

Oral Presentations & Invited Lectures

- 14.00-14.05 **Welcome by the Local Host**
Barend van Royen
- 14.05-14.15 **Welcome by the Program Chairman**
Douglas Wardlaw
- Session I: Biology**
Chairs: Rajasekaran S. & Chiba K.
- 14.15-14.20 **O146 Cancer risk and the use of bone morphogenetic protein**
Carragee E., Chu G., Weiner B., Hurwitz E., Comer G., Park D., Yoon T.; USA
- 14.22-14.27 **O147 Serum biomarkers demonstrate greater correlation with low back pain in older adults than MRI**
Sowa G.A., Huang W., Perera S., Kusturiss M.B., Bechara B., Agarwal V., Boardman J., Camacho-Soto A., Davies C., Vo N., Kang J., Weiner D.; USA
- 14.29-14.34 **O148 A novel molecular targeted therapy for spinal MRSA infection**
Kuramoto T., Ishii K., Nagai S., Funao H., Kobayashi K., Hirai M., Sasaki A., Okada Y., Chiba K., Koyasu S., Toyama Y., Matsumoto M.; Japan
- 14.36-14.41 **O149 Inhibiting brain-derived neurotrophic factor (BDNF) at the punctured intervertebral disc downregulates pain-related neuropeptide production in dorsal root ganglia in rats**
Orita S., Ohtori S., Eguchi Y., Inoue G., Yamauchi K., Ishikawa T., Miyagi M., Kamoda H., Arai G., Suzuki M., Sakuma Y., Oikawa Y., Inage K., Takahashi K.; Japan
- 14.41-14.53 **Discussion**

- 14.53-14.58 **O150 Findings of cerebrospinal fluid content in patients with lumbar spinal stenosis**
Kawamura K., Okano Y., Iizuka H., Torio T., Takahashi K.E.; Japan
- 15.00-15.05 **O151 Chronic exposure to tobacco smoke induces proteolysis of disc aggrecan**
Vo N., Wang D., Nasto L., Dong Q., Sowa G., Lee J., Leme A., Shapiro S., Roughley P., Kang J.; Canada
- 15.07-15.12 **O152 Glucosamine supplementation has a negative effect on intervertebral disc matrix**
Jacobs L.J., Coehlo P., Dong Q., Bechara B., Hempen E., Vo N., Kang J.D., Balk J., Preuss H., Sowa G.; USA
- 15.14-15.19 **O153 Dominant involvement of apoptosis relative to autophagy in a rat tail sustained static compression loading-induced disc degeneration model**
Yurube T., Hirata H., Kakutani K., Zhang Z., Yamamoto J., Kurakawa T., Maeno K., Takada T., Doita M., Kurosaka M., Kang J., Nishida K.; USA & Japan
- 15.19-15.30 **Discussion**
- 15.30-16.00 **Coffee**
- 16.00-16.30 **Invited Lecture 1** - Introduced by D. Wardlaw
Present status of the biology of disc degeneration and inflammatory cascade; relationship to present and potential treatments
Roberts S.; UK
- 16.40-17.40 **Session II: Special Poster Session I**



Session III: Disc Degeneration

Chairs: An H. & Lotz J.

- 08.00-08.05 **O203** **Does provocative discography cause clinically important injury to the lumbar intervertebral disc? A ten-year matched cohort study**
Carragee E., Cuellar J., Herzog R., Carrino J., Hurwitz E.; USA
- 08.07-08.12 **O204** **Is adjacent segment degeneration (ASD) associated with preexisting disc degeneration?**
Jeon C.H., Chung N.S., Park D.Y., Hyun H.S., Kim J.H.; Republic of Korea
- 08.14-08.19 **O205** **Adjacent segment degeneration and sagittal spinopelvic alignment in a mean 16-year follow-up of lumbar spinal fusion**
Kobayashi T., Aono K., Jimbo S., Senoo I., Atsuta Y.; Japan
- 08.21-08.30 **Discussion**
- 08.30-08.35 **O206** **Spine curvature is heritable and associated with disc degeneration**
Williams F.M.K., Osei-Boredom D.C., Popham M., MacGregor A.J., Spector T.D.; UK
- 08.37-08.42 **O207** **Ligation of lumbar arteries induces extracellular matrix changes in intervertebral discs as shown by MRI T2-mapping and histology**
Imanishi T., Akeda K., Obata S., Sudo A.; Japan
- 08.44-08.49 **O208** **Multiparametric magnetic resonance imaging of normal and degenerative lumbar intervertebral discs**
Kim M., Chan Q., Anthony M.P., Samartzis D., Cheung K.M.C., Khong P.L.; Hong Kong
- 08.51-09.00 **Discussion**

Session IV: Low Back Pain

Chairs: Battié M. & Kikuchi S.

- 09.00-09.05 **O209** **Is overweight associated with low back pain in adolescence?**
Mikkonen P., Laitinen J., Remes J., Tammelin T., Taimela S., Zitting P., Korpelainen R., Karppinen J.; Finland
- 09.07-09.12 **O210** **Beliefs influence patients' care-seeking behaviour for low back pain**
Mannion A.F., Tamcan O., Eisenring C., Horisberger B., Mueller U., Elfering A.; Switzerland
- 09.14-09.19 **O211** **Considerable long term reduction of pain and healthcare use in patients with chronic low back pain after a short intensive pain management program**
Van Hooff M.L., Horsting P., O'Dowd J., De Kleuver M., Van Lankveld W., Van Limbeek J.; The Netherlands & UK
- 09.21-09.30 **Discussion**
- 09.30-09.35 **O212** **Subgrouping patients with chronic low back pain**
Van Hooff M.L., De Kleuver M., Van Lankveld W., Van Limbeek J.; The Netherlands
- 09.37-09.42 **O213** **The effect of required physiatrist consultation on surgery rates for back pain**
Fox J., Haig A.J., Todey B., Challa S.; USA
- 09.44-09.49 **O214** **Total disc replacement for chronic low-back pain: A Cochrane review**
Jacobs W.C.H., Van der Gaag N.A., Tuschel A., De Kleuver M., Peul W., Verbout A.J., Oner F.C., The Netherlands
- 09.49-10.00 **Discussion**
- 10.00-10.30 **Coffee**
- 10.30-11.00 **Invited Lecture 2** – Introduced by D. Wong
Update on Classifications for Spinal Stenosis
Schizas C.; Switzerland



Session V: Lumbar Spinal Stenosis

Chairs: Luk K. & Hai Y.

- 11.00-11.05 **O215** **Who should have surgery for spinal stenosis? Treatment effect predictors in SPORT**
Pearson A.M., Lurie J.D.N., Tosteson T.D., Zhao W., Abdu W.A., Weinstein J.N.; USA
- 11.07-11.12 **O216** **Poor surgical outcomes of lumbar spinal stenosis with depression – A cohort study**
Watanabe K., Otani K., Nikaido T., Kato K., Yabuki S., Kikuchi S., Konno S.; Japan
- 11.14-11.19 **O217** **SPORT predictors of treatment effect in degenerative spondylolisthesis**
Pearson A.M., Lurie J.D., Tosteson T.D., Zhao W., Abdu W.A., Weinstein J.N.; USA
- 11.21-11.30 **Discussion**
- 11.30-11.35 **O218** **The efficacy and feasibility of a prostaglandin E1 derivative in patients with lumbar spinal stenosis - A multicenter, double blinded, randomized comparative study with Aceclofenac**
Lee H.M., Kim D.J., Shin D.E., Moon S.H., Suk K.S., Park S.Y.; Korea
- 11.37-11.42 **O219** **Therapeutic efficacy of pregabalin for patients with leg symptoms due to lumbar spinal stenosis**
Takahashi N., Arai I., Kayama S., Ichiji K., Fukuda H., Kaga T., Konno S.; Japan
- 11.44-11.49 **O220** **Magnitude of dural tube compression does not show a predictive value for symptomatic lumbar spinal stenosis for one year follow-up: A prospective cohort study**
Otani K., Kikuchi S., Yabuki S., Nikaido T., Watanabe K., Kato K., Konno S.; Japan
- 11.51-12.00 **Discussion**

Session VI: Ageing Spine (I)

Chairs: Rydevik B. & Hu S.

- 12.00-12.05 **O221** **A randomized trial of balloon kyphoplasty and non-surgical management for treating acute vertebral compression fractures: Vertebral body kyphosis correction and surgical parameters**
Van Meirhaeghe J., Bastian L., Boonen S., Ranstam J., Tillman J.B., Wardlaw D.; Belgium, Germany, Sweden & UK
- 12.07-12.12 **O222** **Cost-benefit analysis of treatments for vertebral compression fractures**
Edidin A.A., Ong K.L., Lau E., Schmier J.K., Kemner J.E., Kurtz S.M.; USA
- 12.14-12.19 **O223** **Pathogenic factors affecting back pain and delayed neurologic paralysis in patients with osteoporotic vertebral collapse**
Nakano M., Yasuda T., Kawaguchi Y., Seki S., Hori T., Kimura T., Hirano N.; Japan
- 12.21-12.30 **Discussion**



Session VI: AGEING SPINE (II)

Chairs: Rydevik B. & Hu S.

- 14.00-14.05 **O224** **Impact of initial treatment interventions on the patient outcome in osteoporotic vertebral fracture**
Hoshino M., Tsujio T., Terai H., Namikawa T., Kato M., Matsumura A., Suzuki A., Takayama K., Takaoka K., Nakamura H.; Japan
- 14.07-14.12 **O225** **Pathomechanism of intravertebral clefts in osteoporotic compression fractures of the spine**
Chang D.G., Kim Y.H., Ha K.Y.; Korea
- 14.14-14.19 **O226** **Acute proximal junctional failure following long posterior fusion for spinal deformity: Risk factors and radiographic analysis comparing thoracolumbar to upper thoracic failures**
Hart R.A., Hostin R., Bess S., Line B., Ames C.P., Kebaish K., Burton D.C., Lafage V., O'Brien M.F., Schwab F.J., Shaffrey C.I., Smith J.S., Wood K.B.; USA
- 14.19-14.30 **Discussion**
- Session VII: Biomechanics**
Chairs: Oxland T. & Hodges P.
- 14.30-14.35 **O227** **Lumbar disc height distributions during torsion**
Inoue N., Mammoser N.M., Espinoza Orías A.A., An H.S., Andersson G.B.J.; USA
- 14.37-14.42 **O228** **Mild degeneration decreases viscoelastic moduli of the nucleus pulposus in a large animal model**
Detiger S.E.L., Hoogendoorn R.J.W., Helder M.N., van Royen B.J., van der Veen A.J., Koenderink G.H., Smit T.H.; The Netherlands
- 14.44-14.49 **O229** **Flexibility testing of lumbar spine functional spinal units using a robot/UFS testing system**
Bell K.M., Yan Y., Hartman R.A., Kang J.D.; USA
- 14.49-14.58 **Discussion**

- 14.58-15.03 **O230** **Sagittal lumbar and pelvic alignment in standing and sitting position in adults**
Endo K., Suzuki H., Kimura D., Tanaka H., Shishido T., Yamamoto K.; Japan
- 15.05-15.10 **O231** **Patients with lumbar segmental instability presents more severe low back pain than those without instability**
Hasegawa K., Shimoda H., Sasaki K.; Japan
- 15.12-15.17 **O232** **On the extent and nature of nucleus-annulus integration**
Wade K., Robertson P., Broom N.; New Zealand
- 15.19-15.24 **O233** **Micromechanics of annulus-endplate integration**
Rodrigues S.A., Wade K., Robertson P., Thambyah A., Broom N.D.; New Zealand
- 15.24-15.35 **Discussion**
- 15.35-16.00 **Coffee**
- Session VIII: Radiology – MRI**
Chairs: Diwan A. & Assheuer J.
- 16.00-16.05 **O234** **A large-scale population-based study of modic changes of the lumbar spine**
Mok F.P., Samartzis D., Karppinen J., Fong D.Y.T., Luk K.D.K., Cheung K.M.C.; Hong Kong & Finland
- 16.07-16.12 **O235** **Modic (endplate) changes in the lumbar spine: Bone microarchitecture and remodeling**
Chong K.C., Perilli E., Parkinson I., Osti O., Fazzalari N.; Australia
- 16.14-16.19 **O236** **Lumbar modic changes – in low- and high-field MRI**
Bendix T., Sorensen J.S., Henriksson G.A.C., Bolstad J.E., Narvestad E.K., Jensen T.S.; Denmark & Norway
- 16.21-16.30 **Discussion**



- 16.30-16.35 **O237** **3-D mesostructural imaging of the annulus fibrosus using optical coherence tomography**
Han S.K., Chen C.W., Wierwille J., Chen Y., Hsieh A.H.; USA
- 16.37-16.42 **O238** **Chemical exchange saturation transfer (CEST) and T2 mapping in subjects with intervertebral disc degeneration**
Kim M., Chan Q., Anthony M.P., Samartzis D., Cheung K.M.C., Khong P.L.; Hong Kong
- 16.44-16.49 **O239** **Gadolinium-enhanced MRI of the lumbar spine has no additive value over non-enhanced MRI in the evaluation of patients with sciatica**
el Barzouhi A., Vleggeert-Lankamp C.L.A., Lycklama à Nijeholt G.J., Van der Kallen B.F., Brand R., Koes B.W., Peul W.C.; The Netherlands
- 16.51-16.56 **O240** **Additive value of Magnetic Resonance Imaging beyond clinical assessment in the evaluation of patients who do not recover from sciatica**
el Barzouhi A., Vleggeert-Lankamp C.L.A., Lycklama à Nijeholt G.J., Van der Kallen B.F., Brand R., Koes B.W., Peul W.C.; The Netherlands
- 16.58-17.10 **Discussion**
- 17.10-18.00 **First Business Meeting**



Session IX: The ISSLS Prize Papers

Chair: Andersson G.

- 07.30-07.40 Introduction and Award Ceremony
Sponsored by DePUY SPINE™
- 07.40-07.50 **O241 ISSLS Prize – Clinical**
Lumbar vertebral endplate lesions: Associations with disc degeneration and back pain history
Wang Y., Videman T., Battié M.C.; Canada
- 07.50-08.00 **Discussion**
- 08.00-08.10 **O242 ISSLS Prize – Biomechanics**
Disk dynamic compression in rats produces persistent increases in inflammatory mediators in disks and induces persistent nerve injury and regeneration of the afferent fibers innervating disks
Miyagi M., Ishikawa T., Kamoda H., Suzuki M., Murakami K., Shibayama M., Orita S., Eguchi Y., Arai G., Sakuma Y., Kubota G., Oikawa Y., Ozawa T., Aoki Y., Toyone T., Takahashi K., Inoue G., Kawakami M., Ohtori S.; Japan
- 08.10-08.20 **Discussion**
- 08.20-08.30 **O243 ISSLS Prize - Biology**
Inhibition of NF-κB activity ameliorates age-associated disc degeneration in a mouse model of accelerated aging
Nasto L.A., Seo H.Y., Robinson A.R., Tilstra J.S., Clauson C.L., Sowa G.A., Ngo K., Dong Q., Pola E., Lee J.Y., Niedemhofer L.J., Kang J.D., Robbins P.D., Vo N.V.; USA
- 08.30-08.40 **Discussion**
- 08.40-09.20 **Harry Farfan Presidential Lecture**
Introduction by Rajasekaran S.
Guest Speaker: Shetty D.P.
High quality care at low cost - Is it a reality?
- 09.20-10.00 **Presidential Address: Rajasekaran S.**
Introduction by Oxland T.
Publish to flourish - Is it corrupting science?
- 10.00-10.30 **Coffee**

Session VI: 'Best of Show' Highest rated abstracts

Moderators: Berk H. & Pellisé F.

- 10.30-10.38 **O244 Changing the body position may lead to high spinal loads**
Rohlmann A., Petersen R., Graichen F., Bergmann G.; Germany
- 10.38-10.46 **O245 Accuracy of cervical and thoracic pedicle screw insertion in intraoperative 3D image navigation surgery: Impact of the distance from the navigation reference frame**
Kanemura T., Satake K., Matsumoto A., Sakai Y., Yamaguchi H., Imagama S., Itoh Z., Muramoto A., Ishikawa Y.; Japan
- 10.46-10.54 **O246 Prevalence of back and neck disability among treated and untreated patients with idiopathic scoliosis**
Grauers A., Carlsson M.K., Danielsson A., Gerdhem P.; Sweden
- 10.54-11.02 **O247 Influence of the type of the sagittal profile on clinical results after lumbar total disc replacement after a minimal follow-up of 24 months**
Strube P., Hoff E., Gross C., Putzier M.; Germany
- 11.02-11.10 **O248 The importance of L5 incidence measurement in high-grade spondylolisthesis**
El Rachkidi R., Burnier M., Roussouly P.; France
- 11.10-11.18 **O249 Early clinical results of a novel combined kyphoplasty and intraoperative radiation (Kypho-IORT) in spinal metastases**
Schmidt R., Bludau F., Reis T., Blank E., Wenz F., Obertacke U.; Germany
- 11.18-11.26 **O250 Posterior spinal percutaneous stabilization - Where are the limits?**
Wiese D., Ezzati A., Shawky A., Boehm H.; Germany
- 11.30-12.00 **Medal Lecture: "In vino veritas"**
Kravitz J.; USA
- 12.00-12.30 **Presidential Address**
Jean Charles LeHuec



- 08.00-09.00 **Session X: Special Poster Session 2**
- Session XI: Disc Herniation**
Chairs: van Royen B. & Robertson P.
- 09.15-09.20 **O333 Recovery of motor deficit accompanying sciatica – Subgroup analysis of a randomized controlled trial**
Overdevest G.M., Vleggeert-Lankamp C.L.A.M., Jacobs W.C.H., Peul W.C.; The Netherlands
- 09.22-09.27 **O334 Long-term clinical and radiological outcomes and their correlation after open discectomy for lumbar disc herniation**
Son I.N., Chang D.G., Kim Y.H., Ha K.Y.; Korea
- 09.29-09.34 **O335 Effect of waitlist-time on pain improvement after elective surgical lumbar discectomy**
Quon J.A., Sobolev B., Levy A.R., Fisher C.G., Bishop P.B., Kopec J.A., Dvorak M.F., Schechter M.T.; Canada
- 09.36-09.41 **O336 A randomized, double-blind, placebo-controlled trial of etanercept delivered by the transforaminal epidural route for the treatment of symptomatic lumbosacral disc herniation**
Freeman B.J.C., Ludbrook G., Hall S., Cousins M., Mitchell B., Jaros M.J., Wyand M., Gorman J.; Australia & USA
- 09.43-09.48 **O337 Do L5 and S1 nerve root compressions produce radicular pain in a dermatomal pattern?**
Taylor C.S., Coxon A., Watson P., Greenough C.G.; UK
- 09.48-10.00 **Discussion**
- 10.00-10.30 **Coffee**

Session XII: Spinal Fusion - Use of BMP

Chairs: Gunzburg R. & Balagué F.

- 10.30-10.35 **O338 In an animal model of posterolateral arthrodesis BMP-2 triggers postoperative allodynia and local DRG inflammation**
Kang D., Dmitriev A.E., Tsytsikova L., Gaume R., Craig A., Lehman Jr R.A., Symes A.J.; USA
- 10.37-10.42 **O339 Quantitative assessment of retrograde ejaculation using semen analysis, comparison to a standardized qualitative questionnaire, and investigating the impact of rhBMP-2**
Tepper G., Rabbani R., Yousefzadeh M., Prince D.; USA
- 10.51-10.56 **O341 Effectiveness and safety of recombinant human bone morphogenetic protein-2 versus local bone graft in primary lumbar interbody fusion**
Adams C.L., Robertson I.K., Broadhurst S., Ogden K., Edis D.; Australia
- 10.58-11.10 **Discussion**
- 11.10-11.40 **Invited Lecture 3** – Introduced by Chiba K.
Relationship between industry and researchers; What are their responsibilities?
Bono C.; USA



Session XIII: Epidemiology/ Health Research Rehabilitation

Chairs: M. Nordin & J. Karppinen

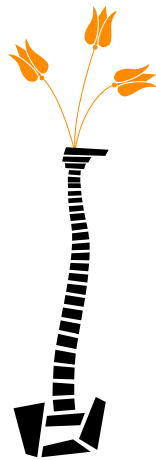
- 11.42-11.47 **O342** **Inconsistencies between abstracts and manuscripts in published papers about lumbar spine surgery**
Lehmen J.A., Deering R.M., Simpson A.K., Carrier C.S., Bono C.M.; USA
- 11.49-11.54 **O343** **The effect of early initiation of rehabilitation after lumbar spinal fusion. A randomized clinical study.**
Oestergaard L.G., Nielsen C.V., Bünger C.E., Sogaard R., Fruensgaard S., Helmig P., Christensen F.B.; Denmark
- 11.56-12.01 **O344** **Presurgical psychological screening: A new algorithm, including the MMPI-2-RF, for predicting spine surgery results**
Block A.R., Ohnmeiss D.D., Guyer R.D., Atanasov A., Ben-Porath Y., Burchett D.; USA
- 12.01-12.10 **Discussion**
- 12.10-12.15 **O345** **Do we agree on level of evidence (LOE), and does author designated LOE influence acceptance of abstract for podium presentation?**
Sengupta D.K., Sanders J.O., Burton D.C., Knight R.Q., Bowen E., Spratt K.F., Raso V.J.; USA & Canada
- 12.17-12.22 **O346** **Association of complementary and alternative medicine use and health care expenditures for spine problems**
Martin B.I., Gerkovich M.M., Deyo R.A., Sherman K.J., Cherkin D.C., Goertz C., Lafferty W.; USA
- 12.24-12.29 **O347** **Trends in utilization and expenditures for spine-related problems in the United States**
Martin B.I., Deyo R.A., Lurie J.D., Mirza S.K.; USA
- 12.31-12.40 **Discussion**
- 12.40-13.00 **Second Business Meeting**



- 14.00-14.30 **Session XIV: Fellowship Award Ceremony**
Chair: Oxland T.
- Introduction of Fellowships
by *Scott Hodges*
- Announcement MacNab/LaRocca Fellowship for 2012
- MacNab LaRocca Fellowship Report 2011
Recipient - Christopher Colloca
- Announcement of Globus Fellowship for 2012
- Globus Fellowship Report 2011
Recipient - Dr. Paramisavim
- Introduction of the International ISSLS Fellows for 2011 and 2012 - Sponsored by Eisai Co Ltd
- Presentation of Spine Young Investigators Award
by *Scott Boden*
- The distribution of body mass as a significant risk factor for lumbar spinal fusion postoperative infections**
Mehta A.I., Babu R., Karikari I.O., Hughes B.D., Agarwal V.J., Owens T.R., Friedman A.H., Bagley C.A., Gottfried O.N.; USA
- Session XV: Surgery**
Chairs: Takahashi K. & Fairbank J.
- 14.30-14.35 **O378 Compensation hinders functional recovery in lumbar spinal fusions - or does it? The benefits of a no fault, universal compensation system**
Montgomery A.S., Cunningham J.E., Robertson P.A.; New Zealand
- 14.37-14.42 **O379 DensiProbe Spine: First clinical experience with intraoperative measurement of bone quality**
Benneker L.M., Popp A., Schiuma D., Schwyn R.; Switzerland
- 14.44-14.49 **O380 Is it beneficial to remove the pedicle screw implants after fusion in thoracolumbar fractures?**
Jeon C.H., Chung N.S., Park D.Y., Hyun H.S., Kim J.H.; Republic of Korea
- 14.51-15.00 **Discussion**

- 15.00-15.05 **O381 Two state comparison of the safety of lumbar fusion operations among workers' compensation patients**
Martin B.I., Franklin G.M., Deyo R.A., Wickizer T., Lurie J.D., Mirza S.K.; USA
- 15.07-15.12 **O382 Cranial facet joint violations by percutaneously placed pedicle screws adjacent to a minimally invasive lumbar spinal fusion**
Park Y., Korea
- 15.14-15.19 **O383 Intraoperative epidural pressure in patients with positive versus negative sedimentation sign undergoing spinal surgery**
Barz T., Melloh M., Staub L., Lange J., Merk H.R., Follak N.; Germany, New Zealand & Australia
- 15.21-15.30 **Discussion**
- 15.30-16.00 **Coffee**
- Session XVI: Debate**
Chairs: Boden S. & Freeman B.
- Short segment fusion is preferred to long segment fusion for Degenerative Lumbar Scoliosis**
- Proposer:** *Teli M., Italy*
Opposer: *Hu S., USA*
- 16.00-16.15
16.15-16.30
- 16.40-16.50 **Discussion**
- Disc degeneration has mainly a genetic and not a mechanical basis?**
- Second Proposer:** *Battié M., Canada*
Second Opposer: *Kang J., USA*
- 17.05-17.20
17.20-17.30 **Discussion**
- 17.30-17.40 **Announcement - Medtronic Best Paper And Poster Awards**
Moderator: *Wardlaw D.*
- Closing Remarks**
Takahashi Ka., Japan





**Special ePosters ISSLS
&
ePosters
BSS, CSRS-es, EuroSpine,
ISSLS, NASS, SILACO**

Session I: Special Emphasis Poster

Tuesday, May 29, 2012, 16.40-17.40

A. Biomechanics

Chairs: Wilke H.J. & Adams M.

- SP01** Prediction of rapid progression of failure in a lumbar disc under cyclic loading-continuum damage mechanics formulation in a finite element model
Qasim M., Natarajan R.N., An H., Andersson G.B.J.; USA
- SP02** The impact of bone mineral density and disc degeneration on torsion biomechanics of the human lumbar spine following laminectomy
Bisschop A., van Dieën J.H., Mullender M.G., Kingma I., Paul C.P.L., Jijya T.U., van der Veen A.J., van Royen B.J.; The Netherlands
- SP03** Is movement of the lumbar spine important to postural stability?
Mok N.W., Hodges P.W.; Hong Kong & Australia
- SP04** Structural health monitoring (vibration) as a diagnostic tool to identify spinal pathologies: A twin study using MRI validation
Kawchuk G.N., Hartvigsen J., Edgecombe T., Prasad N.; Canada & Denmark
- SP05** Gait analysis under real-life conditions in patients presenting with lumbar spinal stenosis
Kulik G., Pittier R., Paraschiv-Ionescu A., Tzinieris N., Aminian K., Schizas C.; Switzerland
- SP06** Annulus fissures are mechanically and chemically conducive to the ingrowth of nerves and blood vessels
Stefanakis M., Al-Abbasi M., Harding I., Pollintine P., Dolan P., Tarlton J., Adams M.A.; UK
- B. Biology**
Chairs: Boos N. & Urban J.
- SP07** Alteration of blood perfusion in vertebrae of subjects with Scheuermann's disease: Preliminary results
Tibiletti M., Brayda-Bruno M.; Italy

- SP08** Nucleus pulposus cells expressing HBMP-7 can prevent the degeneration of allogenic intervertebral disc in a canine transplantation model
Wang C., Ruan D., Zhang C., Wang D., He Q.; China
- SP09** Rapid and early bone formation prevents premature structural collapse of biodegradable mPCL-TCP used in porcine ALIF
Abbah S.A., Goh J.C.H., Wong H.K.; Singapore
- SP10** Tissue engineered construct (TEC) prevents disc degeneration after nucleotomy in a rat model
Moriguchi Y., Ikuta K., Iwasaki M., Yoshikawa H., Nakamura N.; Japan
- SP11** The effect of SSRI on pain-related behavior induced by nucleus pulposus applied on the nerve root in rats
Saito H., Sekiguchi M., Kikuchi S., Konno S.; Japan
- SP12** Removal of mitochondria-generated reactive oxygen species delays age-associated disc degeneration
Nasto L., Robinson A., Sowa G., Ngo K., Dong Q., Wipf P., Robbins P., Kang J., Niedernhofer L., Vo N.; USA
- C. LBP**
Chairs: Cheung K. & Mannion A.
- SP13** A novel biocompatible "superglue" for repair of spinal disc herniation: Biomechanical intradiscal pressurization evaluation
Gasser R., Erdodi G., Tan J.S., Kennedy J.; USA
- SP14** Role of facet joint tropism in lumbar disc herniation
Chadha M., Sharma G., Arora S.; India
- SP15** Intradiscal injection of autologous platelet-rich-plasma improved discogenic low back pain: Preliminary prospective clinical study
Akedo K., Imanishi T., Masuda K., Sakakibara T., Kasai Y., Sudo A.; Japan & USA
- SP16** Body-mass index modulates association of physical activity with low back pain
Smuck M., Kao M.C.J., Huang S.W., Thomkins-Lane C.C.; USA & Canada



SP17 **The association between low back pain and lumbar spine bone density and trunk muscle mass in a population based cross section study**
Lee S., Nam C.M., Ha Y.; USA & Korea

SP18 **Failure analysis of patients in a US IDE trial of a posterior dynamic stabilization system**
Kitchel S.H., Anand N., Castellvi A., Yonemura K., Cheng B., Robie B.; USA

D. Disc Degeneration

Chairs: Kang J. & Masharawi Y.

SP19 **A cross-sectional study of lumbar lesion in 262 rheumatoid arthritis patients**
Yasuda H., Suzuki A., Koike T., Terai H., Toyoda H., Dohzono S., Yamada K., Takahashi S., Matsumura A., Shinohara Y., Nakamura H.; Japan

SP20 **Association of body mass index in early childhood with lumbar disc degeneration at 21 years of age**
Huikari V., Paananen M., Takatalo J., Kaakinen M., Taimela S., Niinimäki J., Blanco R., Järvelin M.R., Tervonen O., Karppinen J.; Finland

SP21 **A numerical model of cell viability in degenerated lumbar intervertebral discs**
Galbusera F., Mietsch A., Schmidt H., Neidlinger-Wilke C., Wilke H.J.; Germany & Italy

SP22 **Surgical soft-tissue trauma causes disc degeneration – An in vivo animal study on Goettingen minipigs**
Omlor G., Huettnner F., Lorenz S., Holschbach J., Richter W., Guehring T.; Germany

SP23 **Relationship between pain, patient expectations, and satisfaction following spine surgery**
Block A.R., Ohnmeiss D.D., Guyer R.D., Atanasov A., Ben-Porath Y.; USA

SP24 **Does the harvesting of posterior iliac crest autograft contribute to short or long term functional impairment in patients undergoing posterior lumbar fusion?**
Montgomery A.S., Cunningham J.E., Robertson P.A.; New Zealand

E. Deformity
Chairs: Schlenzka D. & Shirado O.

SP25 **Cartilage biomarkers in degenerative lumbar scoliosis**
Hosogane N., Iwanami A., Watanabe K., Tsuji T., Miyamoto T., Ishii K., Niki Y., Nakamura M., Toyama Y., Chiba K., Matsumoto M.; Japan

SP26 **Epidemiologic study of degenerative lumbar scoliosis: Analysis of 276 volunteers**
Otani K., Kikuchi S., Yabuki S., Nikaido T., Watanabe K., Kato K., Konno S.; Japan

SP27 **Global analysis of sagittal spinal alignment in major deformities: Correlation between lack of lumbar lordosis and flexion of the knee**
Bourghli A., Obeid I., Guérin P., Luc S., Gille O., Pointillart V., Vital J.M.; France

SP28 **A comparison of pelvic incidence, lumbar lordosis and lumbar sagittal balance in patients with nonspecific low back pain, degenerative stenosis, spondylolisthesis and healthy volunteers**
Rajasekaran S., Dinesh S.K., Yerramshetty J.S., Shetty A.P.; India & Singapore

SP29 **Readmission rate after spine fusion for adult deformity**
Schairer W., Carrer A., Deviren V., Hu S., Tay B., Burch S., Ames C., Chou D., Mummaneni P., Takemoto S., Sawyer A., Berven S.; USA

SP30 **Radiculopathy in adult scoliosis: Sciatic pain relates to the fractional curve and femoral pain relates to the main lumbar curve - A CT analysis**
Pugely A., Ries Z., Gnanapradeep G., Gao Y., Nash R., Mendoza-Lattes S.A.; USA



Session II: Special Emphasis Poster

Friday, June 1, 2012, 08.00-09.00

F. Spinal Stenosis**Moderators: Hansson T. & Konno S.**

- SP31** **Surgical outcome of neurogenic bladder associated with lumbar spinal stenosis**
Ozaki T., Iguchi T., Sengoku A., Nomi M., Yanagiuchi A., Nishida K., Maeno K., Kakutani K.; Japan
- SP32** **Is there a relationship between the cross-sectional area of the dural sac and postoperative symptoms?**
Futatsugi T., Takahashi J., Ikegami S., Oba H., Mogami Y., Shibata S., Ohji Y., Tanikawa H.; Japan
- SP33** **Study of dural sac cross-sectional area in acute and chronic phases following lumbar decompression surgery**
Oba H., Takahashi J., Futatsugi T., Mogami Y., Shibata S., Ohji Y., Tanikawa H.; Japan
- SP34** **Spinous process splitting decompression versus conventional decompression for degenerative lumbar canal stenosis - A randomised control study**
Shetty A.P., Thomas A., Rajasekaran S.; India
- SP35** **Prospective cohort study over 4 years on the prognosis of lumbar spinal canal stenosis in remission with conservative treatments**
Yano T., Sumi M., Kanatani T., Kasahara K., Kanemura A., Takabatake M., Kaneyama S.; Japan
- SP36** **Revision after lumbar decompression for spinal stenosis**
Fekete T.F., Mannion A.F., Kleinstueck F.S., Mutter U., Porchet F., Buddenberg P., Haschtmann D., Jeszenszky D.; Switzerland

G. Spinal Fusion**Moderators: Bünger C. & Lee H.M.**

- SP37** **Patients perceive limited effect of increased stiffness following fusion of the entire lumbar spine**
Hiratzka J., Hiratzka S., Volpi J., Hart R.; USA
- SP38** **Novel and minimally invasive intervention for low back pain associated with degenerative lumbar scoliosis in the elderly**
Yamada K., Fujimoto Y., Takata H., Hashimoto T., Shimizu R., Sumiyoshi N., Takazawa A.; Japan
- SP39** **Wiltse versus midline approach for decompression and fusion of the degenerative lumbar spine - A prospective cohort comparison**
Street J., Wang Z., Batke J.U., Fisher C.; Canada
- SP40** **Hospital and surgeon variation in complications and repeat surgery following lumbar fusion for common degenerative diagnoses**
Martin B.I., Mirza S.K., Franklin G.M., Lurie J.D., MacKenzie T., Deyo R.A.; USA
- SP41** **Diagnoses associated with lumbar fusion surgery in the elderly U.S. population from 2000-2008**
Tosteson A., Martin B., Mirza S., Deyo R., Lurie J., Tosteson T.; USA
- SP42** **Adjacent disc disease and revision surgery following 360-degree lumbar fusion: A 10-years prospective study**
Garibo F., Maruenda J.I., Barrios C., Burgos J., Hevia E.; Spain
- H. Herniated Disc**
- Moderators: Greenough C. & Kawakami M.**
- SP43** **Endplate defects following lumbar discectomy: A prospective study**
Weiner B.K., Hipp J., Fernandez-Moure J., Tasciotti E.; USA
- SP44** **Surgical techniques for sciatica due to herniated disc: A systematic review**
Jacobs W.C.H., Arts M.P., van Tulder M., Rubinstein S.M., van Middelkoop M., Ostelo R.W., Verhagen A., Koes B.W., Peul W.C.; The Netherlands



- SP45** **Hospital and surgeon variation in repeat surgery rates following decompression for herniated disc**
Martin B.I., Mirza S.K., Flum D.R., Wickizer T., Heagerty P.J., Lenkoski A.F., Deyo R.A.; USA
- SP46** **Volumetric changes of lumbar intervertebral disc herniation in non-operative patients**
Seo J.Y., Ha K.Y., Nam K.W., Choi S., Seo K.B., Shin S.J., Kim S.R.; Korea
- SP47** **How fast the sensory symptoms, numbness, paresthesia and pain resolves after nerve root decompression – A prospective study with patient's self-recorded pain drawing**
Sengupta D.K., Peung H.; USA
- SP48** **Prevalence of Guttman error in PF scores in the SPORT IDH cohort**
Spratt K.F.; USA
- I. Outcomes/Infection**
Moderators: Mayer M. & Mossaad M.
- SP49** **Outcome of treatment of post-operative spine surgical site infections: Predictors of treatment success and failure**
Maruo K., Berven S., Hu S., Ames C., Deviren V., Mummaneni P., Takemoto S., Chou D.; USA
- SP50** **Did the pathogen identification contribute to the treatment course in the pyogenic spondylitis?**
Hashizume H., Yamada H., Minamide H., Nakagawa Y., Nishi H., Kawai M., Iwasaki H., Tsutsui S., Endo T., Ishimoto Y., Nagata K., Yoshida M.; Japan
- SP51** **Total motion generated in the unstable thoracolumbar spine during management of the trauma patient: A comparison of methods in a cadaver model**
Prasarn M.L., Zhou H., Horodyski M.B., Del Rossi G., Conrad B.P., Rechtine G.R.; USA
- SP52** **How well do Roland Morris scores reflect the actual performance on functional tests in patients with chronic LBP?**
Mannion A.F., Caporaso F., Pulkovski N., Sprott H.; Switzerland

- SP53** **Does balloon kyphoplasty improve global spinal alignment in patients with osteoporotic vertebral fractures?**
Kanayama M., Oha F., Shigenobu K., Hashimoto T.; Japan
- SP54** **Disadvantages of using Oswestry disability index in developing countries and the need for the modifications**
Aithala Paramalli J.; India
- J. Spondylolysis/Spondylolisthesis**
Moderators: Szpalski M. & Wong H.K.
- SP55** **Efficacy of physical examinations to diagnose early-stage spondylolysis**
Sugjura S., Nishikawa S., Takashi S., Shiga T., Oyama K., Suzuki Y., Aoki Y.; Japan
- SP56** **Gender differences of radiographic findings in patients with lumbar spondylolysis**
Sakai T., Takao S., Sairyo K., Nishitani H., Yasui N.; Japan
- SP57** **Degenerative spondylolisthesis: The role of a weakened abdominal wall**
Fraser R.D., Dalzell K.; Australia
- SP58** **Long-term clinical outcomes after microendoscopic decompression surgery for lumbar spinal stenosis including degenerative spondylolisthesis**
Minamide A., Yoshida M., Yamada H., Hashizume H., Nakagawa Y., Kawai M., Iwasaki H., Tsutsui S.; Japan
- SP59** **The relationship between performance and traditional outcomes of pain, function and quality of life in people with spondylolisthesis and lumbar spinal stenosis**
Tomkins-Lane C.C., Thomas K., Hu R., Hepler C., Haig A.; Canada & USA
- SP60** **Perioperative outcomes, complications, and costs associated with lumbar spinal fusion in older patients with spinal stenosis and spondylolisthesis: Analysis of the US Medicare claims database**
Ong K.L., Auerbach J.D., Lau E., Ochoa J., Schmier J., Zigler J.D.; USA



Biomechanics

- P239** **Comparison of different posterior instrumentation systems in achieving stability to supplement transforaminal lumbar interbody fusion (TLIF): A biomechanical cadaver study**
Techy F., Mageswaran P., Colbrunn R., Bonner T., McLain R.; USA
- P240** **Biomechanical effect of dynamically stabilizing the adjacent segment to a one level lumbar fusion**
Mageswaran P., Techy F., Colbrunn R., Bonner T., McLain R.; USA
- P242** **Modal testing is a valid method for measuring the mechanical properties of human lumbar motion segments**
Van Engelen S.J.P.M., Ellenbroek M.H.M., Van Royen B.J., De Boer A., Van Dieën J.; The Netherlands
- P243** **Kinematic characteristics of postural stability in individuals with and without recurrent low back pain**
Sung P.; Korea
- P244** **A kinematic analysis of the core spine and pelvis during lateral bending in subjects with and without chronic low back pain**
Sung P.; Korea
- P245** **Human response to single and combined sinusoidal vertical vibration-revisited**
Gant L.C., Wilder D.G., Wasserman D.E.; USA
- P246** **To determine the association between anatomic landmarks of lumbar spine and age: a postmortem study of 1072 cadaveric human specimens**
Bajwa N.S., Young E.Y., Ahn N.U.; USA
- P247** **Lumbar disk degeneration is associated with canal area and interpedicular distance: A study of 1072 human cadaveric specimens**
Bajwa N.S., Young E.Y., Ahn N.U.; USA
- P248** **Is L5 pedicle length increased in subjects with spondylolysis ? An anatomic study of 1072 human cadaveric specimens**
Bajwa N.S., Young E.Y., Ahn N.U.; USA
- P249** **A definition for congenital stenosis of the lumbar spine: An anatomic study of 1072 postmortem specimens**
Bajwa N.S., Young E.Y., Ahn N.U.; USA
- P250** **Establishment of a lumbar torg ratio to predict congenital lumbar stenosis: A study of 420 postmortem subjects**
Bajwa N.S., Young E.Y., Ahn N.U.; USA
- P251** **Is congenital stenosis of the cervical spine associated with congenital lumbar stenosis? An anatomic study of 1072 human cadaveric specimens**
Bajwa N.S., Young E.Y., Ahn N.U.; USA
- P252** **The study of trunk motor control during tracking tasks in combined exertions**
Mousavi S.J., Hadizadeh M., Sedaghatnejad E., Narimani R., Talebian S., Parnianpour M.; Iran
- P253** **Biomechanical effect of Four-Rod Technique on lumbo-sacral fixation: An in vitro human cadaveric investigation**
Zheng Z.M., Wang T.P., Liu H., Li Z.M., Zhang K.B.; China
- P254** **The effect of sliding rods on kinematics and load sharing in a pedicle screw rod system: An in vitro study**
Zhu Q., Lin Z., Huang Z., Chen J.; China
- P255** **Biologic responses of rat intervertebral discs to mechanical loading using a dynamic organ culture system**
Kurakawa T., Kakutani K., Morita Y., Takada T., Maeno K., Yurube T., Zhang Z., Yamamoto J., Hirata H., Doita M., Kurosaka M., Nishida K.; Japan
- P256** **Bone cement augmentation of pedicle screws improves rotational rigidity in the lumbar spine**
Yan Y., Bell K.M., Hartman R.A., Kang J.D.; USA
- P257** **Multiple freeze-thaw cycles and cumulative testing on intervertebral flexibility of human cadaveric lumbosacral spine**
Uppuganti S., Tan J.S.; USA
- P258** **The positive effects of vertebral endplate conformed PCL-HA tissue scaffold on endplate stress distribution and stability in spinal fusion: A finite element study**
Agarwal A., Palepu V., Agarwal A.K., Yildirim E.D., Goel V.K.; USA



- P259** **Fatigue failure of dynamic stabilization devices can be predicted by pedicle-to-pedicle distance changes in the lumbar spine**
Sengupta D.K., Fan H.; USA
- P260** **Dynamic spinal stiffness changes in an in vivo model of spondylolysis**
Colloca C.J., Moore R.J., Gunzburg R., Szpalski M., Afifi M., Freeman B.J.; USA, Australia, Belgium & Canada
- P261** **Finite element investigation of the effect of spina bifida on loading of the vertebral isthmus**
Quah C., Yeoman M., Cizinauskas A., Cooper K., McNally D., Boszczyk B.; UK
- P263** **The influence of disc degeneration of the superior adjacent segment on the stress of the corresponding segment after lumbar fusion**
Kim H.J., Moon S.H., Chun H.J., Kang K.T., Park J.H., Lee H.M.; Korea
- P264** **Changes in recruitment of psoas major in people with recurring back pain when sitting are specific to muscle region and patient subgroup**
Hodges P.W., Park R.J., Tsao H., Claus A., Cresswell A.G.; Australia
- P265** **Holding your breath: Does glottis closure influence the control of the spine?**
Hodges P.W., Massery M., Hagins M.; Australia & USA
- P266** **Transforaminal lumbar interbody fusion: Which construct configuration provides the optimal biomechanical stability?**
Ambati D.V., Dmitriev A.E., Lehman Jr R.A., Kang D.; USA
- P267** **Cement distribution following vertebroplasty affects restoration of mechanical function**
Harrowell I., Gower J., Robson-Brown K., Luo J., Annesley-Williams D.J., Adams M.A., Dolan P.; UK
- P268** **Biomechanical evaluation of anterior and oblique lumbar spacers with integrated plate fixation**
Freeman A.L., Camisa W.J., Buttermann G.R., Malcolm J.; USA
- P269** **Biomechanics of a novel expandable interbody device as compared to BAK cage**
Kiapour A., Kiapour A.M., Kodigudla M., Hill G.M., Mishra S., Goel V.K.; USA
- P270** **The biomechanical consequences of rod reduction following facetectomy in the lumbar spine**
Bevevino A.B., Lehman R.A., Dmitriev A.E., Gaume R.E., Happel P., Helgeson M.D., Kang D.; USA
- P271** **VAS scores and torso motions in low-back pain symptomatic patients**
Espinoza Orías A.A., Soni G., Andersson G.B.J., An H.S., Inoue N.; USA
- P272** **Image-based 3D-characterization of the lumbar spinal canal geometry in vivo**
An J.S., Espinoza Orías A.A., Andersson G.B.J., An H.S., Inoue N.; USA
- P273** **Lumbar facet joint centroids as a function of spinal level and age**
Ishihara Y., Simon P., Espinoza Orías A.A., Andersson G.B.J., An H.S., Inoue N.; USA
- P274** **In vivo measurement of morphological changes in the human lumbar spine pedicle**
Ishihara Y., Espinoza Orías A.A., Simon P., An H.S., Andersson G.B.J., Sugisaki K., Inoue N.; USA
- P275** **Effect of hip abduction exercise with pelvic fixation on recruitment of deep trunk muscles**
Kim E.H., Cho Y.W., Lee D.G., Kim C.S., Park S.H., Kim G.J., Jung Y.J., Ahn S.H.; Korea
- P277** **Tapping insertional torque predicts better pedicle screw fixation and optimal screw size selection**
Helgeson M.D., Lehman R.A., Dmitriev A.E., Kang D.G., Bevevino A.J., Luhmann S.J.; USA
- Disc Biology**
- P278** **IL-1-beta and TNF-alpha modulation of human annulus cells: Chemokine and chemokine receptor expression and production**
Gruber H.E., Hoelscher G., Bethea S., Ingram J., Norton H.J., Hanley E.N.; USA
- P279** **Alendronate chondroprotective effects on disc cells in vitro: Dose-response studies and effects of alendronate on gag production under low osmotic and hypoxic conditions as seen in degenerated disc**
Kobayashi S., Miyazaki T., Shimada S., Guerrero A., Baba H.; Japan



- P280** **Inhibiting IKB kinase-down-regulates inflammatory mediators in injured disks and neuropeptides in dorsal root ganglia innervating injured disks in rats**
Kobori S., Miyagi M., Ishikawa T., Kamoda H., Suzuki M., Hishiya T., Yamada T., Arai G., Sakuma Y., Oikawa Y., Inoue G., Ohtori S., Takahashi K.; Japan
- P281** **The influence of tumor necrosis factor (TNF) alpha derived from nucleus pulposus on nerve**
Hishiya T., Kamoda H., Miyagi M., Ishikawa T., Inoue G., Suzuki M., Sakuma Y., Oikawa Y., Kubota G., Inage K., Saino T., Kobori S., Yamada T., Orita S., Takahashi K., Ohtori S.; Japan
- P282** **Organ culture model for simulation of disc cell therapy**
Neidlinger-Wilke C., Mietsch A., Mollenhauer J., Docheva D., Schieker M., Wilke H.J., Ignatius A.; Germany
- P283** **Effect of autophagy on annulus fibrosus cell matrix homeostasis**
Yurube T., Sowa G., Buscher W., Hartman R., Moon H.J., Nasto L., Coelho P., Vo N., Lotze M., Kang J.; USA
- P284** **The characteristics of dorsal root ganglion neurons and sensory innervation of lumbar intervertebral discs in rabbits**
Yamada T., Ishikawa T., Kamoda H., Miyagi M., Kobori S., Hishiya T., Ohtori S., Inoue G., Arai G., Suzuki M., Sakuma Y., Oikawa Y., Takahashi K.; Japan
- P285** **A new animal model of degenerative disc disease seen in human**
Fukui D., Kawakami M., Nakao S., Matsuoka T.; Japan
- P286** **The modulation of intervertebral disc degeneration by Heme oxygenase-1 in Bach 1 deficient mice**
Ohta R., Tanaka N., Nakanishi K., Kamei N., Nakamae T., Izumi B., Fujioka Y., Ochi M.; Japan
- P287** **BMP-7 inhibits TNF-alpha induced upregulation of the ADAMTS-4 and ADAMTS-5 aggrecanases by antagonizing NF activity**
Wang Z., Hutton W.C., Yoon S.T.; USA
- P288** **Notch signaling pathway regulates programme cellular death of intervertebral disc cells**
Shen C., Jiang L.S., Dai L.Y.; China

- P289** **Time- and dose-dependent cytotoxicities of ioxitalamate and indigocarmine in human nucleus pulposus cells**
Kuh S.U., Kim Y.S., Park H.S., Kim K.H., Park J.Y., Chin D.K., Kim K.S., Cho Y.E.; South Korea
- P290** **Is pain blockage safe? The viewpoint based on nucleus pulposus cell cytotoxicity**
Kuh S.U., Moon J.H., Park H.S., Kim K.H., Park J.Y., Chin D.K., Kim K.S., Cho Y.E.; South Korea
- P291** **Does glucose deprivation influence gene expression and mechanosensitivity of nucleus pulposus cells after long-term culture?**
Mietsch A., Ignatius A., Brayda-Bruno M., Neidlinger-Wilke C.; Germany & Italy
- P292** **Inflammatory pain pattern and pain in lumbar extension are associated with Modic 1 changes: A case-control study**
Bailey F., Maigne J.Y., Genevay S., Marty M., Gandjibakhch F., Rozenberg S., Foltz V.; Switzerland & France
- P293** **Differential involvement of ADAMTS-5 in the early stage and MMP-3 in the moderate to late stage of disc degeneration in a rat tail multi-duration static compression model**
Hirata H., Yurube T., Kakutani K., Maeno K., Takada T., Zhang Z., Yamamoto J., Kurakawa T., Doita M., Kurosaka M., Nishida K.; Japan
- P294** **Stress-mediated regulation of intervertebral disc cells' proliferation**
Mavrogenatou E., Dimeozi A., Pratsinis H., Kleisas D.; Greece
- P295** **Mechanical stress loading of cervical intervertebral disc in CILP transgenic mice promotes intervertebral disc degeneration**
Seki S., Tsumaki N., Matsui Y., Kawaguchi Y., Motomura H., Suzuki K., Kimura T.; Japan
- P296** **The purpose of our study was to use a rabbit model in a twelve-month experiment to determine the long-term changes in the intervertebral discs at the levels adjacent to two fused lumbar levels**
Higashino K., Hamasaki T., Kim J.H., Okada M., Yoon T., Boden S., Hutton W.; Japan, Korea & USA
- P297** **A reproducible papain-induced in-vitro disc degeneration model for the study of injectable nucleus pulposus therapy**
Chan S.C.W., Benneker L.M., Gantenbein-Ritter B.; Switzerland



- P298** **Anti TNFalpha antibody and anti IL-8 antibody cocktail recover mechanical hyperalgesia in herniated disc model**
Takada T., Maeno K., Kakutani K., Yurube T., Yamamoto J., Zhang Z., Hirata H., Kurakawa T., Doita M., Kurosaka M., Nishida K.; Japan
- P299** **MRI changes of intervertebral discs after cement augmentation**
König M.A., Panzer S., Bierschneider M., Boszczyk B.M.; UK & Germany
- P300** **Exogenous SIRT1 shows different effects on proliferation activity in human intervertebral disc depending on the difference of the degeneration stage**
Zhang Z., Kakutani K., Kurakawa T., Hirata H., Yamamoto J., Yurube T., Maeno K., Takada T., Doita M., Kurosaka M., Nishida K.; Japan
- P301** **LRP1 functions as a neurotrophic receptor in dorsal root ganglion sensory neurons**
Yamauchi K., Yamauchi T., Takahashi K., Gonias S.L., Campana W.M.; Japan & USA
- P302** **Annular fibrosis response to ex-vivo static compression of rabbit functional spinal units**
Hartman R.A., Yurube T., Coelho J.P., Bell K.M., Debski R.E., Vo N.V., Kang J.D., Sowa G.A.; USA
- P303** **The behavior of the intervertebral disc cells under the oxygen condition**
Kang Y.M., Moon E.S., Kim H.J., Lee B.H., Kim T.H., Park J.O., Lee H.M., Moon S.H.; Korea
- P304** **EP1/3 pathway suppresses exaggeration of IL-1-induced collagenases by a selective COX-2 inhibitor in human IVD cells**
Sawaji Y., Alimasi W., Endo K., Kosaka T., Kimura D., Yamamoto K.; Japan
- P305** **Effects of intervertebral disc cells on the morphology of DRG and nerve roots: An in vivo study**
Larsson K., Örndal C., Nordborg C., Sasaki N., Runesson E., Rydevik B., Brisby H.; Sweden & Japan
- P306** **Different effects on evoked thalamic neuronal activity by two cell populations derived from nucleus pulposus**
Nilsson E., Larsson K., Rydevik B., Brisby H., Hammar I.; Sweden
- P307** **EP2/4 receptor suppresses the expression of NGF in human IVD cells**
Alimasi W., Sawaji Y., Kimura D., Tanaka H., Kosaka T., Endo K., Yamamoto K.; Japan
- P308** **Cell viability in human samples of herniated intervertebral disc: Implications for biological therapies**
Turner S., Balain B., Roberts S.; UK
- P309** **Anti-inflammatory effect of platelet-rich plasma on nucleus pulposus cell with response of TNF- α and IL-1**
Park J.H., Chun H.J., Kang K.T., Moon S.H., Lee H.M., Kim H.J.; Korea
- P310** **Modulating the microenvironment of differentiating hMSCs through RNA interference**
Twomey J., Thakore P., Myers E.G.H., Hsieh A.H.; USA
- P311** **Influence of prilocaine, iopamidol and cortisol on intervertebral disc cell proliferation: Does medication routinely used for discography influence intervertebral disc biology?**
Eder C., Pinsger A., Schildböck S., Ogon M.; Austria
- P312** **Regulation of disc cell density by nutrient supply**
Boubriak O.A., Watson N., Stubbens N., Urban J.P.G.; UK
- P314** **Allogeneic articular chondrocytes survived in the degenerating rabbit intervertebral disc in vivo**
Zhang Y., Chee A., Shi P., Chen E.R., Moss I., Thonar E.J., An H.S.; USA
- P315** **Cultured primary sensory neurons from the rabbit dorsal root ganglion respond to Capsaicin: An in vitro model for inflammatory pain**
Shi P., An H.S., Chen E.R., Hartley D., Chee A., Thonar E.J., Zhang Y.; USA
- P316** **Vertebral bone remodeling in disc degeneration – Quantitative Micro-CT analysis in a porcine nucleotomy model**
Omlor G., Lorenz S., Huettner F., Holschbach J., Richter W., Guehring T.; Germany
- P317** **Change in pain behavior and cellular activity in dorsal horn after pulsed radiofrequency on chronic radiculopathic pain**
Ahn S.H., Dong-Lee D.G., Cho Y.W., Kim E.H., Kim S.H., Kim J.Y., Choi G.S., Hwang S.J.; Korea



Non-Operative

- P318** **Who is likely to develop persistent low back pain? A longitudinal analysis of prognostic occupational factors**
Melloh M., Käser A., Rolli Salathé C., Elfering A.; Australia, New Zealand & Switzerland
- P319** **Predictors of sickness absence in patients with a new episode of low back pain in primary care**
Melloh M., Rolli Salathé C., Käser A., Elfering A.; Australia, New Zealand & Switzerland
- P320** **Course of recovery in patients with acute low back pain - Does depression matter?**
Melloh M., Käser A., Rolli Salathé C., Elfering A.; Australia, New Zealand & Switzerland
- P321** **Disc degeneration in lumbar spine precedes osteoarthritic changes in the hip: A postmortem study of 350 human specimens**
Bajwa N.S., Young E.Y., Ahn N.U.; USA
- P322** **Study of factors affecting outcome of conservative treatment of lumbar disc herniation**
Deore T., Jain A., Rustagi T., Prasad G., Bhojraj S.; India
- P323** **Fracture union and quality of life in patients with osteoporotic vertebral fracture treated with rigid or soft external support**
Morita T., Watanabe G., Kanaya K., Narita Y., Kawaguchi S., Yamashita T.; Japan
- P324** **The statistic analysis of the factors to inducing the VEGFR2 positive endothelial cells in the ligamentum flavum**
Kitahama Y., Koichi S., Dezawa A., Hanakita J., Namba H.; Japan
- P326** **Symptomatic laminolysis in adolescent athletes**
Miyagi R., Sairyō K., Sakai T., Yasui N., Dezawa A.; Japan
- P327** **Limaprost Alfadex and nonsteroidal anti-inflammatory drugs for sciatica due to lumbar spinal stenosis**
Onda A., Kikuchi S., Yabuki S., Otani K., Nikaido T., Watanabe K., Konno S.; Japan
- P328** **3D-CT analysis on preservation of posterior elements after microendoscopic decompression surgery for lumbar foraminal stenosis**
Yamada H., Yoshida M., Hashizume H., Minamide A., Nakagawa Y., Kawai M., Iwasaki H., Tsutsui S.; Japan
- P329** **Measurement of the low back muscle activities during lumbar stabilization exercises**
Ishigaki N., Aihara T.; Japan
- P330** **The effects of proopiomelanocortin gene transfection in a rat lumbar disc injury model**
Sakai R., Ishikawa T., Yamashita M., Miyagi M., Kamoda H., Suzuki M., Sakuma Y., Oikawa Y., Inoue G., Ohtori S., Takahashi K.; Japan
- P331** **Is activation of transversus abdominis and obliquus internus abdominis associated with long-term changes in chronic low back pain? A prospective study with one year follow-up**
Unsgaard-Tøndel M., Lund Nilsen T., Magnussen J., Vasseljen O.; Norway
- P332** **Analysis of adolescent patients with MRI signal changes in the adjacent pedicle in fresh lumbar spondylolysis**
Goda Y., Sakamaki T., Sakai T., Yasui N., Sairyō K.; Japan
- P333** **MRI-based diagnosis and follow-up program for adolescent athletes suffering from early-stage lumbar spondylolysis**
Sato T., Kawaguchi S., Yamamura T.; Japan
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