

## ERGOPAR - A PARTICIPATORY ERGONOMICS APPROACH TO PREVENTING RISKS IN THE WORKPLACE

### General information

**Country:** Spain

**Hazard:** Musculoskeletal disorders (MSDs), although could be applied to other hazards.

**Workplace participation measures:** A participatory ergonomics methodology that includes a toolkit of resources covering both direct and indirect worker participation.

### Introduction

Ergonomía participativa (ErgoPar) is a participatory ergonomics method developed in Spain by the Union Institute of Work, Environment and Health, in cooperation with the University of Valencia, the Valencian Institute of Occupational Safety and Health, the Biomechanics Institute of Valencia and Unimat Prevención.

The value of the participatory ergonomics approach is widely recognised, for example by studies from the United Kingdom's Health and Safety Executive (Haines and Wilson, 1998), Canada's Institut de recherche Robert-Sauvé en santé et en sécurité du travail (St-Vincent et al., 2006) and the Institute for Work and Health (Cole, 2005; Van Eerd, 2008), the National Institute for Occupational Safety and Health (NIOSH, 1994) in the United States and the European Trade Union Confederation (Morris et al., 2004). Concepts of participatory ergonomics also exist for broader contexts like change management (see for example Zink, 2008).

The ErgoPar method includes a toolkit consisting of an action and communication plan, as well as single tools covering both direct and indirect worker participation, such as:

- interviews and questionnaires;
- setting up an Ergo Group (Grupo Ergo) that includes all company stakeholders;
- involving the safety committee and the safety representative;
- setting up health circles (círculos de prevención) that include workers at workstations or lines.

ErgoPar is not an intervention method that occurs only once. It is also an approach for establishing methods of direct and indirect participation that are routine in the safety management of the companies that use it and for improving the communication between management and workers or worker representatives.

ErgoPar follows the concept of participatory ergonomics defined by Haines and Wilson (Wilson and Haines, 1997; Haines and Wilson, 1998). The focus of the ErgoPar inventory is on the prevention of MSDs.

### The ErgoPar method

ErgoPar is not an instrument for single actions in occupational safety and health (OSH) at work, but a general concept on how to improve prevention in the company based on the idea of involving all stakeholders. Before beginning with the implementation, it is important to ensure that the approach is agreed and fully backed by the management, as well as by the company's SH committee. The relevant parties should also agree on the general aims and the extent of the interventions that follow.

#### Preparation phase

An Ergo Group is set up. This group is a central working group within the ErgoPar methodology. It should consist of people with different qualifications from all groups of company stakeholders, such as top and middle management, different groups of workers, safety experts, and safety and worker representatives. Including the expertise of different people with various points of view is crucial to the ErgoPar approach. The Ergo Group has central competences in the following phases of the intervention process: during analysis, finding solutions and the evaluation phases.

The idea is that once the Ergo Group is established, it will be a permanent fixture in the company. This ensures that the ErgoPar method is not only a project, but will become part of the OSH management in general. The Ergo Group should demonstrate competency in decision-making regarding its specific functions, and it should be clear that the

members must be given time to attend the Ergo Group meetings. Because the Ergo Group represents all stakeholders in the company, the decision-making should be agreed by all.

A communication plan is set up by the Ergo Group. The plan includes all different actors in the company and makes sure that everybody will be informed in time and according to the legal requirements of participation, especially regarding the worker representatives. Like the Ergo Group, the communication plan should be seen as an instrument that should generally be respected by all stakeholders.

**Figure 1: Example of ErgoPar communication plan**

Target groups/ Activity	Company (top) management	SH committee/SH and worker representatives	Engineers/middle management	Prevention services	Workers
ErgoPar objectives and work packages	X	X			
Agreements with management			X	X	X
Establishment of Ergo Group	X	X	X	X	X
Minutes of Ergo Group meetings	X	X			X
Quantitative interviews with ...		X			X
Qualitative interviews with ...			X		X
Additional observations			X		X
Organising SH circles			X		X
Information after milestones	X	X		X	X
Final information	X	X		X	X

## Analysis phase

Different instruments are used to identify hazards regarding MSDs. At the start, it is recommended that all workers who are part of the intervention complete a questionnaire. Often, the results of the questionnaire can already provide a good impression of the working processes and typical problems in the work environment.

The results can be refined by qualitative interviews with key persons who may be representatives for certain work processes or departments, as well as safety experts and other experts within the company. In this way, some workers can be selected for a more in-depth interview on specific aspects regarding SH at their workplace or their broader work context. Another method that provides a deeper (additional) insight is carrying out work observations at certain workplaces or with certain workers.

The results of the questionnaire, the interviews and the observations should be discussed in the Ergo Group. It is a key function of the Ergo Group to analyse the results and to communicate them with the prevention circles. These prevention circles consist of four to eight (or more) workers who are experienced in those kinds of work processes or workplaces, and their main goal is to contribute concrete solutions and interventions. Then the Ergo Group again proposes intervention measures to the management and SH committee.

## Implementation phase

The proposed interventions are implemented by the company's safety experts and technical staff. The Ergo Group now supervises the timely implementation of the measures. Such measures could include direct ergonomic interventions, organisational interventions, or additional measures to promote workplace health.

## Evaluation phase

Finally, there should be an evaluation phase to determine whether the interventions have shown any results or not. Administering another questionnaire could help during this phase. Again, it is considered crucial to ask the workers their opinion. The results of the evaluation can then be discussed within the Ergo Group that can propose further steps to the management and the safety and health committee.

The whole process is summarised in a manual aimed specifically at the practitioners in the company or external consultancies. The manual presents the whole ErgoPar method step-by-step for immediate application.

## Using ErgoPar in practice

To implement participative ergonomics, sufficient time and commitment from management are needed. The whole organisation needs ownership of the process, not just an individual.

The application of certain instruments may require specific experience. External experts should be consulted if the in-house services of a company are not skilled in working with questionnaires, workplace observations, or interviews. The same may be true if in-house services are uncertain about other methods of participation or ergonomics in general. Alternatively, the preparation phase should include training measures (see Haines and Wilson, 1998).

The success of the method mainly depends on the key players in the company. It is crucial to have the backing of the management and the safety and health committee, as well as other stakeholders such as safety representatives and safety experts or engineers. The Ergo Group can only be integrated into the management and communication processes when the framework already favours good collaboration. This means that workers and representatives are able to communicate openly with the management. The management should take problems and concerns seriously and prioritise timely implementation of improvement measures.

The Ergo Group plays a key role in the implementation of ErgoPar. The members should be given adequate resources and capacities to do this job effectively. All the different stakeholders should be represented in the group, and members must be provided with training (when needed). The Ergo Group should also have control over taking decisions and be able to request external guidance when needed.

## Analysis

- ErgoPar is not only a methodology for running a participatory ergonomics intervention, but also a package that includes an entire toolkit of participatory methods to be used according to needs of the specific workplace and intervention.
- Use of the approach goes beyond the one-time intervention because the aim is to integrate the participatory practices into the organisation's operations.

## Transferability

The participatory approach is transferable to other countries and can be applied to hazards besides MSDs. Given the range of participatory measures in the toolkit, it is highly adaptable to organisations of different sizes and in different sectors.

## References and further information

### Further information about the approach

ErgoPar website: <http://ergopar.istas.net> provides information on the ErgoPar approach and on the pilot studies for companies, practitioners and all interested OSH stakeholders.

García, A., Gadea, R., et al. (2011), 'Validación de un cuestionario para identificar daños y exposición a riesgos ergonómicos en el trabajo', *Revista Española de Salud Pública* 4/2011 (85), pp. 339-349. Available online at: <http://istas.net/web/abreenlace.asp?idenlace=9172>

Instituto Sindical de Trabajo, Ambiente y Salud (ISTAS). (2014). *Summary of the ErgoPar method*. Retrieved 2 July 2021, from [http://ergopar.istas.net/ficheros/documentos/Summary\\_ERGOPAR\\_2.0\\_%28English%29.pdf](http://ergopar.istas.net/ficheros/documentos/Summary_ERGOPAR_2.0_%28English%29.pdf)

Instituto Sindical de Trabajo, Ambiente y Salud (ISTAS). (n.d.). *ERGOPAR* [Video file]. Retrieved 22 June 2021, from <https://youtu.be/GPRJNff6BNQ>

- García, A., Gadea, R., et al. (2009), 'Ergonomía participativa, empoderamiento des los trabajadores para la prevención de trastornos musculoesqueléticos', *Revista Española de Salud Pública* 4/2009 (83), pp. 509-518. Available online at: <http://istas.net/web/abreenlace.asp?idenlace=8473>
- García, A. (2011), 'Ergonomía participativa, metodología', presentation held at Jornada Técnica, los trastornos musculoesqueléticos (TME) – estrategias para una prevención eficaz, Madrid, 24 Feb. 2011. Power point slides available at: [http://www.insht.es/InshtWeb/Contenidos/Instituto/Noticias/Noticias\\_INSHT/2011/ficheros/Ponencia\\_ISTAS.pdf](http://www.insht.es/InshtWeb/Contenidos/Instituto/Noticias/Noticias_INSHT/2011/ficheros/Ponencia_ISTAS.pdf)

## References

- Cole, D.C. et al. (2005), 'Effectiveness of participatory ergonomic interventions: a systematic review', Toronto. Summary available online at: [http://www.iwh.on.ca/system/files/documents/summary\\_pe\\_effectiveness\\_2005.pdf](http://www.iwh.on.ca/system/files/documents/summary_pe_effectiveness_2005.pdf)
- Gadea, R. (2010), 'El método ErgoPar, un procedimiento de ergonomía participativa', presentation held at 2nd Jornada de Evaluación Ergonómica, Valencia, 25 Nov. 2010. Video available online at: <http://laboral.ibv.org/es/jornadas-evaluacion-ergonomica.html>
- Haines, H. and Wilson, J. (1998), *Development of a framework for participatory ergonomics*, HSE Books, Norwich.
- Held, J. (2005), 'Partizipative Ergonomie', *Ergonomie: Mensch – Produkt – Arbeit – Systeme*, tome 1, Zürich (ETH), Aachen.
- Morris, W., Wilson J., Koukoulaki, T. (2004), 'Developing a participatory approach to the design of work equipment', ETUI, Brussels. Further information online at: <http://www.etui.org/Publications2/Books/Developing-a-participatory-approach-to-the-design-of-work-equipment>
- NIOSH (1994), *Participatory Ergonomic Interventions in Meatpacking Plants*, NIOSH. Available at: <https://www.cdc.gov/niosh/docs/94-124/>
- St-Vincent M, Bellemare M, Toulouse G, Tellier C. (2006) Participatory ergonomic processes to reduce musculoskeletal disorders: summary of a Québec experience. *Work*. Vol. 27(2) pp. 123-35. PMID: 16971759. Available at: <https://pubmed.ncbi.nlm.nih.gov/16971759/>
- Van Eerd et al. (2008), 'Report on process and implementation of participatory ergonomic interventions: a systematic review', Toronto. Available online at: <http://www.iwh.on.ca/sys-reviews/implementation-of-pe-interventions>
- Wilson, J. and Haines, H. (1997), 'Participatory ergonomics', in Salvendy, G. (ed.), *Handbook of Human Factors and Ergonomics*, 2nd ed., pp. 490-513.
- Zink, K.-J., Steimle, U. and Schröder, D. (2008), 'Comprehensive change management concepts – Development of a participatory approach', *Applied Ergonomics*, Vol. 4, pp. 527-538.