Marjolein Christine Hermance van der Meulen

List of Publications by Citations

140 papers	7,869 citations	45 h-index	87 g-index
148 ext. papers	8,809 ext. citations	4 avg, IF	5.75 L-index

#	Paper	IF	Citations
140	Atypical subtrochanteric and diaphyseal femoral fractures: second report of a task force of the American Society for Bone and Mineral Research. *Journal of Bone and Mineral Research*, **2014**, 29, 1-23	6.3	935
139	Atypical subtrochanteric and diaphyseal femoral fractures: report of a task force of the American Society for Bone and Mineral Research. *Journal of Bone and Mineral Research*, **2010**, 25, 2267-94	6.3	840
138	Association of low-energy femoral fractures with prolonged bisphosphonate use: a case control study. *Osteoporosis International*, **2009**, 20, 1353-62	5.3	291
137	Understanding bone strength: size isn't everything. *Bone*, **2001**, 29, 101-4	4.7	211
136	A mathematical framework to study the effects of growth factor influences on fracture healing. *Journal of Theoretical Biology*, **2001**, 212, 191-209	2.3	191
135	Mesenchymal stem cells and insulin-like growth factor-I gene-enhanced mesenchymal stem cells improve structural aspects of healing in equine flexor digitorum superficialis tendons. *Journal of Orthopaedic Research*, **2009**, 27, 1392-8	3.8	189
134	Loading induces site-specific increases in mineral content assessed by microcomputed tomography of the mouse tibia. *Bone*, **2005**, 36, 1030-8	4.7	186
133	Mechanical factors in bone growth and development. *Bone*, **1996**, 18, 5S-10S	4.7	176
132	Why mechanobiology? A survey article. *Journal of Biomechanics*, **2002**, 35, 401-14	2.9	175
131	Insulin-like growth factor-I improves cellular and molecular aspects of healing in a collagenase-induced model of flexor tendinitis. *Journal of Orthopaedic Research*, **2002**, 20, 910-9	3.8	172
130	Mechanobiologic influences in long bone cross-sectional growth. *Bone*, **1993**, 14, 635-42	4.7	156
129	Establishing biomechanical mechanisms in mouse models: practical guidelines for systematically evaluating phenotypic changes in the diaphyses of long bones. *Journal of Bone and Mineral Research*, **2015**, 30, 951-66	6.3	154
128	Effects of surface roughness and maximum load on the mechanical properties of cancellous bone measured by nanoindentation. *Journal of Biomedical Materials Research - Part A*, **2006**, 77, 426-35	5.4	134
127	Beneficial effects of moderate, early loading and adverse effects of delayed or excessive loading on bone healing. *Journal of Biomechanics*, **2003**, 36, 1069-77	2.9	123
126	In vivo cyclic compression causes cartilage degeneration and subchondral bone changes in mouse tibiae. *Arthritis and Rheumatism*, **2013**, 65, 1569-78		119
125	Contribution of mineral to bone structural behavior and tissue mechanical properties. *Calcified Tissue International*, **2010**, 87, 450-60	3.9	104
124	In vivo cyclic axial compression affects bone healing in the mouse tibia. *Journal of Orthopaedic Research*, **2006**, 24, 1679-86	3.8	99

123	Biomechanical comparison of posterior internal fixation techniques for unstable pelvic fractures. *Journal of Orthopaedic Trauma*, **1996**, 10, 517-22	3.1	98
122	Spatial variation in osteonal bone properties relative to tissue and animal age. *Journal of Bone and Mineral Research*, **2009**, 24, 1271-81	6.3	96
121	Tibial compression is anabolic in the adult mouse skeleton despite reduced responsiveness with aging. *Bone*, **2011**, 49, 439-46	4.7	93
120	Effects of tissue age on bone tissue material composition and nanomechanical properties in the rat cortex. *Journal of Biomedical Materials Research - Part A*, **2010**, 92, 1048-56	5.4	93
119	Age-related differences in cross-sectional geometry of the forearm bones in healthy women. *Calcified Tissue International*, **1994**, 54, 113-8	3.9	90
118	Whole bone mechanics and bone quality. *Clinical Orthopaedics and Related Research*, **2011**, 469, 2139-49	2.2	89
117	Finite element models predict cancellous apparent modulus when tissue modulus is scaled from specimen CT-attenuation. *Journal of Biomechanics*, **2004**, 37, 613-21	2.9	88
116	Body mass is the primary determinant of midfemoral bone acquisition during adolescent growth. *Bone*, **1996**, 19, 519-26	4.7	86
115	Determinants of femoral geometry and structure during adolescent growth. *Journal of Orthopaedic Research*, **1996**, 14, 22-9	3.8	81
114	Female mice lacking estrogen receptor-alpha in osteoblasts have compromised bone mass and strength. *Journal of Bone and Mineral Research*, **2014**, 29, 370-9	6.3	80
113	Mechanical load increases in bone formation via a sclerostin-independent pathway. *Journal of Bone and Mineral Research*, **2014**, 29, 2456-67	6.3	79
112	Inhibition of osteoclastogenesis and inflammatory bone resorption by targeting BET proteins and epigenetic regulation. *Nature Communications*, **2014**, 5, 5418	17.4	78
111	Effects of voluntary exercise on bone mineral content in rats. *Journal of Bone and Mineral Research*, **1991**, 6, 289-96	6.3	76
110	Alterations to the Gut Microbiome Impair Bone Strength and Tissue Material Properties. *Journal of Bone and Mineral Research*, **2017**, 32, 1343-1353	6.3	74
109	Cancellous bone adaptation to tibial compression is not sex dependent in growing mice. *Journal of Applied Physiology*, **2010**, 109, 685-91	3.7	74
108	Non-invasive mouse models of post-traumatic osteoarthritis. *Osteoarthritis and Cartilage*, **2015**, 23, 1627-38	6.3	70
107	Nanoscale X-ray microscopic imaging of mammalian mineralized tissue. *Microscopy and Microanalysis*, **2010**, 16, 327-36	0.5	70
106	DSPP effects on in vivo bone mineralization. *Bone*, **2008**, 43, 983-90	4.7	67

105	Cancellous bone adaptation to in vivo loading in a rabbit model. *Bone*, **2006**, 38, 871-7	4.7	66
104	In vivo tibial compression decreases osteolysis and tumor formation in a human metastatic breast cancer model. *Journal of Bone and Mineral Research*, **2013**, 28, 2357-67	6.3	64
103	Genetic variation in structure-function relationships for the inbred mouse lumbar vertebral body. *Journal of Bone and Mineral Research*, **2005**, 20, 817-27	6.3	64
102	Microstructure and nanomechanical properties in osteons relate to tissue and animal age. *Journal of Biomechanics*, **2011**, 44, 277-84	2.9	58
101	MYC-dependent oxidative metabolism regulates osteoclastogenesis via nuclear receptor ERR□ *Journal of Clinical Investigation*, **2017**, 127, 2555-2568	15.9	56
100	Stability of open-book pelvic fractures using a new biomechanical model of single-limb stance. *Journal of Orthopaedic Trauma*, **1997**, 11, 590-3	3.1	54
99	Improved method for analysis of whole bone torsion tests. *Journal of Bone and Mineral Research*, **1994**, 9, 1459-65	6.3	53
98	Understanding Bone Strength Is Not Enough. *Journal of Bone and Mineral Research*, **2017**, 32, 1157-1162	6.3	47
97	Bone mass is preserved and cancellous architecture altered due to cyclic loading of the mouse tibia after orchidectomy. *Journal of Bone and Mineral Research*, **2008**, 23, 663-71	6.3	47
96	Developmental mechanics determine long bone allometry. *Journal of Theoretical Biology*, **1995**, 172, 323-7	2.3	47
95	Rabbit knee immobilization: bone remodeling precedes cartilage degradation. *Journal of Orthopaedic Research*, **1992**, 10, 88-95	3.8	45
94	Variations in nanomechanical properties and tissue composition within trabeculae from an ovine model of osteoporosis and treatment. *Bone*, **2013**, 52, 326-36	4.7	44
93	Transcriptional profiling of cortical versus cancellous bone from mechanically-loaded murine tibiae reveals differential gene expression. *Bone*, **2016**, 86, 22-9	4.7	43
92	The effect of lead on bone mineral properties from female adult C57/BL6 mice. *Bone*, **2010**, 47, 888-94	4.7	43
91	In vivo tibial stiffness is maintained by whole bone morphology and cross-sectional geometry in growing female mice. *Journal of Biomechanics*, **2010**, 43, 2689-94	2.9	43
90	The effects of metabolic syndrome, obesity, and the gut microbiome on load-induced osteoarthritis. *Osteoarthritis and Cartilage*, **2019**, 27, 129-139	6.2	43
89	A method for isolating high quality RNA from mouse cortical and cancellous bone. *Bone*, **2014**, 68, 1-5	4.7	42
88	Quasistatic and dynamic nanomechanical properties of cancellous bone tissue relate to collagen content and organization. *Journal of Materials Research*, **2006**, 21, 2106-2117	2.5	42

87	Role for beta1 integrins in cortical osteocytes during acute musculoskeletal disuse. *Matrix Biology*, **2008**, 27, 609-18	11.4	41
86	MicroCT morphometry analysis of mouse cancellous bone: intra- and inter-system reproducibility. *Bone*, **2011**, 49, 580-7	4.7	40
85	Hindlimb suspension diminishes femoral cross-sectional growth in the rat. *Journal of Orthopaedic Research*, **1995**, 13, 700-7	3.8	39
84	Effects of Deletion of ER in Osteoblast-Lineage Cells on Bone Mass and Adaptation to Mechanical Loading Differ in Female and Male Mice. *Journal of Bone and Mineral Research*, **2015**, 30, 1468-80	6.3	38
83	A High Resolution, Hard X-ray Bio-imaging Facility at SSRL. *Synchrotron Radiation News*, **2008**, 21, 17-26	0.6	37
82	The effect of systemically administered rhIGF-I/IGFBP-3 complex on cortical bone strength and structure in ovariectomized rats. *Bone*, **1995**, 16, 559-65	4.7	37
81	A rare case of a bisphosphonate-induced peri-prosthetic femoral fracture. *Journal of Bone and Joint Surgery: British Volume*, **2012**, 94, 994-7		36
80	Role of parathyroid hormone in the mechanosensitivity of fracture healing. *Journal of Orthopaedic Research*, **2007**, 25, 1474-80	3.8	35
79	Factors influencing changes in articular cartilage following hemiarthroplasty in sheep. *Journal of Orthopaedic Research*, **2002**, 20, 669-75	3.8	35
78	The effects of loading on cancellous bone in the rabbit. *Clinical Orthopaedics and Related Research*, **2009**, 467, 2000-6	2.2	34
77	Mechanical and geometric changes in the growing femora of BMP-5 deficient mice. *Bone*, **1996**, 18, 601-7	4.7	34
76	Load-induced changes in bone stiffness and cancellous and cortical bone mass following tibial compression diminish with age in female mice. *Journal of Experimental Biology*, **2014**, 217, 1775-83	3	33
75	Reduced tissue-level stiffness and mineralization in osteoporotic cancellous bone. *Calcified Tissue International*, **2014**, 95, 125-31	3.9	33
74	Atypical subtrochanteric femoral shaft fractures: role for mechanics and bone quality. *Arthritis Research and Therapy*, **2012**, 14, 220	5.7	32
73	Cancellous bone osseointegration is enhanced by in vivo loading. *Tissue Engineering - Part C: Methods*, **2010**, 16, 1399-406	2.9	32
72	Fan-beam densitometry of the growing skeleton: are we measuring what we think we are?. *Journal of Clinical Densitometry*, **2005**, 8, 57-64	3.5	32
71	Role of subchondral bone properties and changes in development of load-induced osteoarthritis in mice. *Osteoarthritis and Cartilage*, **2017**, 25, 2108-2118	6.2	31
70	Effects of disrupted beta1-integrin function on the skeletal response to short-term hindlimb unloading in mice. *Journal of Applied Physiology*, **2005**, 98, 690-6	3.7	30

69	BMP-5 deficiency alters chondrocytic activity in the mouse proximal tibial growth plate. *Bone*, **1999**, 24, 211-6	4.7	30
68	Skeletal phenotype of growing transgenic mice that express a function-perturbing form of beta1 integrin in osteoblasts. *Calcified Tissue International*, **2005**, 76, 39-49	3.9	29
67	Progressive cell-mediated changes in articular cartilage and bone in mice are initiated by a single session of controlled cyclic compressive loading. *Journal of Orthopaedic Research*, **2016**, 34, 1941-1949	3.8	26
66	Murine Axial Compression Tibial Loading Model to Study Bone Mechanobiology: Implementing the Model and Reporting Results. *Journal of Orthopaedic Research*, **2020**, 38, 233-252	3.8	24
65	Intermittent Parathyroid Hormone Enhances Cancellous Osseointegration of a Novel Murine Tibial Implant. *Journal of Bone and Joint Surgery - Series A*, **2015**, 97, 1074-83	5.6	23
64	Mouse models to evaluate the role of estrogen receptor □n skeletal maintenance and adaptation. *Annals of the New York Academy of Sciences*, **2017**, 1410, 85-92	6.5	23
63	The Effect of Osteoporosis Treatments on Fatigue Properties of Cortical Bone Tissue. *Bone Reports*, **2015**, 2, 8-13	2.6	20
62	Dynamic structure and composition of bone investigated by nanoscale infrared spectroscopy. *PLoS ONE*, **2018**, 13, e0202833	3.7	19
61	Intermittent PTH administration and mechanical loading are anabolic for periprosthetic cancellous bone. *Journal of Orthopaedic Research*, **2015**, 33, 163-73	3.8	18
60	The effects of PTH, loading and surgical insult on cancellous bone at the bone-implant interface in the rabbit. *Bone*, **2013**, 52, 718-24	4.7	18
59	Pause insertions during cyclic in vivo loading affect bone healing. *Clinical Orthopaedics and Related Research*, **2008**, 466, 1232-8	2.2	18
58	In vivo axial loading of the mouse tibia. *Methods in Molecular Biology*, **2015**, 1226, 99-115	1.4	18
57	Full-field transmission x-ray microscopy for bio-imaging. *Journal of Physics: Conference Series*, **2009**, 186, 12081	0.3	15
56	DXA-derived section modulus and bone mineral content predict long-bone torsional strength. *Acta Orthopaedica*, **1999**, 70, 71-6		15
55	Transient overexpression of sonic hedgehog alters the architecture and mechanical properties of trabecular bone. *Journal of Bone and Mineral Research*, **2009**, 24, 1598-607	6.3	14
54	Nanoscale examination of microdamage in sheep cortical bone using synchrotron radiation transmission x-ray microscopy. *PLoS ONE*, **2013**, 8, e57942	3.7	14
53	Osteoarthritis: Pathology, Mouse Models, and Nanoparticle Injectable Systems for Targeted Treatment. *Annals of Biomedical Engineering*, **2016**, 44, 2062-75	4.7	14
52	Osteocalcin affects bone mineral and mechanical properties in female mice. *Bone*, **2019**, 128, 115031	4.7	13

51	Assessing the stiffness of spinal fusion in animal models. *HSS Journal*, **2006**, 2, 12-8	2	13
50	Injectable mechanical pillows for attenuation of load-induced post-traumatic osteoarthritis. *International Journal of Energy Production and Management*, **2019**, 6, 211-219	5.3	12
49	Method for calculating G, GI, and GII to simulate crack growth in 2D, multiple-material structures. *Engineering Fracture Mechanics*, **2015**, 140, 106-126	4.2	12
48	The aging spine: new technologies and therapeutics for the osteoporotic spine. *European Spine Journal*, **2003**, 12 Suppl 2, S147-54	2.7	12
47	Improved prediction of rat cortical bone mechanical behavior using composite beam theory to integrate tissue level properties. *Journal of Biomechanics*, **2012**, 45, 2784-90	2.9	11
46	Kinematics of meniscal- and ACL-transected mouse knees during controlled tibial compressive loading captured using roentgen stereophotogrammetry. *Journal of Orthopaedic Research*, **2017**, 35, 353-360	3.8	9
45	An in vivo model of a mechanically-induced bone marrow lesion. *Journal of Biomechanics*, **2017**, 64, 258-261	2.9	9
44	Low-level cyclic tibial compression attenuates early osteoarthritis progression after joint injury in mice. *Osteoarthritis and Cartilage*, **2019**, 27, 1526-1536	6.2	9
43	Collagen XI mutation lowers susceptibility to load-induced cartilage damage in mice. *Journal of Orthopaedic Research*, **2018**, 36, 711-720	3.8	9
42	Tissue-level remodeling simulations of cancellous bone capture effects of in vivo loading in a rabbit model. *Journal of Biomechanics*, **2015**, 48, 875-82	2.9	9
41	Correcting fan-beam magnification in clinical densitometry scans of growing subjects. *Journal of Clinical Densitometry*, **2009**, 12, 322-9	3.5	9
40	Mechanobiology of femoral neck structure during adolescence. *Journal of Rehabilitation Research and Development*, **2000**, 37, 201-8		9
39	Effect of ulnar ostectomy on intra-articular pressure mapping and contact mechanics of the congruent and incongruent canine elbow ex vivo. *Veterinary Surgery*, **2014**, 43, 339-46	1.7	8
38	Trabecular bone adaptation to loading in a rabbit model is not magnitude-dependent. *Journal of Orthopaedic Research*, **2013**, 31, 930-4	3.8	8
37	In vivo and in vitro analysis of rat lumbar spine mechanics. *Clinical Orthopaedics and Related Research*, **2010**, 468, 2695-703	2.2	8
36	Correspondence between theoretical models and dual energy x-ray absorptiometry measurements of femoral cross-sectional growth during adolescence. *Journal of Orthopaedic Research*, **1997**, 15, 473-6	3.8	8
35	Knockouts of Se-glutathione peroxidase-1 and Cu,Zn superoxide dismutase exert different impacts on femoral mechanical performance of growing mice. *Molecular Nutrition and Food Research*, **2008**, 52, 1334-9	5.9	8
34	Mechanics in skeletal development, adaptation and disease. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2000**, 358, 565-578	3	8

33	Simulation of the behaviour of the L1 vertebra for different material properties and loading conditions. *Computer Methods in Biomechanics and Biomedical Engineering*, **2013**, 16, 736-46	2.1	7
32	Spatial periodicity in growth plate shear mechanical properties is disrupted by vitamin D deficiency. *Journal of Biomechanics*, **2013**, 46, 1597-603	2.9	7
31	Effect of the Proximal Abducting Ulnar Osteotomy on Intra-Articular Pressure Distribution and Contact Mechanics of Congruent and Incongruent Canine Elbows Ex Vivo. *Veterinary Surgery*, **2016**, 45, 347-55	1.7	7
30	Hard X-ray Full Field Nano-imaging of Bone and Nanowires at SSRL. *AIP Conference Proceedings*, **2010**, 1234, 79-82	0	6
29	Ceramic composite with gentamicin decreases persistent infection and increases bone formation in a rat model of debrided osteomyelitis. *Journal of Bone and Joint Infection*, **2021**, 6, 283-293	2.7	5
28	Mechanobiological Mechanisms of Load-Induced Osteoarthritis in the Mouse Knee. *Journal of Biomechanical Engineering*, **2019**, 141,	2.1	4
27	Increased Bone Accrual in Premenarcheal Gymnasts: A Longitudinal Study. *Pediatric Exercise Science* , **2005**, 17, 149-160	2	4
26	Mechanical Determinants of Peak Bone Mass **1999**, 105-114		3
25	Early inhibition of subchondral bone remodeling slows load-induced posttraumatic osteoarthritis development in mice. *Journal of Bone and Mineral Research*, **2021**, 36, 2027-2038	6.3	3
24	Knee fibrosis is associated with the development of osteoarthritis in a murine model of tibial compression. *Journal of Orthopaedic Research*, **2021**, 39, 1030-1040	3.8	3
23	Low bone mass resulting from impaired estrogen signaling in bone increases severity of load-induced osteoarthritis in female mice. *Bone*, **2021**, 152, 116071	4.7	3
22	A High Resolution Full Field Transmission X-ray Microscope at SSRL. *AIP Conference Proceedings*, **2007**,	0	2
21	Quasi-static and Dynamic Nanoindentation Testing of Lamellar and Inter-lamellar Trabecular Bone. *Materials Research Society Symposia Proceedings*, **2003**, 778, 3141		2
20	Effects of Surface Roughness and Maximum Load on the Mechanical Properties of Cancellous Bone Measured by Nanoindentation. *Materials Research Society Symposia Proceedings*, **2004**, 823, W8.5.1		2
19	Skeletal Development **2001**, 471-488		2
18	Biomechanics of Bone **2010**, 157-179		2
17	Increased anabolic bone response in Dkk1 KO mice following tibial compressive loading. *Bone*, **2020** , 131, 115054	4.7	2
16	Articular Cartilage Tidemark in the Murine Knee Advances with Mechanical Loading **2013**,		1

List of Publications

15	Progress in understanding disuse osteopenia. *Current Opinion in Orthopaedics*, **2005**, 16, 325-330		1
14	Bone mass and adaptation to mechanical loading are sexually dimorphic in adult osteoblast-specific ER knockout mice.. *Bone*, **2022**, 116349	4.7	1
13	T cells Mediate Progression of Load-Induced Osteoarthritis		1
12	Factors Contributing to Atypical Femoral Fractures **2016**, 125-136		1
11	Biomechanics of Bone. *Contemporary Endocrinology*, **2020**, 185-209	0.3	1
10	Potential influences on optimizing long-term musculoskeletal health in children and adolescents with X-linked hypophosphatemia (XLH).. *Orphanet Journal of Rare Diseases*, **2022**, 17, 30	4.2	0
9	Obesity and load-induced posttraumatic osteoarthritis in the absence of fracture or surgical trauma. *Journal of Orthopaedic Research*, **2021**, 39, 1007-1016	3.8	0
8	Adaptation of skeletal structure to mechanical loading **2021**, 337-356		0
7	Adaptation of Skeletal Structure to Mechanical Loading **2013**, 477-495		
6	Adele Ludin Boskey, PhD. *Journal of Bone and Mineral Research*, **2017**, 32, 1597-1598	6.3	
5	Skeletal Mechanoresponsiveness: Effects of Sex Hormones. *Studies in Mechanobiology, Tissue Engineering and Biomaterials*, **2012**, 217-234	0.5	
4	Collagen Content and Organization Relate to Bone Nanomechanical Properties. *Materials Research Society Symposia Proceedings*, **2005**, 874, 1		
3	Impacts of GPX4 Haploid Insufficiency on Murine Bone Biomechanical Properties. *FASEB Journal*, **2006**, 20, A1068	0.9	
2	Skeletal Development: Mechanical Consequences of Growth, Aging, and Disease **2008**, 563-580		
1	Systemic osteoprotegerin does not improve peri-implant bone volume or osseointegration in rabbits. *Journal of Orthopaedic Research*, **2021**, 39, 1611-1621	3.8	