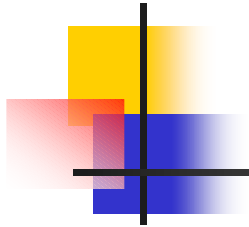


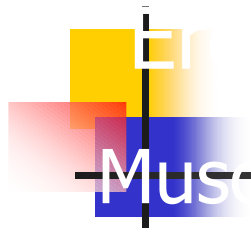
# **ILO/IEA Ergonomic Checkpoints**

# Ergonomics and Occupational Health



*Ergonomics stresses fitting the job to the worker as compared to the more usual practice of obliging the worker to fit the job.*

*Ergonomics is a field which integrates knowledge derived from the human sciences in particular anatomy, physiology and psychology to match jobs, systems, products and environments to the physical and mental abilities and limitations of workers.*



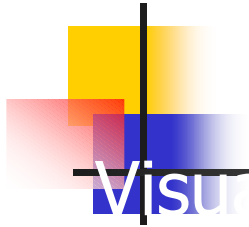


---

Psychological job demands

Decision latitude

Social support



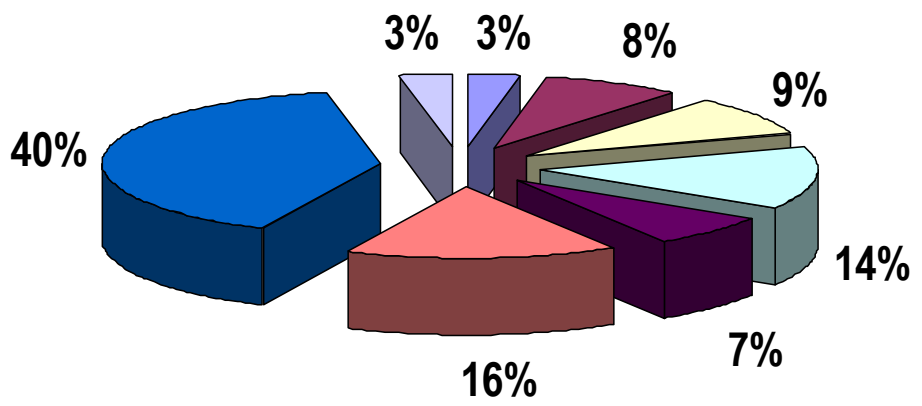
Visual



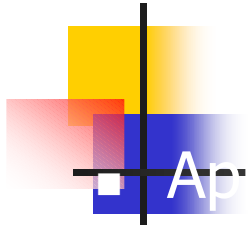


Musculoskeletal complaints are a major cause of absence because of sickness in particular in developed countries

# Costs by disease



- Tumors
- Respiratory Diseases
- Mental Disorders
- Musculoskeletal Diseases
- Central Nervous System
- Accidents
- Heart Diseases
- Skin Diseases



Ap





# Key ILO OSH Instruments

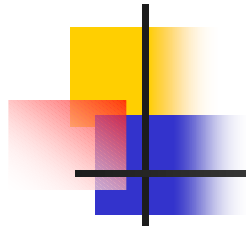
---

- ILO Maximum Weight Convention, 1967 (No. 127) & Recommendation (No. 128)
- C. 155 & R. 164 on Occupational Safety and Health, 1981
- Protocol of 2002 to the Occupational Safety and Health Convention, 1981
- C. 161 & R. 171 on Occupational Health Services, 1985
- C. 81 & R. 81 on Labour Inspection, 1947
- C. 129 & R. 133 on Labour Inspection (Agriculture), 1969
- R. 194 on List of Occupational Diseases, 2002
- C. 187 & R. 197 on Promotional Framework for

# ILO Convention No. 127 & Recommendation No. 128



Convention No. 127 and Recommendation No.128 which specify the international requirements concerning the manual transport of a load which by reason of its weight is likely to jeopardise a worker's health or safety and the necessary measures needed to protect the workers including women and young workers who are engaged in manual transport of loads other than light loads.



## **Recommendation No. 194**

**Recommendation concerning the List of Occupational Diseases and the Recording and Notification of Occupational Accidents and Diseases.**



## **2.3. Musculoskeletal disorders**

- 2.3.1. Radial styloid tenosynovitis due to repetitive movements, forceful exertions and extreme postures of the wrist
- 2.3.2. Chronic tenosynovitis of hand and wrist due to repetitive movements, forceful exertions and extreme postures of the wrist
- 2.3.3. Olecranon bursitis due to prolonged pressure of the elbow region
- 2.3.4. Prepatellar bursitis due to prolonged stay in kneeling position
- 2.3.5. Epicondylitis due to repetitive forceful work
- 2.3.6. Meniscus lesions following extended periods of work in a kneeling or squatting position
- 2.3.7. Carpal tunnel syndrome due to extended periods of repetitive forceful work, work involving vibration, extreme postures of the wrist, or a combination of the three
- 2.3.8. Other musculoskeletal disorders not mentioned in the preceding items where a direct link is established scientifically, or determined by methods appropriate to national conditions and practice, between exposure to the risk factors arising from work activities and the musculoskeletal disorder(s) contracted by the worker

# **Global Strategy on Occupational Safety and Health Adopted at the 91st Session of the International Labour Conference in 2003**



---

## **The Global Strategy:**

- **reaffirmed the importance for all countries to apply international labour standards on occupational safety and health**
- **requested the ILO to give highest priority to the development of new instruments in the areas of ergonomics and biological hazards.**
- **Preventative Safety and Health Culture**

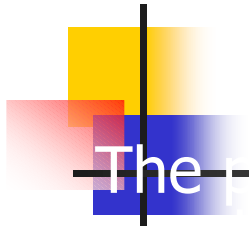
([http://www.ilo.org/public/english/protection/safework/globstrat\\_e.pdf](http://www.ilo.org/public/english/protection/safework/globstrat_e.pdf))

# SafeWork/CIS



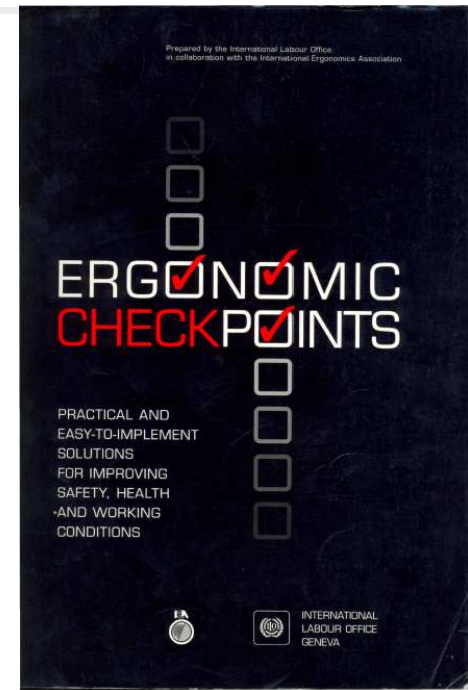
---

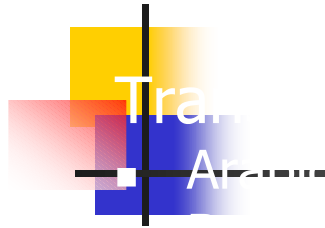
- Knowledge base
- Information base
- Database
- Solutions
- Tool for change
- Exchange of experience
- Networking



The p

- 
- 
- 
- 
- 
- 
- 
- 







## Core Group for Compiling the 1st Edition



Martin Helander, State University of New York, Buffalo, United States;

Andrew Imada, University of Southern California, Los Angeles, United States;

Kazutaka Kogi,\* International Labour Office, Geneva, Switzerland;

Stephen Konz, Kansas State University, Manhattan, United States;

Ilkka Kuorinka, Institut de Recherches en Santé et Sécurité de Travail de Québec (IRSST), Montreal, Canada;

Tuulikki Kuorinka, IRSST, Montreal, Canada;

Wolfgang Laurig, Institut für Arbeitsphysiologie, Dortmund, Germany;

Najmedin Meshkati, University of Southern California, Los Angeles, United States;

Houshang Shahnava, Luleå University of Technology, Luleå, Sweden.

# Core Group for Compiling the 1st Edition





# Ergonomic Checkpoints

Practical and easy-to-implement solutions for improving safety, health and working conditions

Second edition

Prepared by the International Labour Office in collaboration with the International Ergonomics Association

### SPECIFICATIONS

ISBN  
978-92-2-122666-0  
Price  
CHF 45; USD 40; GBP 28; EUR 30  
Trimmed Size  
8.3 x 11 inches; 21 x 29.7 centimetres  
Page Count  
xxx+304 pages  
Publication Date  
July 2010

Fully revised and expanded, this new edition of the highly successful Ergonomic Checkpoints is aimed at reducing work-related accidents and diseases and improving safety, health and working conditions. Building on the wealth of experience of practitioners in applying these checkpoints, the second edition features revised text, additional checkpoints and new, full-colour illustrations. The manual presents 132 realistic and flexible solutions to ergonomic problems applicable across a whole range of workplace situations, including:

- Materials storage and handling
- Hand tools
- Machine safety
- Workstation design
- Lighting
- Premises
- Control of hazardous substances and agents
- Welfare facilities
- Work organization

Each of the illustrated checkpoints indicates an action, why it is necessary and how to carry it out, and provides further hints and points to remember. A template checklist is also included, which can be adapted to individual workplaces.

The manual is designed for use by all who are concerned with creating a better workplace: Employers, supervisors, workers, inspectors, safety and health personnel, trainers and educators, extension workers, engineers, ergonomists and designers.

### TABLE OF CONTENTS

#### Foreword

Preface to the second edition

Preface to the first edition

Suggestions for using the manual

Ergonomic checklist

Materials storage and handling (checkpoints 1-17)

Hand tools (checkpoints 18-31)

Machine safety (checkpoints 32-50)

Workstation design (checkpoints 51-63)

Lighting (checkpoints 64-72)

Premises (checkpoints 73-84)

Hazardous substances and agents (checkpoints 85-94)

Welfare facilities (checkpoints 95-105)

Work organization (checkpoints 106-132)

#### Annexes

Annex 1: Using Ergonomic Checkpoints in participatory training

Annex 2: Workplace checklist

Annex 3: Practical hints for the workplace checklist

Annex 4: Sample programmes for a training workshop using Ergonomic Checkpoints

Annex 5: Examples of group work results

### RELATED TITLES

**Approaches to Attribution of Detrimental Health Effects to Occupational Ionizing Radiation Exposure and their Application in Compensation Programmes for Cancer (OSH 73)**  
2018. xiv+100 pp. ISBN 978-92-2-122413-6  
CHF 35; USD 32; GBP 20; EUR 23

**Safety and Health in Underground Coalmines: An ILO Code of Practice**  
2009. 360 pp. ISBN 978-92-2-120162-5  
CHF 40; USD 37; GBP 17; EUR 25  
Also available in French and Spanish

**Fundamental Principles of Occupational Health and Safety**  
Second edition  
September 09. 448  
2008. 220 pp. ISBN 978-92-2-120564-1  
CHF 40; USD 36,90; GBP 16,90; EUR 25

**Occupational Injuries Statistics from Household Surveys and Establishment Surveys**  
An ILO manual on methods  
Koenraad and Peter Wright/Eds.  
2008. iv+166 pp. ISBN 978-92-2-120439-8  
CHF 35; USD 45; GBP 25; EUR 35

**International Classification of Radiographs of Pneumoconiosis**  
Revised edition 2000  
22 standard radiographs  
2000. ISBN 92-2-107177-4  
CHF 625; USD 560; GBP 360; EUR 550  
16 standard radiographs  
2000. ISBN 92-2-113206-5  
CHF 450; USD 375; GBP 185; EUR 300

### Contacts

Publicity  
Ms. Elvira Lesaffre  
lesaffre@ilo.org

Sales  
Mr. Neil Thornton  
pubvente@ilo.org



## Order Acceptance Form

**Select your order**

Contact us: Fax: (+41) 022 799 6938, Email: pubvente@ilo.org, Tel: (+41) 022 799 7501/6028

Write to: ILO Publications, International Labour Office, 4, route des Maronniers, CH-1211 Geneva 22, Switzerland

YES! Please send me the following items as indicated below (please indicate desired quantity).

ISBN	TITLE	PRICE	QUANTITY	TOTAL
978-92-2-122666-0	Ergonomic Checkpoints			
			Subtotal	
			Postage*	
			TOTAL	

\* For Europe and the Mediterranean please add 20% for surface mail. 10% for airmail. (For all other ILO orders, 20% airmail.)

**SHIPPING ADDRESS**

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_ Mr./Mrs./Ms.  
Organization: \_\_\_\_\_ Dept.: \_\_\_\_\_  
Address: \_\_\_\_\_ Postal Code: \_\_\_\_\_  
City: \_\_\_\_\_ Country: \_\_\_\_\_  
Telephone: \_\_\_\_\_ Email: \_\_\_\_\_ Fax: \_\_\_\_\_

**METHOD OF PAYMENT**

Payment System:  VISA  MasterCard  American Express  Debit

Card No.: \_\_\_\_\_ Expiry Date: \_\_\_\_\_  
Signature (with or without approval): \_\_\_\_\_  
Please send me a 2% ILO Form 1 (order distribution/return), please check a postage stamp.  
Signature (with or without approval): \_\_\_\_\_  
No cash on order unless arranged otherwise.

### Work organization

#### CHECKPOINT 128

Take measures so that older workers can perform work safely and efficiently.

#### WHY

Older workers have knowledge and experience but may have difficulty in adapting to physically demanding tasks or too fast a pace of work. Adapting work to older workers can improve safety and the flow of work.

Older workers often find it difficult to read instructions and signs written in small characters or presented on dim light. Special care should be taken to make them easy to see.

New technology can make jobs easier for older workers, but may make it difficult for them to adapt to it. Although older workers may be very experienced, they need training in newly introduced technology just like younger workers. However they may find difficulty to learn in the same way as the younger workers.

#### RISKS / SYMPTOMS

- **serious injury or incident**
- **musculoskeletal strain**
- **poor worker health**
- **loss of acceptance**

#### HOW

1. Check, together with the workers, if some tasks may cause difficulty or unsafe conditions for older workers. Discuss how these tasks can be made more adaptable to older workers.
2. Apply mechanical devices for physically demanding tasks involving older workers. Make sure that they are able to accomplish new tasks safely.
3. Make instructions, signs and labels easy for older workers to read.
4. Provide sufficient lighting for older workers. Install local lights, if necessary.

### Work organization

#### CHECKPOINT 128

Take measures so that older workers can perform work safely and efficiently.

#### WHY

Older workers have knowledge and experience but may have difficulty in adapting to physically demanding tasks or too fast a pace of work. Adapting work to older workers can improve safety and the flow of work.

Older workers often find it difficult to read instructions and signs written in small characters or presented on dim light. Special care should be taken to make them easy to see.

New technology can make jobs easier for older workers, but may make it difficult for them to adapt to it. Although older workers may be very experienced, they need training in newly introduced technology just like younger workers. However they may find difficulty to learn in the same way as the younger workers.

#### RISKS / SYMPTOMS

- **serious injury or incident**
- **musculoskeletal strain**
- **poor worker health**
- **loss of acceptance**

#### HOW

1. Check, together with the workers, if some tasks may cause difficulty or unsafe conditions for older workers. Discuss how these tasks can be made more adaptable to older workers.
2. Apply mechanical devices for physically demanding tasks involving older workers. Make sure that they are able to accomplish new tasks safely.
3. Make instructions, signs and labels easy for older workers to read.
4. Provide sufficient lighting for older workers. Install local lights, if necessary.

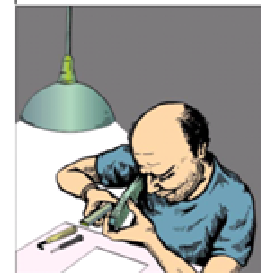


Figure 128. Check together with older workers. If possible, make sure that older workers can perform work safely and efficiently.

# Core Group for Compiling the 2nd Edition



Sara Arphorn, Mahidol University, Bangkok, Thailand

Jose Maria Batino, Department of Labor and Employment, Manila, Philippines

David C. Caple, David Caple & Associates, East Ivanhoe, Australia

Pierre Falzon, International Ergonomics Association, Paris, France

Martin Helander, Nanyang Technologies University, Singapore

Toru Itani, Nagoya City University, Nagoya, Japan

Akiyoshi Ito, University of Occupational Health and Environment, Kitakyushu, Japan

Tsuyoshi Kawakami, International Labour Office Regional Office for Asia and the Pacific, Bangkok, Thailand

Ton That Khai, Centre for Occupational Health and Environment, Cantho, Vietnam

Halimahtun M. Khalid, Damai Sciences, Kuala Lumpur, Malaysia

Kazutaka Kogi, Institute for Science of Labour, Kawasaki, Japan

Sudthida Krungkraiwong, Institute for the Improvement of Working Conditions and Environment, Bangkok, Thailand

Shengli Niu, International Labour Office, Geneva, Switzerland

Theresia Pawitra, Surabaya University, Surabaya, Indonesia

Budi Santoso Goutama, Surabaya University, Surabaya, Indonesia

Barbara Silverstein, Washington State Department of Labor and Industries, United States

Sutjana, University of Udayana, Denpasar, Indonesia

Erna Tresnaningsih, Division of Occupational Health, Jakarta, Indonesia



# ILO New Instrument on Ergonomics

In res

the ILO is collaborating with the IEA in collecting national practices, regulations, standards and laws on ergonomics at the workplace.

# Ergonomics Approaches to the Prevention of Work-Related Musculoskeletal Disorders

An Analysis and Critical Review of Existing National,  
and Regional Standards and Guidelines

<i>Prepared for:</i>	The International Labour Organisation (ILO) Geneva, Switzerland
<i>Prepared by:</i>	La Trobe University, Melbourne, Australia <i>for the</i>



Contents lists available at ScienceDirect

## Applied Ergonomics

journal homepage: [www.elsevier.com/locate/apergo](http://www.elsevier.com/locate/apergo)



# Ergonomics and occupational safety and health: An ILO perspective<sup>☆</sup>

Shengli Niu\*

*Programme on Safety and Health at Work and the Environment, International Labour Organization, 4 route des Morillons, 1211 Geneva 22, Switzerland*

### ARTICLE INFO

*Article history:*

Received 10 February 2009

Accepted 3 March 2010

*Keywords:*

Occupational safety and health

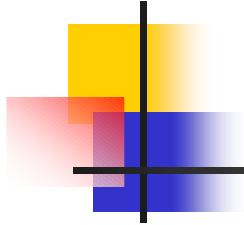
Musculoskeletal

International conventions and recommendations

Ergonomic

### ABSTRACT

The ILO has a mandate to protect workers against sickness, diseases and injuries due to workplace hazards and risks including ergonomic and work organization risk factors. One of the main functions for the ILO is to develop international standards related to labour and work. ILO standards have exerted considerable influence on the laws and regulations of member States. The ILO standards take the form of international Conventions and Recommendations. ILO Conventions and Recommendations relevant to protection of workers against ergonomic risk factors at the workplace include Convention No. 127 and Recommendation No.128 which specify the international requirements concerning the manual transport of a load. To help member States in applying the ILO standards, the ILO produces practical guides and training manuals on ergonomics at work and collects and analyses national practices and laws on ergonomics at the workplace. The ILO also conducts technical cooperation activities in many countries on ergonomics to support and strengthen the capacities of its tripartite constituents in dealing with workplace ergonomic and work organization risks. The ILO's technical cooperation activities give priorities on the promotion of voluntary, participatory and action-oriented actions to improve working conditions and work organizations of the small and medium sized enterprises. This paper reviews ILO's policies and activities on ergonomics in relation to occupational safety and health and prescribes ILO's



**Thank you!**

