A guide to studying simple and complex lifting tasks using updated NIOSH lifting equation (LI, CLI, VLI)

Pre-conference Workshop
September 21, 2023

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Managing all the risk assessment data collected and the relevant risk score calculations can be so complex that "simple tools", i.e., Excel©, have been developed for gathering, managing, and processing the data. These tools (present in different calculation models for biomechanical overload estimation) are employed to implement the strategy we have developed for calculating the risk arising.
During the workshop, specific free software will be provided with which exercises will be done. It is mandatory to bring and use a personal laptop during the workshop.

The tool is primarily designed to be used by ergonomists, employers, OSH operators, and trade union representatives. It may also be helpful for occupational medical staff conducting periodical inspections and drafting health surveillance protocols and for supervisory bodies (labour inspectors) conducting inspections in the workplace needing to detect potentially dangerous situations requiring specific preventive interventions rapidly.

This workshop offers helpful guidance and tools (spreadsheets in Excel free download) on analysing and evaluating the intricate lifting functions for preventing injury during their execution. Based on the practical experience of the authors, the manual should help users to apply both the international standards ISO [ISO 11228-1, 2003] and the RNLE (Revised NIOSH Lifting Equation).

The tools were created by EPM with the support of a qualified group of co-workers in various European countries based on extensive field experience. For over 10 years now, EPM has worked with researchers at the NIOSH, primarily Thomas Waters, the principal author of the RNLE, to develop theoretical models and application tools for the update of the criteria to study complex manual lifting tasks (variable and/or sequential, manual lifting situations commonly present in all warehouses, supermarkets, construction, agricultural works, etc.). Variable and sequential tasks today represent the latest evolution of the original RNLE [Waters, 2003] and have become the reference method for international standards.

About Our Speakers:

1. Daniela Colombini

MD in Occupational Medicine and Statistics, European Ergonomist. President of Scientific Association Ergonomics of Posture and Movements International Ergonomics School (EPM IES), she has 40 years of experience in risk assessment methods for biomechanical overload prevention. Coauthor of OCRA method, VLI NIOSH ML, TACOs posture. Occupational Medicine Professor at the University of Milan, Florence and Bogotà for many years.Since 20 years active member of CEN and ISO in TC 159 SC3: co-chair of sub-groups in TC MSDs in International Ergonomics Association. Chair of **ISO TR 23476** ***(agriculture)*** and the new **ISO TR** ***(construction).*** Author of more than 20 books and 200 scientific papers.

2. Enrico Occhipinti

Enrico has a degree in Medicine and Surgery with postgraduate specializations in Occupational Medicine and in Health Statistics at the University of Milano (Italy). He is a Certified European Ergonomist. He is professor at the School of Specialization in Occupational Medicine, University of Milano and has been Director of the Research Unit "Ergonomics of Posture and Movement" (EPM) at Fondazione Don Gnocchi ONLUS - Milano up to 2015. He is the Scientific Director of EPM International Ergonomics School. He has devoted about 40 years on ergonomic issues related to physical ergonomics and the prevention of work-related musculoskeletal disorders and is Author of more than 250 papers and handbooks, in Italian and English, on the matter. He developed and co authored the OCRA method. He is a member and has been coordinator (up to 2012) of the Technical Committee on Prevention of Musculoskeletal Disorders of the International Ergonomics Association (IEA) and represents Italy in international commissions of the European Committee for Normalization (CEN) and the International Organization for Standardization (ISO) dealing with ergonomics and biomechanics. He is member of the Italian Working Group devoted to the Prevention of Occupational Musculoskeletal Diseases in the framework of the National Health Service Plan for Prevention (2021-2025).

3. Matteo Candoli

Graduated in Prevention Techniques in workplaces from the University of Bologna and specialized in Prevention Sciences from the University of Milan, Matteo is a researcher and collaborator at the "Ergonomics of Posture and Movement" - research unit of Milan, since 2021. He has worked as a consultant alongside Marco Cerbai at Safety Work Srl since 2021, where he carries out risk analysis in the field of workplace ergonomics. Specialized in biomechanical overload analysis using OCRA, NIOSH, Snook&Ciriello and TACOS methods. He works with

local, national and multinational companies where he analyzes and proposes solutions for improving workstations.