis: a clinical and biomechanical study. Archives of Orthopaedic and Trauma Surgery, 2011, 131, 1187-1194.	1.3	9
78	Operated and Adjacent Segment Motions for Fusion versus Cervical Arthroplasty: A Pilot Study. Clinical Orthopaedics and Related Research, 2011, 469, 682-687.	0.7	18
79	Biomechanical Analysis Comparing Three C1–C2 Transarticular Screw Salvaging Fixation Techniques. Spine, 2010, 35, 378-385.	1.0	24
80	Gravimetric wear analysis and particulate characterization of bilateral facet-augmentation system – PercuDynâ,,¢. Bio-Medical Materials and Engineering, 2010, 20, 329-338.	0.4	0
81	Effects of rate of loading on viscoelastic supraspinous ligament inflammation and cumulative lumbar disorder. Spine Journal, 2010, 10, 1086-1088.	0.6	0
82	Biomechanics of a posture-controlling cervical artificial disc: mechanical, in vitro, and finite-element analysis. Neurosurgical Focus, 2010, 28, E11.	1.0	7
83	Newly occurred L4 spondylolysis in the lumbar spine with pre-existence L5 spondylolysis among sports players: case reports and biomechanical analysis. Archives of Orthopaedic and Trauma Surgery, 2009, 129, 1433-1439.	1.3	16
84	Foreword. SAS Journal, 2009, 3, 123-124.	1.3	0
85	Lumbar Fusion Leads to Increases in Angular Motion and Stress Across Sacroiliac Joint. Spine, 2009, 34, E162-E169.	1.0	154
86	Basic Science Symposium II: MEMS Technology. International Journal of Spine Surgery, 2008, 2, 120-129.	0.7	0
87	Interactions between SNP Alleles at Multiple Loci and Variation in Skin Pigmentation in 122 Caucasians. Evolutionary Bioinformatics, 2007, 3, 117693430700300.	0.6	5
88	The Effect of Removing the Lateral Part of the Pars Interarticularis on Stress Distribution at the Neural Arch in Lumbar Foraminal Microdecompression at L3–L4 and L4–L5. Spine, 2007, 32, 2462-2466.	1.0	39
89	Vertebral Endplate Morphology Follows Bone Remodeling Principles. Spine, 2007, 32, E667-E673.	1.0	13
90	Point of View. Spine, 2007, 32, 967.	1.0	0

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91	Residual Sagittal Motion After Lumbar Fusion. Spine, 2007, 32, 417-422.	1.0	51
92	Biomechanical rationale of ossification of the secondary ossification center on apophyseal bony ring fracture: A biomechanical study. Clinical Biomechanics, 2007, 22, 1063-1067.	0.5	28
93	Anatomic Facet Replacement System (AFRS) Restoration of Lumbar Segment Mechanics to Intact: A Finite Element Study and In Vitro Cadaver Investigation. SAS Journal, 2007, 1, 46-54.	1.3	49
94	Finite Element Study of Matched Paired Posterior Disc Implant and Dynamic Stabilizer (360° Motion) Tj ETQq0 C)	Overlock 10 T
95	Finite Element Study of Matched Paired Posterior Disc Implant and Dynamic Stabilizer (360° Motion) Tj ETQq1 1	0.78431	4 rgBT /Overl
96	Anatomic Facet Replacement System (AFRS) Restoration of Lumbar Segment Mechanics to Intact: A Finite Element Study and In Vitro Cadaver Investigation. International Journal of Spine Surgery, 2007, 1, 46-54.	0.7	22
97	Biomechanics of two-level Charité artificial disc placement in comparison to fusion plus single-level disc placement combination. Spine Journal, 2006, 6, 659-666.	0.6	66
98	Buck's direct repair of lumbar spondylolysis restores disc stresses at the involved and adjacent levels. Clinical Biomechanics, 2006, 21, 1020-1026.	0.5	35
99	Lumbar Spinal Disorders in Patients With Athetoid Cerebral Palsy. Spine, 2006, 31, E66-E70.	1.0	40
100	Effect of the Increase in the Height of Lumbar Disc Space on Facet Joint Articulation Area in Sagittal Plane. Spine, 2006, 31, E198-E202.	1.0	38
101	Three-dimensional finite element analysis of the pediatric lumbar spine. Part I: pathomechanism of apophyseal bony ring fracture. European Spine Journal, 2006, 15, 923-929.	1.0	76
102	Three dimensional finite element analysis of the pediatric lumbar spine. Part II: biomechanical change as the initiating factor for pediatric isthmic spondylolisthesis at the growth plate. European Spine Journal, 2006, 15, 930-935.	1.0	52
103	Test Protocols for Evaluation of Spinal Implants. Journal of Bone and Joint Surgery - Series A, 2006, 88, 103-109.	1.4	199
104	TEST PROTOCOLS FOR EVALUATION OF SPINAL IMPLANTS. Journal of Bone and Joint Surgery - Series A, 2006, 88, 103-109.	1.4	3
105	Effects of Charité Artificial Disc on the Implanted and Adjacent Spinal Segments Mechanics Using a Hybrid Testing Protocol. Spine, 2005, 30, 2755-2764.	1.0	191
106	Design of an Artificial Intervertebral Disc Exhibiting a Negative Poisson's Ratio. Frontiers in Forests and Global Change, 2005, 24, 127-138.	0.6	45
107	Artificial disc prosthesis: design concepts and criteria. Spine Journal, 2004, 4, S209-S218.	0.6	65
108	Ability of the Finite Element Models to Predict Response of the Human Spine to Sinusoidal Vertical Vibration. Spine, 2003, 28, 1961-1967.	1.0	79

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109	Spinal Cord Mechanics During Flexion and Extension of the Cervical Spine: A Finite Element Study. Pain Physician, 2002, 4;5, 394-400.	0.3	9
110	Load-Sharing Between Anterior and Posterior Elements in a Lumbar Motion Segment Implanted With an Artificial Disc. Spine, 2001, 26, E122-E129.	1.0	232
111	The Pathomechanism of Spondylolytic Spondylolisthesis in Immature Primate Lumbar Spines. Spine, 2001, 26, E38-E49.	1.0	55
112	Contribution of disc degeneration to osteophyte formation in the cervical spine: a biomechanical investigation. Journal of Orthopaedic Research, 2001, 19, 977-984.	1.2	175
113	Impact Response of the Intervertebral Disc in a Finite-Element Model. Spine, 2000, 25, 2431-2439.	1.0	107
114	Load Sharing Characteristics in the Stabilized Lumbar Motion Segment: A Finite Element Study. Journal of Musculoskeletal Research, 1998, 02, 55-64.	0.1	11
115	Prediction of Load Sharing Among Spinal Components of a C5-C6 Motion Segment Using the Finite Element Approach. Spine, 1998, 23, 684-691.	1.0	223
116	Basic Science of Spinal Instrumentation. Clinical Orthopaedics and Related Research, 1997, 335, 10-31.	0.7	46
117	Uncinate processes and Luschka joints influence the biomechanics of the cervical spine: Quantification using a finite element model of the C5-C6 segment. Journal of Orthopaedic Research, 1997, 15, 342-347.	1.2	122
118	Materials and design of spinal implants? A review., 1997, 38, 267-288.		90
119	Effects of Muscle Dysfunction on Lumbar Spine Mechanics. Spine, 1996, 21, 2197-2206.	1.0	50
120	Spine Update. Spine, 1995, 20, 1719-1727.	1.0	57
121	Finite Element Methods in Spine Biomechanics Research. Critical Reviews in Biomedical Engineering, 1995, 23, 411-473.	0.5	58
122	Biomechanical analysis of bone mineral density, insertion technique, screw torque, and holding strength of anterior cervical plate screws. Journal of Neurosurgery, 1995, 83, 324-329.	0.9	109
123	Cancellous Bone Young's Modulus Variation Within the Vertebral Body of a Ligamentous Lumbar Spineâ€"Application of Bone Adaptive Remodeling Concepts. Journal of Biomechanical Engineering, 1995, 117, 266-271.	0.6	105
124	Stress analysis of a canine spinal motion segment using the finite element technique. Journal of Biomechanics, 1994, 27, 1259-1269.	0.9	34
125	Investigation of Vibration Characteristics of the Ligamentous Lumbar Spine Using the Finite Element Approach. Journal of Biomechanical Engineering, 1994, 116, 377-383.	0.6	107
126	A Comparison of Stress-Induced Porosity Due to Conventional and a Modified Spinal Fixation Device. Journal of Spinal Disorders, 1994, 7, 1-11.	1.1	26

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127	Effects of seated posture on erector spinae EMG activity during whole body vibration. Ergonomics, 1993, 36, 667-675.	1.1	37
128	A Combined Finite Element and Optimization Investigation of Lumbar Spine Mechanics With and Without Muscles. Spine, 1993, 18, 1531-1541.	1.0	224
129	Dynamic response of the occipito-atlanto-axial (C0-C1-C2) complex in right axial rotation. Journal of Orthopaedic Research, 1992, 10, 446-453.	1.2	18
130	Cervical Human Vertebrae Quantitative Three-Dimensional Anatomy of the Middle and Lower Regions. Spine, 1991, 16, 861-869.	1.0	384
131	Possible Role of Stresses in Inducing Spinal Stenosis—A Long Term Complication Following Disk Excision. Journal of Biomechanical Engineering, 1990, 112, 478-481.	0.6	3
132	Evaluation of effectiveness of a facet wiring technique: Anin vitro biomechanical investigation. Annals of Biomedical Engineering, 1989, 17, 115-126.	1.3	17
133	Kinematics of the cervical spine: Effects of multiple total laminectomy and facet wiring. Journal of Orthopaedic Research, 1988, 6, 611-619.	1.2	70
134	An Analytical Investigation of the Mechanics of Spinal Instrumentation. Spine, 1988, 13, 1003-1011.	1.0	191
135	Role of Gloves in Reducing Vibration: An Analysis for Pneumatic Chipping Hammer. AIHA Journal, 1987, 48, 9-14.	0.4	34
136	A technique for measurement and description of three-dimensional six degree-of-freedom motion of a body joint with an application to the human spine. Journal of Biomechanics, 1981, 14, 447-460.	0.9	149