

Werner Schmoelz

List of Publications by Year in descending order

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118
papers

3,146
citations

159585

30
h-index

175258

52
g-index

128
all docs

128
docs citations

128
times ranked

2604
citing authors

#	ARTICLE	IF	CITATIONS
1	Dynamic Stabilization of the Lumbar Spine and Its Effects on Adjacent Segments. <i>Journal of Spinal Disorders and Techniques</i> , 2003, 16, 418-423.	1.9	299
2	Effects of three different preservation methods on the mechanical properties of human and bovine cortical bone. <i>Bone</i> , 2010, 47, 1048-1053.	2.9	157
3	Influence of a dynamic stabilisation system on load bearing of a bridged disc: an in vitro study of intradiscal pressure. <i>European Spine Journal</i> , 2006, 15, 1276-1285.	2.2	114
4	Significant differences in femoral torsion values depending on the CT measurement technique. <i>Archives of Orthopaedic and Trauma Surgery</i> , 2016, 136, 1259-1264.	2.4	113
5	Biomechanical in vitro assessment of screw augmentation in locked plating of proximal humerus fractures. <i>Injury</i> , 2013, 44, 1327-1332.	1.7	95
6	The effect of in situ augmentation on implant anchorage in proximal humeral head fractures. <i>Injury</i> , 2012, 43, 1759-1763.	1.7	93
7	Suspensory Fixation of Grafts in Anterior Cruciate Ligament Reconstruction: A Biomechanical Comparison of 3 Implants. <i>Arthroscopy - Journal of Arthroscopic and Related Surgery</i> , 2009, 25, 767-776.	2.7	90
8	Biomechanical Comparison of 2 Anterior Cruciate Ligament Graft Preparation Techniques for Tibial Fixation. <i>American Journal of Sports Medicine</i> , 2015, 43, 1380-1385.	4.2	85
9	Increased internal femoral torsion can be regarded as a risk factor for patellar instability – A biomechanical study. <i>Clinical Biomechanics</i> , 2017, 47, 103-109.	1.2	82
10	Motion of the fibula relative to the tibia and its alterations with syndesmosis screws: A cadaver study. <i>Foot and Ankle Surgery</i> , 2012, 18, 203-209.	1.7	75
11	Biomechanical effect of bone cement augmentation on rotational stability and pull-out strength of the Proximal Femur Nail Antirotation. <i>Injury</i> , 2011, 42, 1322-1327.	1.7	74
12	Biomechanical Evaluation of a New Total Posterior-Element Replacement System. <i>Spine</i> , 2006, 31, 2790-2796.	2.0	72
13	Higher Risk of Adjacent Segment Degeneration After Floating Fusions: Long-Term Outcome After Low Lumbar Spine Fusions. <i>Journal of Spinal Disorders and Techniques</i> , 2008, 21, 79-85.	1.9	64
14	Pedicle screw anchorage of carbon fiber-reinforced PEEK screws under cyclic loading. <i>European Spine Journal</i> , 2018, 27, 1775-1784.	2.2	64
15	Revision of Cannulated and Perforated Cement-Augmented Pedicle Screws. <i>Spine</i> , 2010, 35, E932-E939.	2.0	62
16	The use of augmentation techniques in osteoporotic fracture fixation. <i>Injury</i> , 2016, 47, S36-S43.	1.7	60
17	Effect of augmentation techniques on the failure of pedicle screws under cranio-caudal cyclic loading. <i>European Spine Journal</i> , 2017, 26, 181-188.	2.2	60
18	In Vitro Stabilizing Effect of a Transforaminal Compared With Two Posterior Lumbar Interbody Fusion Cages. <i>Spine</i> , 2005, 30, E665-E670.	2.0	56

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19	Isolated medial patellofemoral ligament reconstruction for patella instability is insufficient for higher degrees of internal femoral torsion. <i>Knee Surgery, Sports Traumatology, Arthroscopy</i> , 2019, 27, 758-765.	4.2	55
20	En bloc spondylectomy reconstructions in a biomechanical in-vitro study. <i>European Spine Journal</i> , 2008, 17, 715-725.	2.2	53
21	The medial periosteal hinge, a key structure in fractures of the proximal humerus. <i>Journal of Bone and Joint Surgery: British Volume</i> , 2009, 91-B, 973-976.	3.4	53
22	Biomechanical comparison of an angular stable plate with augmented and non-augmented screws in a newly developed shoulder test bench. <i>Clinical Biomechanics</i> , 2013, 28, 273-277.	1.2	51
23	Biomechanical performance of the new BeadEx implant in the treatment of osteoporotic vertebral body compression fractures: Restoration and maintenance of height and stability. <i>Clinical Biomechanics</i> , 2006, 21, 676-682.	1.2	50
24	Non-fusion instrumentation of the lumbar spine with a hinged pedicle screw rod system: an in vitro experiment. <i>European Spine Journal</i> , 2009, 18, 1478-1485.	2.2	47
25	Comparison of mechanical characteristics of the human and porcine chest during cardiopulmonary resuscitation. <i>Resuscitation</i> , 2009, 80, 463-469.	3.0	41
26	Oncosurgical Results of Multilevel Thoracolumbar En-bloc Spondylectomy and Reconstruction with a Carbon Composite Vertebral Body Replacement System. <i>Spine</i> , 2011, 36, E647-E655.	2.0	40
27	Limited V-shaped cement augmentation of the proximal femur to prevent secondary hip fractures. <i>Journal of Biomaterials Applications</i> , 2013, 28, 136-143.	2.4	37
28	Systematic Review of Back-Support Exoskeletons and Soft Robotic Suits. <i>Frontiers in Bioengineering and Biotechnology</i> , 2021, 9, 765257.	4.1	37
29	The role of prosthesis design on segmental biomechanics. <i>European Spine Journal</i> , 2012, 21, 577-584.	2.2	35
30	Three-dimensional stiffness in a thoracolumbar en-bloc spondylectomy model: A biomechanical in vitro study. <i>Clinical Biomechanics</i> , 2007, 22, 957-964.	1.2	33
31	Biomechanical evaluation of a posterior non-fusion instrumentation of the lumbar spine. <i>European Spine Journal</i> , 2012, 21, 939-945.	2.2	32
32	Angular Stable Anterior Plating Following Thoracolumbar Corpectomy Reveals Superior Segmental Stability Compared to Conventional Polyaxial Plate Fixation. <i>Spine</i> , 2008, 33, 1429-1437.	2.0	30
33	A new distractable implant for vertebral body replacement: biomechanical testing of four implants for the thoracolumbar spine. <i>Archives of Orthopaedic and Trauma Surgery</i> , 2009, 129, 1375-1382.	2.4	30
34	Construct stability of an instrumented 2-level cervical corpectomy model following fatigue testing: biomechanical comparison of circumferential antero-posterior instrumentation versus a novel anterior-only transpedicular screw "plate fixation technique. <i>European Spine Journal</i> , 2015, 24, 2848-2856.	2.2	29
35	Is a gradual reduction of stiffness on top of posterior instrumentation possible with a suitable proximal implant? A biomechanical study. <i>Spine Journal</i> , 2017, 17, 1148-1155.	1.3	29
36	Cement Augmentation in a Thoracolumbar Fracture Model. <i>Spine</i> , 2014, 39, E1147-E1153.	2.0	27

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37	Vertebroplasty With High-Viscosity Polymethylmethacrylate Cement Facilitates Vertebral Body Restoration In Vitro. <i>Spine</i> , 2009, 34, 2619-2625.	2.0	26
38	Extent of corpectomy determines primary stability following isolated anterior reconstruction in a thoracolumbar fracture model. <i>Clinical Biomechanics</i> , 2010, 25, 16-20.	1.2	26
39	Preparation techniques for all-inside ACL cortical button grafts: a biomechanical study. <i>Knee Surgery, Sports Traumatology, Arthroscopy</i> , 2016, 24, 2983-2989.	4.2	26
40	Interfragmentary lag screw fixation in locking plate constructs increases stiffness in simple fracture patterns. <i>Clinical Biomechanics</i> , 2015, 30, 814-819.	1.2	25
41	Biomechanical comparison of vertebral augmentation with silicone and PMMA cement and two filling grades. <i>European Spine Journal</i> , 2013, 22, 2695-2701.	2.2	24
42	Biomechanical evaluation of straight antegrade nailing in proximal humeral fractures: the rationale of the "proximal anchoring point". <i>International Orthopaedics</i> , 2017, 41, 1715-1721.	1.9	22
43	Is augmentation a possible salvage procedure after lateral migration of the proximal femur nail antirotation?. <i>Archives of Orthopaedic and Trauma Surgery</i> , 2012, 132, 1577-1581.	2.4	21
44	The influence of distal locking on the need for fibular plating in intramedullary nailing of distal metaphyseal tibiofibular fractures. <i>Bone and Joint Journal</i> , 2014, 96-B, 385-389.	4.4	20
45	Biomechanical evaluation of cable and suture cerclages for tuberosity reattachment in a 4-part proximal humeral fracture model treated with reverse shoulder arthroplasty. <i>Journal of Shoulder and Elbow Surgery</i> , 2018, 27, 1816-1823.	2.6	20
46	Measurement of intraarticular wrist joint biomechanics with a force controlled system. <i>Medical Engineering and Physics</i> , 2012, 34, 900-905.	1.7	16
47	Timing of PMMA cement application for pedicle screw augmentation affects screw anchorage. <i>European Spine Journal</i> , 2017, 26, 2883-2890.	2.2	16
48	Effects of multilevel posterior ligament dissection after spinal instrumentation on adjacent segment biomechanics as a potential risk factor for proximal junctional kyphosis: a biomechanical study. <i>BMC Musculoskeletal Disorders</i> , 2018, 19, 57.	1.9	16
49	Spinal Deformities and Advancement in Corrective Orthoses. <i>Bioengineering</i> , 2021, 8, 2.	3.5	16
50	Simulation of Fretting Wear at Orthopaedic Implant Interfaces. <i>Journal of Biomechanical Engineering</i> , 2005, 127, 357-363.	1.3	15
51	The Humerusblock NG: a new concept for stabilization of proximal humeral fractures and its biomechanical evaluation. <i>Archives of Orthopaedic and Trauma Surgery</i> , 2012, 132, 985-992.	2.4	15
52	Biomechanical Study of a Novel, Expandable, Non-Metallic and Radiolucent CF/PEEK Vertebral Body Replacement (VBR). <i>Materials</i> , 2019, 12, 2732.	2.9	15
53	Locking plate constructs benefit from interfragmentary lag screw fixation with decreased shear movements and more predictable fracture gap motion in simple fracture patterns. <i>Clinical Biomechanics</i> , 2019, 70, 89-96.	1.2	15
54	Biomechanical analysis of a new expandable vertebral body replacement combined with a new polyaxial antero-lateral plate and/or pedicle screws and rods. <i>European Spine Journal</i> , 2012, 21, 546-553.	2.2	14

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55	Optimizing the grain size distribution of allografts in bone impaction grafting. <i>Journal of Orthopaedic Research</i> , 2014, 32, 1024-1029.	2.3	14
56	Biomechanical testing of circumferential instrumentation after cervical multilevel corpectomy. <i>European Spine Journal</i> , 2015, 24, 2788-2798.	2.2	14
57	The Mechanical Stability of Allografts After a Cleaning Process: Comparison of Two Preparation Modes. <i>Journal of Arthroplasty</i> , 2014, 29, 1642-1646.	3.1	13
58	Inverse Finite Element Modeling for Characterization of Local Elastic Properties in Image-Guided Failure Assessment of Human Trabecular Bone. <i>Journal of Biomechanical Engineering</i> , 2015, 137, .	1.3	13
59	Vertebroplasty with self-locking hexagonal metal implants shows comparable primary and secondary stiffness to PMMA cement augmentation techniques in a biomechanical vertebral compression fracture model. <i>European Spine Journal</i> , 2010, 19, 1029-1036.	2.2	12
60	The biomechanical effects of a deepened articular cavity during dynamic motion of the wrist joint. <i>Clinical Biomechanics</i> , 2012, 27, 557-561.	1.2	12
61	Clinical and biomechanical investigation of an increased articular cavity depth after distal radius fractures: effect on range of motion, osteoarthritis and loading patterns. <i>Archives of Orthopaedic and Trauma Surgery</i> , 2013, 133, 1249-1255.	2.4	12
62	Augmented screws in angular stable plating of the proximal humerus: What to do when revision is needed?. <i>Clinical Biomechanics</i> , 2014, 29, 1023-1026.	1.2	12
63	Effect of additional fixation in tibial plateau impression fractures treated with balloon reduction and cement augmentation. <i>Clinical Biomechanics</i> , 2015, 30, 847-851.	1.2	11
64	Subtalar arthrodesis stabilisation with screws in an angulated configuration is superior to the parallel disposition: a biomechanical study. <i>International Orthopaedics</i> , 2015, 39, 2275-2280.	1.9	11
65	Cementless hemiarthroplasty in femoral neck fractures: evaluation of clinical results and measurement of migration by EBRA-FCA. <i>Archives of Orthopaedic and Trauma Surgery</i> , 2006, 126, 380-386.	2.4	10
66	Resect or not to resect: the role of posterior longitudinal ligament in lumbar total disc replacement. <i>European Spine Journal</i> , 2012, 21, 592-598.	2.2	10
67	Prophylactic augmentation of the proximal femur: an investigation of two techniques. <i>Archives of Orthopaedic and Trauma Surgery</i> , 2016, 136, 345-351.	2.4	10
68	Cement-augmented screws in a cervical two-level corpectomy with anterior titanium mesh cage reconstruction: a biomechanical study. <i>European Spine Journal</i> , 2017, 26, 1047-1057.	2.2	10
69	Biomechanical comparison of fixation techniques for transverse acetabular fractures – Single-leg stance vs. sit-to-stand loading. <i>Injury</i> , 2020, 51, 2158-2164.	1.7	10
70	Local osteo-enhancement of osteoporotic vertebra with a triphasic bone implant material increases strength – a biomechanical study. <i>Archives of Orthopaedic and Trauma Surgery</i> , 2020, 140, 1395-1401.	2.4	10
71	A pelvic fracture model for the assessment of treatment options in a laboratory environment. <i>Injury</i> , 2007, 38, 1151-1157.	1.7	9
72	Primary Stiffness of a Modified Transforaminal Lumbar Interbody Fusion Cage With Integrated Screw Fixation. <i>Spine</i> , 2014, 39, E994-E1000.	2.0	9

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73	Biomechanical investigation of lumbar hybrid stabilization in two-level posterior instrumentation. <i>European Spine Journal</i> , 2018, 27, 1887-1894.	2.2	9
74	Effect of pedicle screw augmentation with a self-curing elastomeric material under cranio-caudal cyclic loading—a cadaveric biomechanical study. <i>Journal of Orthopaedic Surgery and Research</i> , 2018, 13, 251.	2.3	9
75	Biomechanical evaluation of a novel dynamic posterior cruciate ligament brace. <i>Clinical Biomechanics</i> , 2016, 33, 20-25.	1.2	8
76	Effect of cage design, supplemental posterior instrumentation and approach on primary stability of a lumbar interbody fusion — A biomechanical in vitro study. <i>Clinical Biomechanics</i> , 2017, 48, 30-34.	1.2	7
77	Biomechanical testing of rectangular humeral shaft prosthesis: higher torsional stability without increased fracture risk. <i>Archives of Orthopaedic and Trauma Surgery</i> , 2011, 131, 267-273.	2.4	6
78	Biomechanical analysis of screw fixation vs. K-wire fixation of a slipped capital femoral epiphysis model. <i>Biomedizinische Technik</i> , 2012, 57, 157-62.	0.8	6
79	Validation of a novel biomechanical test bench for the knee joint with six degrees of freedom. <i>Biomedizinische Technik</i> , 2018, 63, 709-717.	0.8	6
80	Screw tip augmentation leads to improved primary stability in the minimally invasive treatment of displaced intra-articular fractures of the calcaneus: a biomechanical study. <i>International Orthopaedics</i> , 2019, 43, 2175-2181.	1.9	6
81	Single column plate plus other column lag screw fixation vs. both column plate fixation for anterior column with posterior hemitransverse acetabular fractures — a biomechanical analysis using different loading protocols. <i>Injury</i> , 2021, 52, 699-704.	1.7	6
82	Biomechanical in vitro comparison of suture anchors for thumb UCL repair. <i>Archives of Orthopaedic and Trauma Surgery</i> , 2018, 138, 435-442.	2.4	5
83	The Effect of Rod Pattern, Outrigger, and Multiple Screw-Rod Constructs for Surgical Stabilization of the 3-Column Destabilized Cervical Spine - A Biomechanical Analysis and Introduction of a Novel Technique. <i>Neurospine</i> , 2020, 17, 610-629.	2.9	5
84	Modified Lemaire tenodesis reduces anterior cruciate ligament graft forces during internal tibial torque loading. <i>Journal of Experimental Orthopaedics</i> , 2022, 9, 45.	1.8	5
85	Biomechanical Comparison of 2 Anterior Cruciate Ligament Graft Preparation Techniques for Tibial Fixation: Response. <i>American Journal of Sports Medicine</i> , 2015, 43, NP38-NP39.	4.2	4
86	Screw oversizing for anterior cruciate ligament graft fixation in primary and enlarged tibial tunnels: A biomechanical study in a porcine model. <i>Knee</i> , 2018, 25, 774-781.	1.6	4
87	Evaluation of mushroom-shaped allograft for unstable proximal humerus fractures. <i>Archives of Orthopaedic and Trauma Surgery</i> , 2022, 142, 409-416.	2.4	4
88	Migration of two different cementless hip arthroplasty stems in combination with two different heads: a biomechanical in vitro study. <i>Archives of Orthopaedic and Trauma Surgery</i> , 2006, 126, 387-393.	2.4	3
89	Shoulder joint abduction motion test bench: A new shoulder test bench for in vitro experiments with active muscle force simulation. <i>Biomedizinische Technik</i> , 2012, 57, 163-8.	0.8	3
90	Morphological similarities after compression trauma of bovine and human intervertebral discs. Do disc cells have a chance of surviving?. <i>Journal of Orthopaedic Research</i> , 2014, 32, 1198-1207.	2.3	3

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91	Modelling and computation of acrylic bone cement injection and curing within the framework of vertebroplasty. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2014, 14, 121-122.	0.2	3
92	How does a novel knitted titanium nucleus prosthesis change the kinematics of a cervical spine segment? A biomechanical cadaveric study. <i>Clinical Biomechanics</i> , 2019, 63, 134-139.	1.2	3
93	Ultrasound melted polymer sleeve for improved primary pedicle screw anchorage: A novel augmentation technique. <i>Clinical Biomechanics</i> , 2019, 63, 16-20.	1.2	3
94	Soft Active Dynamic Brace for Spinal Deformities. , 2021, , .		3
95	A biomechanical comparison of steel screws versus PLLA and magnesium screws for the Latarjet procedure. <i>Archives of Orthopaedic and Trauma Surgery</i> , 2022, 142, 1091-1098.	2.4	3
96	The effect of stem geometry on stresses within the distal cement mantle in total hip replacement. <i>Technology and Health Care</i> , 2000, 8, 67-73.	1.2	3
97	Active Soft Brace for Scoliotic Spine: A Finite Element Study to Evaluate in-Brace Correction. <i>Robotics</i> , 2022, 11, 37.	3.5	3
98	The three-way stopcock may be a weak component of total intravenous anaesthesia. <i>Acta Anaesthesiologica Scandinavica</i> , 2009, 53, 1173-1175.	1.6	2
99	Actuator and Contact Force Modeling of an Active Soft Brace for Scoliosis. <i>Bioengineering</i> , 2022, 9, 303.	3.5	2
100	Statistical model based analysis of bone mineral density of lumbar spine. <i>International Journal of Computer Assisted Radiology and Surgery</i> , 2009, 4, 239-243.	2.8	1
101	Biomechanical analysis of anterior stabilization techniques for different partial and total vertebral corpectomy defect models. <i>Biomedizinische Technik</i> , 2012, 57, 149-55.	0.8	1
102	Ultrasound melted polymer sleeve for improved screw anchorage in trabecular bone – A novel screw augmentation technique. <i>Clinical Biomechanics</i> , 2016, 33, 79-83.	1.2	1
103	The Influence of Liquids on the Mechanical Properties of Allografts in Bone Impaction Grafting. <i>Biopreservation and Biobanking</i> , 2017, 15, 410-416.	1.0	1
104	Letter to the editor regarding “The quantity of bone cement influences the anchorage of augmented pedicle screws in the osteoporotic spine: A biomechanical human cadaveric study” by Pishnamaz M et al. <i>Clin Biomech</i> 2018;52:14–19. <i>Clinical Biomechanics</i> , 2018, 59, 211.	1.2	1
105	Mallet finger – A modified technique using the finger nail as a fixation point for the temporary immobilization of the distal interphalangeal joint – A biomechanical study. <i>Clinical Biomechanics</i> , 2019, 69, 64-70.	1.2	1
106	Functional and radiographic evaluation of an interspinous device as an adjunct for lumbar interbody fusion procedures. <i>Biomedizinische Technik</i> , 2020, 65, 183-189.	0.8	1
107	Mechanical and Morphological Assessment of an Innovative Textile for Patient Positioning Applications: Comparison to Two Standard Bandage Systems. <i>Materials</i> , 2021, 14, 1508.	2.9	1
108	Nail Versus Plate: A Biomechanical Comparison of a Locking Plate Versus an Intramedullary Nail With an Angular Stable Locking System in a Shoulder Simulator With Active Muscle Forces Using a Two-Part Fracture Model. <i>Journal of Orthopaedic Trauma</i> , 2021, 35, e71-e76.	1.4	1

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109	Implant Materials in Spinal Surgery. , 2012, , 17-21.		1
110	Dynamic locking screws in proximal humeral plate osteosynthesis demonstrate superior fixation properties: a biomechanical study. Journal of Experimental Orthopaedics, 2020, 7, 82.	1.8	1
111	Standardized fracture creation in the distal humerus and the olecranon for surgical training and biomechanical testing. Archives of Orthopaedic and Trauma Surgery, 2022, 142, 3853-3861.	2.4	1
112	A New System for Periprosthetic Fracture Stabilizationâ€”A Biomechanical Comparison. Journal of Clinical Medicine, 2022, 11, 892.	2.4	1
113	A BIOMECHANICAL ANALYSIS OF MICROMOTION DURING CYCLIC LOADING FOR ACL RECONSTRUCTION. Journal of Biomechanics, 2008, 41, S266.	2.1	0
114	Image-guided failure assessment of human trabecular bone â€” Inverse finite element modelling for characterization of elastic properties. Biomedizinische Technik, 2013, 58 Suppl 1, .	0.8	0
115	Biomechanics of Vertebral Fractures and Their Treatment. , 2018, , 395-407.		0
116	Surgical nuances and construct patterns influence construct stiffness in C1-2 stabilizations: a biomechanical study of C1-2 gapping and advanced C1-2 fixation. European Spine Journal, 2021, 30, 1596-1606.	2.2	0
117	Mechanical and Biomechanical Testing of Spinal Implants. , 2012, , 23-26.		0
118	Level Set Segmentation of Lumbar Vertebrae Using Appearance Models. Informatik Aktuell, 2008, , 46-50.	0.6	0