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UNDERSTANDING OF LUMBAR SPINE SYSTEM MECHANICS AND CAPACITY: STEP TO LOW BACK ISSUES PREVENTION

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One of common considerations in physical ergonomics practice is prevention of musculoskeletal disorders with imperative to identify directives that lead to more effective health protection. To ensure safety and wellbeing, creating of appropriate prevention strategies based on relevant parameters are crucial. Regarding occurrence of LBP (low back pain) and correlated costs, thorough knowledge of the functionality of the spine (as well as complete musculoskeletal functionality) is the basis for determining the appropriate recommendations, and also consequent limitations. This knowledge should be holistic as much as possible. The talk will present biomechanical understanding of the lumbar spine system in order to create safety precaution indicators. Findings indicates that evaluation score of personal psychophysical capacity depends on age, gender, anthropometric data and appropriate skills, experience, assignment structure, its intensity and complexity, but not limited to. Actual task analysis will be illustrated *via* compared diagrams of lumbar spine moment that are used to point at critical considerations. In conclusion, safety and wellbeing of individuals requires determination of case sensitive risk factors, limitations and even exclusions. This is considered as most suitable injury prevention and safety implementation strategy that suggests that it is necessary to match task/assignment to person/s that should perform it.

Recent Publications

1. Susic A and Wolf H (2016) Is it Possible to Effectively Implement Ergonomic Considerations in Product Development?. Proceedings of the 6th International Ergonomics Conference, Ergonomics 2016, Zadar,



Croatia: 331-336 ISSN 1848-9699

2. Susic A., Zokalj M., Kasovic M. (2013) Estimation of Lumbar Spine Load during Lifting Task Execution. Proceedings of the 5th International Ergonomics Conference, Ergonomics 2013, Zadar, Croatia: 139-144, ISSN 1848-9699
3. Susic, A., Spehar M., Jurcevic Lulic T. (2013) Procedure for Correction of Lifting Task Posture for Injury Prevention. Proceedings of the 5th International Ergonomics Conference, Ergonomics 2013, Zadar, Croatia: 205-210, ISSN 1848-9699

Biography

Aleksandar Susic is a Professor of Biomechanics and Ergonomics with a specialization in Human Centred Design, Biomechanics and Applied Biomechanics in Kinesiology. He is currently an employee of Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb, Croatia. As Head of Department for Biomechanics and Ergonomics, he is an active consultant in many applications of Applied Biomechanics and Ergonomics. In his latest research he has improved integration of ergonomic criterions into conceptualization and embodiment phases of engineering design that is essential to meet advanced product demands. He has organized two international ergonomic conferences with objective to manage integration of ergonomics into societies, industry and academia during his mandates as the President of Croatian Ergonomics Society. He is interested in further research on ergonomics real life implementation, improvement in product design for consequent elevation of overall life quality.

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