



DANSK BIOMEKANISK SELSKAB

## Detailed program

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09:00 – 09:30	Poster Mounting, Registration, Coffee
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09:30 – 09:45	Welcome by the organizers and sponsors.  By John Rasmussen, AnyBody Technology and Velamed
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09:45 – 10:25	<b>Podium Presentations 1</b>
09:45 – 09:55 Page: 12	What are we talking about? a pilot review of injury risk inferences in biomechanical experiments of running <u>Sebastian Deisting SkejØ</u>
09:55 – 10:05 Page: 13	Predicting drag in a racing kayak using a forward dynamics model <u>Jonas Østergaard Juhl</u> , Mark de Zee and Kent Klitgaard
10:05 – 10:15 Page: 14	Persons with parkinson’s disease show repeated bout rate enhancement during cycling <u>Ernst A. Hansen</u> , Mathilde J. C. Berner, Nikoline H. Gade, Maja H. Bjørnkjær, Anders F. Brekke, Vibeke Grønland
10:15 – 10:25 Page: 15	The effect of power clean or loaded hex bar jump on physical performance in soccer <u>Sebastian Svane</u> , Mathias Kristensen  Chair: Mark de Zee

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10:25 – 11:10	<b>Keynote by Enrico de Pieri</b>  Increased femoral anteversion in children – can musculoskeletal modeling better inform clinical decision-making?  Chair: John Rasmussen
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11:10 – 11:25	Break
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- 11:25 – 12:55      **Student competition sponsored by AnyBody Technology**
- 11:25 – 11:35      Investigating the validity and reliability of the repon velocity  
Page: 16            sensor on average concentric velocity in squat and bench press  
Marcus Thrane Leth, Tue Skallgaard and Louise Fleng Sandal
- 11:35 – 11:45      Analyzing one-repetition-maximum predictions: load-velocity  
Page: 17            relationship vs. repetition to failure equation in ten lower  
extremity exercises  
Mikkel Faarup, Jonas Green Jensen, Sissel Rosenkrans Pedersen,  
Rasmus Toftholm Jakobsen, Elisa Jolas, Michael Skipper  
Andersen, Mathias Kristiansen, Morten Bilde Simonsen
- 11:45 – 11:55      Biomechanical gait analysis of overground walking in healthy  
Page: 18            individuals using robot-assisted dynamic body weight unloading  
Jon Skovgaard Jensen, Anders Holsgaard-Larsen, Anders  
Stengaard Sørensen, Per Aagaard, Jens Bojsen-Møller
- 11:55 – 12:05      Impact of an upper limb exoskeleton on muscle activity during  
Page: 19            three task  
Musso Matteo, A. S. Oliveira and S. bai
- 12:05 – 12:15      Effects of in field use and familiarization of a passive back  
Page: 20            exoskeleton on the lower back muscles during logistics work  
Lasse Schrøder Jakobsen, Mark de Zee Afshin Samani, Kévin  
Desbrosses, and Pascal Madeleine
- 12:15 – 12:25      Bones segmentation from lower extremity mri for patient-  
Page: 21            specific modeling  
Yunsub Jung, Morten Bilde Simonsen and Michael Skipper  
Andersen
- 12:25 – 12:35      Effects of transcranial direct current stimulation combined with  
Page: 22            arm swing on the walking performance of people with  
parkinson's disease  
Vinicius Cavassano Zampier, P.I. Bichara, P.P. Gutierrez, F.A.  
Barbieri, A. S. Oliveira



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12:35 – 12:45  
Page: 23

Gait kinematics during body weight support in young adults with neurological disorders

Morten B. Pedersen, Per Aagaard, Anders Stengaard Sørensen, Gitte Rasmussen and Anders Holsgaard-Larsen

12:45 – 12:55  
Page: 24

Towards a laxity protocol for in vivo applications: Preliminary results parameters

Brett Michael Musolf, Ilias Theodorakos, Michael Skipper Andersen

Chair: Peter Christian Raffalt

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12:55 – 14:00

Lunch

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13:05 – 14:00

General assembly

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14:00 - 15:10

### **Podium presentations 3**

14:00 – 14:10  
Page: 25

Advancing orthopaedic postoperative evaluation through time-series 3d computed tomography: focusing on femoral torsion  
Ahmed Haloum, Ole Rahbek, Søren Kold, Jan Rölfling, Shima Gholinezhad, John Rasmussen, Ahmed Abood

14:10 – 14:20  
Page: 26

The determination of the optimal material combination for total hip prosthesis components using parametric finite element analysis

I. Ağıl, Fatih Alibeyoglu and A.T. Şensoy

14:20 – 14:30  
Page: 27

Lean mass and isometric upper body strength are associated with sprint kayak performance

Mathias Kristiansen, Matthew Flood and Kent Klitgaard

14:30 – 14:40  
Page: 28

Patient-specific spinal bone screw fixation: homogenized versus voxel-based finite element analysis

Mohammadjavad Einafshar, Alireza Rouyin, Mohadese Rajairad, Mohammadjavad Salmani, Farzam Farahmand, Navid, Arjmand

- 14:40 – 14:50  
Page: 29
- A preliminary analysis on the feasibility of detecting gait events using machine learning and motion sensors embedded in smartphones  
Larsen, Aske G., Sadolin, Line Ø., Thomsen, Trine R., Oliveira, Anderson S.
- 14:50 – 15:00  
Page: 30
- Children diagnosed with idiopathic toe walking – altered treatment strategy when 3d-gait analysis is added to the decision-making  
Anders Holsgaard-Larsen, Tina Udemark Pasgaard, Sidsel Hald Rahlf, Julie Ladeby Erichsen, Bjarke Viberg, Christian Færgemann
- 15:00 – 15:10  
Page: 31
- Biomechanical efficacies of stabilization of lumbar degenerative diseases using hybrid instrumentations: a finite element study  
Moustafa Mesbah, Mohamed Bendoukha, Abdelwahed Berkaoui, Hakim Chiali
- Chair: Michael Skipper Andersen

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15:10 – 15:20     **Student award ceremony**

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15:20 – 16:20     **Posters and coffee**

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- #1  
Page: 32
- Prediction of discrete football actions using semi-supervised machine learning  
Larsen, Aske Gye, Papi, Giovanni & Oliveira, Anderson Souza
- #2  
Page: 33
- Kinematic analysis of the two phases, jump on trampette and trampette support phase, with focus on angles and angular velocity in the lower body.  
Østerballe, Nielsen, W. Nielsen & K. Nielsen,
- #3  
Page: 34
- Evaluation of trip-reducing elements using a mechanical free body shoe collision test  
Mathias Munk-Hansen, Anders Holsgaard-Larsen, Mark de Zee, Thor Grønlykke, Pascal Madeleine



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- #4  
Page: 35  
AnyBody modeling driven by multi-modal data from wearable sensors  
Mingyuan He, Shaoping Bai
- #5  
Page: 36  
Biomechanical Evaluation of Lumbar Interbody Fixation Techniques: A Comparative Study of Standalone Cages vs. 360-Fixation Constructs  
Ali Kiapour, Mohammadjavad Einafshar, Elie Massaad, John Shin
- #6  
Page: 37  
Modulating femoral torsion: evaluating the impact of a novel plate design in a growing porcine model  
Ahmed Haloum, Ole Rahbek, Søren Kold, Jan Rölfing, Shima Gholinezhad, John Rasmussen, Ahmed Abood
- #7  
Page: 38  
Quest for Accuracy: Progressing Towards Optimal Ultrasound Settings for Bone-Soft Tissue Interface Identification  
Martin Vorup Lindvand, Nico Verdonschot, Ilias Theodorakos, and Michael S. Andersen
- #8  
Page: 39  
Sensitivity analysis of cartilage creep material properties prediction in unconfined compression: impact of data quantity  
Bo E. Seiferheld and Michael S. Andersen
- #9  
Page: 40  
Robot-assisted weight relief for prevention of musculoskeletal pain among bronchoscopists  
Knudsen PK, Jepsen RB, Sørensen AS, Juul AD, Andersen JF, Deleuran MK, Dalager T, Sjøgaard K
- #10  
Page: 41  
Classification of jaw movements from tmd patients based on pca  
Ryuji Shigemitsu, Takehiko Mito, Emika Sato, Hiroshi Egusa, Keiichi Sasaki and John Rasmussen

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16:20 – 17:00 Beer, soda, snacks and networking

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