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Journal Publications by Product Family

C Clinical B Biomechanical S Scientific

ALTERA®

The expandable transforaminal lumbar interbody fusion – two years follow-up C
Boktor et al. *J Craniovertebr Junction Spine* 9(1):50–55, 2018.
Also listed under CALIBER® and RISE®

Minimally invasive transforaminal lumbar interbody fusion with expandable versus static interbody devices: radiographic assessment of sagittal segmental and pelvic parameters C
Hawasli et al. *Neurosurg Focus* 43(2):E10, 2017.

Transfacet minimally invasive transforaminal lumbar interbody fusion with an expandable interbody device—part I: 2-dimensional operative video and technical report C
Khalifeh et al. *Oper Neurosurg* (Hagerstown) 19(5):E473-E479, 2020.

Transfacet minimally invasive transforaminal lumbar interbody fusion with an expandable interbody device—part II: consecutive case series C
Khalifeh et al. *Oper Neurosurg* (Hagerstown) 19(5):518-529, 2020.

Assessment of radiographic and clinical outcomes of an articulating expandable interbody cage in minimally invasive transforaminal lumbar interbody fusion for spondylolisthesis C
Massie et al. *Neurosurg Focus* 44(1):E8, 2018.

A radiographic analysis of the use of banana-shaped articulating interbody spacers in lumbar spine fusion: retrospective design C
Russo et al. *Interdiscip Neurosurg* 23 (March 2021) 100918, 2020.

Minimally invasive TLIF with expandable articulating interbody spacers significantly improves radiographic outcomes compared to static interbody spacers C
Russo et al. *J Spine Surg* 7(3):300-309, 2021.

Transforaminal lumbar interbody fusion with expandable cages: radiological and clinical results of banana shaped and straight implants C
Tassemeier et al. *J Craniovert Jun Spine* 9(3):196-201, 2018.

Combining expandable interbody cage technology with a minimally invasive technique to harvest iliac crest autograft bone to optimize fusion outcomes in minimally invasive transforaminal lumbar interbody fusion surgery C
Virk et al. *Clin Spine Surg* 34(9):E522-E530, 2021.

CALIBER®

The expandable transforaminal lumbar interbody fusion – two years follow-up C
Boktor et al. *J Craniovertebr Junction Spine* 9(1):50–55, 2018.
Also listed under ALTERA® and RISE®

Minimally invasive transforaminal lumbar interbody fusion using expandable technology: a clinical and radiographic analysis of 50 patients C
Kim et al. *World Neurosurg* 90:228–235, 2016.

Two-year clinical and radiographic outcomes of expandable interbody spacers following minimally invasive transforaminal lumbar interbody fusion: a prospective study C
Kim et al. *Int J Surg* 14(4):518-526, 2020.

***In vitro* biomechanical and fluoroscopic study of a continuously expandable interbody spacer concerning its role in insertion force and segmental kinematics** B
Torretti et al. Asian *Spine J* 12(4):601–610, 2018.

CALIBER®-L

Expandable interbody spacers implanted through a lateral approach: a multicenter observational study at two years C
Cohen et al. *J Spine Neurosurg* 9(7):1000342, 2020.
Also listed under RISE®-L

Clinical and radiographic analysis of expandable versus static lateral lumbar interbody fusion devices with two-year follow-up C
Frisch et al. *J Spine Surg* 4(1):62–71, 2018.

Indirect decompression and vertebral body endplate strength after lateral interbody spacer impaction: cadaveric and foam-block models B
Kwon et al. *J Neurosurg Spine* 24(5):727–733, 2016.

COALITION®

A clinical comparison of anterior cervical plates versus stand-alone intervertebral fusion devices for single anterior cervical discectomy and fusion procedures C
Panchal et al. *World Neurosurg* 99:630–637, 2017.

COALITION MIS®

Single-level *in vitro* kinematic comparison of novel inline cervical interbody devices with intervertebral screw, anchor, or blade B
Arnold et al. *Global Spine J* 9(7):697–707, 2019.

CREO®

The role of sagittal alignment in predicting major failure of lumbopelvic instrumentation - a biomechanical validation of lumbopelvic failure classification S
Cho et al. *Spine Deform* May 8(4):561-568, 2020.

Guidelines for cortical screw versus pedicle screw selection from a fatigued decompressive lumbar laminectomy model show similar stability and less bone mineral density dependency B
Radcliff et al. *Clin Biomech* (Briston, Avon) 80:105195, 2020.

Biomechanical investigation of potential prophylactic scoliosis treatments following various sizes of chest wall resection B
Witte et al. *Clin Biomech* (Bristol, Avon) 87:105416, 2021.

CREO AMP®

Are modular pedicle screws associated with a high complication rate following posterior spinal fixation? C
Pugely et al. *J Spine Surg* 10 March [Epub ahead of print], 2023.

CREO® S2AI

Fixation strength of modified iliac screw trajectory compared to traditional iliac and s2 alar-iliac trajectories: a cadaveric study B
Von Glinski et al. *World Neurosurg* 154:e481-e487, 2021.

ELLIPSE®

Effects of pre-contoured and *in situ* contoured rods on the mechanical strength and durability of posterior cervical instrumentation: a finite element analysis and scanning electron microscopy investigation S
Kim et al. *Spine Deform* 8(4):569-576, 2020.

ELSA®

A novel lateral titanium expandable interbody spacer with integrated plate restores anterior and posterior disc height and intervertebral lordosis C
Brady et al. *J Spine* S8:002, 2019.

Do evoked potentials matter? Pre-pathologic signal change and clinical outcomes with expandable cages in lateral lumbar interbody fusion surgery C
Malham et al. *J Clin Neurosci* 98:248-253, 2022.
Also listed under RISE®-L

ExcelsiusGPS®

First spine surgery utilizing real-time image-guided robotic assistance C
Ahmed et al. *Comput Assist Surg* (Abingdon) 24(1):13-17, 2019.

Navigated robotic assistance results in improved screw accuracy and positive clinical outcomes: an evaluation of the first 54 cases C
Benech et al. *J Robot Surg* 14(3):431-437, 2020.

A quantitative accuracy assessment of the use of a rigid robotic arm in navigated placement of 726 pedicle screws C
Benech et al. *BMC Surg* 22(1):385, 2022.

Clinical results following robotic navigation guidance for sacroiliac joint fusion in 36 patients C
Chaves et al. *Neurosurg Focus* 52(1):E6, 2022.
Also listed under SI-LOK®

Ensuring navigation integrity using robotics in spine surgery S
Crawford et al. *J Robot Surg* 14(1):177-183, 2020.

Robotic-assisted spinal surgery: current generation instrumentation and new applications C
Elswick et al. *Neurosurg Clin N Am* 31(1):103-110, 2020.

Robotics in spine surgery: a technical overview and review of key concepts C
Farber et al. *Front Surg* 8:578674, 2021.

A quantitative assessment of the accuracy and reliability of robotically guided percutaneous pedicle screw placement: technique and application accuracy C
Godzik et al. *Oper Neurosurg (Hagerstown)* 17(4):389–395, 2019.

Navigated robot-guided pedicle screws placed successfully in single-position lateral lumbar interbody fusion C
Huntsman et al. *J Robot Surg* 14(4):643-647, 2020.

Robotic-assisted navigated minimally invasive pedicle screw placement in the first 100 cases at a single institution C
Huntsman et al. *J Robot Surg* 14(1):199-203, 2020.

Initial single-institution experience with a novel robotic-navigation system for thoracolumbar pedicle screw and pelvic screw placement with 643 screws C
Jain et al. *Int J Spine Surg* 13(5):459-463, 2019.

Pedicle screw accuracy assessment in ExcelsiusGPS® robotic spine surgery: evaluation of deviation from pre-planned trajectory C
Jiang et al. *Chin Neurosurg J 4:23, 2018.*

New spinal robotic technologies S
Jiang et al. *Front Med* 13(6):723-729, 2019.

Robot-assisted versus freehand instrumentation in short-segment lumbar fusion: experience with real-time image-guided spinal robot C
Jiang et al. *World Neurosurg* 136:E635–E645, 2020.

Three-dimensional assessment of robot-assisted pedicle screw placement accuracy and instrumentation reliability based on a preplanned trajectory C
Jiang et al. *J Neurosurg Spine* 33(4):519-528, 2020.

Robotic-assisted spine surgery allows for increased pedicle screw sizes while still improving safety as indicated by elevated triggered electromyographic thresholds C
Kanaly et al. *J Robot Surg* November 30 [Epub ahead of print], 2022.

A retrospective analysis of pedicle screw placement accuracy using the ExcelsiusGPS® robotic guidance system: case series C
Kanaly et al. *Oper Neurosurg* (Hagertown) 24(3):242-247, 2023.

Retrospective study assessing the learning curve and the accuracy of minimally invasive robot-assisted pedicle screw placement during the first 41 robot-assisted spinal fusion surgeries C
Maalouly et al. *Mini-invasive Surg* 5:35, 2021.

Lumbar percutaneous pedicle screw breach rates: a comparison of robotic navigation platform versus conventional techniques B
Panchmatia et al. 33(4):E162-E167, 2020.

Robotic assisted percutaneous iliac screw fixation for destructive lumbosacral metastatic lesions: an early single-institution experience C
Park et al. *Acta Neurochir* (Wien) 163(11):2983-2990, 2021.

Sacroiliac joint fusion: fusion rates and clinical improvement using minimally invasive approach and intraoperative navigation and robotic guidance C
Sarkar et al. *Asian Spine J* 16(6):882-889, 2022.
Also listed under SI-LOK®

Does robot-assisted navigation influence pedicle screw selection and accuracy in minimally invasive spine surgery? C
Shafi et al. *Neurosurg Focus* 52(1):E4, 2022.

Robot-assisted pedicle screw placement: learning curve experience C
Siddiqui et al. *World Neurosurg* 130:E417–E422, 2019.

Factors affecting the accuracy of pedicle screw placement in robot-assisted surgery: a multicenter study C
Toossi et al. *Spine (Phila Pa 1976)* 47(23):1613-1619, 2022.

Assessment of surgical procedural time, pedicle screw accuracy, and clinician radiation exposure of a novel robotic navigation system compared with conventional open and percutaneous freehand techniques: a cadaveric investigation B
Vaccaro et al. *Global Spine J* 10(7):814-825, 2020.

Does the accuracy of pedicle screw placement differ between the attending surgeon and resident in navigated robotic-assisted minimally invasive spine surgery? C
Vardiman et al. *J Robot Surg* 14(4):567-572, 2020.

Pedicle screw accuracy in clinical utilization of minimally invasive navigated robot-assisted spine surgery C
Vardiman et al. *J Robot Surg* 14(3):409-413, 2020.

Decreasing the pedicle screw misplacement rate in the thoracic spine with robot-guided navigation C
Vardiman et al. *Clin Spine Surg* June 16 [Epub ahead of print], 2023.

Robotic spine surgery: current state in minimally invasive surgery S
Vo et al. *Global Spine J* 10(2 Suppl):34S-40S, 2020.

Navigated robotic assistance improves pedicle screw accuracy in minimally invasive surgery of the lumbosacral spine: 600 pedicle screws in a single institution C
Wallace et al. *Int J Med Robot* 16(1):e2054, 2020.

Awake percutaneous transforaminal lumbar interbody fusion with expandable cage and robotic-assisted navigation and instrumentation: case report and review of literature C
Wang et al. *Interdisc Neurosurg* 20(June 2020):100685, 2020.

HEDRON®

Comparison of 3D-printed titanium-alloy, standard titanium-alloy, and PEEK interbody spacers in an ovine model B
Van Horn et al. *Spine J* 21(12):2097-2103, 2021.

INDEPENDENCE®

The role of sacral slope in lumbosacral fusion: a biomechanical study B
Drazin et al. *J Neurosurg Spine* 23(6):754–762, 2015.

Evaluation of two novel integrated stand-alone spacer designs compared with anterior and anterior-posterior single-level lumbar fusion techniques: an *in vitro* biomechanical investigation B
Kuhns et al. *Asian Spine J* 11(6):854–862, 2017.

REFLECT™

Return to sport and daily life activities after vertebral body tethering for AIS: analysis of the sport activity questionnaire C
Baroncini et al. *Eur Spine J* 30(7):1998-2006, 2021.

Learning curve for vertebral body tethering: analysis on 90 consecutive patients C
Baroncini et al. *Spine Deform* (1):141-147, 2021.

The effects of vertebral body tethering on sagittal parameters: evaluations from a 2-years follow-up C
Baroncini et al. *Eur Spine J* 31(4):1060-1066, 2022.

Are we looking at a paradigm shift in the management of adolescent idiopathic scoliosis? Comprehensive retrospective analysis of 75 patients of nonfusion anterior scoliosis correction with 2-5-year follow-up: a single center experience C
Hegde et al. *Asian Spine J* May 22 [Epub ahead of print], 2023.

An initial biomechanical investigation of fusionless anterior tether constructs for controlled scoliosis correction B
Lavelle et al. *Spine J* 16(3):408-413, 2016.

Motion preservation surgery for scoliosis with a vertebral body tethering system: a biomechanical study B
Nicolini et al. *Eur Spine J* 31(4):1013-1021, 2021.

REVERE®

Short segment spinal instrumentation with index vertebra pedicle screw placement for pathologies involving the anterior and middle vertebral column is as effective as long segment stabilization with cage reconstruction: a biomechanical study B
Bartanusz et al. *Spine (Phila Pa 1976)* 40(22):1729–1736, 2015.

Undertapping of lumbar pedicle screws can result in tapping with a pitch that differs from that of the screw, which decreases screw pull-out force B
Bohl et al. *Spine* 40(12):E729–E734, 2015.

Pedicle screw instrumentation of thoracolumbar burst fractures: biomechanical evaluation of screw configuration with pedicle screws at the level of the fracture B
Bolesta et al. *Int J Spine Surg* 6:200–205, 2012.

Range of motion after thoracolumbar corpectomy: evaluation of analogous constructs with a novel low profile anterior dual-rod system and a traditional dual-rod system B
Gehrchen et al. *Eur Spine J* 26(3):666–670, 2017.

Comprehensive evaluation of accessory rod position, rod material and diameter, use of cross-connectors, and anterior column support in a pedicle subtraction osteotomy model, part i: effects on apical rod strain: an *in vitro* and *in silico* biomechanical study B
Gelb et al. *Spine (Phila Pa 1976)* 46(1):E1-E11, 2021.

Does lumbopelvic fixation add stability? A cadaveric biomechanical analysis of an unstable pelvic fracture model B
Jazini et al. *J Orthop Trauma* 31(1):37–46, 2017.

Finding the right fit: studying the biomechanics of undertapping with varying thread depths and pitches B
Jazini et al. *Spine J* 17(4):574–578, 2017.

Comprehensive *in silico* evaluation of accessory rod position, rod material and diameter, use of cross-connectors, and anterior column support in a pedicle subtraction osteotomy model, part ii: effects on lumbosacral rod and screw strain B
Jazini et al. *Spine (Phila Pa 1976)* 46(1):E12-E22, 2021.

A novel technique for sacropelvic fixation using image-guided sacroiliac screws: a case series and biomechanical study B
Kim et al. *J Biomed Res* 33(3):208–216, 2019.

Biomechanical comparison of spinopelvic reconstruction techniques in the setting of total sacrectomy B
Mindea et al. *Spine (Phila Pa 1976)* 37(26):E1622–E1627, 2012.

***In vitro* biomechanical study of pedicle screw pull-out strength based on different screw path preparation techniques** B
Moldavsky et al. *Indian J Orthop* 50(2):177–182, 2016.

Biomechanical evaluation of s2 alar-iliac screws: effect of length and quad-cortical purchase as compared with iliac fixation B
O'Brien et al. *Spine* 38(20):E1250–E1255, 2013.

Pedicle screw configuration for thoracolumbar burst fracture treatment: short versus long posterior fixation constructs with and without anterior column augmentation B
Peters et al. *Asian Spine J* 8(1):35–43, 2014.

Stabilizing effect of the rib cage on adjacent segment motion following thoracolumbar posterior fixation of the human thoracic cadaveric spine: a biomechanical study B
Rahm et al. *Clin Biomech (Bristol, Avon)* 70:217-222, 2019.

Biomechanical evaluation of a novel posterior integrated clamp that attaches to an existing posterior instrumentation for use in thoracolumbar revision B
Senatus et al. *Asian Spine J* 7(1):1–7, 2013.

RISE®

The expandable transforaminal lumbar interbody fusion – two years follow-up C
Boktor et al. *J Craniovertebr Junction Spine* 9(1):50–55, 2018.
Also listed under ALTERA® and CALIBER®

Transforaminal lumbar interbody fusion with expandable interbody device provides indirect decompression through significant disc height restoration C
Gentry et al. *J Spine* 8(4):440, 2019.

RISE®-L

Expandable interbody spacers implanted through a lateral approach: a multicenter observational study at two years C
Cohen et al. *J Spine Neurosurg* 9(7):1000342, 2020.
Also listed under CALIBER®-L

Static versus expandable interbody spacers: preliminary 1-year clinical and radiographic results C
Frisch et al. *J Clin Neurol Neurosurg Spine* 1(1):113, 2017.

Static versus expandable interbody spacers: final 2-year clinical and radiographic results C
Frisch et al. *J Neurol Neurosurg Spine* (4)1:1018, 2019.

Laterally placed expandable interbody spacers improve radiographic and clinical outcomes: a 1-year follow-up study
Huang et al. *Interdiscip Neurosurg* 20(June 2020), 100639, 2020.

Expandable titanium interbody spacer via lateral approach improves radiographic and clinical outcomes: a 2-year follow-up study
Li et al. *J Spine* 8(3):439, 2019.

Laterally placed expandable interbody spacers with adjustable lordosis improve radiographic and clinical outcomes
Li et al. *J Spine* S8:001, 2019.

Comparative effectiveness of adjustable lordotic expandable versus static lateral lumbar interbody fusion devices: one year clinical and radiographic outcomes
Li et al. *Open Orthop J* 14:60-68, 2020.

Comparative effectiveness of expandable versus static interbody spacers via MIS LLIF: a 2-year radiographic and clinical outcomes study
Li et al. *Global Spine J* 10(8):998-1005, 2020.

Adjustable lordotic expandable spacers: how do they compare to traditional static spacers in lateral lumbar interbody fusion?
Li et al. *J Spine* 9(6):459, 2020.

Laterally placed expandable interbody spacers with and without adjustable lordosis improve radiographic and clinical outcomes: a two-year follow-up study
Li et al. *Cureus* 13(12):e20302, 2021.

Expandable technology improves clinical and radiographic outcomes of minimally invasive lateral lumbar interbody fusion for degenerative disc disease
Li et al. *Int J Spine Surg* 15(1):87-93, 2021.

Comparative effectiveness of laterally placed expandable versus static interbody spacers: a 1-year follow-up radiographic and clinical outcomes study
Li et al. *Asian Spine J* 15(1)89-96, 2021.

Laterally placed expandable interbody spacers with and without adjustable lordosis improve patient outcomes: a preliminary one-year chart review
Li et al. *Clin Neurol Neurosurg* 213:107123, 2022.

Do evoked potentials matter? Pre-pathologic signal change and clinical outcomes with expandable cages in lateral lumbar interbody fusion surgery
Malham et al. *J Clin Neurosci* 98:248-253, 2022.
Also listed under ELSA®

Rod Link Reducer

Use of a novel corrective device for correction of deformities in adolescent idiopathic scoliosis
Feeley et al. *Ir J Med Sci* May 18 189(1):203-210, 2020.

A novel posterior rod-link-reducer system provides safer, easier, and better correction of severe scoliosis
Zhang et al. *Spine Deform* 7(3):445–453, 2019.

SECURE-C®

Cervical disc arthroplasty versus anterior cervical discectomy and fusion: a meta-analysis of rates of adjacent-level surgery to 7-year follow-up S
Badhiwala et al. *J Spine Surg* 6(1):217-232, 2020.

Clinical outcomes with selectively constrained SECURE-C® cervical disc arthroplasty: two-year results from a prospective, randomized, controlled, multicenter investigational device exemption study C
Vaccaro et al. *(Phila Pa 1976)* 38(26):2227–2239, 2013.

Long-term clinical experience with selectively constrained SECURE-C® cervical artificial disc for 1-level cervical disc disease: results from seven-year follow-up of a prospective, randomized, controlled investigational device exemption clinical trial C
Vaccaro et al. *Int J Spine Surg* 12(3): 377–387, 2018.

Long-term results comparing cervical disc arthroplasty to anterior cervical discectomy and fusion: a systematic review and meta-analysis of randomized controlled trials S
Wang et al. *Orthop Surg* 12(1):16-30, 2020.

SI-LOK®

Biomechanical analysis of motion following sacroiliac joint fusion using lateral sacroiliac screws with or without lumbosacral instrumented fusion B
Dall et al. *Clin Biomech (Bristol, Avon)* 68:182–189, 2019.

Minimally invasive sacroiliac joint fusion using a novel hydroxyapatite-coated screw system improves functional outcomes in patients with sacroiliitis at two year follow-up C
Mohit et al. *Interdisc Neurosurg* 22(December 2020)100834, 2020.

A biomechanical investigation of the sacroiliac joint in the setting of lumbosacral fusion: impact of pelvic fixation versus sacroiliac joint fixation B
Mushlin et al. *J Neurosurg Spine* 31(4):457-618, 2019.

The effect of sacroiliac fusion and pelvic fixation on rod strain in thoracolumbar fusion constructs: a biomechanical investigation B
Mushlin et al. *Spine (Phila Pa 1976)* 46(14):E769-E775, 2021.

Minimally invasive sacroiliac joint fusion using a novel hydroxyapatite-coated screw: preliminary 1-year clinical and radiographic results of a 2-year prospective study C
Rappoport et al. *World Neurosurg* 101:493–497, 2017.

Minimally invasive sacroiliac joint fusion using a novel hydroxyapatite-coated screw: final 2-year clinical and radiographic results C
Rappoport et al. *J Spine Surg* 7(2):155-161, 2021.

Clinical results following robotic navigation guidance for sacroiliac joint fusion in 36 patients C
Chaves et al. *Neurosurg Focus* 52(1):E6, 2022.
Also listed under ExcelsiusGPS®

Sacroiliac joint fusion: fusion rates and clinical improvement using minimally invasive approach and intraoperative navigation and robotic guidance C
Sarkar et al. *Asian Spine J* 16(6):882-889, 2022.
Also listed under ExcelsiusGPS®

TRANSITION®

Stability and load sharing characteristics of a posterior dynamic stabilization device B
Cook et al. *Int J of Spine Surg* 9(9), 2015.

Could junctional problems at the end of a long construct be addressed by providing a graduated reduction in stiffness? A biomechanical investigation B
Durrani et al. *Spine* 37(1):E16–E22, 2012.

***In vitro* biomechanical study to quantify range of motion, intradiscal pressure, and facet force of 3-level dynamic stabilization constructs with decreased stiffness** B
Lee et al. *(Phila Pa 1976)* 38(22):1913–1919, 2013.

The comprehensive biomechanics and load-sharing of semirigid PEEK and semirigid posterior dynamic stabilization systems B
Sengupta et al. *Adv in Orthop* 2013:745610, 2013.

XPand®

Spinal instrumentation after complete resection of the last lumbar vertebra: an *in vitro* biomechanical study after L5 spondylectomy B
Bartanusz et al. *Spine (Phila Pa 1976)* 36(13):1017–1021, 2011.

Biomechanical rigidity of an all-polyetheretherketone anterior thoracolumbar spinal reconstruction construct: an *in vitro* corpectomy model B
Moon et al. *Spine J* 9(4):330–335, 2009.

ZYFUSE®

Do facet screws provide the required stability in lumbar fixation? a biomechanical comparison of the Boucher technique and pedicular fixation in primary and circumferential fusions B
Agarwala et al. *Clin Biomech* 27(1):64–70, 2011.