Prediction of femoral fracture load using automated finite element modeling

DOI: 10.1016/s0021-9290(97)00123-1
Journal of Biomechanics, 1998, 31, 125-33.

#	Paper	IF	Citations
504	A cellular solid criterion for predicting the axial-shear failure properties of bovine trabecular bone. **1999**, 121, 414-22		65
503	Load transfer analysis of the distal radius from in-vivo high-resolution CT-imaging. *Journal of Biomechanics*, **1999**, 32, 821-8	2.9	85
502	Banded matrix approach to Finite Element modelling for soft tissue simulation. **1999**, 4, 203-212		26
501	Risk of fracture in elderly patients: a new predictive index based on bone mineral density and finite element analysis. **1999**, 60, 23-33		48
500	Effect of local density changes on the failure load of the proximal femur. **1999**, 17, 661-7		51
499	Advanced imaging of bone macro and micro structure. **1999**, 25, 149-52		55
498	Perspectives on bone mechanical properties and adaptive response to mechanical challenge. **1999**, 2, 423-33		31
497	Tibial plateau fracture as a measure of early estrogen-dependent bone fragility in rats. **2000**, 18, 326-32		2
496	Femoral structure and stiffness in patients with femoral neck fracture. **2000**, 18, 443-8		42
495	The open section effect in a long bone with a longitudinal defect - a theoretical modeling study. *Journal of Biomechanics*, **2000**, 33, 1517-22	2.9	22
494	Prediction of femoral fracture load using finite element models: an examination of stress- and strain-based failure theories. *Journal of Biomechanics*, **2000**, 33, 209-14	2.9	203
493	Relationships between femoral fracture loads for two load configurations. *Journal of Biomechanics*, **2000**, 33, 499-502	2.9	55
492	Finite element analyses and simulations in biomedicine: a bibliography (1985-1999). **2000**, 17, 813-856		3
491	Biomechanics of trabecular bone. **2001**, 3, 307-33		532
490	Optical processing of radiographic trabecular pattern versus bone mineral density of proximal femur as measures of bone strength. **2001**, 4, 121-9		3
489	Biomechanics of Age-Related Fractures. **2001**, 509-531		31
488	Effect of force direction on femoral fracture load for two types of loading conditions. **2001**, 19, 539-44		111

487	Improved prediction of proximal femoral fracture load using nonlinear finite element models. **2001**, 23, 165-73	235
486	Prediction of fracture location in the proximal femur using finite element models. **2001**, 23, 657-64	155
485	Reply to letter. *Journal of Biomechanics*, **2001**, 34, 561	2.9
484	A comparison between automatically generated linear and parabolic tetrahedra when used to mesh a human femur. **2001**, 215, 85-94	38
483	Predicting the failure response of cement-bone constructs using a non-linear fracture mechanics approach. **2002**, 124, 462-70	13
482	Quantitative computed tomography estimates of the mechanical properties of human vertebral trabecular bone. **2002**, 20, 801-5	186
481	Reproducibility and side differences of mechanical tests for determining the structural strength of the proximal femur. **2004**, 19, 379-85	79
480	Stress and strain distribution in the intact canine femur: finite element analysis. **2003**, 25, 387-95	39
479	Comparison of in situ and in vitro CT scan-based finite element model predictions of proximal femoral fracture load. **2003**, 25, 781-7	178
478	Finite element models predict in vitro vertebral body compressive strength better than quantitative computed tomography. **2003**, 33, 744-50	426
477	Mechanical strength of a femoral reconstruction in paediatric oncology: a finite element study. **2003**, 217, 111-9	34
476	Quantitative computed tomography-based finite element models of the human lumbar vertebral body: effect of element size on stiffness, damage, and fracture strength predictions. **2003**, 125, 434-8	89
475	Biomechanically derived guideline equations for burst fracture risk prediction in the metastatically involved spine. **2003**, 16, 180-5	37
474	Finite element modeling of the human thoracolumbar spine. **2003**, 28, 559-65	85
473	A New Approach for Improving the Prediction of Femoral Neck Fracture. **2003**, 13, 74-79	
472	Prediction of the strength and fracture location of the femoral neck by CT-based finite-element method: a preliminary study on patients with hip fracture. **2004**, 9, 545-50	44
471	Updating a 3-D vertebral body finite element model using 2-D images. **2004**, 26, 329-33	5
470	Modelling bone tissue fracture and healing: a review. **2004**, 71, 1809-1840	319

469	Predicting proximal femoral strength using structural engineering models. **2005**, 219-28		174
468	Predicting the strength of femoral shafts with and without metastatic lesions. **2005**, 439, 161-70		35
467	Determinants of skeletal fragility. **2005**, 19, 897-911		136
466	Towards automated 3D finite element modeling of direct fiber reinforced composite dental bridge. **2005**, 74, 520-8		50
465	Differences in hip quantitative computed tomography (QCT) measurements of bone mineral density and bone strength between glucocorticoid-treated and glucocorticoid-naive postmenopausal women. **2005**, 16, 642-50		53
464	Finite element prediction of proximal femoral fracture patterns under different loads. **2005**, 127, 9-14		41
463	Use of finite element analysis to assess bone strength. **2005**, 2, 8-19		9
462	Prediction of torsional failure in 22 cadaver femora with and without simulated subtrochanteric metastatic defects: a CT scan-based finite element analysis. **2006**, 77, 474-81		25
461	Comparison of micro-level and continuum-level voxel models of the proximal femur. *Journal of Biomechanics*, **2006**, 39, 2951-7	2.9	84
460	Prediction of failure load using micro-finite element analysis models: Toward in vivo strength assessment. **2006**, 3, 221-9		29
459	Biomechanics of Vertebral Bone. **2006**, 63-98		7
458	Biomechanical Study on Distal Filling Effects in Cementless Total Hip Replacement. **2006**, 49, 147-156		3
457	Nonlinear finite element model predicts vertebral bone strength and fracture site. **2006**, 31, 1789-94		140
456	Finite Element Modeling of the Cortical Bone Region Using Clinical CT Images. **2006**, 1, 316-326		1
455	Advanced imaging assessment of bone quality. **2006**, 1068, 410-28		80
454	Effects of teriparatide and alendronate on vertebral strength as assessed by finite element modeling of QCT scans in women with osteoporosis. **2007**, 22, 149-57		196
453	Biomechanics of osteoporotic fractures. **2006**, 4, 143-154		9
452	Imaging assessment of bone quality in osteoporosis. **2006**, 4, 213-224		6

451	Subject-specific finite element models of long bones: An in vitro evaluation of the overall accuracy. *Journal of Biomechanics*, **2006**, 39, 2457-67	2.9	190
450	Finite-element modeling of bones from CT data: sensitivity to geometry and material uncertainties. **2006**, 53, 2194-200		74
449	The stability of the femoral component of a minimal invasive total hip replacement system. **2006**, 220, 465-72		6
448	A CT-based high-order finite element analysis of the human proximal femur compared to in-vitro experiments. **2007**, 129, 297-309		108
447	Noninvasive assessments of bone strength. **2007**, 14, 451-7		15
446	Investigation into the affect of cementing techniques on load transfer in the resurfaced femoral head: a multi-femur finite element analysis. **2007**, 22, 422-30		53
445	Hip resurfacing femoral neck fracture influenced by valgus placement. **2007**, 465, 71-9		73
444	Simulation of hip fracture in sideways fall using a 3D finite element model of pelvis-femur-soft tissue complex with simplified representation of whole body. **2007**, 29, 1167-78		80
443	Prediction of strength and strain of the proximal femur by a CT-based finite element method. *Journal of Biomechanics*, **2007**, 40, 1745-53	2.9	309
442	Biomechanical response of the pubic symphysis in lateral pelvic impacts: a finite element study. *Journal of Biomechanics*, **2007**, 40, 2758-66	2.9	73
441	In vitro replication of spontaneous fractures of the proximal human femur. *Journal of Biomechanics*, **2007**, 40, 2837-45	2.9	97
440	Anisotropic finite element modeling for patient-specific mandible. **2007**, 88, 197-209		29
439	The course of osteons in the compact bone of the human proximal femur with clinical and biomechanical significance. **2007**, 29, 201-7		24
438	Constitutive Modeling and Algorithmic Implementation of a Plasticity-like Model for Trabecular Bone Structures. **2007**, 40, 61-72		22
437	The use of sparse CT datasets for auto-generating accurate FE models of the femur and pelvis. *Journal of Biomechanics*, **2007**, 40, 26-35	2.9	65
436	Off-axis loads cause failure of the distal radius at lower magnitudes than axial loads: a finite element analysis. *Journal of Biomechanics*, **2007**, 40, 1670-5	2.9	61
435	An accurate estimation of bone density improves the accuracy of subject-specific finite element models. *Journal of Biomechanics*, **2008**, 41, 2483-91	2.9	246
434	Effects of trochanteric soft tissue thickness and hip impact velocity on hip fracture in sideways fall through 3D finite element simulations. *Journal of Biomechanics*, **2008**, 41, 2834-42	2.9	75

433	Predicting distal femur bone strength in a murine model of tumor osteolysis. **2008**, 466, 1271-8		15
432	Micromechanics-based conversion of CT data into anisotropic elasticity tensors, applied to FE simulations of a mandible. **2008**, 36, 108-22		95
431	Subject-specific finite element models implementing a maximum principal strain criterion are able to estimate failure risk and fracture location on human femurs tested in vitro. *Journal of Biomechanics*, **2008**, 41, 356-67	2.9	252
430	Prediction of mechanical properties of cortical bone by quantitative computed tomography. **2008**, 30, 321-8		71
429	A modified method for assigning material properties to FE models of bones. **2008**, 30, 444-53		102
428	Considerations for development of surrogate endpoints for antifracture efficacy of new treatments in osteoporosis: a perspective. **2008**, 23, 1155-67		52
427	A Method to Improve Experimental Validation of Finite-Element Models of Long Bones. **2008**, 46, 242-251		1
426	Macro- and Microimaging of Bone Architecture. **2008**, 1905-1942		3
425	Bone mass and architecture determination: state of the art. **2008**, 22, 737-64		85
424	Biomechanics of Age-Related Fractures. **2008**, 601-623		6
423	Clinical use of quantitative computed tomography and peripheral quantitative computed tomography in the management of osteoporosis in adults: the 2007 ISCD Official Positions. **2008**, 11, 123-62		326
422	An anatomical subject-specific FE-model for hip fracture load prediction. **2008**, 11, 105-11		47
421	Multiscale investigation of the functional properties of the human femur. **2008**, 366, 3319-41		33
420	Quantification of bone structural parameters and mechanical competence at the distal radius. **2008**, 22, S66-72		11
419	Qualitative and quantitative assessment of bone fragility and fracture healing using conventional radiography and advanced imaging technologies--focus on wrist fracture. **2008**, 22, S83-90		20
418	In vivo assessment of lumbar vertebral strength in elderly women using computed tomography-based nonlinear finite element model. **2008**, 33, 27-32		49
417	Biomechanics of Bone and Age-Related Fractures. **2008**, 29-51		12
416	Development of Human Lower Limb and Pelvis FE Models for Adult and the Elderly. **2009**,		10

415	EVALUATION AND MINIMIZATION OF GEOMETRIC RECONSTRUCTION ERRORS IN FEM MODELS GENERATED FROM CT-SCAN IMAGES. **2009**, 09, 301-327		3
414	Basic research in orthopedic surgery: Current trends and future directions. **2009**, 43, 318-23		8
413	Effect of an UHMWPE patellar component on stress fields in the patella: a finite element analysis. **2009**, 17, 71-82		3
412	Assessment of vertebral fracture risk and therapeutic effects of alendronate in postmenopausal women using a quantitative computed tomography-based nonlinear finite element method. **2009**, 20, 801-10		79
411	DXA-based hip structural analysis of once-weekly bisphosphonate-treated postmenopausal women with low bone mass. **2009**, 20, 911-21		29
410	Comparison of 3D finite element analysis derived stiffness and BMD to determine the failure load of the excised proximal femur. **2009**, 31, 668-72		36
409	A fracture risk assessment model of the femur in children with osteogenesis imperfecta (OI) during gait. **2009**, 31, 1043-8		25
408	Use of a statistical model of the whole femur in a large scale, multi-model study of femoral neck fracture risk. *Journal of Biomechanics*, **2009**, 42, 2171-6	2.9	80
407	In vitro fatigue crack analysis of the Lubinus SPII cemented hip stem. **2009**, 16, 1294-1302		9
406	Finite element analysis of the proximal femur and hip fracture risk in older men. **2009**, 24, 475-83		199
405	Reduction in proximal femoral strength due to long-duration spaceflight. **2009**, 44, 449-53		179
404	Identify fracture-critical regions inside the proximal femur using statistical parametric mapping. **2009**, 44, 596-602		50
403	Prediction of proximal femur strength using a CT-based nonlinear finite element method: differences in predicted fracture load and site with changing load and boundary conditions. **2009**, 45, 226-31		111
402	Bone fracture risk estimation based on image similarity. **2009**, 45, 560-7		13
401	Pathological fracture prediction in patients with metastatic lesions can be improved with quantitative computed tomography based computer models. **2009**, 45, 777-83		67
400	Examination of femoral-neck structure using finite element model and bone mineral density using dual-energy X-ray absorptiometry. **2009**, 24, 47-52		12
399	Subject specific finite element analysis of stress shielding around a cementless femoral stem. **2009**, 24, 196-202		44
398	Augmentation with silicone stabilizes proximal femur fractures: an in vitro biomechanical study. **2009**, 24, 286-90		20

397	A Finite-Element Biomechanical Model for Evaluating Buttock Tissue Loads in Seated Individuals with Spinal Cord Injury. **2009**, 181-205		1
396	Patient-specific finite element model of the hip muscles and bones. **2009**, 18, 117-129		1
395	Prediction of vertebral strength under loading conditions occurring in activities of daily living using a computed tomography-based nonlinear finite element method. **2009**, 34, 1464-9		36
394	Multi-level patient-specific modelling of the proximal femur. A promising tool to quantify the effect of osteoporosis treatment. **2009**, 367, 2079-93		27
393	Mechanical Therapeutic Effects in Osteoporotic L1-Vertebrae Evaluated by Nonlinear Patient-specific Finite Element Analysis. **2010**, 5, 499-514		6
392	Biomechanical Analysis of Implant Treatment for Fully Edentulous Maxillas. **2010**, 5, 526-538		2
391	Assessment of Mechanical Stability and Safety for Fully Edentulous Maxilla with Dental Implants. **2010**, 4, 953-962		2
390	Multiscale modelling and nonlinear finite element analysis as clinical tools for the assessment of fracture risk. **2010**, 368, 2653-68		41
389	Bone densitometry and true BMD accuracy for predicting fractures: what are the alternatives?. **2010**, 5, 371-385		3
388	Mechanical Studies on Biomaterials for Reconstruction of Lower Limb Functions. **2010**, 57, 293-297		
387	The structure of the femoral neck: A physical dissection with emphasis on the internal trabecular system. **2010**, 192, 168-77		15
386	Mechanical evaluation by patient-specific finite element analyses demonstrates therapeutic effects for osteoporotic vertebrae. **2010**, 3, 31-40		22
385	Effects of internal stress concentrations in plantar soft-tissue--A preliminary three-dimensional finite element analysis. **2010**, 32, 324-31		85
384	Comparison of trabecular bone behavior in core and whole bone samples using high-resolution modeling of a vertebral body. **2010**, 9, 469-80		22
383	A comparative finite-element analysis of bone failure and load transfer of osseointegrated prostheses fixations. **2010**, 38, 2418-27		52
382	Does femoral strain distribution coincide with the occurrence of cervical versus trochanteric hip fractures? An experimental finite element study. **2010**, 48, 711-7		18
381	A mechanical analysis of femoral resurfacing implantation for osteonecrosis of the femoral head. **2010**, 25, 1282-9		14
380	Finite element analysis of acetabular fractures--development and validation with a synthetic pelvis. *Journal of Biomechanics*, **2010**, 43, 1635-9	2.9	28

379	Determination of the heterogeneous anisotropic elastic properties of human femoral bone: from nanoscopic to organ scale. *Journal of Biomechanics*, **2010**, 43, 1857-63	2.9	77
378	Local irradiation alters bone morphology and increases bone fragility in a mouse model. *Journal of Biomechanics*, **2010**, 43, 2738-46	2.9	54
377	Patient specific quantitative analysis of fracture fixation in the proximal femur implementing principal strain ratios. Method and experimental validation. *Journal of Biomechanics*, **2010**, 43, 2684-8	2.9	14
376	Material growth in thermoelastic continua: Theory, algorithmics, and simulation. **2010**, 199, 979-996		12
375	Mechanical testing of bones: the positive synergy of finite-element models and in vitro experiments. **2010**, 368, 2725-63		53
374	Parameter study for the finite element modelling of long bones with computed-tomography-imaging-based stiffness distribution. **2010**, 224, 1095-107		1
373	Optimal fixation of acute scaphoid fractures: finite element analysis. **2010**, 35, 1246-50		45
372	Comparison of hip fracture risk prediction by femoral aBMD to experimentally measured factor of risk. **2010**, 46, 742-6		58
371	Performance of the resurfaced hip. Part 2: The influence of prosthesis stem design on remodelling and fracture of the femoral neck. **2010**, 224, 841-51		6
370	Performance of the resurfaced hip. Part 1: the influence of the prosthesis size and positioning on the remodelling and fracture of the femoral neck. **2010**, 224, 427-39		8
369	A parametric study of hard tissue injury prediction using finite elements: consideration of geometric complexity, subfailure material properties, CT-thresholding, and element characteristics. **2010**, 11, 286-93		12
368	Patient Specific Modeling of Musculoskeletal Fractures. **2011**, 53-72		
367	Male-female differences in the association between incident hip fracture and proximal femoral strength: a finite element analysis study. **2011**, 48, 1239-45		123
366	Finite element method (FEM), mechanobiology and biomimetic scaffolds in bone tissue engineering. **2011**, 7, 112-32		105
365	Development and Validation of an Occupant Lower Limb Finite Element Model. **2011**,		14
364	Study on the Mechanical Properties of Porous Bioceramics Varied by Bone Tissue Formation. **2011**, 77, 784-788		
363	Patient-Specific Finite Element Analyses Detect Significant Mechanical Therapeutic Effects on Osteoporotic Vertebrae During a Three-Year Treatment. **2011**, 6, 248-261		4
362	Vertebral fracture risk and alendronate effects on osteoporosis assessed by a computed tomography-based nonlinear finite element method. **2011**, 29, 645-51		20

361	Assessment of the 3-D shape and mechanics of the proximal femur using a shape template and a bone mineral density image. **2011**, 10, 529-38		14
360	Robust QCT/FEA models of proximal femur stiffness and fracture load during a sideways fall on the hip. **2011**, 39, 742-55		174
359	Whole bone mechanics and bone quality. **2011**, 469, 2139-49		89
358	Effects of cable tightening load on the stability in a plate-cable fixation of oblique femoral fractures. **2011**, 12, 551-556		
357	Number crunching: how and when will numerical models be used in the clinical setting?. **2011**, 9, 1-3		4
356	New imaging modalities in bone. **2011**, 13, 241-50		34
355	In situ parameter identification of optimal density-elastic modulus relationships in subject-specific finite element models of the proximal femur. **2011**, 33, 164-73		42
354	IMPROVED FEMORAL NECK FRACTURE PREDICTIONS USING ANISOTROPIC FAILURE CRITERIA MODELS. **2011**, 11, 1333-1346		6
353	Pre-clinical evaluation of ceramic femoral head resurfacing prostheses using computational models and mechanical testing. **2011**, 225, 866-76		11
352	MICRO-FINITE ELEMENT ANALYSIS OF TRABECULAR BONE YIELD BEHAVIOR EFFECTS OF TISSUE NONLINEAR MATERIAL PROPERTIES. **2011**, 11, 563-580		15
351	Assessment of bone quality and strength with new technologies. **2012**, 19, 474-82		16
350	Biomechanical rationale for six splinted implants in bilateral canine, premolar, and molar regions in an edentulous maxilla. **2012**, 21, 220-4		6
349	Influence of resection geometry on fracture risk in the treatment of femoroacetabular impingement: a finite element study. **2012**, 40, 2002-8		28
348	Simulated bone remodeling around two types of osseointegrated implants for direct fixation of upper-leg prostheses. **2012**, 15, 167-75		29
347	Patellar morphology and femoral component geometry influence patellofemoral contact stress in total knee arthroplasty without patellar resurfacing. **2012**, 20, 1787-95		20
346	A new approach to determine the accuracy of morphology-elasticity relationships in continuum FE analyses of human proximal femur. *Journal of Biomechanics*, **2012**, 45, 2884-92	2.9	30
345	Physical modeling with orthotropic material based on harmonic fields. **2012**, 108, 536-47		9
344	Apparent Young's modulus of vertebral cortico-cancellous bone specimens. **2012**, 15, 23-8		16

343	The assessment of the risk of fracture in femora with metastatic lesions: comparing case-specific finite element analyses with predictions by clinical experts. **2012**, 94, 1135-42		45
342	Cyclic loading of fractured cadaveric femurs after elastomer femoroplasty: an in vitro biomechanical study. **2012**, 27, 819-23		7
341	Research status and application prospects of digital technology in orthopaedics. **2012**, 4, 131-8		26
340	Development of a parametric finite element model of the proximal femur using statistical shape and density modelling. **2012**, 15, 101-10		39
339	Numerical analysis of an osseointegrated prosthesis fixation with reduced bone failure risk and periprosthetic bone loss. *Journal of Biomechanics*, **2012**, 45, 1875-80	2.9	28
338	Age-related loss of proximal femoral strength in elderly men and women: the Age Gene/Environment Susceptibility Study--Reykjavik. **2012**, 50, 743-8		55
337	Ct-based finite element models can be used to estimate experimentally measured failure loads in the proximal femur. **2012**, 50, 824-9		105
336	Age-Related Changes in Whole-Bone Structure and Strength. **2012**, 1-30		
335	A comparative biomechanical study of bone ingrowth in two porous hydroxyapatite bioceramics. **2012**, 262, 81-88		13
334	Cortical bone finite element models in the estimation of experimentally measured failure loads in the proximal femur. **2012**, 51, 737-40		36
333	Use of Polyurethane Foam in Orthopaedic Biomechanical Experimentation and Simulation. **2012**,		10
332	Estimation of 3D shape, internal density and mechanics of proximal femur by combining bone mineral density images with shape and density templates. **2012**, 11, 791-800		20
331	Relationships between femoral strength evaluated by nonlinear finite element analysis and BMD, material distribution and geometric morphology. **2012**, 40, 1575-85		30
330	Finite element prediction of proximal femur fracture pattern based on orthotropic behaviour law coupled to quasi-brittle damage. **2012**, 34, 202-10		50
329	Finite element prediction of surface strain and fracture strength at the distal radius. **2012**, 34, 290-8		48
328	Biomechanical evaluation of porous bioactive ceramics after implantation: micro CT-based three-dimensional finite element analysis. **2012**, 23, 463-72		8
327	Algorithms for a strain-based plasticity criterion for bone. **2013**, 29, 40-61		13
326	A comparison of DXA and CT based methods for estimating the strength of the femoral neck in post-menopausal women. **2013**, 24, 1379-88		40

325	Patient-specific modelling of bone and bone-implant systems: the challenges. **2013**, 29, 233-49		32
324	The Mechanical Behavior of Bone. **2013**, 431-452		6
323	Biomechanics of Hip and Vertebral Fractures. **2013**, 497-516		3
322	Computational anatomy in the study of bone structure. **2013**, 11, 237-45		14
321	Finite element analysis of the hip and spine based on quantitative computed tomography. **2013**, 11, 156-62		14
320	A robust 3D finite element simulation of human proximal femur progressive fracture under stance load with experimental validation. **2013**, 41, 2515-27		46
319	Hip structural analysis: a comparison of DXA with CT in postmenopausal Japanese women. **2013**, 2, 331		20
318	Comparison of mechanical stress and change in bone mineral density between two types of femoral implant using finite element analysis. **2013**, 28, 1731-5		38
317	Integrating micro CT indices, CT imaging and computational modelling to assess the mechanical performance of fluoride treated bone. **2013**, 35, 1793-800		6
316	Proximal femur bone strength estimated by a computationally fast finite element analysis in a sideways fall configuration. *Journal of Biomechanics*, **2013**, 46, 1231-6	2.9	79
315	A finite element model of the lower limb for simulating automotive impacts. **2013**, 41, 513-26		55
314	Accounting for patient variability in finite element analysis of the intact and implanted hip and knee: a review. **2013**, 29, 273-92		33
313	Patient-specific finite element modeling of bones. **2013**, 227, 464-78		74
312	Effect of boundary conditions, impact loading and hydraulic stiffening on femoral fracture strength. *Journal of Biomechanics*, **2013**, 46, 2115-21	2.9	22
311	Simulation based Upon Medical Data Offers a Fast and Robust Method for the Prediction of Fracture Risk. **2013**, 60, 459-466		
310	Effect of finite element model loading condition on fracture risk assessment in men and women: the AGES-Reykjavik study. **2013**, 57, 18-29		73
309	Structural patterns of the proximal femur in relation to age and hip fracture risk in women. **2013**, 57, 290-9		34
308	Hip fracture and anthropometric variations: dominance among trochanteric soft tissue thickness, body height and body weight during sideways fall. **2013**, 28, 1034-40		17

307	Measurement of structural anisotropy in femoral trabecular bone using clinical-resolution CT images. *Journal of Biomechanics*, **2013**, 46, 2659-66	2.9	30
306	Factor of Risk for Fracture. **2013**, 133-150		
305	DXA predictions of human femoral mechanical properties depend on the load configuration. **2013**, 35, 1564-72; discussion 1564		27
304	Overview of Bone Structure and Strength. **2013**, 25-34		4
303	A nonlinear QCT-based finite element model validation study for the human femur tested in two configurations in vitro. **2013**, 52, 27-38		123
302	Integrated remodeling-to-fracture finite element model of human proximal femur behavior. **2013**, 17, 89-106		22
301	Finite element analysis modelling of proximal femoral fractures, including post-fixation periprosthetic fractures. **2013**, 44, 791-5		6
300	Stress distribution within rotator cuff tendons with a crescent-shaped and an L-shaped tear. **2013**, 41, 2262-9		25
299	Precision study of DXA-based patient-specific finite element modeling for assessing hip fracture risk. **2013**, 29, 615-29		31
298	Investigation of repeatability in hip fracture risk predicted by DXA-based finite element model. **2013**, 2013, 3171-4		
297	Proximal femoral density distribution and structure in relation to age and hip fracture risk in women. **2013**, 28, 537-46		58
296	Finite element analysis for prediction of bone strength. **2013**, 2, 386		110
295	PREDICTION OF PROXIMAL FEMORAL FRACTURE IN SIDEWAYS FALLS USING NONLINEAR DYNAMIC FINITE ELEMENT ANALYSIS. **2014**, 14, 1450026		3
294	Accuracy of specimen-specific nonlinear finite element analysis for evaluation of distal radius strength in cadaver material. **2014**, 19, 1012-8		15
293	Prediction of risk of fracture in the tibia due to altered bone mineral density distribution resulting from disuse: a finite element study. **2014**, 228, 165-74		9
292	Hierarchical perspective of bone toughness from molecules to fracture. **2014**, 59, 245-263		33
291	Adaptive Bone Remodeling to Capture the Trabecular Bone Morphology of the Proximal Femur. **2014**,		
290	Image-based vs. mesh-based statistical appearance models of the human femur: implications for finite element simulations. **2014**, 36, 1626-35		20

289	A novel simplified 3D skull model to predict cranial fracture patterns. **2014**, 27, 927-935		1
288	Microcomputed tomography: approaches and applications in bioengineering. **2014**, 5, 144		68
287	Effects of densitometry, material mapping and load estimation uncertainties on the accuracy of patient-specific finite-element models of the scapula. **2014**, 11, 20131146		10
286	Prediction of incident hip fracture with the estimated femoral strength by finite element analysis of DXA Scans in the study of osteoporotic fractures. **2014**, 29, 2594-600		56
285	Specimen-specific nonlinear finite element modeling to predict vertebrae fracture loads after vertebroplasty. **2014**, 39, E1291-6		37
284	Hyperlipidemia affects multiscale structure and strength of murine femur. *Journal of Biomechanics*, **2014**, 47, 2436-43	2.9	11
283	Classification of women with and without hip fracture based on quantitative computed tomography and finite element analysis. **2014**, 25, 619-26		46
282	How accurately can we predict the fracture load of the proximal femur using finite element models?. **2014**, 29, 373-80		30
281	. **2014**,		3
280	Adiponectin is associated with bone strength and fracture history in paralyzed men with spinal cord injury. **2014**, 25, 2599-607		19
279	To what extent can linear finite element models of human femora predict failure under stance and fall loading configurations?. *Journal of Biomechanics*, **2014**, 47, 3531-8	2.9	101
278	Potential pathogenic mechanism for stress fractures of the bowed femoral shaft in the elderly: Mechanical analysis by the CT-based finite element method. **2014**, 45, 1764-71		47
277	Computational modeling of bone and bone remodeling. **2014**, 244-267		
276	Mapping anisotropy of the proximal femur for enhanced image based finite element analysis. *Journal of Biomechanics*, **2014**, 47, 3272-8	2.9	33
275	Experimental quantification of bone mechanics. **2014**, 30-71		2
274	Statistical shape and appearance models for fast and automated estimation of proximal femur fracture load using 2D finite element models. *Journal of Biomechanics*, **2014**, 47, 3107-14	2.9	19
273	Analysis of strength and failure pattern of human proximal femur using quantitative computed tomography (QCT)-based finite element method. **2014**, 64, 108-14		24
272	Development of a balanced experimental-computational approach to understanding the mechanics of proximal femur fractures. **2014**, 36, 793-9		42

271	Theoretical efficacy of preventive measures for pathologic fracture after surgical removal of mandibular lesions based on a three-dimensional finite element analysis. **2014**, 72, 833.e1-18	12
270	Experimental and computational studies on the femoral fracture risk for advanced core decompression. **2014**, 29, 412-7	14
269	Are we taking full advantage of the growing number of pharmacological treatment options for osteoporosis?. **2014**, 16, 64-71	4
268	Orthotropic HR-pQCT-based FE models improve strength predictions for stance but not for side-way fall loading compared to isotropic QCT-based FE models of human femurs. **2014**, 32, 287-299	39
267	Nonlinear mechanical analysis of posterior spinal instrumentation for osteoporotic vertebra: Effects of mechanical properties of the rod on the failure risks around the screw. **2014**, 9, 13-00163-13-00163	1
266	Micro-Computed Tomography to Finite Element Analysis of In Vivo Biodegradable Magnesium-Alloy Screw and Surrounding Bone in Rabbit Femurs. **2015**,	2
265	Predicting failures of suture anchors used for rotator cuff repair: a CT-based 3-dimensional finite element analysis. **2015**, 25, 371-80	1
264	Biomechanical analysis of poly-L-lactic acid and titanium plates fixated for mandibular symphyseal fracture with a conservatively treated unilateral condylar fracture using the three-dimensional finite element method. **2015**, 31, 396-402	8
263	Computed tomography-based finite element analysis to assess fracture risk and osteoporosis treatment. **2015**, 5, 182-7	11
262	Influence of bone parameters on peri-implant bone strain distribution in the posterior mandible. **2015**, 20, e66-73	18
261	Analysis of vertebral bone strength, fracture pattern, and fracture location: a validation study using a computed tomography-based nonlinear finite element analysis. **2015**, 6, 180-7	31
260	Discordance between Prevalent Vertebral Fracture and Vertebral Strength Estimated by the Finite Element Method Based on Quantitative Computed Tomography in Patients with Type 2 Diabetes Mellitus. **2015**, 10, e0144496	8
259	Microstructural Analysis of Porcine Skull Bone Subjected to Impact Loading. **2015**,	2
258	Assessment of Hip Fracture Risk Using Cross-Section Strain Energy Determined by QCT-Based Finite Element Modeling. **2015**, 2015, 413839	11
257	Finite element analysis of a condylar support prosthesis to replace the temporomandibular joint. **2015**, 53, 352-7	20
256	Tissue level microstructure and mechanical properties of the femoral head in the proximal femur of fracture patients. **2015**, 31, 259-267	9
255	Stress variations owing to single-stance load and sideways fall result in fracture at proximal femur. **2015**,	1
254	Machine Learning for Predictive Modelling based on Small Data in Biomedical Engineering. **2015**, 48, 469-474	40

253	Individual and combined effects of OA-related subchondral bone alterations on proximal tibial surface stiffness: a parametric finite element modeling study. **2015**, 37, 783-91		15
252	Computational Analysis of Bone Fracture. **2015**, 183-201		1
251	Comparison of explicit finite element and mechanical simulation of the proximal femur during dynamic drop-tower testing. *Journal of Biomechanics*, **2015**, 48, 224-32	2.9	28
250	Comparison between mechanical stress and bone mineral density in the femur after total hip arthroplasty by using subject-specific finite element analyses. **2015**, 18, 1056-1065		17
249	Effects of rotational acetabular osteotomy on the mechanical stress within the hip joint in patients with developmental dysplasia of the hip: a subject-specific finite element analysis. **2015**, 97-B, 492-7		17
248	Subject specific finite element modeling of periprosthetic femoral fracture using element deactivation to simulate bone failure. **2015**, 37, 567-73		4
247	Biomechanical evaluation of the fixation strength of lumbar pedicle screws using cortical bone trajectory: a finite element study. **2015**, 23, 471-8		62
246	Prediction of local proximal tibial subchondral bone structural stiffness using subject-specific finite element modeling: Effect of selected density-modulus relationship. **2015**, 30, 703-12		18
245	Incorporating in vivo fall assessments in the simulation of femoral fractures with finite element models. **2015**, 37, 593-8		4
244	Effects of different loading patterns on the trabecular bone morphology of the proximal femur using adaptive bone remodeling. **2015**, 137,		7
243	ASSESSMENT OF OSTEOPOROTIC FEMORAL FRACTURE RISK: FINITE ELEMENT METHOD AS A POTENTIAL REPLACEMENT FOR CURRENT CLINICAL TECHNIQUES. **2015**, 15, 1530003		3
242	Correlation between mechanical stress by finite element analysis and 18F-fluoride PET uptake in hip osteoarthritis patients. **2015**, 33, 78-83		17
241	QCT-based failure analysis of proximal femurs under various loading orientations. **2015**, 53, 477-86		7
240	Predicting mouse vertebra strength with micro-computed tomography-derived finite element analysis. **2015**, 4, 664		19
239	Accuracy of specimen-specific nonlinear finite element analysis for evaluation of radial diaphysis strength in cadaver material. **2015**, 18, 1811-7		9
238	Subject-specific finite element model with an optical tracking system in total hip replacement surgery. **2015**, 229, 280-90		2
237	Assessment of sagittal split ramus osteotomy rigid internal fixation techniques using a finite element method. **2015**, 44, 823-9		14
236	A Preliminary Study of DXA and QCT Derived Femur Cross-Section Stiffness. **2015**, 775, 415-419		

235	Clinical Use of Quantitative Computed Tomography-Based Finite Element Analysis of the Hip and Spine in the Management of Osteoporosis in Adults: the 2015 ISCD Official Positions-Part II. **2015**, 18, 359-92	83
234	The paradox of Wolff's theories. **2015**, 184, 13-22	12
233	Finite Element Simulation of Fracture Profile of Bone Material: A Case of Study Applied to Human Femur Specimen. **2016**,	
232	The effects of bone density and crestal cortical bone thickness on micromotion and peri-implant bone strain distribution in an immediately loaded implant: a nonlinear finite element analysis. **2016**, 46, 152-65	19
231	Can CT image deblurring improve finite element predictions at the proximal femur?. **2016**, 63, 337-351	17
230	Patient-specific fracture risk assessment of vertebrae: A multiscale approach coupling X-ray physics and continuum micromechanics. **2016**, 32, e02760	25
229	Study of stress variations in single-stance and sideways fall using image-based finite element analysis. **2016**, 27, 1-14	1
228	Quantitative Computed Tomography (QCT) derived Bone Mineral Density (BMD) in finite element studies: a review of the literature. **2016**, 3, 36	43
227	Effect of femoral canal shape on mechanical stress distribution and adaptive bone remodelling around a cementless tapered-wedge stem. **2016**, 5, 362-9	12
226	The influence of the modulus-density relationship and the material mapping method on the simulated mechanical response of the proximal femur in side-ways fall loading configuration. **2016**, 38, 679-689	28
225	Finite Element-Based Mechanical Assessment of Bone Quality on the Basis of In Vivo Images. **2016**, 14, 374-385	26
224	Morphology based anisotropic finite element models of the proximal femur validated with experimental data. **2016**, 38, 1339-1347	22
223	Exercise loading history and femoral neck strength in a sideways fall: A three-dimensional finite element modeling study. **2016**, 92, 9-17	14
222	A method for accounting for test fixture compliance when estimating proximal femur stiffness. *Journal of Biomechanics*, **2016**, 49, 3101-3105	2.9
221	Understanding Bone Strength from Finite Element Models: Concepts for Non-engineers. **2016**, 14, 161-166	2
220	Prediction of pathological fracture of the femoral shaft with an osteolytic lesion using a computed tomography-based nonlinear three-dimensional finite element method. **2016**, 21, 530-538	1
219	Computer modelling integrated with micro-CT and material testing provides additional insight to evaluate bone treatments: Application to a beta-glycan derived whey protein mice model. **2016**, 68, 9-20	9
218	Moving toward a prevention strategy for osteoporosis by giving a voice to a silent disease. **2016**, 2,	4

217	Experimental validation of DXA-based finite element models for prediction of femoral strength. **2016**, 63, 17-25		49
216	Biomechanical evaluation of fixation strength among different sizes of pedicle screws using the cortical bone trajectory: what is the ideal screw size for optimal fixation?. **2016**, 158, 465-71		48
215	Modelling of bone fracture and strength at different length scales: a review. **2016**, 6, 20150055		70
214	Relevance of inhomogeneous□nisotropic models of human cortical bone: a tibia study using the finite element method. **2016**, 30, 538-547		7
213	Nonlinear quasi-static finite element simulations predict in vitro strength of human proximal femora assessed in a dynamic sideways fall setup. **2016**, 57, 116-27		25
212	A coupled biomechanical-Smoothed Particle Hydrodynamics model for predicting the loading on the body during elite platform diving. **2016**, 40, 3812-3831		15
211	Maximum principal strain as a criterion for prediction of orthodontic mini-implants failure in subject-specific finite element models. **2016**, 86, 24-31		11
210	Material Properties of Diabetic Bone. **2016**, 183-210		
209	Prediction of proximal femur strength by a quantitative computed tomography-based finite element method--Creation of predicted strength data of the proximal femur according to age range in a normal population. **2016**, 26, 151-5		11
208	QCT/FEA predictions of femoral stiffness are strongly affected by boundary condition modeling. **2016**, 19, 208-16		27
207	Comparison of Pedicle Screw Fixation Strength Among Different Transpedicular Trajectories: A Finite Element Study. **2017**, 30, 301-307		21
206	Virtual stress testing of fracture stability in soldiers with severely comminuted tibial fractures. **2017**, 35, 805-811		11
205	Handling limited datasets with neural networks in medical applications: A small-data approach. **2017**, 75, 51-63		132
204	Physical Activity for Strengthening Fracture Prone Regions of the Proximal Femur. **2017**, 15, 43-52		13
203	Three-dimensional finite element model to predict patterns of pterygomaxillary dysjunction during Le Fort I osteotomy. **2017**, 46, 564-571		9
202	Development of a surrogate model based on patient weight, bone mass and geometry to predict femoral neck strains and fracture loads. *Journal of Biomechanics*, **2017**, 55, 121-127	2.9	12
201	Ibuprofen before Exercise Does Not Prevent Cortical Bone Adaptations to Training. **2017**, 49, 888-895		6
200	Development and validation of a subject-specific finite element model of the functional spinal unit to predict vertebral strength. **2017**, 231, 821-830		8

199	Phase-field boundary conditions for the voxel finite cell method: Surface-free stress analysis of CT-based bone structures. **2017**, 33, e2880	25
198	Tight medial knot tying may increase retearing risk after transosseous equivalent repair of rotator cuff tendon. **2017**, 28, 267-277	4
197	Assessment of fracture risk in proximal tibia with tumorous bone defects by a finite element method. **2017**, 80, 975-984	8
196	Skeletal assessment with finite element analysis: relevance, pitfalls and interpretation. **2017**, 29, 402-409	5
195	Prediction of damage formation in hip arthroplasties by finite element analysis using computed tomography images. **2017**, 44, 8-15	6
194	Computed Tomography-Based 3-Dimensional Finite Element Analyses of Various Types of Plates Placed for a Virtually Reduced Unilateral Condylar Fracture of the Mandible of a Patient. **2017**, 75, 1239.e1-1239.e11	13
193	A Method to Estimate Cadaveric Femur Cortical Strains During Fracture Testing Using Digital Image Correlation. **2017**,	2
192	Comparison of non-invasive assessments of strength of the proximal femur. **2017**, 105, 93-102	53
191	Sideways fall-induced impact force and its effect on hip fracture risk: a review. **2017**, 28, 2759-2780	26
190	The risk assessment of pathological fracture in the proximal femur using a CT-based finite element method. **2017**, 22, 931-937	26
189	Femoral fracture type can be predicted from femoral structure: A finite element study validated by digital volume correlation experiments. **2018**, 36, 993-1001	14
188	Phantomless calibration of CT scans for measurement of BMD and bone strength-Inter-operator reanalysis precision. **2017**, 103, 325-333	53
187	FE and experimental study on how the cortex material properties of synthetic femurs affect strain levels. **2017**, 46, 96-109	11
186	Understanding Hip Fracture by QCT-Based Finite Element Modeling. **2017**, 37, 686-694	0
185	Advances in imaging approaches to fracture risk evaluation. **2017**, 181, 1-14	35
184	Biomechanical analysis of immediately loaded implants according to the "All-on-Four" concept. **2017**, 61, 123-132	28
183	In vitro and in silico characterization of open-cell structures of trabecular bone. **2017**, 20, 1562-1570	4
182	Prediction of fracture load and stiffness of the proximal femur by CT-based specimen specific finite element analysis: cadaveric validation study. **2017**, 18, 536	26

181	Study of the variations of fall induced hip fracture risk between right and left femurs using CT-based FEA. **2017**, 16, 116	2
180	Investigation of Occupant Lower Extremity Injures under Various Overlap Frontal Crashes. **2018**, 19, 301-312	9
179	Embedded shell finite elements: Solid–shell interaction, surface locking, and application to image-based bio-structures. **2018**, 335, 298-326	6
178	Biomechanical Analysis of a Novel Intercalary Prosthesis for Humeral Diaphyseal Segmental Defect Reconstruction. **2018**, 10, 23-31	13
177	Robust variational segmentation of 3D bone CT data with thin cartilage interfaces. **2018**, 47, 95-110	9
176	Clinical hip fracture is accompanied by compression induced failure in the superior cortex of the femoral neck. **2018**, 108, 121-131	13
175	Estimation of mechanical stiffness by finite element analysis of ultrasound computed tomography (UCT-FEA); a comparison with X-ray μCT based FEA in cancellous bone replica models. **2018**, 133, 8-15	5
174	Associations Between Lean Mass, Muscle Strength and Power, and Skeletal Size, Density and Strength in Older Men. **2018**, 33, 1612-1621	14
173	Femoral fracture load and fracture pattern is accurately predicted using a gradient-enhanced quasi-brittle finite element model. **2018**, 55, 1-8	10
172	Material mapping strategy to improve the predicted response of the proximal femur to a sideways fall impact. **2018**, 78, 196-205	26
171	Altered bone density and stress distribution patterns in long-standing cubitus varus deformity and their effect during early osteoarthritis of the elbow. **2018**, 26, 72-83	14
170	A multiscale predictor/corrector scheme for efficient elastoplastic voxel finite element analysis, with application to CT-based bone strength prediction. **2018**, 330, 598-628	8
169	On the Failure Initiation in the Proximal Human Femur Under Simulated Sideways Fall. **2018**, 46, 270-283	12
168	Hip Fracture: Anatomy, Causes, and Consequences. **2018**,	
167	A three-dimensional finite element analysis of the human hip. **2018**, 42, 546-552	9
166	Fracture risk prediction on children with Osteogenesis Imperfecta subjected to loads under activity of daily living. **2018**, 429, 012004	5
165	Risk analysis of patients with an osteolytic acetabular defect after total hip arthroplasty using subject-specific finite-element modelling. **2018**, 100-B, 1455-1462	2
164	Development of Subject-Specific Proximal Femur Finite Element Models Of Older Adults with Obesity to Evaluate the Effects of Weight Loss on Bone Strength. **2018**, 6,	5

163	Towards a patient-specific estimation of intra-operative femoral fracture risk. **2018**, 21, 663-672		10
162	Finite element analysis of the femoral diaphysis of fresh-frozen cadavers with computed tomography and mechanical testing. **2018**, 13, 192		7
161	Rate and age-dependent damage elasticity formulation for efficient hip fracture simulations. **2018**, 61, 1-12		4
160	Overview of Bone Structure and Strength. **2018**, 197-208		2
159	Feasibility of using computer simulation to predict the postoperative outcome of the minimally invasive Nuss procedure: Simulation prediction vs. postoperative clinical observation. **2018**, 71, 1496-1506		3
158	The Multi-Axial Failure Response of Porcine Trabecular Skull Bone Estimated Using Microstructural Simulations. **2018**, 140,		2
157	A novel sideways fall simulator to study hip fractures ex vivo. **2018**, 13, e0201096		14
156	Mapping anisotropy improves QCT-based finite element estimation of hip strength in pooled stance and side-fall load configurations. **2018**, 59, 36-42		10
155	Effects of sclerotic changes on stress concentration in early-stage osteonecrosis: A patient-specific, 3D finite element analysis. **2018**, 36, 3169-3177		14
154	Linear and nonlinear analyses of femoral fractures: Computational/experimental study. *Journal of Biomechanics*, **2018**, 79, 155-163	2.9	5
153	Effect of Exercise Modality During Weight Loss on Bone Health in Older Adults With Obesity and Cardiovascular Disease or Metabolic Syndrome: A Randomized Controlled Trial. **2018**, 33, 2140-2149		28
152	Dynamic finite element analysis of implants for femoral neck fractures simulating walking. **2018**, 26, 2309499018777899		4
151	Impact loading history modulates hip fracture load and location: A finite element simulation study of the proximal femur in female athletes. *Journal of Biomechanics*, **2018**, 76, 136-143	2.9	8
150	Mechanical Strength of the Proximal Femur After Arthroscopic Osteochondroplasty for Femoroacetabular Impingement: Finite Element Analysis and 3-Dimensional Image Analysis. **2018**, 34, 2377-2386		6
149	Prediction of the Segmental Pelvic Ring Fractures Under Impact Loadings During Car Crash. **2019**, 138-149		2
148	The multiscale finite element method for nonlinear continuum localization problems at full fine-scale fidelity, illustrated through phase-field fracture and plasticity. **2019**, 396, 129-160		10
147	Mechanical and numerical characterization of ceramic femoral components for hip resurfacing arthroplasty. **2019**, 233, 883-891		4
146	Prediction of Bone Quality of Remodeling Trabeculae Using Multi-Scale Stress Analyses with a Homogenization Technique Reflecting Material Anisotropy. **2019**, 11, 1950055		2

145	Study on Voxel Finite Element Analysis of Open-Cell Polyurethane Foam. **2019**, 548, 012010		
144	Single-leg weight limit of fixation model of simple supracondylar fracture of femur. **2019**, 35, 926-939		1
143	Predicting experimentally-derived failure load at the distal radius using finite element modelling based on peripheral quantitative computed tomography cross-sections (pQCT-FE): A validation study. **2019**, 129, 115051		4
142	Potential bone fragility of mid-shaft atypical femoral fracture: Biomechanical analysis by a CT-based nonlinear finite element method. **2019**, 50, 1876-1882		14
141	Mechanical behavior of metastatic femurs through patient-specific computational models accounting for bone-metastasis interaction. **2019**, 93, 9-22		16
140	Implementation of controlling strategy in a biomechanical lower limb model with active muscles for coupling multibody dynamics and finite element analysis. *Journal of Biomechanics*, **2019**, 91, 51-60	2.9	18
139	Assessment of finite element models for prediction of osteoporotic fracture. **2019**, 97, 312-320		14
138	A comparison of exercise interventions from bed rest studies for the prevention of musculoskeletal loss. **2019**, 5, 12		20
137	Hip load capacity cut-points for Astronaut Skeletal Health NASA Finite Element Strength Task Group Recommendations. **2019**, 5, 6		9
136	A viscoelastic system for determining acoustical and mechanical parameters of the bone. **2019**, 150, 70-75		1
135	Microimaging-informed continuum micromechanics accurately predicts macroscopic stiffness and strength properties of hierarchical plant culm materials. **2019**, 130, 39-57		9
134	Fracture prediction on patient-specific tibia model with Osteogenesis Imperfecta under various loading direction. **2019**, 670, 012073		
133	Biomechanical analysis of patient-specific femur model of osteogenesis imperfecta with cortical and cancellous bone. **2019**, 670, 012045		0
132	Determination of Fracture Risk on Patient-specific Model of Femur with Osteogenesis Imperfecta. **2019**, 1372, 012042		0
131	X-Ray Based Imaging Methods to Assess Bone Quality. **2019**, 102-115		
130	A multiscale model to predict current absolute risk of femoral fracture in a postmenopausal population. **2019**, 18, 301-318		14
129	A residual-driven local iterative corrector scheme for the multiscale finite element method. **2019**, 377, 60-88		6
128	Prediction of incident vertebral fracture using CT-based finite element analysis. **2019**, 30, 323-331		33

127	Construction of polyhedral finite element meshes based upon marching cube algorithm. **2019**, 128, 98-112	3
126	Prediction of fracture lines of the calcaneus using a three-dimensional finite element model. **2019**, 37, 483-489	7
125	The application of finite element modelling based on clinical pQCT for classification of fracture status. **2019**, 18, 245-260	7
124	Computational Biomechanics for Medicine. **2020**,	
123	Influence of novel design alteration of pedicle screw on pull-out strength: A finite element study. **2020**, 25, 66-72	2
122	Influence of femoral external shape on internal architecture and fracture risk. **2020**, 19, 1251-1261	1
121	Effects of active muscle forces on driver's lower-limb injuries due to emergency brake in various frontal impacts. **2020**, 234, 2014-2024	1
120	Individualized prediction of pedicle screw fixation strength with a finite element model. **2020**, 23, 155-167	8
119	Opportunistic Computed Tomography and Spine Surgery: A Narrative Review. **2020**, 10, 919-928	1
118	Heterogeneous Spatial and Strength Adaptation of the Proximal Femur to Physical Activity: A Within-Subject Controlled Cross-Sectional Study. **2020**, 35, 681-690	9
117	Combining numerical models and discretizing methods in the analysis of bamboo parenchyma using finite element analysis based on X-ray microtomography. **2020**, 54, 161-186	8
116	Patient-Specific Bone Multiscale Modelling, Fracture Simulation and Risk Analysis-A Survey. **2019**, 13,	4
115	Perspectives on the non-invasive evaluation of femoral strength in the assessment of hip fracture risk. **2020**, 31, 393-408	20
114	Finite element method for nerve root decompression in minimally invasive endoscopic spinal surgery. **2021**, 14, 628-635	0
113	Towards an App to Estimate Patient-Specific Perioperative Femur Fracture Risk. **2020**, 10, 6409	5
112	Image-based finite-element modeling of the human femur. **2020**, 23, 1138-1161	8
111	Proximal-medial part in the coracoid graft demonstrates the most evident stress shielding following the Latarjet procedure: a simulation study using the 3-dimensional finite element method. **2020**, 29, 2632-2639	4
110	DENSITOMETRY-BASED FEM SIMULATIONS OF NOVEL POROUS IMPLANTS AND CORRESPONDING STRESS DISTRIBUTION AT THE PERI-IMPLANT AREA. **2020**, 26, 76-80	

109	Ideal placement of an implant considering the positional relationship to an opposing tooth in the first molar region: a three-dimensional finite element analysis. **2020**, 6, 31		1
108	Periprosthetic femoral fractures in sideways fall configuration: comparative numerical analysis of the influence of femoral stem design. **2020**, 30, 86-93		2
107	Reduced cortical bone thickness increases stress and strain in the female femoral diaphysis analyzed by a CT-based finite element method: Implications for the anatomical background of fatigue fracture of the femur. **2020**, 13, 100733		3
106	Effect of sagittal pelvic tilt on joint stress distribution in hip dysplasia: A finite element analysis. **2020**, 74, 34-41		7
105	Risk Prediction of Femoral Head Necrosis: A Finite Element Analysis Based on Fracture Mechanics. **2020**, 17, 1950019		4
104	Comparison study of bone strength of the proximal femur with and without hip osteoarthritis by computed tomography-based finite element analysis. *Journal of Biomechanics*, **2020**, 105, 109810	2.9	2
103	Distribution of Femoral Head Subchondral Fracture Site Relates to Contact Pressures, Age, and Acetabular Structure. **2020**, 215, 448-457		2
102	Simulated lesions representative of metastatic disease predict proximal femur failure strength more accurately than idealized lesions. *Journal of Biomechanics*, **2020**, 106, 109825	2.9	3
101	Development of a Knee Joint CT-FEM Model in Load Response of the Stance Phase During Walking Using Muscle Exertion, Motion Analysis, and Ground Reaction Force Data. **2020**, 56,		2
100	Hip fracture risk functions for elderly men and women in sideways falls. *Journal of Biomechanics*, **2020**, 105, 109771	2.9	1
99	Biomechanical Computed Tomography analysis (BCT) for clinical assessment of osteoporosis. **2020**, 31, 1025-1048		20
98	Hip load capacity and yield load in men and women of all ages. **2020**, 137, 115321		6
97	Femur strength predictions by nonlinear homogenized voxel finite element models reflect the microarchitecture of the femoral neck. **2020**, 79, 60-66		4
96	Glenoid bone resorption after Bankart repair: finite element analysis of postoperative stress distribution of the glenoid. **2021**, 30, 188-193		1
95	Computational modelling of bone and bone remodelling. **2021**, 227-249		
94	The effects of bone remodeling on biomechanical behavior in a patient with an implant-supported overdenture. **2021**, 129, 104173		2
93	Degenerative changes in the elbow joint after radial head excision for fracture: quantitative 3-dimensional analysis of bone density, stress distribution, and bone morphology. **2021**, 30, e199-e211		0
92	Computational Analysis on Bone Adaptation in Resurfacing Hip Arthroplasty with Valgus-Varus Placement. **2021**, 179-189		

91	Evaluation of Bone-Implant Interface Stress and Strain Using Heterogeneous Mandibular Bone Properties Based on Different Empirical Correlations. **2021**, 15, 454-462	1
90	The mechanical behavior of bone. **2021**, 283-307	0
89	Effect of Impact Velocity, Flooring Material, and Trochanteric Soft-Tissue Quality on Acetabular Fracture during a Sideways Fall: A Parametric Finite Element Approach. **2021**, 11, 365	1
88	The effect of denosumab on pedicle screw fixation: a prospective 2-year longitudinal study using finite element analysis. **2021**, 16, 219	2
87	Does Patient-specific Functional Pelvic Tilt Affect Joint Contact Pressure in Hip Dysplasia? A Finite-element Analysis Study. **2021**, 479, 1712-1724	2
86	Effects of implant diameter, implant-abutment connection type, and bone density on the biomechanical stability of implant components and bone: A finite element analysis study. **2021**,	2
85	Finite Element Analysis of Different Titanium Plates for Internal Fixation of Fractures of the Mandibular Condylar Neck. **2021**, 79, 665.e1-665.e10	1
84	Total hip arthroplasty using a three-dimensional porous titanium acetabular cup: an examination of micromotion using subject-specific finite element analysis. **2021**, 22, 308	2
83	Prediction of proximal femur fracture risk from DXA images based on novel fracture indexes. **2021**, 9, 205-216	0
82	Ulnar collateral ligament dysfunction increases stress on the humeral capitellum: a finite element analysis. **2021**, 5, 307-313	
81	Alterations in femoral neck strength following pelvic irradiation. A finite element analysis of simulated eccentric forces using bone density data derived from CT. **2021**, 145, 115865	
80	Evaluation of fixation after plating of distal radius fractures - a validation study. **2021**, 24, 1687-1692	0
79	Effect of pedicle screw angles on the fracture risk of the human vertebra: A patient-specific computational model. **2021**, 116, 104359	7
78	A Simulation Case Study of Knee Joint Compressive Stress during the Stance Phase in Severe Knee Osteoarthritis Using Finite Element Method. **2021**, 57,	1
77	Evaluation of vertebral bone strength with a finite element method using low dose computed tomography imaging. **2021**,	1
76	Does angulation of osteotome during pterygomaxillary dysjunction for a Le Fort I osteotomy influence stress transmission to the orbit? A finite element simulation in normal and cleft maxillae. **2021**, 59, 407-412	0
75	Incorporating Nutrition, Vests, Education, and Strength Training (INVEST) in Bone Health: Trial Design and Methods. **2021**, 104, 106326	0
74	Risk assessment of vertebral compressive fracture using bone mass index and strength predicted by computed tomography image based finite element analysis. **2021**, 85, 105365	1

73	Mechanical fatigue of whole rabbit-tibiae under combined compression-torsional loading is better explained by strained volume than peak strain magnitude. *Journal of Biomechanics*, **2021**, 122, 110434	2.9	1
72	Disturbance of osteonal bone remodeling and high tensile stresses on the lateral cortex in atypical femoral fracture after long-term treatment with Risedronate and Alfacalcidol for osteoporosis. **2021**, 14, 101091		4
71	Is Anterior Rotation of the Acetabulum Necessary to Normalize Joint Contact Pressure in Periacetabular Osteotomy? A Finite-element Analysis Study. **2021**,		1
70	The influence of pelvic tilt on stress distribution in the acetabulum: finite element analysis. **2021**, 22, 764		0
69	Prediction of Bone Mineral Density (BMD) Adaptation in Pelvis-Femur Model with Hip Arthroplasties. **2021**, 12,		0
68	Intra-articular biomechanical environment following modified Bristow and Latarjet procedures in shoulders with large glenoid defects: relationship with postoperative complications. **2021**, 30, 2260-2269		3
67	Validation of Compressive Test of Biodegradable Lumbar Interbody Spinal Cage with Different Porous Structure Using Computed Tomography-Based Finite Element Analysis. **2022**, 153-167		
66	Physical activity induced adaptation can increase proximal femur strength under loading from a fall onto the greater trochanter. **2021**, 152, 116090		4
65	Multiple Regression Analysis of Hip Fracture Risk Assessment Via Finite Element Analysis. **2021**, 4,		1
64	Biomechanics of hip and vertebral fractures. **2021**, 357-378		
63	Musculoskeletal Modelling and the Physiome Project. **2018**, 123-174		5
62	Perspectives on Advances in Bone Imaging for Osteoporosis. **2007**, 5-26		2
61	Bone Overview. **2011**, 1-28		3
60	Location of atypical femoral fracture can be determined by tensile stress distribution influenced by femoral bowing and neck-shaft angle: a CT-based nonlinear finite element analysis model for the assessment of femoral shaft loading stress. **2017**, 48, 2736-2743		31
59	Effect of CT imaging on the accuracy of the finite element modelling in bone. **2020**, 4, 51		3
58	Computer-aided, pre-surgical analysis for oral rehabilitation. **2003**, 52-68		1
57	Bone Biomechanics. **2012**, 3-48		1
56	Measurement of Bone: Diagnosis of SCI-Induced Osteoporosis and Fracture Risk Prediction. **2015**, 21, 267-74		27

55	Biomechanical Comparison of Polymeric Spinal Cages Using Ct Based Finite Element Method. **2017**, 7, 110-117	3
54	Impact of Screw Diameter and Length on Pedicle Screw Fixation Strength in Osteoporotic Vertebrae: A Finite Element Analysis. **2021**, 15, 566-574	9
53	Computational Simulations of Bone Remodeling under Natural Mechanical Loading or Muscle Malfunction Using Evolutionary Structural Optimization Method. **2014**, 06, 113-126	1
52	Biomechanical Study of Vertebral Compression Fracture Using Finite Element Analysis. **2017**, 05, 953-965	7
51	Biomechanical Study of the Effects of Balloon Kyphoplasty on the Adjacent Vertebrae. **2016**, 09, 478-487	3
50	Biomechanical Effects of Implant Materials on Posterior Lumbar Interbody Fusion: Comparison of Polyetheretherketone and Titanium Spacers Using Finite Element Analysis and Considering Bone Density. **2018**, 11, 45-59	2
49	Experimental and finite element analysis of tibial stress fractures using a rabbit model. **2013**, 4, 267-78	6
48	Finite Element Analysis of Osteoporotic Vertebrae with First Lumbar (L1) Vertebral Compression Fracture. **2014**, 4, 267-274	6
47	Risk of Femoral Bone Fractures in Hip Arthroplasties during Sideway Falls. **2014**, 4, 286-289	1
46	Optimal bone biopsy route to the proximal femur evaluated by computed tomography-based finite element modeling. **2021**,	
45	Macro- and Microimaging of Bone Architecture. **2002**, 1599-XLVIII	
44	Numerical Investigations of Interactions between the Knee-Thigh-Hip Complex with Vehicle Interior Structures.	7
43	Bone Biomechanics and the Determinants of Skeletal Fragility. **2015**, 65-80	
42	Damage Prediction of the Femur with Postresection Defect. **2015**, 753-759	
41	What Next in the Field of Bone Health in Pediatrics? Research Considerations. **2016**, 285-313	
40	Use Case V: Imaging Biomarkers in Musculoskeletal Disorders. **2017**, 259-277	
39	Biomechanical Effects of Stretching Exercise on Site of Femoral Subtrochanteric Fracture. **2017**, 29, 100-105	
38	A Biomechanical Study on the Use of Curved Drilling Technique for Treatment of Osteonecrosis of Femoral Head. **2020**, 87-97	2

37	Parametric Study of Hip Fracture Risk Using QCT-Based Finite Element Analysis. **2022**, 71, 1349-1369	0
36	Discrimination of Contributing Factors to Bone Fragility Using vQCT In Vivo. **2007**, 431-449	
35	Can Patient-specific Finite Element Models Enter Clinical Practice as a Decision Support System?. **2021**, 9, 1-4	
34	A method for generating finite element models of wood boards from X-ray computed tomography scans. **2022**, 260, 106702	0
33	The Effect of Implant Length and Diameter on Stress Distribution around Single Implant Placement in 3D Posterior Mandibular FE Model Directly Constructed Form In Vivo CT. **2021**, 14,	0
32	Development of Bone Strength Prediction Method by Using MCA with Damage Mechanics. **2022**, 253-256	
31	Effect of coronal plane acetabular correction on joint contact pressure in Periacetabular osteotomy: a finite-element analysis.. **2022**, 23, 48	0
30	Study of the significance of parameters and their interaction on assessing femoral fracture risk by quantitative statistical analysis.. **2022**,	0
29	Mechanical influence of pubic nonunion on the stress distribution after curved periacetabular osteotomy: patient-specific three-dimensional finite element analysis.. **2022**,	0
28	Finite element analysis of mechanical stress of the hip joint in patients with posterior pelvic inclination. **2022**, 4,	
27	Lateral pillar is the key in supporting pre-collapse osteonecrosis of the femoral head: a finite element model analysis of propensity-score matched cohorts.. **2021**, 16, 728	0
26	Lumbar Fusion Including Sacroiliac Joint Fixation Increases The Stress And Angular Motion At The Hip Joint: A Finite Element Study. **2022**,	0
25	Implementing Machine Learning Algorithms on a Finite Element Simulated Dataset to Predict Hip Fracture Risk.	
24	Factors Associated with Abnormal Joint Contact Pressure after Periacetabular Osteotomy: A Finite-Element Analysis.. **2022**,	
23	Analyzing bone regeneration using topological optimization. **2005**, 25, 22-29	
22	Fracture analysis of healthy and osteoporotic femora using clinical CT images, phantomless densitometry, and linear FE method.	
21	Finite element analysis potentially identifies nonessential prophylactic stabilization in femurs with metastatic disease. 095441192211097	
20	The influence of foramina on femoral neck fractures and strains predicted with finite element analysis. **2022**, 105364	0

19	Image-Based Finite Element Modeling for the Descriptions of Bone Failure Behaviors. **2022**, 363-393	
18	Role of impaction bone grafting of allografts in the management of benign lesions of the proximal femur. **2022**, 34, 189-195	0
17	Cervical Lift-up Basket Laminoplasty after Resection of Spinal Intramedullary Tumors: A Finite Element Analysis and Clinical Image Evaluation. **2022**,	0
16	Patient-specific numerical investigation of the correction of cervical kyphotic deformity based on a retrospective clinical case. 10,	0
15	Patient-specific three-dimensional evaluation of interface micromotion in two different short stem designs in cementless total hip arthroplasty: a finite element analysis. **2022**, 17,	0
14	What is the most fixable intramedullary implant for basicervical fracture and transcervical shear fracture? A finite element study. **2022**, 34, 102015	0
13	Effects of Stem Design on the Mechanical Behavior of Femur with Total Hip Arthroplasty. 8, 1-7	0
12	Cortical bone continuum damage mechanics constitutive model with stress triaxiality criterion to predict fracture initiation and pattern. 10,	0
11	Biomechanical investigation of long spinal fusion models using three-dimensional finite element analysis.	0
10	Changes in strain energy density in the temporomandibular joint disk after sagittal split ramus osteotomy using a computed tomography-based finite element model.	0
9	Asymmetric load transmission induces facet joint subchondral sclerosis and hypertrophy in patients with idiopathic adolescent scoliosis: Evaluation using finite element model and surgical specimen.	0
8	Simulating Knee-Stress Distribution Using a Computed Tomography-Based Finite Element Model: A Case Study. **2023**, 8, 15	0
7	Finite Element Model-Computed Mechanical Behavior of Femurs with Metastatic Disease Varies Between Physiologic and Idealized Loading Simulations. **2023**, 14, 117959722311662	0
6	The role of torsional stress in the development of subchondral insufficiency fracture of the femoral head: A finite element model analysis. **2023**,	0
5	Transforaminal Lumbar Interbody Fusion with Double Banana Cages: Clinical Evaluations and Finite Element Model Analysis. 219256822311657	0
4	Choose the appropriate implantation position of the Femoral Neck System in the femoral neck: a finite-element analysis.	0
3	Biomechanical investigation of long spinal fusion models using three-dimensional finite element analysis. **2023**, 24,	0
2	Primary Stability of Collared and Collarless Cementless Femoral Stems A Finite Element Analysis Study. **2023**, 21, 101140	0

1	Finite Element Analysis of the Mechanical Strength of Phalangeal Osteosynthesis Using Kirschner Wires. **2023**, 28, 163-171	0