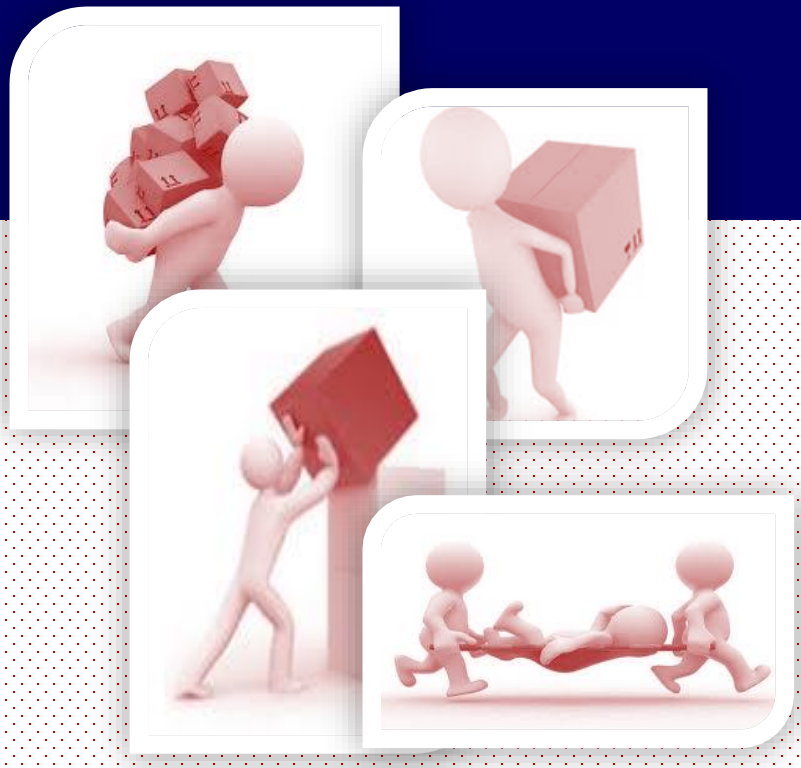


MANUAL LIFTING ASSESSMENT

Injury risk evaluation of lifting tasks involving job rotation, warehousing and small lot delivery operations based on the revised NIOSH lifting equation

By
Daniela Colombini, EPM
Enrico Occhipinti, EPM
Enrique Alvarez-Casado, CENEA
Jack Lu, NIOSH
Robert Fox, GM
Marisol Barrero, Toyota

26-27 September, 2016
Cincinnatti, Ohio

epm international ergonomics school

Ergonomics of Postures and Movements
International Ergonomics School

NIOSH

National Institute for Occupational
Safety and Health

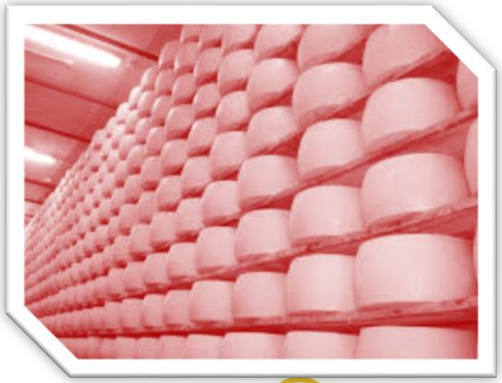
COURSE OBJECTIVES

The attendees will learn how to use newly developed lifting index variables for a variety of applications including manual lifitng involving job rotation, manual lifting in a warehousing setting, manual lifting for small lot delivery operations and variable lifting conditions. This course will introduce easy-to-use software tools aimed for personnel without strong ergonomic background. The course will be carried out by:

A NIOSH expert,

Two senior corporate ergonomists from Toyota and General Motors,

Three internationally recognized researchers from EPM International Ergonomics School.



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The 2 Day Course Will Cover The Following Topics

1. INTRODUCTION (Dr. Steve Hudock, Manager, NIOSH Musculoskeletal Health program)

2. A BRIEF HISTORY OF THE REVISED NIOSH LIFTING EQUATION (RNLE) AND ITS GENERAL APPLICATIONS (Dr. Jack Lu, research ergonomist, NIOSH)

3. The Application of the RNLE at General Motors (Dr. Bob Fox, General Motors)

4. The Application of the RNLE at Toyota (Marisol Barrero, Toyota)

5. INTERNATIONAL TECHNICAL STANDARDS FOR THE MANUAL HANDLING OF LOADS: ISO 11228 AND EN 1005 (Drs. Daniela Colombini, Enrique Alvarez and Enrico Occhipinti)

6. PROCEDURES, MODELS AND CRITERIA FOR EVALUATING RISK IN MANUAL LIFTING JOBS (Drs. Daniela Colombini, Enrique Alvarez and Enrico Occhipinti)

7. VARIABLE LIFTING TASKS. THE VARIABLE LIFTING INDEX (VLI): COMPUTATION PROCEDURES AND EXAMPLES (Drs. Daniela Colombini, Enrique Alvarez and Enrico Occhipinti)

8. COMPUTING THE EXPOSURE INDEX FOR EVALUATING SEQUENTIAL TASKS: CRITERIA AND PROCEDURES (Drs. Daniela Colombini, Enrique Alvarez and Enrico Occhipinti)

9. MAPPING RISK ASSOCIATED WITH MANUAL LOAD LIFTING (Drs. Daniela Colombini, Enrique Alvarez and Enrico Occhipinti)

10. THE NEW DATA BASE WITH RESULTS OF CLINICAL EXAMINATION IN EXPOSED AND NOT EXPOSED TO OCCUPATIONAL MMH: LIFTING INDEX AND CONSEQUENT ACTIONS (Drs. Daniela Colombini, Enrique Alvarez and Enrico Occhipinti)

Excel spread-sheets for calculating the LI variables will be provided during the course. The tool is also freely available at www.epmresearch.org. web site. Althouth the training room at NIOSH is requipement with PCs., you are encouraged to bring you own laptop computer for the hands-on applications.

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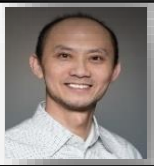
COURSE INSTRUCTORS

Daniela Colombini
Daniela holds a MD with specialization in occupational medicine and health statistics. She is a certified European Ergonomist and a senior researcher at the Research unit Ergonomics of Posture and Movement, Milan, where she developed methods for the analysis, evaluation and management of risk and damage from occupational biomechanical overload. He is a Professor at the School of Specialization in Occupational Medicine, University of Florence. She is the coauthor of the OCRA method (EN 1005-5 standard and ISO 11228-3). She is founder and President of the EPM International Ergonomics School. She has been working with accredited native teachers in different countries such as France, India, Spain, Chile, Colombia, Guatemala, Costa Rica, Brazil and other South America Countries. She is a member of the Ergonomics Committee of UNI working in the international commissions of CEN and ISO. She is coordinator of a sub-group of Technical Committee on the Prevention of Musculoskeletal Disorders of the IEA

Enrico Occhipinti
Enrico specializes in occupational medicine. He is a certified European Ergonomist and responsible for the Center for Occupational Medicine (CEMOC) working in the Department of Preventive Medicien at Foundation IRCSS PoloclinicoCa Granda in Milan. He is a Professor at the School of Specialization in Occupational Medicine, University of Milan and the Director of the Research Unit Ergonomics of Posture and Movement EPM-Polo Tecnologico Fondazione Don Gnocchi ONLUS-Milan and of the EPM International Ergonomics School. He was coordinator of the Technical Committee on the Prevention of Musculoskeletal Disorders of the IEA and member of the Ergonomics Committee of UNI and represent Italy in the International Committee of CEN and ISO.

Enrique Alvarez-Casado
Enrique is the main scientific consultant for the Centro de Ergonomía Aplicada (CENEA) from Barcelona. He holds a Ph.D. in Occupational Ergonomics from the Universitat Politècnica de Catalunya. He is an industrial engineer, master of ergonomics and master of occupational risk prevention. He is member and professor at the EPM International Ergonomics School and president of the Catalan Ergonomics Association (CATERGO). He participates on the work groups of ISO and CEN for developing standards on occupational biomechanics. Enrique is co-author of the Variable Lifting Index (VLI).



Ming-Lun (Jack) Lu
Jack Lu is a certified professional ergonomist and research ergonomist in the Division of Applied Research and Technology at NIOSH. He holds a Ph.D. in Ergonomics/Industrial Hygiene from the University of Cincinnati. Jack is involved in a number of field and laboratory studies at NIOSH aimed at evaluating risk of work-related musculoskeletal disorders. His primary research interests include the NIOSH lifting equation, occupational biomechanics and ergonomic risk assessments for prevention of work-related low back disorders.

Robert (Bob) Fox
Bob holds a Ph.D. in Industrial Engineering from Texas Tech University and has worked in General Motors North American and global ergonomics activities since late 1993. He works with divisions, plants and the UAW-GM joint ergonomics program on addressing proactive ergonomics concerns and in developing and issuing ergonomics guidelines and evaluation tools and methods. He chairs the US Technical Advisory Group (TAG) to the International Standards Organization (ISO) for anthropometry and biomechanics and participates on various work groups for ANSI and ISO standards and technical reports on ergonomics. He also chairs the HFES Technical Standards Division.

Marisol Barrero
Marisol Barrero is a certified professional ergonomist and the North American Ergonomics Lead for Toyota Motor Engineering and Manufacturing North America (Erlanger, KY). She develops regional strategy and supports tools, standards, and procedures for use across Toyota's 15 North American manufacturing facilities. Marisol has also worked as an ergonomics consultant with Humantech and Mitsui Sumitomo Insurance Group, as well as a researcher with NIOSH. She received her B.A. and M.S. from Cornell University.

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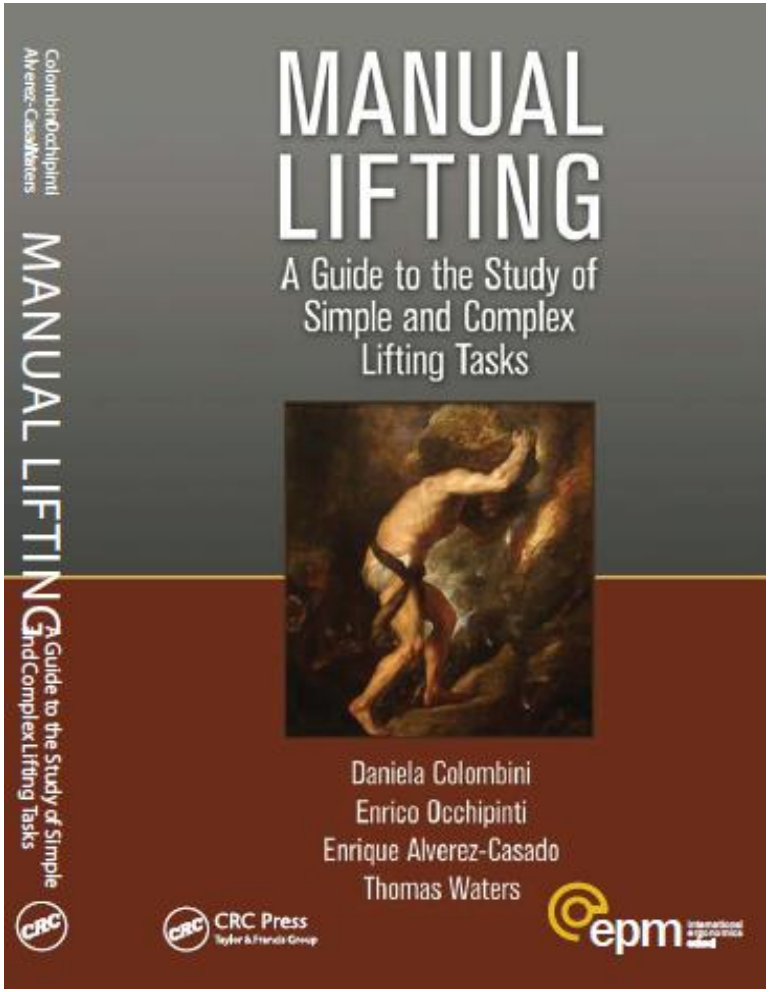
COURSE REFERENCES



Free Excel program (spreadsheets with formulas) will be distributed to participants of the course. The program will be used in the course to carry out application examples.

EPMIES INTERNATIONAL SCHOOL: WHO WE ARE

Our "vocations" as "old hardened researchers" has always been to seek solutions for the prevention of occupational risk of biomechanical overload and to teach "self-management of the problems “at the source": prevention should be done directly by those designing workplace and jobs! Our experience comes from constant comparisons between the need to respond to the actual needs of workers and technical staff ,who require practical tools, simple, easily applicable in the field..

In summary EPM and its schools EPMIES have the following main goals in relation to the broader aim of improving the health and work:

- *development of simple methods and computerized tools, for field application of research results, suitable to simplify the evaluation and management of risk by biomechanical overload;*
- *transformation of research results and best application practices relating to prevention and management of risk by biomechanical overload into training materials;*
- *development of specific training courses directed to the different professionals involved with the prevention (technical and medical professionals);*
- *activation of new schools (with either private or public character) in the different part of the world with teacher specifically trained, thus assuring the homogeneity of the different EPM associated schools.*

OFFICIAL TEACHERS FROM 12 DIFFERENT COUNTRIES IN 5 LANGUAGES

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COURSE LOCATION

NIOSH Taft Laboratories Room B34.
1150 Tusculum Ave.
Cincinnati, OH 45226, USA

Directions: Please enter from Grandin Road. There is no access from Columbia Parkway. Security check-in is required at entrance.