

CPN as a Promoter of Gender Equality in Research, Science and Technology

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Agenda



- 1. CPN as a Promoter of Gender Equality in Research**
- 2. Gendered Innovations in Serbia: Examples**
- 3. Conclusions**

Women Chemists in Serbia

CPS published book “Women Chemists in Serbia” in 2011, the international year of chemistry.

Since the end of the nineteenth century until the Second World War 139 women from Serbia gained diploma of chemist and chemical engineer. Of these, 18 received diplomas in France, four in Switzerland, two in the Czech Republic, one in Germany and the rest of Serbia. Nine women got doctoral degree in chemistry.

According to the number of chemists, and especially the number of PhDs, Serbia has kept pace with modern European states that were economically stronger and richer than Serbia, and in educational and cultural activities at a much higher level.

The aim of the book is to increase awareness of the role of chemistry in solving human problems, to encourage interest in chemistry among young people, and to arouse enthusiasm for the creative future of chemistry.



Image on Women in Science in Serbia

CPN Survey



Citizens say that in science:

- **women can achieve as good results as men do – 76%**
- **women can do better than men – 13%**
- **men do better than women – 12%**

Ones who consider **women do better** in science than men say:

- **“its because women are more capable” - 61 %**
- **“because women are smarter” - 60 %**
- **“women get better work conditions” - 12%**

Ones who think **men do better** in science say:

- **“because they get better work conditions” – 49%**
- **“men are more capable” – 39%**
- **“men are smarter than women” – 29%**

Participation of Women in Science and Technology



Three Round Tables organized by CPS, CSO Equal Opportunities and “Mihajlo Pupin” Institute

- **Participation of Women in Science and Technology: Challenges, Opportunities and the Way Forward** was held in Belgrade in 2012.
- Opening the discussion about the participation of women in science and technology
- Strengthening the motivation of school girls to choose a career in science and technology.

The Project Was Presented on Three Round Tables:

- 1. Women Experts in Serbia (Inspiring Examples as Role Models for Future Scientists and Experts)** has shed light on the challenges and benefits of choice of scientific and technical professions through the personal stories of selected women experts who broke the existing gender barriers and succeeded in an area that is predominantly “ruled” by men.
- 2. From a Girl to a Scientist – the Way Forward and Obstacles (How to Motivate Girls to Choose Technical Professions)** opened the discussion on women in science and technology, their representation in the study and teaching staff and management structures within universities, research institutions and industry and proposed plan of action to improve the current situation.
- 3. Women's Participation in Science and Technology: Challenges, Opportunities and the Way Forward – The Role of Media.** The idea is to increase the visibility of women scientists in the media and to broaden the focus of the media coverage on the topics in the field. What is a "stumbling block" on this way, and how to remove it, is defined by interaction between academics and journalists, with special reference to the benefit to the whole society from highlighting this currently completely neglected topic.

Round Tables Conclusions and Next Steps

MAIN CONCLUSIONS:

- **Number of girls** choosing scientific and technical careers is **much lower** than the boys and has decreasing trend
- **Gender stereotypes** have big impact during the processes of choosing careers and promotion in career
- Although men and women have the same career choice, there is **still a strong line between typical male and female occupations**

ACTIVITIES:

- Continue with roundtables in other cities in Serbia
- Conduct research on the participation of girls in technical faculties
- Develop brochures with inspiring examples of women scientists role models
- Prepare brochures and promotional materials with presentation of women scientist role models
- Create thematic web site and use social networks to reach girls all over the country
- Prepare video material with role models
- Promote these issues in media, specially ICT careers

Gender Innovations in Serbia

How Gender Analysis Can Contribute to Research?

GI: Women and Stroke

Professor Miroslava Zivković MD PhD, Faculty of Medicine, University of Nis



Facts on Women and Stroke

- Serbia: More women than men die from stroke: 18.38% compared to 12.44%.
- Stroke is primary reason of mortality for women and second in case of men. Stroke is main cause of death in hospital conditions in Serbia.
- **Research is showing a correlation of gender and outcome of stroke treatment**

BUT: Nearly 20% of women report that they don't know any risk factors of stroke, such as high blood pressure, smoking, high cholesterol, diabetes, atrial fibrillation, obesity and family history.

Further analysis and recommendations for stroke prevention:

The problem of stroke in women is complex and requires further epidemiological monitoring, based on the principles of complex neuro-hormonal and vascular status, with regular multifactorial preventive strategy.

Paper: [Do women benefit more from systemic thrombolysis in acute ischemic stroke? A Serbian experience with thrombolysis in ischemic stroke \(SETIS\) study.](#)



Research Study on Women and Stroke

Research goal

Bearing in mind facts on women and stroke the team felt that it was necessary to design a clinical and epidemiological research for better understanding the processes that influence the occurrence of stroke in women.

Methodology

The computer database of the admissions department of the Neurology Clinic in Nis was created in 1998 and collected data constantly analyzed.

Data were examined specifically in relation to females who have been diagnosed with stroke treated at the Clinic of Neurology in Nis in period from 1998 up to now, with 38,000 recorded patients, with the aim to review the basic hospital-based epidemiological data.

GI: Impact of Gender Equality on Climate Change

Research Work Group of Hydrometeorology Institute, Belgrade



Chapter 4: Climate change and gender

About gender and gender equality

Gender Analysis

Socio-economic approach to gender analysis (Seagate)

Impact on Health

Gender differences and agriculture:

- access to resources
- labor market,
- financial services,
- education,
- Technology

Gender analysis ensuring sufficient food availability

Cities and Climate Change

Principles

The inclusion of gender in the climate change

Recommendations for the community of cities and governments

- Gender and the labor market
- The impact of gender in disasters
- The impact of gender after disaster
- Gender and Migration
- Climate change, gender and conflict

Republic of Serbia - Gender Aspects

- The legal framework for the achievement of gender equality in the Republic of Serbia
- Objectives and institutions
- Statistics

GI: Autoimmune Diseases in Middle-aged Women

Sonja Pavlovic, PhD, Principal Research Fellow, Laboratory for Molecular Hematology



Mechanisms of sex differences in autoimmune diseases*

Women are more susceptible to a variety of autoimmune diseases including systemic lupus erythematosus (SLE), multiple sclerosis (MS), primary biliary cirrhosis, rheumatoid arthritis and Hashimoto's thyroiditis. This increased susceptibility in females compared to males is also present in animal models of autoimmune diseases such as spontaneous SLE in (NZBxNZW)F1 and NZM.2328 mice, experimental autoimmune encephalomyelitis (EAE) in SJL mice, thyroiditis, Sjogren's syndrome in MRL/Mp-lpr/lpr mice and diabetes in non-obese diabetic mice. Indeed, **being female confers a greater risk of developing these diseases than any single genetic or environmental risk factor discovered to date.** Understanding how the state of being female so profoundly affects autoimmune disease susceptibility would accomplish two major goals. First, it would lead to an insight into the major pathways of disease pathogenesis and, secondly, it would likely lead to novel treatments which would disrupt such pathways.



* Rhonda Voskuhl, Biology of Sex Differences 2011, 2:1
<http://www.bsd-journal.com/content/2/1/1>

GI: Gait Analysis and High Heels

PhD Milica Djuric Jovicic, Innovaton Center of EE Faculty, Belgrade



Milica Djuric Jovicic, PhD in Biomedical Engineering, Innovation Center of Electrical Engineering Faculty in Belgrade:

1. “Inertial Sensors Signal Processing Methods for Gait Analysis of Patients With Impaired Gait Pattern”
2. “Analysis of Ground Reaction Forces While Walking in Shoes With Different Heel Heights”



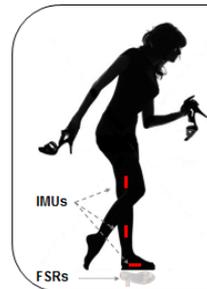
School of Electrical Engineering, University of Belgrade, Serbia, www.ETF.rs, <http://bmit.ETF.rs>



The influence of heel height on gait pattern

Milica Djuric-Jovicic, Nenad Jovičić, Dejan B. Popović

EMBE 2011, 5th European Conference of IFMBE, 14-18 Sep 2011, Budapest, Hungary



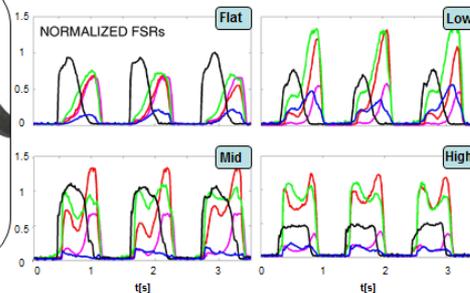
Experiment

10 subjects

4 heel heights:

- flat (1 cm)
- low (3cm)
- middle (5 cm)
- high (8 cm)

Change of gait pattern for force profiles

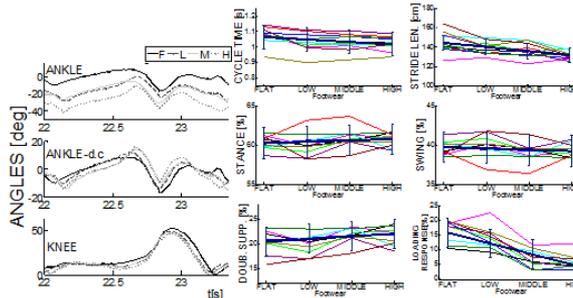


Sensor system



We used wireless sensor system SENSY, developed at the ETF Belgrade in collaboration with Tecnalia Serbia. SENSY comprises 3D IMUs and FSRs which provide assessment of gait kinematics and kinetics.

Change of gait kinematics: altered joint angles and parameters



High heels:
Yes or No?

78%

58%

FORCE @ MTT

22%

(0)

GI: Piezotechnology help against cellulite

Research Institute Mihajlo Pupin, The Department for magnetic materials, Belgrade



WOMEN'S UNDERWEAR WITH A MAGNETIC SYSTEM

MAGNETO-SLIM FIT

Magneto-slim fit is used to treat cellulite, stretch marks and varicose capillaries. The biological effects of controlled magnetic field influence the cell membrane and cell nucleus accelerating blood circulation, establishing lymphatic drainage, reducing body fat and improving skin elasticity tightening it at the same time. Also, it has been proved that Magneto-slim fit has beneficial effect on withdrawal of hematoma, wound healing, reducing of pain, stretch marks and wrinkles, varicose veins and the withdrawal of capillaries.

MAGCELFIT – Anti cellulite suite

Helps fighting fat and cellulite because of the favorable influence that magnets have on increasing the metabolism in the treated region. It is made of dermatologically tested materials that are easy to maintain.



MEDICAL MAGNETS



Magnetic therapy is the application of electromagnetic field in therapy. The use of magnets for therapeutic purposes has been known for more than 3,000 years. Studies have shown that when the human body comes in contact with the permanent magnet's magnetic field it affects the expansion and contraction of capillary blood vessels. This process affects the micro regulation of blood and decreases inflammation. Magnetic therapy has proven effective in eliminating the pain of various origin, stiffness, it decreases inflammatory processes, reduces swellings after injuries and postoperative treatment of wounds of patients.

Conclusions and Next Steps

- Although Gender Equality Law and National Strategy for Improving the Status of Women and Gender Equality Promotion exist and Gender Equality Directorate is proactively working on related legislation and promotion related to gender issues, there is not yet developed the gendered research strategy in Serbia.
- Drafting of Strategy for the Promotion of Science is currently ongoing.
- CPS is involved as one of the stakeholders and we will put all our efforts to include gender dimension in it.
- This could be an example that could influence the next step – engendering the research strategy in Serbia.



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