4. MODULE ErgoCheck

- Introduction
- Data
- Report

INTRODUCTION

Scope of application. The *ErgoCheck* module allows you to initially identify, in a qualitative and simple way, the ergonomic and psychosocial risk factors of a company, workplace or task.

The purpose of applying this module is, on the one hand, to provide a map of the potential ergonomic risks and obtain initial recommendations to improve them and, on the other hand, to offer information about which risk assessment modules included in ErgoIBV can be used to (quantitatively) assess the risks identified using ErgoCheck.

Content. The module is based on a checklist and is structured in two levels:

- The initial level (Level I: Initial identification) includes 12 basic questions to identify situations that may imply ergonomic and psychosocial risks.
- The intermediate level (Level II: Detailed check) includes up to 64 questions grouped into 9 sections: sensitive workers, psychosocial aspects, environmental conditions, postures/repetitiveness, manual materials handling, strength, display screens, design of the spaces and design of the elements/equipment. At this level, only those sections and questions where any item was marked at Level I are activated. For example, if the item "tasks that imply using display screens for more 2 hours" was marked at Level I, then at Level II the Display Screens subtab will be activated.

Once the workplace or task has been analyzed, the module provides the following results:

- Summary of the items marked, which can be considered as a potential ergonomic or psychosocial risk.
- General recommendations to help to correct the ergonomic problem detected.
- Quantitative methods, included in ErgoIBV, that are recommended to assess the situation, depending on the results obtained.

In addition, the results obtained in the analysis can be exported to be used as work requirements in the NedLabor/IBV[1] software.

Source. The module is based on the experience of the IBV research staff in the area of ergonomics and occupational health. The IBV has extensive experience identifying ergonomic risk factors in many areas and companies. Additionally, we are aware of the importance of making a good identification and data collection of the ergonomic risk factors, which is essential to subsequently perform a rigorous assessment of the ergonomic risks. The data of the different checklist elements were adapted, among others, from the following sources:

- Sensitive workers: In-house development.
- Psychosocial aspects: *Manual para la evaluación y prevención de riesgos ergonómicos y psicosociales en PYME, CoPsoQ-istas21 method* (Manual for the assessment and prevention of ergonomic and psychosocial risks in SMEs, CoPsoQ-istas21 method [Spanish version of the *Copenhagen psychosocial questionnaire].*)
- Environmental conditions: In-house development. *Manual para la evaluación y prevención de riesgos ergonómicos y psicosociales en PYME* (Manual for the assessment and prevention of ergonomic and psychosocial risks in SMEs)
- Postures/repetitiveness: In-house development. UNE-EN 1005-4 standard and UNE-EN 1005-5 standard.
- Manual materials handling: In-house development. *Guía técnica para la evaluación y prevención de los riesgos relativos a la manipulación manual de cargas* (Technical guide for the assessment and prevention of risks related to manual materials handling.) *Manual para la evaluación y prevención de riesgos ergonómicos y psicosociales en PYME* (Manual for the assessment and prevention of ergonomic and psychosocial risks in SMEs.)
- Strength: *Manual para la evaluación y prevención de riesgos ergonómicos y psicosociales en PYME (*Manual for the assessment

[1] **NedLabor/IBV** is a computer program to assess the working capacity, which allows us to objectify the existence or not of mismatches between the physical requirements of the job and the physical capabilities of the worker.

This software was designed to help the expert to objectively determine if a patient can return to his/her job after a sick leave due to an injury to the musculoskeletal system.

and prevention of ergonomic and psychosocial risks in SMEs.) UNE-EN 1005-3 standard.

- Display screens: In-house development. *NTP 602* (technical note for prevention by the INSHT).
- Design of spaces and design of elements/equipment: In-house development. *Manual para la evaluación y prevención de riesgos ergonómicos y psicosociales en PYME (*Manual for the assessment and prevention of ergonomic and psychosocial risks in SMEs.)

DATA

In order to start, select the *ErgoCheck* module in the *New Task* window (Figure 1).

This way, you access the main window of this module (Figure 2), where the data are entered.

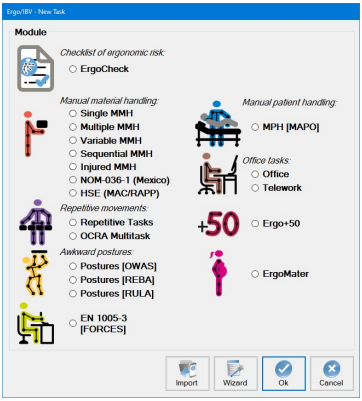


Figure 1. Access to ErgoCheck module

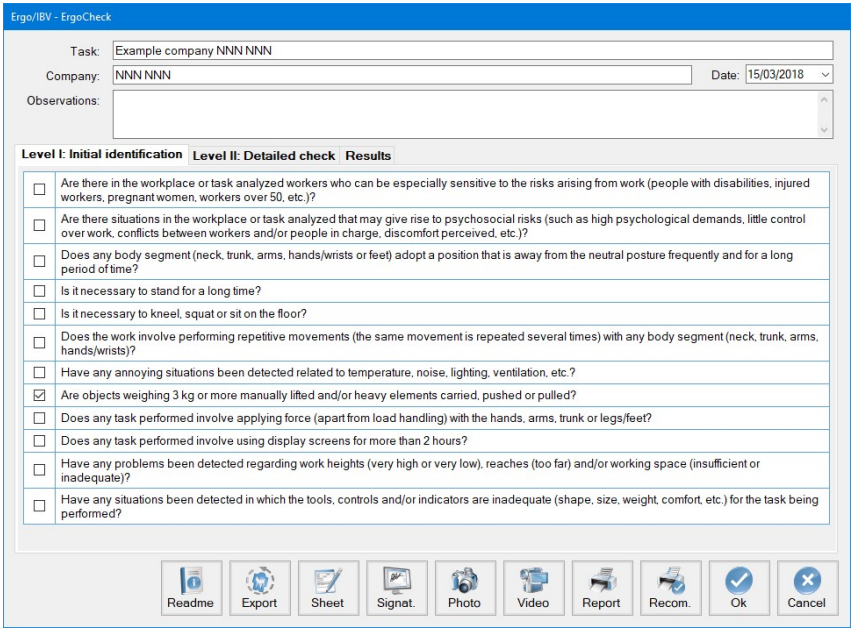


Figure 2. ErgoCheck – Main window

Identification. The name of the task and the company, the date of the analysis and the appropriate observations are entered in the header.

Analysis. The checklist must be completed as follows:

First, the items under the tab **Level I: Initial identification** will be reviewed. There are 12 basic questions to identify situations that may involve ergonomic and psychosocial risks. All the items in the sheet must be reviewed and the relevant box must be checked when this situation exists in the workplace or task under analysis.

Once Level I has been finished, the user can complete the tabs of **Level II: Detailed check** that were activated depending on the items marked in Level I.

The items of Level II are organized in the following sections and sub-sections (see Figure 3):

- Sensitive workers
- Psychosocial aspects
- Environmental conditions
- Postures/repetitiveness
    - Type of task/activity
    - Postures adopted
- Manual materials handling
    - Situations implying manual materials handling
    - Manual materials handling organization
- Strength
- Display screens
- Design of spaces
- Design of elements/equipment.

Note: The sections and sub-sections of Level II are related to what the analyst has answered in Level I. If Level I is blank, no marked item will appear in Level II and the screen will show the text "No risks detected".

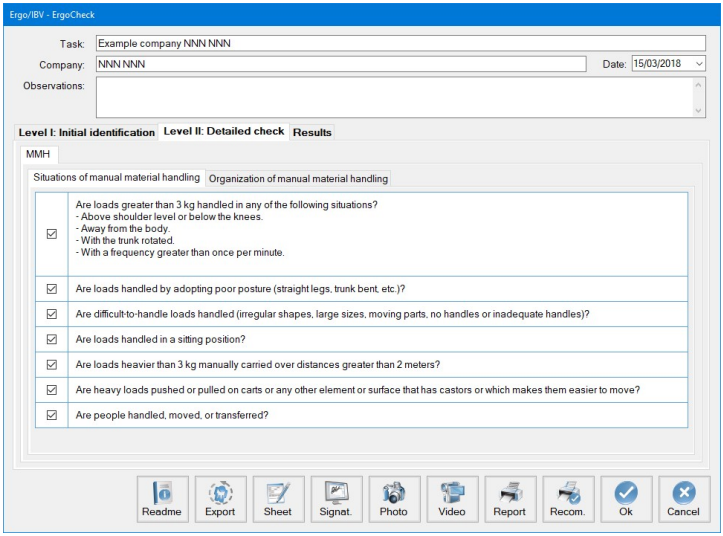


Figure 3. ErgoCheck – Sections of Level II

All the items in each section must be reviewed, and the appropriate box must be checked if that factor exists when considering the most usual and/or most unfavorable situation in the workplace or task under analysis.

The data collection can be based on the direct observation of the workers in the workplace or task, on personal interviews with the workers, with the people in charge, with the medical service, with the prevention service of the company (if any), etc. A single item marked in any of the sheets means that the situation may involve an ergonomic risk, which must be further assessed and/or take corrective and/or preventive actions.

Notes:

- In order to obtain information about a section in the results tab of the application, at least one item has to be marked in each section of Level II that was activated. If there are sections with no items marked, the results cannot be accessed, and it will be necessary to check that Level I was correctly completed.
- Since it is a global and qualitative assessment, the purpose of the analysis is not to evaluate the ergonomic risks, for which specific methodologies should be used. In this respect, the results, in

addition to providing an overview of the potential problems and initial recommendations, they also offer information on the quantitative methods that can be used to assess the ergonomic risks that were detected in the identification phase.

Once Level II has been completed, it is possible to access the **results** tab, which offers the following information:

- **Risk factor**. Aspects marked in Level II that can be considered a potential ergonomic problem.
- **Recommendations** to help to correct the problem detected. General recommendations for each problem are provided by clicking on the button.
- **Recommended module.** As it is an initial qualitative identification, many of the problems detected (or combinations of them) will require expanding and quantifying the ergonomic risk that the problem identified may imply. In these cases, the software recommends the most adequate ErgoIBV modules to perform an ergonomic assessment of it. By clicking on the button of the recommended module (for example,

), you can directly access the module and begin the assessment.

Notes:

- By pressing the button of the recommended assessment module, an empty task of the module will open, which will take the data used in *ErgoCheck* for identification (Task, Company, Observations). The analyst can modify this information if necessary.
- If the changes have not been saved to *ErgoCheck*, the system will ask you to save the changes before opening the appropriate assessment module.

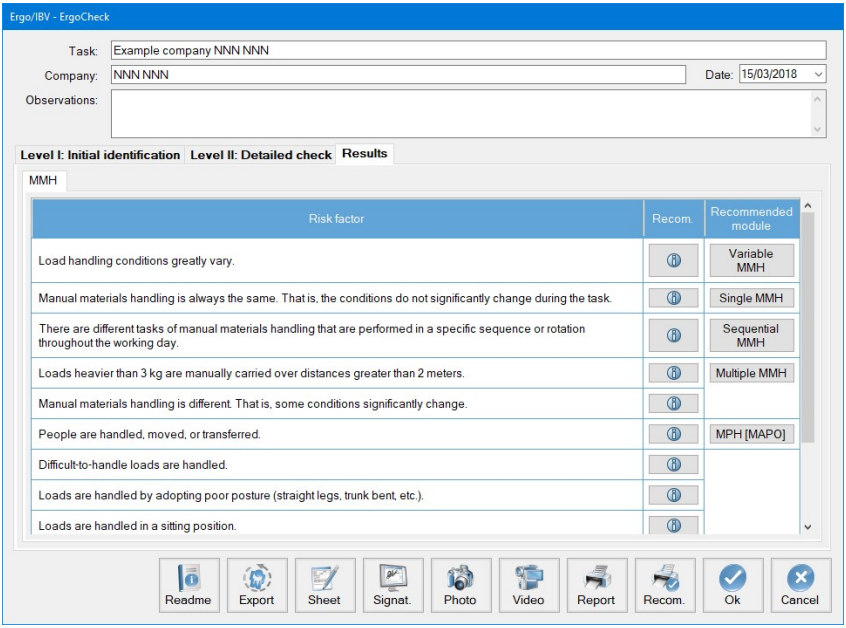


Figure 4. ErgoCheck – Results

Additional features

The lower bar of the main window shows several options that are common to all ErgoIBV modules and other additional and specific features of *ErgoCheck*.

Read me. It opens a pop-up window that shows the simplified instructions for use of the *ErgoCheck* module (objectives and how it is applied).

Export. This function allows the user to generate two files that can be used later with the NedLabor/IBV software:

- *Ergo2ned* file: working requirements derived from the analysis peformed using ErgoCheck.
- Risk identification report in PDF format.

Sheet. This feature opens a window where the user can add information to characterize more exhaustively the workplace, task or activity under analysis. The sheet includes the following fields:

- Location of the task being analyzed in the

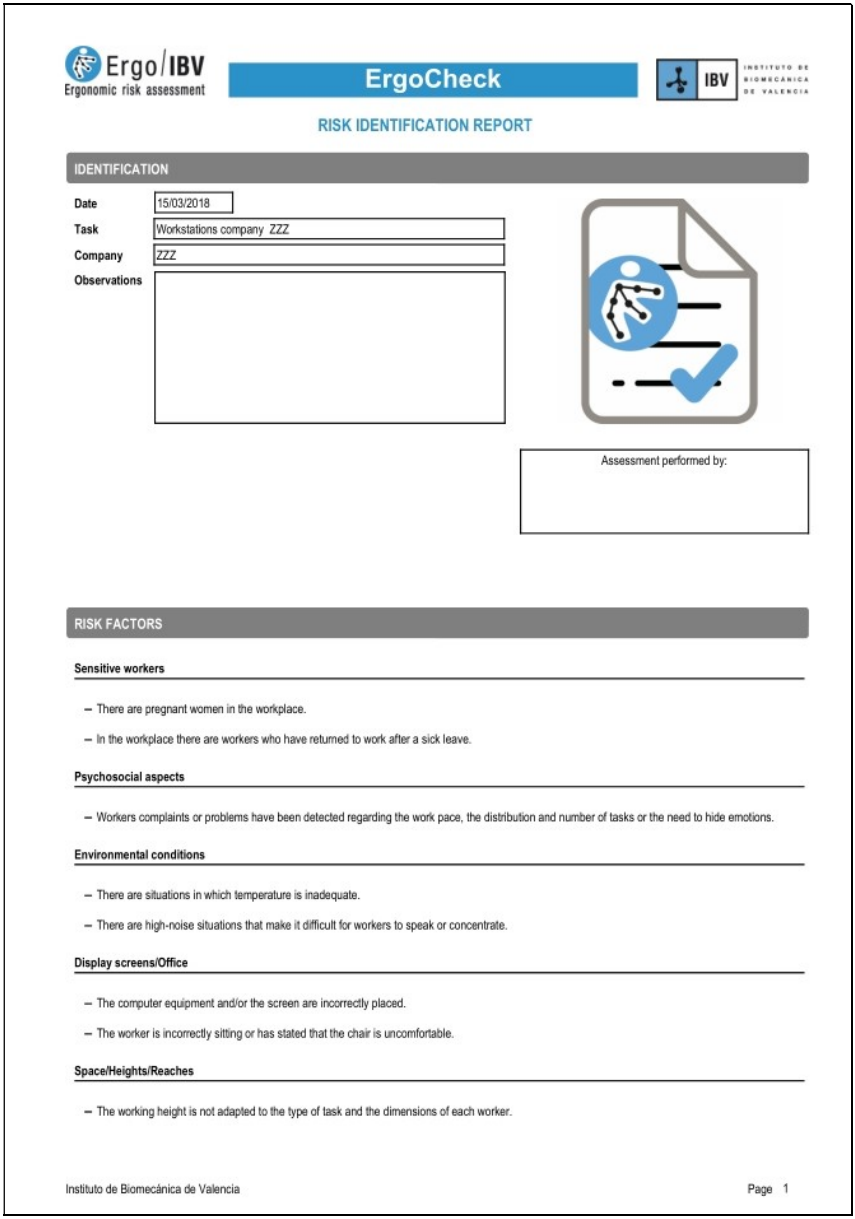
company.

- Task description.
- Number of workers.
- Significant organizational aspects (schedule, shifts, breaks, flexibility, etc.)
- Previous incidents recorded (complaints, accidents, injuries, etc.)
- Previous ergonomic interventions performed (describe).
- Observations on the analysis.

REPORT

Once the information has been entered, clicking on the *Report* button in the lower part of the main window will open the *task report* window (Figure 5), which contains the following:

- **Identification**. This includes the general data (date, task, company and observations) and an image of the task, if it was previously added. A specific space is included to add the name and signature of the specialist who performed the analysis.
- **Task sheet**. It includes the data of the sheet where the workplace, task or activity under analysis was characterized.
- **Risk factors**. It shows the items that were marked in each section of the checklist organized in sub-sections.



Ergo/IBV
Ergonomic risk assessment

ErgoCheck

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RISK IDENTIFICATION REPORT

IDENTIFICATION

Date 15/03/2018

Task Workstations company ZZZ

Company ZZZ

Observations

Assessment performed by:

RISK FACTORS

Sensitive workers

- There are pregnant women in the workplace.
- In the workplace there are workers who have returned to work after a sick leave.

Psychosocial aspects

- Workers complaints or problems have been detected regarding the work pace, the distribution and number of tasks or the need to hide emotions.

Environmental conditions

- There are situations in which temperature is inadequate.
- There are high-noise situations that make it difficult for workers to speak or concentrate.

Display screens/Office

- The computer equipment and/or the screen are incorrectly placed.
- The worker is incorrectly sitting or has stated that the chair is uncomfortable.

Space/Heights/Reaches

- The working height is not adapted to the type of task and the dimensions of each worker.

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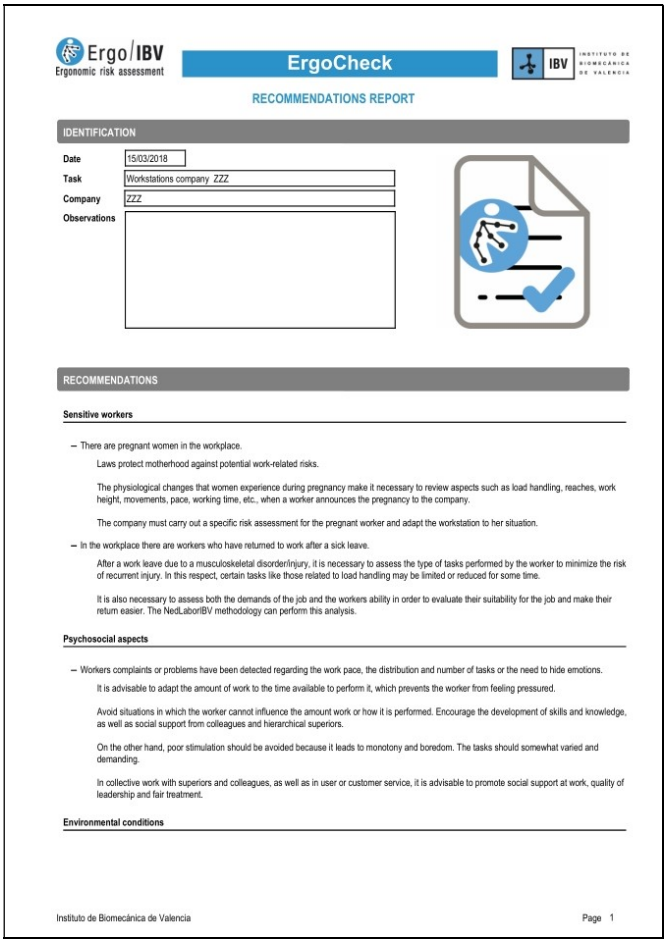
Figure 5. ErgoCheck – Identification report

RECOMMENDATIONS

Clicking on the *Recom* button in the lower part of the main window will generate the *recommendations report* (Figure 6). Together with the **identification** data, **recommendations** to help solve each ergonomic problem detected in the different sections are included here.



Ergo/IBV
Ergonomic risk assessment

ErgoCheck

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RECOMMENDATIONS REPORT

IDENTIFICATION

Date 15/03/2018
Task Workstations company ZZZ
Company ZZZ
Observations

RECOMMENDATIONS

Sensitive workers

– There are pregnant women in the workplace.

Laws protect motherhood against potential work-related risks.

The physiological changes that women experience during pregnancy make it necessary to review aspects such as load handling, reaches, work height, movements, pace, working time, etc., when a worker announces the pregnancy to the company.

The company must carry out a specific risk assessment for the pregnant worker and adapt the workstation to her situation.

– In the workplace there are workers who have returned to work after a sick leave.

After a work leave due to a musculoskeletal disorder/injury, it is necessary to assess the type of tasks performed by the worker to minimize the risk of recurrent injury. In this respect, certain tasks like those related to load handling may be limited or reduced for some time.

It is also necessary to assess both the demands of the job and the workers ability in order to evaluate their suitability for the job and make their return easier. The NedLaborIBV methodology can perform this analysis.

Psychosocial aspects

– Workers complaints or problems have been detected regarding the work pace, the distribution and number of tasks or the need to hide emotions.

It is advisable to adapt the amount of work to the time available to perform it, which prevents the worker from feeling pressured.

Avoid situations in which the worker cannot influence the amount work or how it is performed. Encourage the development of skills and knowledge, as well as social support from colleagues and hierarchical superiors.

On the other hand, poor stimulation should be avoided because it leads to monotony and boredom. The tasks should somewhat varied and demanding.

In collective work with superiors and colleagues, as well as in user or customer service, it is advisable to promote social support at work, quality of leadership and fair treatment.

Environmental conditions

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Figure 6. ErgoCheck – Recommendations report