Dear Colleagues,

Welcome to Singapore at the 9th Interdisciplinary World Congress on Low Back & Pelvic Girdle Pain. In this brochure you will find the Preliminary Program. These series of programs, initiated in 1991 by Andry Vleeming and Vert Mooney aim to promote and facilitate interdisciplinary knowledge and to create a consensus on prevention, diagnosis and treatment of acute and chronic lumbopelvic pain. Held every three years the congress welcomes practitioners, academics, researchers and policymakers from all continents.

The theme of the 2016 World Congress is Progress in Evidence Based Diagnosis and Treatment. The program will be presented in the format of eight main sessions led by moderators and keynote speakers known for their expertise in selected areas followed by eight parallel sessions that highlight topic specific research. Eight primary subject areas will address the dominant theme which include:

- Anatomy and biomechanical research of the lumbo pelvic spine;
- Pelvic girdle pain (diagnostics, biomechanics, motor control and psychosocial aspects);
- Novel developments in spine surgery (in cooperation with North American Spine Society, NASS);
- Effective exercise, training and treatment modalities for the lumbopelvic spine;
- State-of the art in motor control: Now and the future;
- The role of fascia in lumbopelvic pain and stability;
- Emerging new treatments in low back pain, the clinical practice, how do we improve?
- Improving primary care for low back pain.

The pre- and post- congress workshops will share clinician experience in the management of lumbopelvic pain. Poster presentations will illustrate the worldwide research of new and innovative ideas in the field.

The congress is supported in cooperation with the Singapore Exhibition and Convention Bureau, North American Spine Society (NASS), Vert Mooney Spine and Sport Foundation, University of New England Medical faculty of Osteopathic Medicine USA, Department of Rehabilitation Sciences and Physiotherapy University of Ghent Belgium, as well as a wide array of academic societies from countries around the world.

Singapore is a vibrant city with a mixing pot of cultures, this is evident not only in the architecture but also in the food. From the tranquillity of the gardens to the unique markets or city shopping, we hope that besides hanging out with us at congress you are able to discover the real Singapore.

We also look forward to meeting many of you at the Congress Dinner, after all the hard work has been done. It will be an opportunity to relax and have fun with your colleagues.

We are happy that you could join us here in Singapore and we look forward to presenting a program of interest to all disciplines mentioned here above.

A warm welcome,

Andry Vleeming, Dinesh Verma, Ted Dreisinger
Program Chairmen
SCIENTIFIC COMMITTEE

Andry Vleeming, Belgium  
Dinesh Verma, Singapore  
Ted Dreisinger, USA  
Hanne Albert, Denmark  
Lieven Danneels, Belgium  
Jan Hartvigsen, Denmark  
Paul Hodges, Australia  
Robert Schleip, Germany  
Britt Stuge, Norway  
Bengt Sturesson, Sweden  
Jaap van Dieën, The Netherlands  
Maurits van Tulder, The Netherlands  
Jeffrey Wang, USA

LOCAL ORGANIZING COMMITTEE

Dinesh Verma, Singapore Exhibition and Convention Bureau, Singapore tourist board

FACULTY

Andry Vleeming, Belgium  
Ted Dreisinger, USA  
Hanne Albert, Denmark  
Wolfgang Bauernmeister, Germany  
Cecilia Bergström, Sweden  
Jan Bjordal, Norway  
Alan Breen, United Kingdom  
Simon Brumagne, Belgium  
Melanie Bussey, New Zealand  
Jacek Cholewicki, USA  
Lieven Danneels, Belgium  
Jon Ford, Australia  
Christopher Gordon, Germany  
Ryan Graham, Canada  
Annika Griefahn, Germany  
Annelie Gutke, Sweden  
Andrew Hahne, Australia  
Niels Hammer, New Zealand  
Jan Hartvigsen, Denmark  
Rebecca Hemming, UK  
Julie Hides, Australia  
Paul Hodges, Australia  
Tue Secher Jensen, Denmark  
Greg Kawchuk, Canada  
Bart Koes, The Netherlands  
Maria Larsson, Sweden  
Diane Lee, Canada  
Eric Muehlbauer, USA  
Corrie Myburgh, Denmark  
Katrine Owe, Norway  
Heidi Prather, USA  
Servan Rooker, Belgium  
Bruno Saragiotto, Australia  
Siobhan Schabrun, Australia  
Robert Schleip, Germany  
William Shaw, USA  
Eva Skillgate, Sweden  
Susan Slade, Australia  
Carla Stecco, Italy  
Britt Stuge, Norway  
Bengt Sturesson, Sweden  
Jaap van Dieën, The Netherlands  
Linda van Dillen, USA  
Maurits van Tulder, The Netherlands  
Jeffrey Wang, USA  
Jan Wilke, Germany  
Alex Wolf, UK  
Francesca Wuytack, Ireland

ACCREDITATION

The congress has submitted a request for accreditation to the European Accreditation Council for Continuing Medical Education (EACCME). The program has been granted 24 European CME credits by the European Accreditation Council for Continuing Medical Education (EACCME). Participants will receive a certificate of attendance with accreditation details by email on November 4. Through an agreement between the European Union of Medical Specialists and the American Medical Association, physicians may convert EACCME credits to an equivalent number of AMA PRA Category 1 Credits™.
ENDORSING ORGANIZATIONS

- North American Spine Society (NASS)
- Singapore Exhibition and Convention Bureau (SECB)
- Singapore Physiotherapy Association
- Singapore Orthopaedic Society
- Department of Rehabilitation, Sciences and Physiotherapy, University of Ghent
- University of New England, Medical faculty of Osteopathic Medicine
- Afghan Association for Physical Therapy
- American Academy of Orthopaedic Manual Physical Therapy (AAOMPT)
- American Academy of Osteopathy (AOA)
- American Physical Therapy Association (APTA) Orthopaedic Section
- Asia-Pacific Academy of Physical Therapy (APAPT)
- ASCOPI, Asociacion Colombiana de Fisioterapia
- Asociación Española de Fisioterapia
- Association of Academic Physiatrists
- Association of Chiropractic, Malaysia
- Australasian College of Sports Physicians
- Australian Physiotherapy Association
- Australian Pilates Method Association
- Bahrain Physical Therapy Association (BPTA)
- Bangladeshi Physiotherapy Association
- Belgian Back Society
- Cambodian Physiotherapy Association
- Canadian Academy of Manipulative Therapists
- Canadian Physiotherapy Association
- Canadian Physiotherapy Association-Orthopaedic Division
- Chiropractic and Osteopathic College of Australasia
- Chiropractic Association of South Africa
- Chiropractors’ Association of Australia
- Danish Musculoskeletal Physiotherapy Association (DMPA)
- Danish Physiotherapy Association
- Elsevier Limited
- Emirates Medical Association and Physiotherapy Society
- European Chiropractors’ Union (ECU)
- European Rolfing Association
- Exercise & Sports Science Australia ESSA
- Fascia Research Society
- Hong Kong Physiotherapy Association
- International Academy of Osteopathy (IAO)
- International Association of Structural Integrators
- International Federation of Orthopaedic Manipulative Physical Therapists (IFOMPT)
- International Federation for Manual and Musculoskeletal Medicine
- International Organization of Physical Therapists in Women’s Health
- International Pelvic Pain Society
- International Society of Clinical Rehabilitation specialists (I.S.C.R.S.)
- International Society of Physical and Rehabilitation Medicine (I.S.P.R.M.)
- Iran Sports Medicine Federation
- Irish Society of Chartered Physiotherapists
- Institute of Registered Myotherapists of Australia (IRMA)
- Japanese Society of Musculoskeletal Physical Therapy
- Journal of Manipulative and Physiological Therapeutics
- Journal of Orthopaedic & Sports Physical Therapy JOSPT
- Journal of Rheumatology
- Korean Academy of Cyriax Orthopaedic Medicine
- Kuwait Physical Therapy Association
- Manipulation Association of Chartered Physiotherapists, UK
- Manual Therapy Association Belgium (MATHERA)
- McKenzie Institute International
- Musculoskeletal Physiotherapy Association (MPA)
- Myopain Seminars
- New Zealand Chiropractors Association
- New Zealand Manipulative Physiotherapy Association (NZMPA)
- Nepal Physiotherapy Association
- North American Institute of Orthopaedic Manual Therapy (NAIOMT)
- Ontario Association of Osteopathic Manual Practitioners
- Osteopathy Australia
- Osteopaths New Zealand
- Physical Therapy Association of the Republic of China – Taiwan
- Philippine Physical Therapy Association
- Saudi Association of Neurological Surgery
- Saudi Physical Therapy Association
- Sociedad Iberoamericana de Información Sientífica (SIIC)
- Sociedade Brasileira de Fisioterapia
- SOMTY Finnish Association of Orthopaedic Manual Therapists
- SOTO-USA
- South African Society of Physiotherapy
- Spanish Association of Physiotherapists
- Spine Society of Australia
- Swedish Naprapathic Association
- Taiwan Physical Therapy Association
- Registered Massage Therapist Association of British Columbia
- The Rolf Institute of Structural Integration
- The Vert Mooney Spine & Sport Foundation
- Turkish Physiotherapy Association
- World Confederation for Physical Therapy
- World Federation of Chiropractic
- World Spine Society - WSS
Please note: Wearing a badge is mandatory to have access to the congress area

### Program Sunday, October 30  
**Level 5**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>16.00</td>
<td>Registration</td>
</tr>
<tr>
<td>17.00</td>
<td>Welcome Reception</td>
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### Program Monday, October 31  
**Level 5**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>07.00</td>
<td>Registration</td>
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#### Main Session  
**Sands A**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08.25</td>
<td>Welcome Andry Vleeming, Dinesh Verma, Ted Dreisinger</td>
</tr>
<tr>
<td>08.30</td>
<td>Introduction Jaap van Dieën</td>
</tr>
<tr>
<td>08.35</td>
<td>Methods to assess control of lumbar movement Jacek Cholewicki</td>
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<tr>
<td>08.55</td>
<td>Low-back pain and control of lumbar movement Ryan Graham</td>
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<tr>
<td>09.15</td>
<td>Low-back pain and control of segmental lumbar movement Alan Breen</td>
</tr>
<tr>
<td>09.35</td>
<td>Low-back pain and trunk stabilization Jaap van Dieën</td>
</tr>
<tr>
<td>09.55</td>
<td>Exploring differences in spinal kinematics in subgroups during functional tasks Rebecca Hemming</td>
</tr>
<tr>
<td>10.10</td>
<td>Discussion</td>
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<tr>
<td>10.30</td>
<td>Morning Break</td>
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</tbody>
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### Pelvic girdle pain:  
**Biomechanical and psychosocial aspects**  
Moderators: Britt Stuge & Annelie Gutke

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.00</td>
<td>Introduction Britt Stuge</td>
</tr>
<tr>
<td>11.05</td>
<td>Severity and impact of pregnancy-related low back and pelvic girdle pain: Comparisons across United States of America, United Kingdom, Norway and Sweden Annelie Gutke</td>
</tr>
<tr>
<td>11.20</td>
<td>Prevalence of persistent pelvic gridle pain more than 10 years postpartum Cecilia Bergström</td>
</tr>
<tr>
<td>11.35</td>
<td>Towards a greater understanding of mechanical dysfunction in the pelvis? Melanie Bussey</td>
</tr>
<tr>
<td>11.50</td>
<td>Pelvic belt effects on sacroiliac joint pain: A combined in-silico and in-vivo approach Niels Hammer</td>
</tr>
<tr>
<td>12.10</td>
<td>Exercise levels before pregnancy: Does it affect pelvic gridle pain in pregnancy? Katrine Owe</td>
</tr>
<tr>
<td>12.25</td>
<td>Lunch Break</td>
</tr>
<tr>
<td>13.25</td>
<td>Diastasis rectus abdominus – Should we open or close the gap? Diane Lee</td>
</tr>
<tr>
<td>13.45</td>
<td>The impact of persistent pregnancy-related pelvic girdle pain: Women's perspectives Francesca Wuytack</td>
</tr>
<tr>
<td>14.05</td>
<td>The responsiveness of the pelvic girdle questionnaire Britt Stuge</td>
</tr>
<tr>
<td>14.25</td>
<td>Discussion</td>
</tr>
<tr>
<td>14.45</td>
<td>Afternoon Break</td>
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</tbody>
</table>
Novel developments in spine surgery
In cooperation with NASS (North American Spine Society)
Moderators: Jeffrey Wang & Bengt Sturesson

15.15 Introduction
Eric Muehlbauer

15.20 The presentation, workup, management of patients with SI joint pain
Heidi Prather

15.45 The SI joint: Movement, stability, diagnostic tests and procedures leading to surgical treatment
Bengt Sturesson

16.10 Movement Break

16.15 The controversies regarding the surgical treatment of SI joint disease
Jeffrey Wang

16.40 Developing new technology and supporting evidence, barriers to market, developing guidelines for appropriate use
Eric Muehlbauer

17.05 Discussion

17.20 Closure

Program Tuesday, November 1

Main Session

Sands A

The patient and the active therapeutical approach: Balancing between biomedical and psychosocial targets
Moderators: Lieven Danneels & Andry Vleeming

08.00 Introduction
Lieven Danneels

08.05 Which issues need to be identified and addressed along with movement diagnosis?
Heidi Prather

08.25 The potential role of adherence to improving low back pain outcomes
Linda van Dillen

08.45 Peripheral back muscles dysfunctions and central pain mechanisms: An innovative perspective on differences between recurrent and chronic back pain
Lieven Danneels

09.05 Importance of biomedical and psychosocial factors in clinical decision making and predicting future outcomes
Jon Ford

09.25 Spinal exercise prescription in sport: Classifying physical training and rehabilitation by intention and outcome
Alex Wolf

09.40 Morning Break

10.10 Who benefits most from individualised physiotherapy versus advice for low back disorders
Andrew Hahne

10.25 Effects of individualised directional preference management versus advice for reducible discogenic pain
Jon Ford

10.40 Discussion

10.50 End Discussion

10.55 Movement Break
State-of-the-art in motor control: Now and the future
Moderators: Paul Hodges, Jaap van Dieën & Jacek Cholewicki

11.00 Introduction
Paul Hodges

11.05 Neuroplasticity and motor control: Latest evidence of sensorimotor system involvement in low back pain
Simon Brumagne

11.25 Biological plasticity and motor control: The impact of modified biology from muscle to the immune system
Paul Hodges

11.45 Are neuromechanics (motor control and biomechanics) relevant for low back pain and is this individual specific? Another view of “subgrouping”
Jaap van Dieën

12.05 Lunch Break

13.05 Application of motor control to clinical practice: Common concepts with different views
Julie Hides

13.25 What does the latest evidence tell us about the efficacy of training of motor control for low back pain?
Bruno Saragiotto

13.45 People with low back pain display atypical responses to brain based treatments
Siobhan Schabrun

14.00 Discussion

14.15 End Discussion

Parallel Session I

Anatomy and biomechanics
Moderators: Jaap van Dieën & Andry Vleeming

14.25 Introduction
Jaap van Dieën

14.30 Sagittal whole-body postural balance: The missing link between sagittal spinopelvic alignment and coronal plane trunk asymmetry?
Mieke Dolphens

14.40 Mechanical perturbations of the walking surface reveal unaltered axial trunk stiffness in chronic low back pain patients
Maarten Prins

14.50 A comparison of spinal tissue loading created by spinal manipulative therapy (SMT) and passive lumbar movements
Martha Funabashi

15.00 Age-related different needs for car seat design: Needs transition from lumbar to thoracic support
Gyouhyung Kyung

15.10 Spinal and pelvis alignment in women with and without pelvic organ prolapse
Farideh Dehghan Manshadi

15.20 Shorter lumbar paraspinal fascia is associated with high intensity low back pain and disability
Tom Ranger

15.30 Afternoon Break

16.00 Does spinal stiffness differ between people with and without low back pain?
Arnold Wong

16.10 Muscular power during a lifting task in physically active and sedentary young adults
Erika Zemkova

16.20 Tension in the lumbar myofascial ring: Effects of rectus abdominis contraction on the lumbar spine
Mark Schuenke

16.30 Discussion and Closure
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.25</td>
<td>Introduction</td>
<td>Jeffrey Wang</td>
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<tr>
<td>14.30</td>
<td>Lumbosacral radicular syndrome: A new clinical decision-making model to optimize spinal surgical referral following a trial of physiotherapy management</td>
<td>Lynn Bardin</td>
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<tr>
<td>14.40</td>
<td>Results on 750 patients with degenerative spondylosis treated by minimally invasive surgery: Unilateral osteotomy (grad I or II), interspinous arthrodesis or both</td>
<td>Franco Caputi</td>
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<tr>
<td>14.50</td>
<td>The concept of Miss &amp; Interlaminar dynamic stabilization in lumbar degenerative cascade</td>
<td>Bambang Darwono</td>
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<tr>
<td>15.00</td>
<td>Biological cell therapies for discogenic low back pain</td>
<td>Bruce Mitchell</td>
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<tr>
<td>15.10</td>
<td>Posterior dynamic stabilization in degenerative spondylolisthesis and posterior transpedicular dynamic stabilization versus total disc replacement in the treatment of lumbar painful degenerative disc disease: A comparison of clinical results</td>
<td>Tunc Oktenoglu</td>
<td></td>
</tr>
<tr>
<td>15.20</td>
<td>Posterior interbody fusion enhanced by cages and pedicular screw fixation: A review of 167 cases with follow-up of 4 to 9 years</td>
<td>Sabri El Banna</td>
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<tr>
<td>15.30</td>
<td>Discussion</td>
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<tr>
<td>15.40</td>
<td>Afternoon Break</td>
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<tr>
<td>16.10</td>
<td>Early result of SI joint surgery with two new minimally invasive methods</td>
<td>Andreas Westberg</td>
<td></td>
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<tr>
<td>16.20</td>
<td>Gait, kinesiophobia and disability after minimally invasive sacroiliac joint fusion: Outcomes 6 and 12 weeks</td>
<td>Maria Stauffer</td>
<td></td>
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<tr>
<td>16.30</td>
<td>iMIA: A randomized controlled trial of minimally invasive SI joint fusion vs. conservative management</td>
<td>Djaya Kools</td>
<td></td>
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<tr>
<td>16.40</td>
<td>Fluoroscopy-guided sacroiliac intraarticular injection via the middle portion of the joint</td>
<td>Daisuke Kurosawa</td>
<td></td>
</tr>
<tr>
<td>16.50</td>
<td>Anterior arthrodesis of sacroiliac joint for severe sacroiliac joint pain: Minimum 5-year follow-up of 23 patients</td>
<td>Eiichi Murakami</td>
<td></td>
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<tr>
<td>17.00</td>
<td>Bilateral sacroiliac joint pain: Is bilateral fusion necessary?</td>
<td>W. Carlton Reckling</td>
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<tr>
<td>17.10</td>
<td>Discussion and Closure</td>
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</tbody>
</table>
## Program Wednesday, November 2

### Main Session

### Sands A

#### Connecting tissues: The role of fascia in lumbopelvic pain and stability
Moderators: Robert Schleip & Carla Stecco

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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</thead>
<tbody>
<tr>
<td>08.00</td>
<td>Introduction</td>
<td>Robert Schleip</td>
</tr>
<tr>
<td>08.05</td>
<td>Role of fascia in non-specific low back pain</td>
<td>Carla Stecco</td>
</tr>
<tr>
<td>08.25</td>
<td>Role of fascial contractility and fascial nociception in low back pain</td>
<td>Robert Schleip</td>
</tr>
<tr>
<td>08.45</td>
<td>Myofascial chains revisited - Review of several suggested force transmission lines from evidence oriented perspective and with special focus on low back stability</td>
<td>Jan Wilke</td>
</tr>
<tr>
<td>09.05</td>
<td>Sono-elastography: Real time measure of elastic properties of the lumbar fasciae in idiopathic low back and pelvic girdle pain</td>
<td>Wolfgang Bauermeister</td>
</tr>
<tr>
<td>09.25</td>
<td>Interdisciplinary fascia therapy in chronic low back pain: An examination of therapy process and outcome at 18 months</td>
<td>Christopher Gordon</td>
</tr>
<tr>
<td>09.40</td>
<td>Do exercises with the foam roll have a short term impact on the thoracolumbar fascia?</td>
<td>Annika Griefahn</td>
</tr>
<tr>
<td>09.55</td>
<td>Discussion</td>
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</tbody>
</table>

#### Emerging new treatments in low back pain

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>10.15</td>
<td>Morning Break</td>
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<tr>
<td>10.45</td>
<td>Antibiotic and laser treatment in patients with chronic low back pain and Modic changes</td>
<td>Hanne Albert</td>
</tr>
<tr>
<td>11.10</td>
<td>New directions for laser therapy</td>
<td>Jan Bjordal</td>
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#### Sands A

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>11.35</td>
<td>Introduction</td>
<td>Hanne Albert</td>
</tr>
<tr>
<td>11.40</td>
<td>Barriers to health care professional adherence to clinical guidelines for the management of LBP</td>
<td>Susan Slade</td>
</tr>
<tr>
<td>12.00</td>
<td>Can a tailored guideline implementation strategy change physiotherapy practice?</td>
<td>Maria Larsson</td>
</tr>
<tr>
<td>12.20</td>
<td>What is really important for patients when they encounter a chiropractor, how do they evaluate the treatments</td>
<td>Corrie Myburgh</td>
</tr>
<tr>
<td>12.40</td>
<td>Lunch Break &amp; Poster Session</td>
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<tr>
<td>13.40</td>
<td>How an app can assist the physiotherapist in patients with herniation surgery</td>
<td>Servan Rooker</td>
</tr>
<tr>
<td>13.55</td>
<td>Healthy lifestyle behaviour reduces the risk of long duration troublesome low back pain</td>
<td>Eva Skillgate</td>
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<tr>
<td>14.10</td>
<td>Can ultrasound help the clinician in more precise palpation?</td>
<td>Greg Kawchuk</td>
</tr>
<tr>
<td>14.25</td>
<td>Discussion</td>
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<td>End Discussion</td>
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Parallel Session III

**Sands A**

<table>
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<th>Title</th>
<th>Presenter</th>
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<tbody>
<tr>
<td>14:55</td>
<td><strong>Introduction</strong></td>
<td>Britt Stuge</td>
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<tr>
<td>15:00</td>
<td>Understanding the active straight leg raise: An electrophysiological study in healthy subjects</td>
<td>Hai Hu</td>
</tr>
<tr>
<td>15:10</td>
<td><strong>Interventions for preventing and treating low-back and pelvic pain during pregnancy: An evidence update</strong></td>
<td>Sarah Liddle</td>
</tr>
<tr>
<td>15:20</td>
<td>Risk factors for sick-leave due to lumbopelvic pain in late pregnancy</td>
<td>Hilde Stendal Robinson</td>
</tr>
<tr>
<td>15:30</td>
<td>Sacral transient osteoporosis of pregnancy is an underreported cause of pregnancy-related lumbopelvic pain</td>
<td>Monica Rho</td>
</tr>
<tr>
<td>15:40</td>
<td>Afternoon Break</td>
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<tr>
<td>16:10</td>
<td>Postural control parameters and predictors of pregnancy-related pelvic girdle pain: A prospective cohort study</td>
<td>Daniela Aldabe</td>
</tr>
<tr>
<td>16:20</td>
<td>Consequences on health and function after a pregnancy with classified pelvic girdle pain: A longitudinal follow-up study</td>
<td>Hellen Elden</td>
</tr>
<tr>
<td>16:30</td>
<td>Imaging of the sacro-iliac joint in health and dysfunction</td>
<td>Mel Cusi</td>
</tr>
<tr>
<td>16:40</td>
<td>A comparison of PRP and hypertonic glucose injections in the treatment of mechanical SIJ incompetence</td>
<td>Jeni Saunders</td>
</tr>
<tr>
<td>16:50</td>
<td>Postural response of the pelvic floor muscles and muscles of the lower abdominal wall during the active straight leg raise in women with and without post partum pelvic girdle pain and a pilot study on effect of stabilizing</td>
<td>Brigitta Öberg</td>
</tr>
<tr>
<td>17:00</td>
<td>Low level laser therapy in persistent pregnancy-related pelvic girdle pain - Study protocol</td>
<td>Thomas Torstensson</td>
</tr>
<tr>
<td>17:10</td>
<td>Reliability of a new measurement method for pelvic asymmetry using three-dimensional MRI models</td>
<td>Kazuyoshi Gamada</td>
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<tr>
<td>17:20</td>
<td>Discussion and Closure</td>
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Parallel Session IV

**Sands B**

<table>
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<tr>
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<th>Title</th>
<th>Presenter</th>
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<tr>
<td>14:55</td>
<td><strong>Introduction</strong></td>
<td>Maurits van Tulder</td>
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<tr>
<td>15:00</td>
<td>Pain-related sleep disturbance: A prospective study with repeated measures</td>
<td>Iben Axén</td>
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<td>15:10</td>
<td>Simulation of multifactorial causes of low back pain</td>
<td>Jacek Cholewicki</td>
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<td>15:20</td>
<td>Differential diagnosis of lateral hip pain</td>
<td>Alison Grimaldi</td>
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<td>15:30</td>
<td>Prevalence and associated factors of low back pain in community-dwelling elderly women</td>
<td>Hunkyung Kim</td>
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<td>15:40</td>
<td>Afternoon Break</td>
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<tr>
<td>16:10</td>
<td>Can the effect of medial branch blocks for painful zygapophysial joints be predicted by magnetic resonance imaging? A retrospective evaluation</td>
<td>Stephan Klessinger</td>
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<td>16:20</td>
<td>Psychosocial factors in workplace injury - early screening to predict rehabilitation timeframe: A population based study</td>
<td>Sareen McLinton</td>
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<td>16:30</td>
<td>Do physiotherapists consider questioning patients’ illness perceptions during history taking?</td>
<td>Nathalie Roussel</td>
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<td>16.40</td>
<td>The association of different sport activities with lumbar disc degeneration among young Finnish adults: A subsample of northern Finland birth cohort 1986</td>
<td>Jani Takatalo</td>
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<tr>
<td>16.50</td>
<td>The role of sleep quality on spontaneous regression of intervertebral disc herniation</td>
<td>Alexander Tkachev</td>
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<tr>
<td>17.00</td>
<td>Could low grade bacterial infection contribute to low back pain? A systematic review</td>
<td>Donna Urquhart</td>
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<tr>
<td>17.10</td>
<td>Co-morbidities in women with vulvodynia: What are the clinical implications?</td>
<td>Ursula Wesselmann</td>
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<tr>
<td>17.20</td>
<td>Discussion and Closure</td>
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**Program Thursday, November 3**

**Parallel Session V (Sands A)**

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<tr>
<th>Time</th>
<th>Title</th>
<th>Author/Presenter</th>
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<tr>
<td>08.00</td>
<td>Introduction</td>
<td>Andry Vleeming</td>
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<tr>
<td>08.05</td>
<td>Schmorl's nodes: Do they associate with degenerative lumbar spinal stenosis?</td>
<td>Janan Abbas</td>
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<td>08.15</td>
<td>An investigation of the MDT assessment using positional MRI</td>
<td>Lyndsay Alexander</td>
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<tr>
<td>08.25</td>
<td>Classification criteria for neurogenic claudication caused by lumbar spinal stenosis</td>
<td>Stephane Genevay</td>
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<tr>
<td>08.35</td>
<td>Biological gradient in the association between smoking and back pain in a cross-section of adult Americans</td>
<td>Claire Johnson</td>
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<tr>
<td>08.45</td>
<td>Predictive factors of efficacy of transforaminal corticosteroids in patients with low back pain and radiculopathy</td>
<td>Rodger Laurent</td>
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<tr>
<td>08.55</td>
<td>Is there evidence of change under MRI in acute low back pain?</td>
<td>John Panagopoulos</td>
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<td>09.05</td>
<td>Disc space narrowing in lumbar spine is associated with severe disability in chronic low back pain</td>
<td>Romain Perera</td>
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<td>09.15</td>
<td>Back Break</td>
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<tr>
<td>09.20</td>
<td>Non-steroidal anti-inflammatory drugs for low-back pain with sciatica</td>
<td>Eva Rasmussen Barr</td>
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<tr>
<td>09.30</td>
<td>A systematic review and meta-analysis of prospective cohort studies investigating musculoskeletal risk factors for the development of low back pain</td>
<td>Sean Sadler</td>
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<tr>
<td>09.40</td>
<td>Spinal angles in subjects with a history of flexion related back pain when performing a typing task</td>
<td>Valerie Sparkes</td>
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</tbody>
</table>
Indicators of surgery in patients less than 60 years of age referred from the medical department for surgical assessment at a spine centre
Morten Sall Jensen

Discussion

Morning Break

Parallel Session V(b): Lumbar pain
Moderators: Bart Koes & Robert Schleip

10.40 Biopsychosocial risk factors associated with low back pain in stroke survivors
Claire Johnson

10.50 Osteopathic treatment of patients with burnout syndrome accompanied by chronic non-specific low back pain
Andrey Lovchev

11.00 Fear avoidance beliefs underlie differential brain processing in chronic low back pain patients compared to healthy individuals
Michael Meier

11.10 Less lumbar fat infiltration and enhanced efficiency in muscle recruitment in RLBP compared to CLBP
Dorien Goubert

11.20 Lumbar movement pattern during variations of a functional activity test in back-healthy people and people with low back pain
Andrej Marich

11.30 Augmenting conventional treatment of non-specific low back pain with progressive goal attainment programme
Michael Ogunlana

11.40 Use of musculoskeletal ultrasound to detect painful enthesopathies in low back pain
Plamen Todorov

11.50 Number of weekly hours spent in sports is not related to current or future low back pain with consequences in a middle-aged sample of Danes from the population: A 9-year longitudinal cohort study
Per Kjaer

12.00 Biopsychosocial exploration of pain profiles in inflammatory and chronic non-specific axial low back pain: An exploration of similarities and differences
Lolwah Al-Rashed

Comparison of myofascial-trigger-point-release and core stabilization exercises on range of motion within patients with chronic low back pain: A randomized, controlled trial
Jan Vagedes

Discussion

Lunch Break

Parallel Session VI

Parallel Session VI(a): Exercise and treatment
Moderators: Lieven Danneels & Ted Dreisinger

08.00 Introduction
Lieven Danneels

08.05 Determining predictive outcome factors for a multimodal treatment program in low back pain patients: A retrospective cohort study
Rahmet Adnan

08.15 Predictors of response and adherence to outpatient multimodal rehabilitation in patients with chronic low back pain: A cohort study
Evy Dhondt

08.25 The one year results of lumbar transforaminal epidural injection in patients with chronic unilateral radicular pain: The relation to MRI finding and clinical features
Harald Ekedahl

08.35 Inspiratory muscle weakness and balance complaints in individuals with low back pain
Lotte Janssens

08.45 Perceived task complexity of abdominal hollowing and abdominal bracing trunk stability exercises
David MacDonald

08.55 Effects of a prehabilitation program on the improvement of patients’ clinical status and physical capacities while awaiting spinal stenosis surgery: A randomized controlled pilot trial
Andree-Anne Marchand
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<th>Time</th>
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<th>Authors</th>
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<tbody>
<tr>
<td>09:05</td>
<td>The effect of pilates group exercises on transverse abdominal muscle thickness and functional and postural parameters in healthy females with non-specific chronic low back pain</td>
<td>Noelia Goldberg</td>
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<td>09:15</td>
<td>Combination of motor training with repetitive magnetic stimulation of multifides influeanced brain motor function, pain and disability in chronic low back pain</td>
<td>Hugo Massé-Alarie</td>
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<td>09:25</td>
<td>Two-year follow-up of surgical therapy versus untreated observation for patients with intermittent claudication due to lumbar spinal stenosis after physical therapy</td>
<td>Masakazu Minetama</td>
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<td>09:35</td>
<td>LBP - What's next? The effectiveness of a stratified model for non-specific LBP in Danish primary care: A randomized controlled trial</td>
<td>Lars Morsø</td>
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<td>09:45</td>
<td>A systematic review on the effectiveness of physiotherapy in inflammatory low back pain</td>
<td>Deepak Sharan</td>
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<td>09:55</td>
<td>Discussion</td>
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<td>10:05</td>
<td>Morning Break</td>
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<td>10:40</td>
<td>The effect of classification-based cognitive functional therapy on spinal regional kinematics and function in subgroups of chronic low back pain: Randomized clinical pilot study</td>
<td>Liba Sheeran</td>
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<td>10:50</td>
<td>Does change in isolated lumbar extension function correlate with positive clinical outcome?</td>
<td>James Steele</td>
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<td>11:00</td>
<td>Effects of core muscle pre-activation on the recruitment of hip muscles during hip exercises</td>
<td>Sharon Tsang</td>
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<td>11:10</td>
<td>Associations between digital posture assessment, low back pain and MRI-detected pathology in elite Olympic class sailors</td>
<td>Adrian Schultz</td>
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<tr>
<td>11:20</td>
<td>The effects of a 6-week core stability program on side bridge endurance, lumbopelvic motor control and functional movement screen in healthy individuals</td>
<td>Tine Willems</td>
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<td>11:30</td>
<td>Effectiveness and cost-effectiveness of referral for early rehabilitation after lumbar discectomy</td>
<td>Maurits van Tulder</td>
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<tr>
<td>11:40</td>
<td>Effectiveness and cost-effectiveness of radiofrequency denervation for chronic low back pain originating from the facet joints</td>
<td>Esther Maas</td>
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<td>11:55</td>
<td>Discussion</td>
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<td>12:10</td>
<td>Lunch Break</td>
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**Parallel Session VII (Sands A)**

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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>13:35</td>
<td>Introduction</td>
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<tr>
<td>13:40</td>
<td>Outcomes of chiropractic distraction spinal manipulation on post-surgical continued low back and radicular pain patients: A retrospective case series study</td>
<td>James Cox</td>
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<tr>
<td>13:50</td>
<td>Beliefs in the general population regarding the ‘cracking’ or ‘popping’ noise from spine thrust manipulation</td>
<td>Christophe Demoulin</td>
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<td>14:00</td>
<td>A comparison of the effects of connective tissue massage and classical massage on low back pain: A randomized controlled trial</td>
<td>Tim Hustad &amp; Filip Danielsson</td>
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<td>14:10</td>
<td>Reliability and validity of an Iphone® application for the measurement of lumbar spine range of motion</td>
<td>Mohammad Reza Pourahmadi</td>
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<td>14:20</td>
<td>Discussion</td>
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Parallel Session VIII

State-of-the-art: Motor control
Moderators: Paul Hodges & Jacek Cholewicki

13.30  Introduction

13.35  Influence of fatigue on trunk muscles adaptations during sudden external perturbations
Jacques Abboud

13.45  Brain morphology is associated with motor control in patients with chronic low back pain: Preliminary results
Jeroen Kregel

13.55  Lumbar multifidus discharge characteristics after spinal manipulation
Lise R. Lothe

14.05  Targeting the cause, not just the symptoms: A new treatment for chronic low back pain: Results of the reactiv®-A trial
Bruce Mitchell

14.15  Intra- and inter-observer reliability of a sensor-based measurement of a lumbar repositioning test
Lenie Denteneer

14.25  A clinical test of lumbopelvic control: Discriminative capabilities and relation between movement pattern and muscle activation
Jessica Van Oosterwijck

14.35  Discussion

14.45  Afternoon Break

Main Session

Improving primary care for low back pain
Moderators: Maurits van Tulder & Jan Hartvigsen

15.15  Introduction
Maurits van Tulder

15.35  What is the role of imaging in low back pain patients in primary care?
Tue Secher Jensen

15.55  How can primary care clinicians become better at preventing work disability in low back pain patients?
Bill Shaw

16.15  Primary care for low back pain in the elderly
Bart Koes

16.35  The role of spinal manipulation in primary care for low back pain
Jan Hartvigsen

16.55  The role of alternative care in primary care for low back pain
Maurits van Tulder

17.15  Discussion

17.30  Closure

19.30  Congress Dinner - Clifford Pier*

*The Clifford Pier is a 15 minutes' walk around Marina Bay. Warm up your legs in preparation for dancing! The walking group will depart at 19.10 sharp from the lobby of Tower 1
Please note that you can still register for some of the workshops. Information available at the registration desk.

Workshops Sunday, October 30  Level 5

Workshop 1: The Fascial Manipulation© Technique for Low Back Pain: Anatomical bases and biomechanical model
Presenters: Carla Stecco & Tiina Lahtinen Suopanki (09.00 - 16.30 hrs)

Workshop 2: SCORES Back Care Program: Assessment and retraining of the stabilizing muscles of the Spine
Presenters: Felicity Kermode, Dinesh Verma, Monica Verma (09.00 - 16.30 hrs)

Workshop 3: Low back, Pelvic girdle and Optimal breathing - A workshop for dynamic pelvic floor and proper ventilation exercises together with optimal myofascial function as a part of low back rehabilitation
Presenters: Jouko Heiskanen, Mika Pihlman, Tuulia Luomala (09.00 - 16.30 hrs)

Workshop 4: A Classification and Treatment protocol for Low Back Disorders, Based on the ground breaking research from the Specific Treatment of Problems of the Spine (STOPS)
Presenter: Jon Ford (09.00 - 12.30 hrs)

Workshop 5: Evidence based Mind-Body and Movement exercises to improve the function and well being of the lower back
Presenter: Eric Franklin (13.30 - 17.00 hrs)

Workshops Friday, November 4  Level 3

Jasmine Ballrooms

Workshop 6: Optimising Motor Control of the Lumbar/Pelvic Region: Smart Exercises for Brain and Body to retrain the “Virtual Body”
Presenter: Trish Wisbey-Roth (09.00 - 16.30 hrs)

Workshop 7: Understanding Pelvic Girdle Pain: An evidence based course on Clinical Anatomy, Biomechanics and effective Rehabilitation
Presenter: Andry Vleeming (09.00 - 16.30 hrs)

Workshop 9: Ultrasound-Elastography Guided Extracorporeal Shockwave Therapy in Low Back and Pelvic Girdle Pain
Presenter: Wolfgang Bauermeister (09.00 - 12.30 hrs)

Workshop 10: A Specialized Spinal Manipulation System of Flexion distraction for the Treatment of Low Back and Radicular Pain
Presenter: James Cox, Maruti Ram Gudavalli (13.30 - 17.00 hrs)
P15  Non-specific chronic low back pain: Exploring differences in trunk muscle activity in subgroups during functional tasks
Hemming R., Sheeran L., van Deursen R., Sparkes V.

P16  New classification of lumbar degeneration based on 3 columns theory
Darwono B.

P17  The effects of hip-joint range of motion limitation on the lumbar spine: An analysis of pelvic motion conducted using gait analysis
Okuda T., Kawahara N., Kagetika K., Kaneji A., Matsumoto T.

P18  Innomin ate movement pattern in traumatic transfibial amputees with and without low back pain: A descriptive study
Ribeiro D.C., Devan H., Aldabe D., Bussey M.D.

P19  Correlation of abdominal adiposity, percentage body mass and bodymass index with isometric back extensor endurance of nurses in Enugu
Ibikunle P.O., Umunnah J.O., Agwuagu M.I.

P20  How can chronification of lumbal back pain be avoided?
Muller R.

P21  Safety and efficacy of lumbar spine radiofrequency neurotomy in the presence of posterior pedicle screws
Klessinger S.

P22  Evaluation of trunk muscles strength by using tergumed700 device in sanatorium patients with lumbar spine pain syndromes - Rating as an introduction to therapy
Śliwa A., Lysakowska-Będek B., Cygoń K., Bednorz R.

P23  Effect of betametasone injection on the spontaneous regression of intervertebral disc herniation
Tkachev A., Smirnova A., Archakov D., Chernykh I., Ilyushin A.

P24  Clinical indicators of surgery in elderly lumbar spinal stenosis patients referred from the medical department at a spine centre for surgical assessment
Bregger H.A., Jensen M.S., Leboeuf-Yde C., Schiøttz-Christensen B.

P25  Study of chiropractic manipulation attenuating the thermal hyperalgesia by diminishing inflammatory factors in sciatic nerve injured rats
Inouchi T., Jung H.S., Ham J.H.

P26  Study in chiropractic manipulation facilitating regeneration of the sciatic nerve in rats
Amano M., Choi J.O., Jung H.S., Ham J.H.

P27  Survey study on complementary alternative medicine care use for patients with low back pain in Japan
Tanabe H., Cho H.R., Jung H.S., Ham J.H.

P28  Survey study in awareness and use of chiropractic care in Japan
Imoto Y., Eo B.R., Jung H.S., Ham J.H.

P29  Predictors for disability and patient recovery after microscopic discectomy surgery: A prognostic cohort study
Willems S.J., Scholten-Peeters G.G.M., Rooker S.

P30  Effect of a role model in the rehabilitation of patients with non-specific low back pain: A randomised trial with a 2-year follow-up
Larsen I.G., Oestergaard L.G., Thomsen L.M., Nielsen C.V., Schiøttz-Christensen B.

P31  The role of adverse events after naprapathic manual therapy as a prognostic factor
Tabell V., Skillgate E.

P32  Evidence-based clinical practice guideline for primary care physiotherapy treatment of acute low back pain
Karlsson M., Larsson M.E.H., Bernhardsson S.

P33  Interrater reliability for the standing pelvic kinetic “Stork” tests and their relevance to a cluster of functional load transfer tests, pelvic ligamentous tests and lower quarter movement impairments
Franke B.A., Neal N., Moore J., Grajaies T., Olson L.

P34  Patients sick-listed for musculoskeletal or mental disorders – Differences in pain drawing characteristics
Enthoven P., Beka J., Wählin C., Ekberg K., Persson J., Bernfort L., Oberg B.

P35  The relationship between activities and lumbar facet joint pain
Ennri D.R., Azharuddin A., Punwata T.E.

P36  Consensus on Exercise Reporting Template (CERT): A modified Delphi study
Slade S.C., Dionne C.E., Underwood M., Buchbinder R.

P37  Prognostic factors for people with low back pain receiving physiotherapy

P38  Individualised physiotherapy is cost-effective relative to advice for low back disorders: Economic analysis within a randomised controlled trial
Hahne A.J., Ford J.J., Richards M.C., Surkitt L.D., Chan A.Y., Slater S.L., Taylor N.F.

P39  Adaptation and effect of lumbar mobilization for nonspecific low back pain - Standpoint of Modic change type II on the magnetic resonance imaging
Araki H., Miyamoto S.

P40  Identification of preliminary prognostic indicators for back rehabilitation in patients with nonspecific chronic low back pain: A retrospective cohort study
Denteneer L., Van Daele U., De Hertogh W., Truijen S., Stassijns G.

P41  The influence of a trunk stabilization exercise warm-up program on low back and lower extremity injuries in junior youth soccer players
Imai A., Kaneoka K.

P42  A single subject research study of guided graded training in women with pregnancy-related chronic pelvic girdle pain
Jendman Culshaw T.

P44 Rotation exercise classes did not improve function in women with non-specific chronic low back pain: A randomized single blind controlled study Segal-Snir Y., Lubetzky V.A., Masharawi Y.

P45 The effect of therapeutic exercises using modern biofeedback device with an equalizer of imbalance in trunk muscle strength and to reduce feelings of pain and improvement in postural stability in patient with LBP - A case report Śliwa A., Łysakowska-Będek B., Cygoń K., Bednorz R.

P46 The effect of four week treatment with the use of biofeedback device for improving muscle strength and reducing pain in patients with LBP - Preliminary report Śliwa A., Łysakowska-Będek B., Cygoń K., Bednorz R.

P47 The effect of four week therapy with use of specialized equipment with biofeedback to improve postural stability in patients with LBP - Preliminary report Śliwa A., Łysakowska-Będek B., Cygoń K., Bednorz R.

P48 Efficacy of prolotherapy treatment for sacroiliac joint instability and pain Mitchell B., Rose R., Barnard A.

P49 Should hamstring muscles be stretched by flexing the hip while keeping the knee extended or by flexing the hip with a flexed knee and then extending the knee? Demoulin C., Wolfs S., Chevalier M., Granado C., Grosdent S., Roussel N., Depas Y., Hage R., Crielard J.-M., Vanderthommen M.

P50 Are fatigue-related EMG parameters correlated to trunk extensor muscles fatigue induced by the Sorensen test? Demoulin C., George F., Matheve T., Jidovtseff B., Vanderthommen M.

P51 A systematic review and meta-analysis of randomised controlled trials investigating the effectiveness of foot orthotic devices for the prevention and treatment of low back pain Chuter V.H., Spink M.J., Searle A., Sadler S.G., Ho A.

P52 A randomised controlled trial investigating the effect of core strength training on the restoration of the transversus abdominis muscle Sadler S.G., Janse De Jonge X.A.K., Thompson B.M., Chuter V.H.

P53 Evaluating municipality based rehabilitation for low back pain Morse L., Pedersen T.J., Jacobsen Y.J.M.


P55 Effect of activity pacing in chronic low back pain with exercise dependence behavior – A case series Manivasagam M., Anandkumar S., Tie V.S.K., Meyding-Lamadé U.


P58 The development and clinical evaluation of a functional technology-supported exercise therapy program for patients with chronic non-specific low back pain Matheve T., Claes G., Olivier E., Timmermans A.A.A.

P59 'Better Backs @ Austin' group back rehabilitation programme: An audit of outcomes to determine programme effectiveness Bardin L.D.

P60 Reducing inpatient length of stay for low back pain Laurent R., Baecher R.

P61 Effects of individual pilates and group pilates on pain and disability in individuals with chronic non-specific low back pain: A systematic review with meta-analysis Low R.J.C., Poh L.C.R.


P63 Outcomes following the intervention of the hip joint approach for a patient with non-specific low back pain in Taiwan: A case report Hsu C.Y.

P64 Effects of aquatic therapy (Watsu) in patients with chronic nonspecific low back pain – A pilot study Kulik A., Rostoniec E., Koszela A., Zagórski T.


P68 Impact of a high intensity training program on changes in activity level of persons with chronic nonspecific low back pain: Data of a clinical pilot trial Verbrugghe J., Agten A., Seelen H., Eijnde B.O., Vandenaeele F., Timmermans A.

P70  The result of a sequenced rehabilitation protocol for ankylosing spondylitis
Sharan D.

P71  Outcome of a multidisciplinary rehabilitation protocol for failed back surgery syndrome
Sharan D., Rajkumar J.S.

P72  Aquatic therapy: Rehabilitative tool for musculoskeletal dysfunction
Kelsick E.W.

P73  Effect of standing exercises using pelvis and thorax realignment device on the symptoms of care workers with low back pain
Ogura H., Kihara T., Gamada K.

P74  Instantaneous effect of contraction maneuvers of the abdominal muscles on inter-recti distance in women with diastasis recti compared with healthy women
Rezazadeh M., Khalkhali Zavieh M., Dehghan Manshadi F.

P75  Thickness change comparison of abdominal muscles during abdominal hallowing maneuver with and without pelvic floor muscle
Tahan N., Mohseni Bandpei M.A.

P76  Chiropractic treatment, Gonstead technique, to determine the measurement of blood lactate and heart rate in amateur athletes

P77  Examination and treatment of an adolescent circus artist with low back pain with utilization of a patient specific functional scale to assist in returning the patient to all her circus skills
Khoo-Summers L.

P78  Examination and treatment of a competitive figure skater with psoriatic arthritis with bilateral hip pain status post three arthroscopic labral repairs
Khoo-Summers L.

P79  RehApp – The feasibility of an App to guide self-management for patients with cervical radiculopathy
Rasmussen H., Boyle E., Sjegaard G., Schultz U.P., Kjaer P.

P80  Influence of different fixation methods in the Biering-Sørensen test on endurance time and muscle fatigue
Stevens V., Perneel C., Van Tiggelen D., Jodts I., Commere F., Danneels L.

P81  The immediate effect of dry needling on the myofascial and discopathic radiating low back pain
Mahmoudzadeh A., Karimi A., Rezaeian Z.S.

P82  The effect of walking with 10% inclination on treadmill in patients with chronic low back pain - A randomized control trial
Soleimanjur R., Karimi A.

P83  Simple facet joint repair with dynamic pedicular system: Technical note and case series
Ozer A.F., Oktenegroglu T., Suzer T., Sasani M., Cezayiri P., Marandi H.J., Erbulut D.U.

P84  The immediate effect of spinal manipulation on pain intensity in acute low back pain
Amel Eini S., Karimi A., Rezaeian Z.S.

P85  Factors associated with low back pain before pubertal peak growth
Dolphens M., Vansteelandt S., Cagnie B., Vleeming A., Vanderstraeten G., Danneels L.

P86  The immediate effect of multiple mechanical impulses on electromyography and pain pressure threshold of lumbar latent trigger points: An experimental study
Ameloot B., Bagust J.

P87  Validity and responsiveness of the Dutch version of the modified Oswestry disability index
Denteneer L., Van Dalee U., De Hertogh W., Truilen S., Persoone K., Stassijns G.

P88  Complications of spine surgery and litigations
El Banna S.

P89  Applied manual therapy (Mulligan technique) used in pain reduction tests as a method of classifying low back pain in athletes
Takaya N., Koji K.

P90  Lumbar rotation kinematical parameters in men with non-specific chronic low back pain measured in neutral standing and with full flexion
Haj A., Steinberg N., Masrara Y.

P91  Does risk stratification based on the start back tool predict reduced disability after a rehabilitation program? A pilot study
Hansen H.B., Vaegter H.B.

P92  Gouty arthropathy leading to rare sacro-iliac joint erosion and pain
Thomas S.A., Reddy A.

P93  Unique mechanism for lumbar musculoskeletal pain defined from primary care research into periosteal/enthesis response to biomechanical stress and formation of small fibre polyneuropathy
McKay A.B.

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