

# CONFERENCE PROGRAM

AND

ABSTRACTS



Porto  
Portugal

## CONFERENCE PROGRAM

BioMedWomen covers several fields of knowledge related to women's health. It gathers the clinical and bioengineering perspectives from different professionals from around the world: gynecologists, urologists, physiotherapists, nutritionists, sport scientists, radiologists, neurologists, engineers, dermatocosmetologists, gerontologists, psychologists, dentists, among others.



## SCIENTIFIC PROGRAM

Monday, 22 June	
8:30	<b>Registration</b>
9:00h	<p><b>Opening session</b></p> <p>Renato Natal Jorge Teresa Mascarenhas José Alberto Duarte Isabel Ramos Maria Emília Costa Maria Helena Figueiral Olivia Pinho João Manuel RS Tavares</p>
9:15h	<p><b>Room 1, Chairpersons: Maria Emília Costa / José Alberto Duarte</b></p> <p><b>Invited Lecture</b></p> <p><u>Improving women's health via the bio-psycho-social model: fibromyalgia management as a case study.</u> <i>H. L. Rogers</i></p> <p><b>Oral Presentations, Chairpersons: João Manuel RS Tavares / Olivia Pinho</b></p>
10:00h	<p><u>Save-My-Mom: an innovative medical device for autotransfusion in life threatening postpartum hemorrhage in low resource settings.</u> <i>H. Esmailbeigi, V. Dobiesz, N. Robinson, P. Kutz &amp; S. Geller</i></p> <p><u>Screening prevalence of depressive disorder in diabetic women.</u> <i>H. Jahangiri &amp; S. A. Mirbagheri</i></p> <p><u>Eating behaviour and risk factors for eating disorders in women submitted to abdominoplasty.</u> <i>V. Y. Suzuki, F. X. Nahas, F. Furtado, M. J. De Brito &amp; L. M. Ferreira</i></p>
11:00h	<b>Coffee break</b>

Monday, 22 June	
11:30h	<p><b>Room 1, Chairpersons: Thuane da Roza / Augusto Gil Pascoal</b></p> <p><b>Oral Presentations</b></p> <p><u>The quality of enzymatic dispersion viability and cryopreservation of human skin cells.</u> <i>R. Yamamoto, S. Gaiba, F. Zanata, J. França &amp; L. Ferreira</i></p> <p><u>Acute management of hand burns.</u> <i>F. Zanata, A. Oliveira &amp; L. M. Ferreira</i></p> <p><u>Ultrasound imaging transducer orientation and displacement during diastasis recti assessment.</u> <i>P. Mota, A. G. Pascoal, C. Vaz, F. João, A. Veloso &amp; K. Bø</i></p> <p><u>Adolescent health, hygiene and nutritional consciousness among slum girls in Mumbai.</u> <i>N. Beena</i></p> <p><u>Symptoms of eating disorders in at term pregnancy.</u> <i>F. Volpe, G. Tesolat, A. Andrisani, R. Maione, G. Straface &amp; V. Zanardo</i></p>
13 10h	<b>Lunch</b>

Monday, 22 June	
11:30h	<p><b>Room 2, Chairpersons: MPL Parente / João Manuel RS Tavares</b></p> <p><b>Oral Presentations</b></p> <p><u>Evaluation of factors of senior fragility of the clients of third age at the university FTK UP.</u> T. Podzimková, M. Přidalová &amp; M. Cínařová</p> <p><u>Relationship between quadriceps echo intensity, muscle thickness and pain intensity in aged women with knee osteoarthritis.</u> L. Carrão, R. Santos, S. Amado, H. Almeida, P. Faria, P. Armada-da-Silva, A. Veloso &amp; M. Espanha</p> <p><u>The effect of exercise training programs on balance in older women.</u> A. Dunsky, T. Yahalom &amp; R. Lidor</p> <p><u>Ultrasound evaluation of musculotendinous structures in elderly population submitted to a physical activity program.</u> R. Santos &amp; A. P. Amaral</p> <p><u>Are computerized respiratory sounds in COPD gender dependent?</u> C. Jácome &amp; A. Marques</p>
13:10h	<b>Lunch</b>

Monday, 22 June	
14:30h	<p><b>Room 1, Chairpersons: Teresa Mascarenhas / Renato Natal Jorge</b></p> <p><b>Invited Lecture</b></p> <p><u>Biomechanics of female pelvic floor: bridging experiments, modelig, and clinical practice.</u> M. Damaser</p> <p><b>Oral Presentations, Chairpersons: Teresa Mascarenhas / Renato Natal Jorge</b></p>
15:10h	<p><u>Simulation on the effect of pubococcygeous muscle avulsion on the anterior vaginal wall support.</u> L. Chen, J. Ashton-Miller &amp; J. DeLancey</p> <p><u>Simulated surgical repair of cystocele with mesh.</u> J. Luo, L. Chen, J. Ashton-Miller &amp; J. DeLancey</p> <p><u>Significance of fibre geometry on passive-active response of pelvic muscles to evaluate pelvic dysfunction.</u> A. Bhattarai, R. Frotscher &amp; M. Staat</p> <p><u>The effects of fetal head trajectory on stress distribution in levator ani during vaginal delivery.</u> L. Havelková, L. Krofta, L. Hynčík &amp; J. Feyereisl</p>
16:30h	<b>Coffee break</b>

Monday, 22 June	
16:30h	<p><b>Room 2, Chairpersons: Sofia Brandão / J Belinha</b></p> <p><b>Poster Session</b></p> <p><u>Differences between pelvic floor dynamometers.</u> V. Sousa, D. Orth, P. Driusso, F. Araújo-Moreira &amp; N. Parizotto</p> <p><u>Optimization of hyperelastic constitutive parameters for the female pelvic floor muscles.</u> E. Silva, M. Parente, S. Brandão, R. Natal Jorge &amp; T. Mascarenhas</p> <p><u>Biomechanical study on bladder neck displacement during valsalva maneuver.</u> P. Rocha, M. Parente, S. Brandão, T. Mascarenhas &amp; R. Natal Jorge</p> <p><u>Constitutive modeling of vaginal tissue in the transverse direction of fibers.</u> R. Martins, P. Martins, T. Mascarenhas &amp; R. Natal Jorge</p> <p><u>The biomechanical effect of damage on the pelvic floor muscles behavior.</u> D. Oliveira, M. Parente, B. Calvo, T. Mascarenhas &amp; R. Natal Jorge</p> <p><u>The meshless simulation of the atherosclerotic plaque tissue using an elasto-plastic model.</u> J. Belinha, L. M. J. S. Dinis &amp; R.M. Natal Jorge</p> <p><u>Otosclerosis - ear disease in women</u> F. Gentil, C. Santos, M. Parente, P. Martins, E. Almeida &amp; R. Natal Jorge</p>

Monday, 22 June	
17:00h	<p><b>Room 1, Chairpersons: H Almeida / Augusto Gil Pascoal</b></p> <p><b>Thematic Session: Biomechanics and numerical simulation of pregnancy</b></p> <p><b>Organizers:</b> Henrique A. Almeida, Sandra Amado &amp; Rui B. Ruben</p> <p><u>Pregnancy and ergonomics.</u> <b>H. Almeida</b> <u>Kinematic adaptations throughout pregnancy and postpartum in sagittal plane.</u> <b>M. Branco, R. Santos-Rocha, F. Vieira, L. Aguiar &amp; A. P. Veloso</b></p> <p><u>Effect of parity on step width during walking as pregnancy progresses: a case study.</u> <b>W. Gilleard</b> <u>Uterine smooth cells force generation from electrical properties.</u> <b>M. Yochum, J. Laforet &amp; C. Marque</b></p> <p><u>Reliability of a vaginal finger-cot device for measuring pelvic floor muscles strength.</u> <b>A.G. Pascoal, P. Silva &amp; F. Sancho</b></p>
20.00h	<p><b>Conference Dinner - Pestana Palácio do Freixo</b></p> <p>(the bus leaves atmosfera m at 19:30h)</p>

Monday, 22 June	
17.00h	<p><b>Room 2, Chairpersons: M Helena Figueiral / JC Reis Campos</b></p> <p><b>Thematic Session: Female oral medicine</b></p> <p><b>Organizers:</b> M. Helena Figueiral, J. Reis Campos &amp; Patricia Fonseca</p> <p><u>Oral-health related quality of life in patients with removable dentures.</u> A. Assis, S. Pina-Neves, J. C. Reis-Campos, M. Sampaio-Fernandes, M. H. Figueiral &amp; A. Correia</p> <p><u>Personality impact on prosthodontics patients.</u> F. Dantas, <b>A. Correia</b>, J. C. Reis-Campos, P. Fonseca &amp; M. H. Figueiral</p> <p><u>Prevalence of denture-related stomatitis.</u> M. H. Figueiral, J. C. Reis-Campos; T. Pereira-Leite, A. Correia &amp; <b>P. Fonseca</b></p> <p><u>Differences between genders in oral rehabilitation with complete denture.</u> <b>P. Fonseca</b>, M. Sampaio-Fernandes &amp; M. H. Figueiral</p> <p><u>Osteonecrosis of jaw by bisphosphonates: about a case.</u> M. Sampaio-Fernandes, J. G. Carvalho, T. Pereira-Leite &amp; J. Sampaio-Fernandes</p> <p><u>The biomechanical response of a restored tooth due to bruxism: a meshless approach.</u> C. Tavares, J. Belinha, L. M. J. S. Dinis &amp; R.M. Natal Jorge</p> <p><u>Facial cleft prenatal ultrasound diagnosis at 11 weeks – is it possible?</u> P. Vaz, T. Semedo, M. Seabra, V. Campos, <b>R. Nogueira</b> &amp; F. Valente</p>
20.00h	<p><b>Conference Dinner - Pestana Palácio do Freixo</b></p> <p>(the bus leaves atmosphere at 19:30h)</p>

Tuesday, 23 June	
9:20h	<p><b>Room 1, Chairpersons: Thuane da Roza / Rui Viana</b></p> <p><b>Oral Presentations</b></p> <p><u>Selected body composition fractions in relation to meeting recommended physical activity in overweight and obese women.</u> T. Sofková &amp; M. Přidalová</p> <p><u>Pelvic floor muscle electromyography during different running speeds - an exploratory and reliability study.</u> H. Luginbühl, R. Naeff, A. Zahnd, J-P. Baeyens, A. Kuhn &amp; L. Radlinger</p> <p><u>Bone mineral content and density in female adolescent athletes: comparison between participants of sports contrasting mechanical impact.</u> <b>M. J. Coelho-e-Silva</b>, J. P. Duarte, A. Osorio, L. Luz, J. Valente-dos-Santos, O. Tavares, A. Seabra &amp; D. Courteix</p> <p><u>Effective and enjoyable physical activity sessions for women with schizophrenia.</u> E. Gomes, T. Bastos, M. Probst, <b>R. Costa</b> &amp; R. Correadeira</p> <p><u>Effects of a 3-month physical activity program on manual dexterity and physical activity levels in a woman with schizophrenia: a case study.</u> <b>R. Costa</b>, E. Gomes, O. Vasconcelos, R. Correadeira &amp; T. Bastos</p>
11.00h	<p><b>Coffee break</b></p>

Tuesday, 23 June	
9:20h	<p><b>Room 2, Chairpersons: PALS Martins / Sofia Brandão</b></p> <p><b>Oral Presentations</b></p> <p><u>Structural differences between breast lesion by diffusion kurtosis imaging.</u> L. Nogueira, S. Brandão, R. G. Nunes, J. Loureiro, I. Ramos &amp; H. Ferreira</p> <p><u>The effect of late mastectomy with and without breast reconstruction on balance and body posture.</u> A. P. Ribeiro, T. Maniaes, A. Hamamoto &amp; S. M. A. João</p> <p><u>Capsular weakness around breast implant – a non-recognized complication.</u> F. X. Nahas, F. Zanata, P. Arquero, T. Rosewick &amp; L. M. Ferreira</p> <p><u>Evaluation of the shell properties of the PIP breast implants.</u> N. Ramião, P. Martins, A. A. Fernandes, M. L. Barroso, D. Santos</p>
11:00h	<b>Coffee break</b>

Tuesday, 23 June	
11:30h	<p><b>Room 1, Chairpersons: J Belinha / Renato Natal Jorge</b></p> <p><b>Oral Presentations</b></p> <p><u>Optimizing self-esteem and sexual quality of life after burn trauma and childhood abuse: a case report.</u> M. Pocolo, R. P. Lobo &amp; R. P. Daher</p> <p><u>Levonorgestrel-releasing intrauterine device (LNG-IUD) Mirena® and myomas: clinical effects.</u> J. López-Olmos</p> <p><u>Quality of life in women with urinary incontinence in rehabilitation treatment.</u> M. G. Pereira, B. Lynch, M. Hall-Faul &amp; S. Pedras</p> <p><u>Maternal pathology and fetal abnormalities.</u> P. Vaz, I. Côte-Real, V. Campos, B. Assunção, A. C. Braga &amp; F. Valente</p>
13:10h	<b>Lunch</b>

Tuesday, 23 June	
11:30h	<p><b>Room 2, Chairpersons:</b> Henrique A Almeida / Rita MT Ascenso</p> <p><b>Thematic Session:</b> Bioinformatics and optimization algorithms for women's health</p> <p><b>Organizers:</b> Henrique A. Almeida, Eunice Oliveira, Rita M. T. Ascenso</p> <p><u>Mathematical modelling for assessing fracture risk associated with osteoporosis.</u>  <b>D. Monteiro, A. Pereira, M. Baptista &amp; E. Fonseca</b></p> <p><u>Bodyshifter – somatotype determination and optimization.</u>  <b>C. Silva, E. Oliveira, H. Almeida &amp; R. Ascenso</b></p> <p><u>Validation of the kaolin/carrageenan model as an experimental model of osteoarthritis in female rats.</u>  <b>D. Amorim, A. Lima, A. David-Pereira, R. Nogueira, N. Seivas, A. Almeida &amp; F. Pinto-Ribeiro</b></p> <p><u>Image software and statistical analysis applied to expression of RAB25 in breast cancer.</u>  <b>M. Rocha, S. Maia, D. Santos, H. Cardoso, J. Ramalho, M. Martins, M. Seabra &amp; T. Barona</b></p> <p><u>Decision support systems for screening BBD in plastic surgery patients.</u>  <b>M. J. De Brito, M. Sabino Neto, N. R. Ortega, F. X. Nahas, C. A. Santos Filho &amp; L. M. Ferreira</b></p>
13:10h	<b>Lunch</b>

Tuesday, 23 June	
14:30h	<p><b>Room 1, Chairpersons:</b> Thuane da Roza / PALS Martins</p> <p><b>Oral Presentations</b></p> <p><u>Critical review on assessment technologies of pelvic floor muscles.</u>  <b>V. Sousa, D. Orth, P. Driusso, F. Araújo-Moreira &amp; N. Parizotto</b></p> <p><u>The impact of surgical wound dehiscence on women's sexuality and social adjustment.</u>  <b>M. F. Duarte, M. J. De Brito, M. M. Resende, N. F. Corrêa, F. S. Santos &amp; L. M. Ferreira</b></p> <p><u>New anti-candidiasis women's cotton underwear.</u>  <b>C. Mouro, F. Nogueira &amp; I. Gouveia</b></p>
16:30h	<b>Coffee break</b>

Tuesday, 23 June

16:30h

Room 2, Chairpersons: Sofia Brandão / PALS Martins

Poster Session

Body dysmorphic disorder in women seeking plastic surgery.

*M. J. De Brito, F. X. Nahas G. A. Felix, G. M. Dini, T. A. Cordás & L. M. Ferreira*

Body investment and body satisfaction in women undergoing reduction mammoplasty.

*C. C. Fonseca, M. J. De Brito, E. S. Garcia, M. M. Carvalho, G. A. A. Félix, D. F. Veiga & L. M. Ferreira*

Diagnostic performances of DCE and DWI in breast imaging.

*L. Nogueira, S. Brandão, R. G. Nunes, H. Ferreira, J. Loureiro & I. Ramos*

Developing a FON CMU breast model as a teaching aid for breastfeeding.

*S. Yimyam & S. Kannasutra*

The influence of BMI and C-section on the accuracy of CT scan on rectus abdominis diastasis diagnosis.

*F. X. Nahas, F. Zanata, R. Busch, N. F. Neto & L. M. Ferreira*

Temperature assessment in the drilling of ex-vivo bovine and porcine cortical bone.

*M. Fernandes, E. Fonseca, R. Natal & M. I. Dias*

Structural and vascular performance of biodegrading scaffolds within bioreactors.

*S. Almeida, D. Freitas, H. Almeida & P. Bártolo*

Differences in the influence of Nordic walking and walking on the anthropometric characteristics of women.

*N. Čokorilo & M. Mikalački*

Tuesday, 23 June

17:30h

Biomedwomen 2015 Closing Session

# ABSTRACTS

## Institutional Organizers



## Institutional Support



## Publication



## Mathematical Modelling for Assessing Fracture Risk Associated with Osteoporosis

*D. Monteiro<sup>1</sup>; A. Pereira<sup>2</sup>; M. Batista<sup>3</sup>; E. Fonseca<sup>4</sup>*

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<sup>2</sup> Polytechnic Institute of Bragança, Portugal

<sup>3</sup> Dr. Campos Costa, Dept. of Medical Physics, Portugal

<sup>4</sup> LAETA-INEGI/UMNME, Polytechnic Institute of Bragança, Dept. of Applied Mechanics,  
Portugal

**Abstract:** Osteoporosis is a systemic skeletal disease, characterized by low bone mass and by changing the bone microstructure. According to the Portuguese Society of Osteoporosis and Metabolic Bone Diseases (SPODOM), this disease affects about 500,000 people in Portugal. This paper presents a study on the evaluation of the fractures risk due to bone demineralization through various risk factors. An optimization code is developed using a mathematical program for diagnosing the disease and to compare it with the diagnosis obtained from DEXA (Dual-energy X-ray absorptiometry) scans.

The developed code is performed with Matlab method using genetic algorithms. Analysing the numerical results it is possible to conclude that the program can predict the T-Score value based on previous DEXA exams and the patient life behaviour as physical exercise, drinking coffee, the smoking, previous disease and other factors.

## BodyShifter – Somatotype Determination and Optimisation

*C. Silva<sup>1</sup>; E. Oliveira<sup>1,2</sup>; H. Almeida<sup>1</sup>; R. Ascenso<sup>1,3</sup>*

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<sup>3</sup> Computer Science and Communication Research Center, Polytechnic Institute of Leiria

**Abstract:** The somatotype technique is the most complete methodology to assess the physical characterisation of both body morphology and composition. This technique allows determining the body morphology and composition associated with a specific health condition, sports or aesthetic issues, and also aids to improve his/her physical condition, especially when it is associated to specific sportive activity and/or performance. BodyShifter was designed to perform the determination and optimisation of an individual's somatotype, to help physicians, nutritionist and sport technicians to determine the individuals' physical characterisation so that they may perform counselling on how to improve body shape and composition. Bodyshifter determines the current somatotype of an individual and uses a genetic algorithm to propose an optimisation of their somatotype category, for a given situation. In order to present the software's potential, a case study of two young women will be presented as they decide to optimise their somatotype for a given sport.