PENSION COMPANY

Working life information and solutions to support work ability

Manufacturing

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This series on working life information and solutions to support work ability is a compilation of the working conditions, load factors and work ability resources that are typical of the tasks, occupations and sectors of our client companies.

The contents are based on statistics, expert information and research data, Elo's data and open data from research institutes.

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Contents

The Work community survey is a tool provided by Elo to its customers to assist with data driven management. It helps provide a situational overview of the workplace's current resources, the strengthening of which will support the work ability of personnel. The survey of the data bank concerns a 2025 sample that covers the responses of more than 5,000 employees of workplaces operating in the manufacturing sector.

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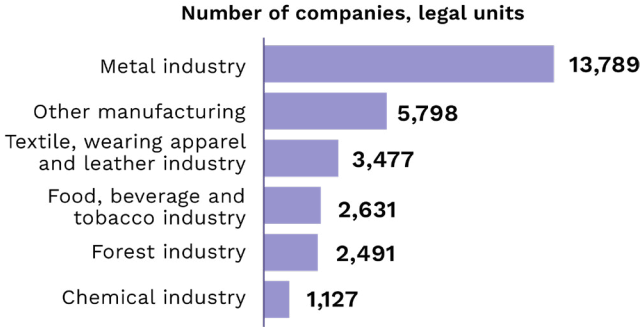
Summary – Everyday working life

The manufacturing sector is one of the most significant employers in Finland and a key driver of economic growth. The various industries in the manufacturing sector are characterised by substantial differences in terms of their work content, work environments and occupational risks. Even though automation and digitalisation have reduced the physical strain of the work, a considerable proportion of manufacturing work is still physically demanding. The sector is continuously evolving due to advances in technology and the green transition.

The largest manufacturing industries in Finland include the metal, chemical, forest, and food industries. The metal industry is the largest of these, both in terms of turnover and employment. The labour force in the manufacturing sector has become more diverse. The sector remains predominantly male, but the share of women has increased, particularly in expert roles. The sector is also among the largest employers of individuals with a foreign background.

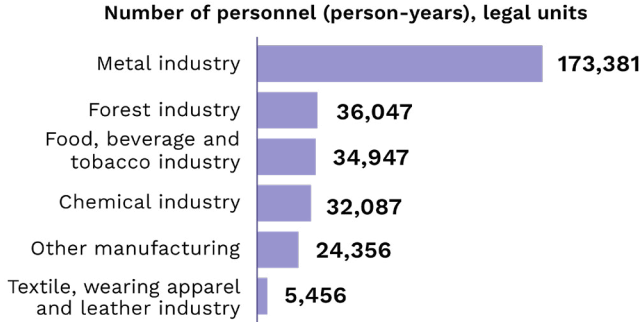
The metal industry is the largest industry in the manufacturing sector in terms of the number of companies.

Source: Statistics Finland, Structural business and financial statement statistics (2024)



The metal industry is the largest employer within the manufacturing sector.

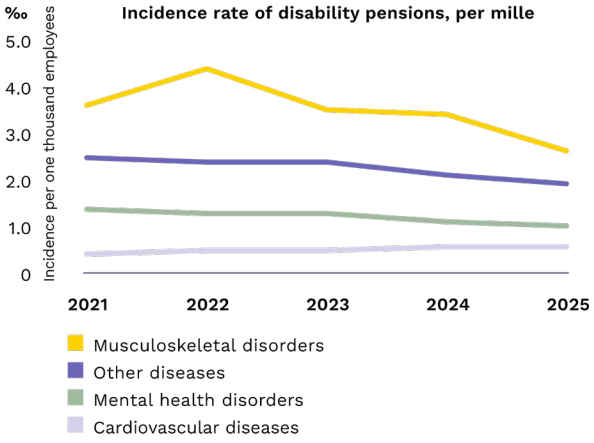
Source: Statistics Finland, Structural business and financial statement statistics (2024)



Many tasks in the manufacturing sector involve physical strain, putting employees at risk of developing musculoskeletal disorders and work-related injuries. Musculoskeletal disorders are the leading cause of work disability in the manufacturing sector. At the same time, changes in the sector have increased the importance of psychosocial risk management. Serious mental health disorders can disrupt careers at an early stage among young people.

According to Elo's data, the leading cause of work disability in the manufacturing sector during 2021–2025 was musculoskeletal disorders. There has been no significant change in the incidence of disability pensions caused by mental health issues.

Source: Elo's data (2021–2025)



Vocational rehabilitation is often effective in the manufacturing sector. Approximately 70% of vocational rehabilitation periods related to musculoskeletal and mental health disorders resulted in a successful outcome at the end of the rehabilitation in 2023–2025.

Rehabilitation initiated at an early stage increases the likelihood of success

In the manufacturing sector, 2/3 of Elo's vocational rehabilitation cases were successful at the end of the rehabilitation *

* Rehabilitation periods for musculoskeletal diseases and mental health disorders in the manufacturing sector during 2023–2025

Read more about everyday working life >

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Summary – Work-related strain and resources

In the manufacturing sector, the demands and resources vary depending on the specific tasks and work environments. Companies use many methods to manage work demands and to increase work resources.

The work involves different forms of physical work-related strain, which, when excessive, can increase the risk of disability. Work-related strain varies depending on specific work tasks.

Harmful work-related strain can, for example, be caused by:

- heavy manual lifting and carrying
- repetitive and unilateral movements
- difficult or static work positions
- prolonged standing or sitting
- exposure to vibration from tools and machinery

Good ergonomics, sufficient skills, breaks from work and work recovery during time off are key factors in improving work ability and managing work-related strain.

The musculoskeletal diagnoses are relatively evenly distributed across different parts of the body and diagnostic subgroups. Lower limb diagnoses are more prevalent in the forest industry.

Source: Elo's Data (2020–2025)

Metal industry

18% Upper limb diagnoses	**38%** Back diseases
26% Lower limb diagnoses	**18%** Other musculoskeletal diagnoses

Chemical industry

9% Upper limb diagnoses	**42%** Back diseases
34% Lower limb diagnoses	**15%** Other musculoskeletal diagnoses

Forest industry

18% Upper limb diagnoses	**16%** Back diseases
45% Lower limb diagnoses	**21%** Other musculoskeletal diagnoses

Food, beverage and tobacco industry

14% Upper limb diagnoses	**34%** Back diseases
26% Lower limb diagnoses	**26%** Other musculoskeletal diagnoses

Psychosocial strain refers to factors related to the work content, work arrangements and the work community that may place harmful strain on employees.

Harmful work-related strain can be increased, for example, by:

- excessive workload and time pressure
- unclear responsibilities
- interpersonal conflicts within the work community
- inappropriate behavior or harassment

Psychosocial strain is associated with mental health issues as well as the risk of accidents and musculoskeletal symptoms.

Smooth workflow relies on good work organisation, a clear division of duties, appropriate equipment and smooth communication. A reasonable workload and sufficient breaks throughout the workday support recovery and improve the ability to cope. Quality first-line management reinforces the work ability and smooth workflow of personnel. The key focal areas of first-line management include consideration for the individual situations of employees, clear expectations for the work, encouraging and timely feedback as well as supporting the team in problem-solving.

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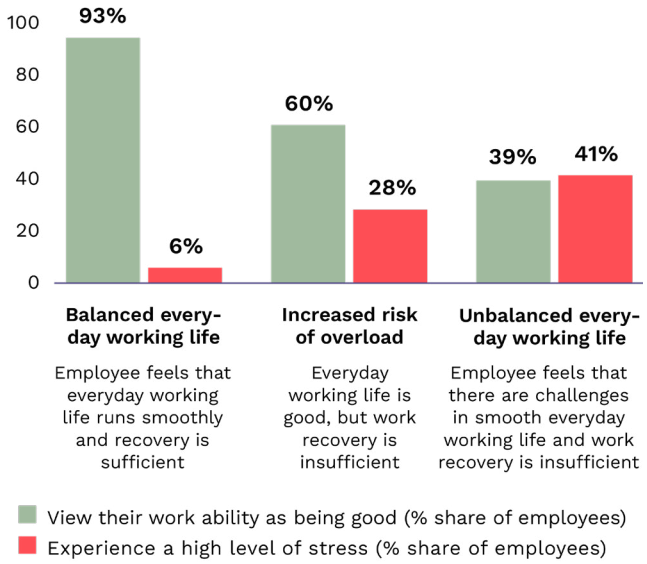
Declining work recovery is an early sign of overload and risks to work ability. The risks increase when any aspects of smooth workflow are lacking.

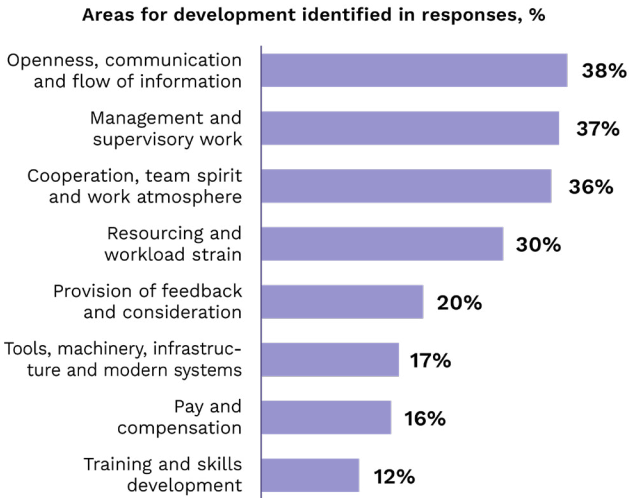
Source: Elo's Work community survey, manufacturing sector (2025)



When a workplace collects information on its employees' experiences, it captures daily phenomena that might otherwise go unnoticed. An analysis based on Elo's extensive database examined the open feedback from employees in the manufacturing sector, particularly responses from those who rated their work ability as at most moderate and gave the workplace an eNPS score of 8 or below. The experiences of this group are particularly important since they help to identify early-stage development needs that have an impact on both the work ability of employees and the workplace's ability to retain staff. The results emphasised factors related to the functioning of the work community, such as communication and flow of information, management, workplace team spirit and everyday cooperation.

Employees in the manufacturing sector perceive the functioning of the work community and management as the most important areas for workplace development.

Source: Elo's Work community survey, manufacturing sector (2023–2025)



Elo's Pulse Survey allows you to measure workplace conditions quickly.

Read more about work-related strain and resource factors >

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Summary – Phenomena and trends

Learning requirements change as work evolves

Work in the manufacturing sector has undergone significant changes in recent decades. The work has not necessarily become less demanding but instead changed in nature.

Employees in the sector are increasingly required to have:

- **skills to use** digital applications and systems
- **the ability to understand** the underlying causes of anomalies
- **readiness to engage** in continuous learning alongside daily work

In the manufacturing sector, learning typically takes place within the work itself rather than outside it.

- systematic **onboarding and guidance** at work
- opportunities to **ask, experiment and practice** safely
- constructive feedback that highlights **strengths and areas for development**

Work-related strain can be excessive or insufficient

As automation increases, there is a growing risk that work will become more monotonous and result in work bore-out.

Bore-out can, for example, manifest as:

- a decreased state of alertness and lack of concentration
- mistakes and errors in routine work
- irritability or lack of motivation

Bore-out is often confused with burnout, but they are distinct phenomena. Burnout is caused by overload, while bore-out occurs when there are insufficient demands and challenges[1].

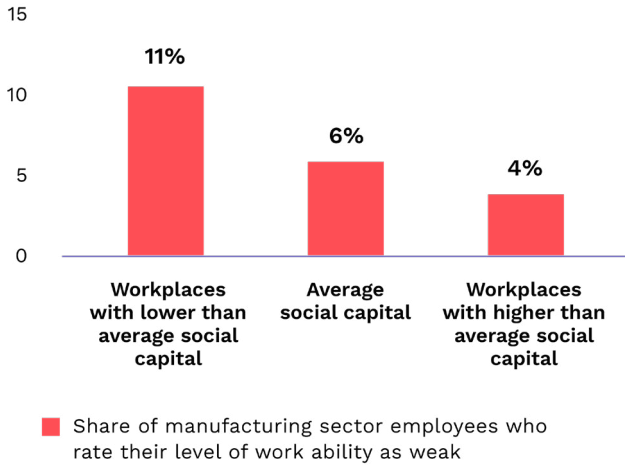
Automation and AI can process tasks at a much faster rate than humans. When this pace extends into the everyday work, it creates a work rhythm that requires constant reaction to issues with little opportunity for natural breaks. The cognitive workload on the worker may increase, even though the work appears externally lighter than before.[2] Without deliberate management of work rhythm, recovery and responsibilities, AI and automation can become an indiscernible risk to work ability.

Significance of social capital is expected to become increasingly prominent in the future manufacturing sector

Elo conducted an analysis at manufacturing sector workplaces to measure social capital from three different perspectives: respectful interactions within the work community, shared responsibility, and a collective willingness to achieve shared goals. The results showed that social capital is reflected in the employees' current level of work ability and their expectations for the future. Employees who reported weak work ability were nearly three times more common in workplaces where social capital was below average. Social capital was also related to employees' expectations regarding their future work ability.

The social capital of the work community is related to employees' current work ability and expectations for the future.

Source: Elo's Work community survey, manufacturing sector (2025)



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Work community diversity as a resource

In 2024, manufacturing was the second largest employer of workers with foreign background in Finland. Diversity can be seen in the workplace, for example, in languages, norms and values. The impacts of diversity depend on how the work community is managed and the operational models that are nurtured in the workplace.

Diversity management refers to actions on two different levels[3]:

1. **Structures and work approaches** (e.g. strategy, common practices)
2. **Behaviour** (e.g. daily interactions, language considerations).

Psychological safety prevents a culture of silence

When a workplace is psychologically safe, employees dare to present their own ideas, ask when something is unclear, ask for help and openly raise concerns and highlight areas that need development.

Employees and supervisors often know early on the factors hindering smooth workflow, causing workload strain and jeopardising safety, but they do not always say it aloud in time. A culture of silence is gradually built up because of work structures, history and learned operational models, not by the attitude of individuals.

In terms of work ability, a culture of silence is problematic, since challenges often develop slowly over time. The first signs of stress, exhaustion and weakening attentiveness appear as minor changes. Conscious management is required to transform a culture of silence into a culture of discussion. Clear and predictable structures must be established to facilitate discussion as an integral aspect of smooth work low, safety and support for work ability.

Based on Elo's Work community survey, we can calculate your company's Personnel Productivity Index (HTI) – a key metric that summarizes three productivity drivers: employee competence, motivation and work ability.

Read more about phenomena and trends >

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Summary – Solutions for the manufacturing sector

Solutions for work

Management of physical work-related strain

- **Identify** work-related strain through risk assessments.
- **Strive** primarily to eliminate the sources of harmful work-related strain.
- **Reduce** work-related strain through ergonomics and work planning.
- **Ensure** the teaching of safe and healthy work methods.
- **Increase** work variation and breaks.
- **Include** employees in work development.
- **Take** advantage of the expertise of occupational health care.

>

Solutions to promote smooth workflow and work recovery

Promoting smooth workflow

- **Set** clear objectives and priorities.
- **State** a clear division of work and responsibilities.
- **Ensure** a timely and smooth flow of information.
- **Ensure** functional and appropriate tools and equipment.
- **Reduce** disturbances.
- **Ensure** that supervisors actively address issues.

Promoting work recovery

- **Assure** a reasonable workload.
- **Alternate** between heavy and light tasks.
- **Ensure** sufficient breaks.
- **Provide** an opportunity to influence working hours and shifts.
- **Assure** practices that support recovery during the workday.
- **Provide** support and information on recovery during time off.

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Ways to strengthen social capital in contact and hybrid work

Common direction and meaning

- **Ensure** that work goals and common objectives are clear to all employees.
- **Show** how each employee's work contributes to the achievement of common goals.
- **Nurture** the use of shared practices and take notice of successes.
- **Highlight** the results of cooperation and customer feedback.

Daily encounters and interactions

- **Agree** on ground rules for contact and remote work.
- **Ensure** regular team meetings.
- **Arrange** in-person sessions for brainstorming and planning.
- **Organise** the work environment and meeting practices that support interaction in remote work and in-person meetings.

Roles, responsibilities and interfaces

- **Clearly describe** how the different roles are linked to one another and where responsibilities intersect.
- **Highlight** the interdependencies of the work: how success in one work phase supports the next.
- **Review** cooperation interfaces, focusing on when tasks are transferred between individuals and the requirements this places on all parties involved.
- **Regularly discuss** the effectiveness of cooperation.

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Summary – Solutions for the manufacturing sector...

Solutions for managing a diverse work community

1. A safe work atmosphere facilitates cooperation

- **Establish** a psychologically safe space, where people with different backgrounds, perspectives and language skills can be equally heard.
- **Facilitate** learning and encourage questioning.
- **Treat** everyone fairly and consistently address inappropriate behaviour.

2. Daily work and common goals unite people regardless of background

- **Emphasise** common goals, professional competence and the significance of the work.
- **Highlight** values and ways of working and support collaboration within a diverse team.
- **Demonstrate** respectful interactions.

3. Cultural and language awareness creates understanding

- **Recognise** the impact of language and culture on cooperation.
- **Remove** any obstacles to success.

4. Training for supervisors and employees in diverse team leadership and cooperation

- **Develop** interaction, language and co-operation skills based on everyday needs.
- **Strengthen** the capabilities of supervisors and personnel to operate within diverse teams.

5. Promotion of diversity as part of the strategy

- **Set clear goals** for diversity and equality.
- **Integrate goals** into management and structures.
- **Monitor** the atmosphere and level of inclusion regularly.

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Methods to improve learning management

Learning management in the everyday work environment

- **Target** learning towards situations where skills development needs, disruptions or errors weaken work effectiveness.
- **Link** learning to critical everyday situations.
- **Build** psychological safety through everyday interactions.
- **Limit** the scope of development and learning requirements. Allow time for adopting new ways of working before making further changes.
- **Turn** tacit knowledge into a visible and shared resource.
- **Encourage** learning through questioning, rather than providing immediate answers.
- **Use** anomalies and data to support learning.
- **Make** learning visible through concrete changes.

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Tips for recovering from demanding knowledge work

- **Vary** the work between demanding and lighter tasks.
- **Take** microbreaks and occasionally step away from the work.
- **Minimise** interruptions and avoid multitasking.
- **Allow** time for reflection and savouring finished tasks.
- **Identify** the signs of overload early on.
- **Support** recovery, including outside of work.

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Summary – Solutions for the manufacturing sector...

Methods to reinforce psychological safety

Supervisors and HR

- **Incorporate** psychological safety in the strategy and daily goals.
- **Encourage** open discussion, learning from mistakes and the sharing of unpolished ideas.
- **Ensure** fair, transparent treatment and clear operational models.
- **Include** everyone, value different viewpoints and address inappropriate behaviours.
- **Be an example for others.**

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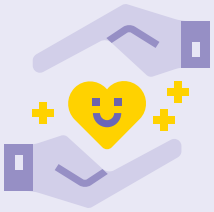
Entire work community



- **Listen to** and respect others.
- **Be present** and interested, even when working remotely.
- **Give and request feedback.**
- **Encourage ideas** and show appreciation.

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Read more about solutions for work >

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Everyday working life – general information about work in the manufacturing sector

The manufacturing sector is a significant employer in Finland. In its industry-specific forecast, ETLA Economic Research estimated that the manufacturing sector will be a key contributor to the growth for the Finnish economy in the coming years[4]. Companies classified within manufacturing transform material, substances or components into physically, mechanically or biologically different products. Products made by the manufacturing sector may be products that are ready for use or consumption or intermediate products intended for further processing. In general, the subsequent modification, refurbishment and regeneration of goods are also regarded as an aspect of manufacturing.[5]

There are major differences between industries of manufacturing in terms of the nature of the work and work environments. Therefore, the occupational risks also vary between different workplaces. In addition, the manufacturing sector is continuously evolving. For example, the amount of physically heavy work has decreased in many workplaces because of automation and digitalisation. A large part of the work in the manufacturing sector is still physically demanding.

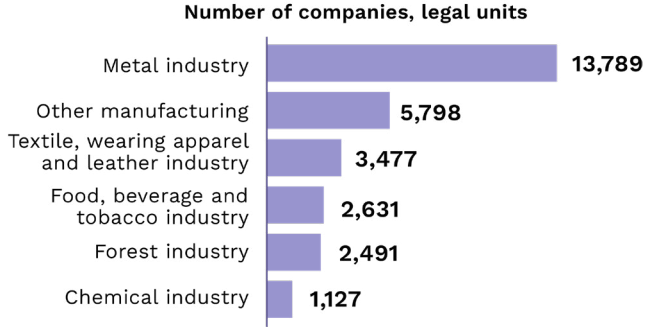
The manufacturing sector can be considered from the perspective of several different industries within the sector. In 2024, Finland's largest manufacturing industries, based on the value of sold output, are as follows.[6]

- Metal industry **42%***
- Chemical industry **20%***
- Forest industry **18%***
- Food industry **12%***

* Total percentage of sold output

The metal industry is the largest industry within the manufacturing sector in terms of the number of companies.

Source: Statistics Finland, Structural business and financial statement statistics (2024)



The metal industry is the largest employer within the manufacturing sector.

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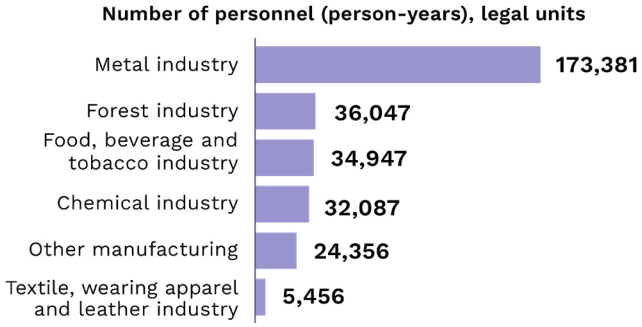

Metal industry

The turnover in the metal industry totalled EUR 83.9 billion (51% of the total turnover of the manufacturing sector) and the industry employed a total of approximately 173,000 employees in 2024. The metal industry includes metal processing, manufacture of metal products, manufacture of machinery and equipment, electronics industry, manufacture of electrical equipment and manufacture of vehicles as well as repair, service and maintenance of machinery and equipment.[5] The technology industry is also often discussed alongside the metal industry[7]. The production chain for the metal and technology industries employs professionals from different fields of education for a variety of tasks. Industry experts can be, for example, welders, process workers, engineers for different industries and experts in the information technology.

Chemical industry

The turnover in the chemical industry totalled EUR 24.8 billion (15% of the total turnover of the manufacturing sector) and the industry employed a total of approximately 32,000 employees in 2024. The chemical industry includes the manufacture of refined petroleum products, the manufacture of chemicals and chemical products, the manufacture of pharmaceutical ingredients and medications, and the manufacture of rubber and plastic products.[5] About one third of those working in the chemical industry are women, since they represent 48% of white-collar workers and 20% of blue-collar workers. About 43% of those employed in the sector have a vocational education, 27% have a degree from a university of applied sciences and 30% have a university degree.[8]

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Occupations in this industry include, for example, laboratory technicians, chemists and product development or research engineers.

Forest industry

The turnover in the forest industry was EUR 32.4 billion (20% of the total turnover of the manufacturing sector) and the industry employed a total of approximately 36,000 employees in 2024. The forest industry includes the manufacture of sawn timber and wood and cork products (excluding furniture), as well as the manufacture of paper and paperboard products.[5] In the sawmill and plywood industry, planks, boards or plywood, for example, are produced from raw timber. In the pulp, paper and paperboard industry, fibre wood is processed to produce products such as packaging materials and raw materials for the textile and pharmaceutical industries. The industry employs sawmill and plywood workers, maintenance technicians and engineers and production planners, among others. These tasks require technical skills, an understanding of production processes and problem-solving skills.[9]

Food industry

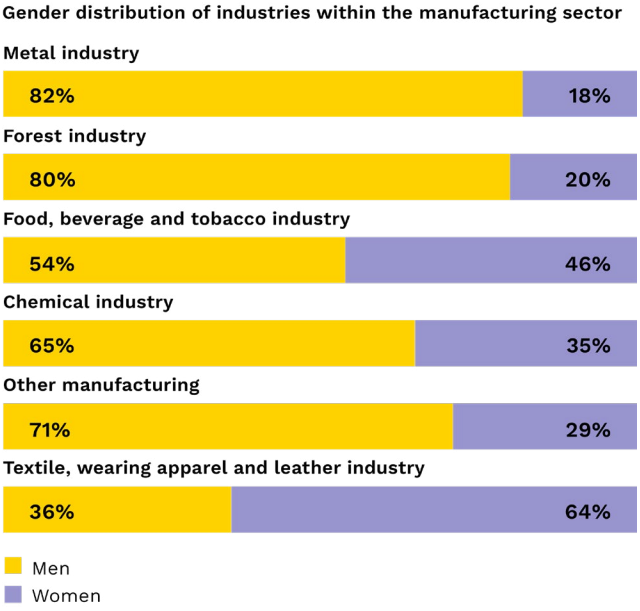
The turnover in the food industry was EUR 14.3 billion (9% of the total turnover of the manufacturing sector) and the industry employed a total of approximately 35,000 employees in 2024. The food industry consists of two main industries, food products and beverages.[5] The manufacturing of food products can be divided into bakery, meat, dairy and other food products. From a regional perspective, most of the workplaces and jobs in the food industry are located in the Uusimaa region of Finland. The second major labour concentration is found in South Ostrobothnia. More than half (52%) of those employed in the food industry have a vocational education and about one-fifth (17%) have a higher education degree.[10]

The labour force in the manufacturing sector has become more diverse

The manufacturing sector in Finland remains predominantly male, but the share of women has increased, particularly in expert positions. Gender distribution varies between industries. In the food industry, for example, the gender distribution is fairly even and in the textile industry, there are proportionally more women. The workplaces within the manufacturing sector are also more multicultural than earlier. According to Statistics Finland, the number of employed persons of foreign background in the manufacturing sector has increased over the last three years.[11] In 2024, manufacturing was the second largest employer of people with foreign background in Finland. Altogether 13.5% of all employed perople aged 20–64 with a foreign background were employed in the manufacturing sector.

Gender distribution varies between industries within the manufacturing sector.

Source: Statistics Finland, Employment statistics (2023)



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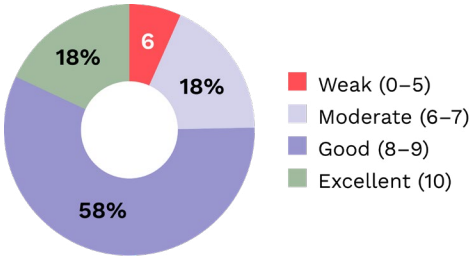
Work ability in the manufacturing sector

According to Elo's data, approximately 76% of employees in the manufacturing sector rated their work ability as being good or excellent in 2025. The result is based on the employees' assessment of their own work ability on a scale of 0–10. Elo's follow-up data shows that assessments of manufacturing employees' work ability have remained relatively stable for the past four years.

The foundation for good work ability and productivity is a balance between the resources and demands of the work. Work-related strain and resources vary between manufacturing jobs, depending on the nature and work environment of each specific job. Manufacturing companies have many ways to manage the work-related strain factors and increase resources to strengthen work ability. The best impact is achieved when development measures are targeted at several different levels: the capabilities of the personnel, the competence of the supervisors, and the organisational structures and operating models of the company.

More than half of the employees in the manufacturing sector view their work ability as good (scale 0–10). On average, the perceived work ability has remained the same between 2022–2025.

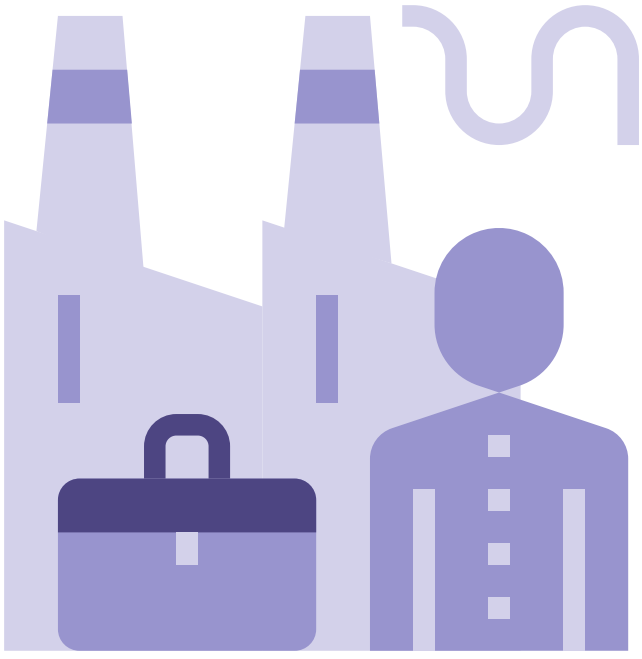
Source: Elo's Work community survey* (2022–2025)



> *"Automation and digitalisation have reduced the amount of physical work and increased the use of information systems and knowledge work."*

Average perceived work ability in the manufacturing sector (scale 0–10)

The promotion of work ability begins with identifying and assessing the work-related strain and the resources that support work ability. Many tasks in the manufacturing sector involve physical strain, putting employees at risk of developing musculoskeletal disorders and work-related injuries. Managing physical work-related strain is a key to maintaining one's work ability[12]. Work in the manufacturing sector has undergone significant changes over the past few decades. Automation and digitalisation have reduced the amount of physical work and increased the use of information systems and knowledge work. The development of the manufacturing sector can be seen in the evolving work demands and skill requirements. As the sector evolves, it is becoming increasingly important to manage employees' psychosocial strain.



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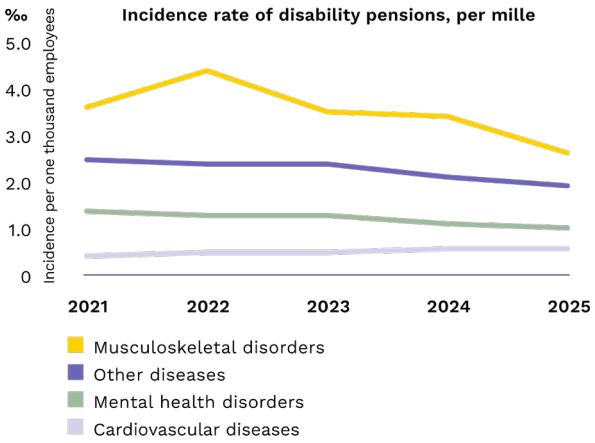
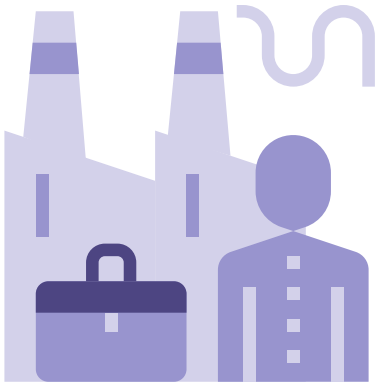
Work disability in the manufacturing sector

Musculoskeletal disorders are the leading cause behind work disability in the manufacturing sector. According to Elo's data for 2025, around 43% of new disability pensions in the manufacturing sector were granted because of musculoskeletal diseases. Over the last five years, the incidence rate of disability pensions related to mental health has remained at relatively stable level. At the same time, studies have indicated concerning trends in mental health-related absences from work. The number of prolonged mental health-related absences (more than 10 days) have increased across all occupations in Finland in recent years.[13]

According to Elo's data, the leading cause of work disability in the manufacturing sector during 2021–2025 was musculoskeletal disorders. There has been no significant change in the incidence of disability pensions caused by mental health issues.

Source: Elo's data (2021–2025)

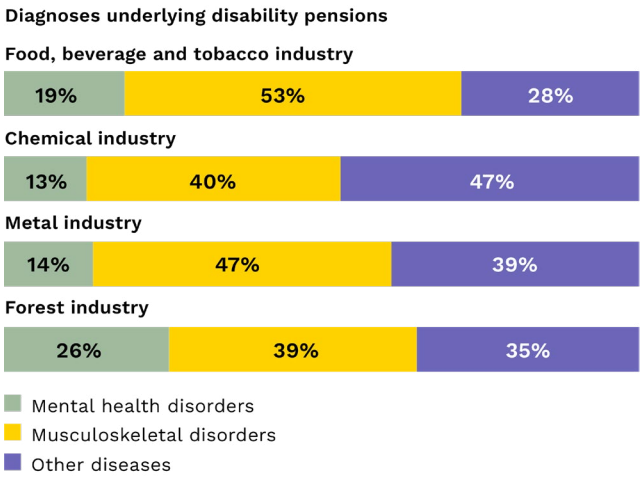




> *"Musculoskeletal disorders are the leading cause behind work disability in the manufacturing sector."*

According to Elo's data, there are only minor differences between manufacturing industries in the diagnoses underlying disability pensions. In the chemical industry, a larger share of disability pensions are granted on the basis of other disorders.

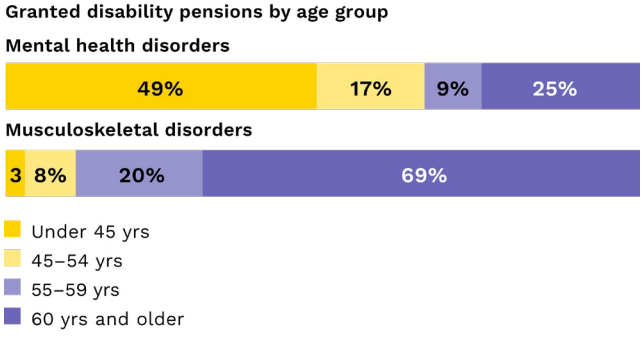
Source: Elo's data (2021–2025)



Among younger age groups, mental health disorders have been the most common diagnosis group across all industries, including manufacturing, in recent years. A serious mental health disorder can disrupt career paths already at an early stage, while in older age groups, disability is more often caused by a physical illness.

For disability pensions granted between 2023–2025, mental health disorders have most often been the underlying diagnosis in younger age groups, whereas musculoskeletal disorders are more common among older age groups.

Source: Elo's data (2021–2025)



In general, in Finland, the age-standardised incidence of disability pensions (the risk of retirement due to a disability) has decreased by half since the early 2000s, which indicates an improvement in the health of working-age people and the enhancement of preventive measures.[14]

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Vocational rehabilitation helps workers return to work

Musculoskeletal disorders are a common reason why individuals are no longer able to perform their current work. In these situations, vocational rehabilitation provides solutions and support. Rehabilitation prevents exclusion from working life, strengthens functional capacity and supports either the continuation of current employment or the pursuit of new work.

Vocational rehabilitation is often effective in the manufacturing sector. Approximately 70% of vocational rehabilitation periods related to musculoskeletal and mental health disorders resulted in a successful outcome at the end of the rehabilitation in 2023–2025. At Elo, the effectiveness of rehabilitation is continuously enhanced through close cooperation with companies and service providers. Statistics and analytics are widely utilised to support the continuous development of rehabilitation effectiveness.

The timing of rehabilitation is a key factor in its success. The earlier rehabilitation is started, the better chances the employee has to continue in working life. Early support prevents the accumulation of problems and increases the likelihood of a positive and sustainable outcome.

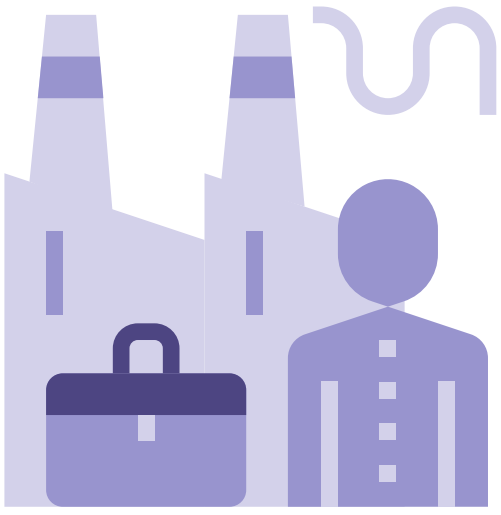
There are three primary benefits of timely support:

1. **Prolonged absences due to illness can be avoided.** This is important, as studies show that such absences significantly reduce the likelihood of an employee returning to work.
2. **The workplace has more options to support the employee when the situation is addressed early on.** Timely rehabilitation enables the use of work modifications, lighter duties and other solutions before the employee's work ability declines too much.
3. **This also allows the company to prevent further decrease of work ability.**

Rehabilitation initiated at an early stage increases the likelihood of success

In the manufacturing sector, 2/3 of Elo's vocational rehabilitation cases were successful at the end of the rehabilitation *

* Rehabilitation periods for musculoskeletal diseases and mental health disorders in the manufacturing sector during 2023–2025



The earlier rehabilitation is started, the better chances the employee has to continue in working life.

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Work-related strain and resource factors

Physical work-related strain

Manufacturing work involves several areas of physical work-related strain that, when excessive, may increase the risk of disability. Key physical work-related strain include:

- Heavy manual lifting and carrying
- Repetitive work movements
- Difficult or static work positions
- Prolonged standing or sitting
- exposure to vibration from tools and machinery

Physical health problems have traditionally been the largest single cause of disability in the manufacturing sector. Of these, musculoskeletal disorders in particular, such as back diseases, osteoarthritis, arthritis and shoulder problems, are especially prevalent. Typical work-related strain in manufacturing work, such as heavy lifting, repetitive work, difficult working positions, long-term standing, increase the risk of health problems. Most of the physical work-related strain in manufacturing work are predictable and manageable using the right methods.

The musculoskeletal diagnoses are relatively evenly distributed across different parts of the body and diagnostic subgroups. Lower limb diagnoses are more prevalent in the forest industry.

Source: Elo's Data (2020–2025)

Metal industry

18% Upper limb diagnoses	**38%** Back diseases
26% Lower limb diagnoses	**18%** Other musculoskeletal diagnoses

Chemical industry

9% Upper limb diagnoses	**42%** Back diseases
34% Lower limb diagnoses	**15%** Other musculoskeletal diagnoses

Forest industry

18% Upper limb diagnoses	**16%** Back diseases
45% Lower limb diagnoses	**21%** Other musculoskeletal diagnoses

Food, beverage and tobacco industry

14% Upper limb diagnoses	**34%** Back diseases
26% Lower limb diagnoses	**26%** Other musculoskeletal diagnoses

Below is a breakdown of the work-related strain in manufacturing work and examples of the health risks they pose. work-related strain clearly increases the risk of work-related injuries and illnesses unless attention is paid to their management.

Heavy lifting and carrying

Lifting heavy objects manually, carrying or pushing loads is especially strenuous for the lower back and other large joints. Repetitive handling of excessive loads can damage intervertebral discs, cause chronic lower back pain and result in sudden muscle sprains and strains. Studies show that continuous lifting of weights of more than 20–25kg manually significantly increase the risk of lower back degenerative disc diseases as well as wear of the knee and hip joints, especially if the lifting work is also accompanied by rotational movements. Heavy physical work is also associated with the risk of acute overload injury: sudden lifts with non-ergonomic motions can cause, for example, a muscle rupture in the lower back or a disc protrusion.[15,12]

Repetitive work and fast-paced movements

Unilateral movements along repetitive trajectories put strain on the small joints and tendons of the upper limbs. For example, in assembly work or packing tasks, where the same movement of the hand is performed hundreds of times each day can result in repetitive stress injuries, such as tendon infections (tenosynovitis), nerve compression syndromes (such as carpal tunnel syndrome) or inflammations of the elbow joint (such as tennis elbow). In addition, repeated bowing of the head or bending of the body can strain the neck-shoulder region, causing chronic tension and pain.

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Work pace is an essential factor: in fast-cycle work, the recovery time for tissues between movements is limited, which increases the accumulation of microdamage. Repetitive work on one side of the body combined with insufficient breaks is a significant risk factor for work-related musculoskeletal problems.[15]

Difficult and static work positions

Some manufacturing tasks can include difficult working positions such as bending, reaching out, kneeling or working with raised arms (overhead work). Non-ergonomic positions burden joints in extreme positions and cause static tension in the muscles. Constantly working in a bent position exerts pressure on the intervertebral discs in the lower back and can lead to their deterioration; being on one's knees for a long time exposes the knee joints to wear; keeping one's arms above shoulder level (e.g., roofing or painting) puts strain on the shoulder joints and can cause rotator cuff problems. In turn, standing still can cause fatigue in the legs and back, reduced blood flow in the lower extremities (e.g. varicose veins) and lower back pain. Continuous sitting weakens core muscles and increases the load on the lower back.[12]

Vibration of the overall body and hands

Many manufacturing jobs involve the use of vibrating hand tools (such as drills, grinders) or vibrating vehicles (e.g. forklifts, forest machinery). Long-term hand-arm vibration can damage blood vessels, nerves and joints in the upper limbs, causing circulatory disorders, numbness of hands and osteoarthritis in the wrists.

Overall body vibration, experienced by, for example, heavy machinery operators, is transmitted to the spine and has been linked to lower back health problems such as intervertebral degenerative disease and chronic back pain. Continuous exposure to vibration, combined with a difficult working position, further increases the risk of lower back and upper limb ailments. The harmful effects of vibration develop slowly over time; the worker may not immediately notice the damage, but after years of exposure, there may be permanent nerve damage or structural changes in the spine.[12,15]

Physical overload is often caused by a combination of several factors – for example, heavy lifting combined with rotational motion and repetition is more harmful than the individual risks on their own. Shift work and insufficient recovery from work can compound the effects of physical stress and expose the body to chronic overload. Physical environmental factors, such as noise, heat and cold, can also increase the stress and strain on the body when combined with physical work, even though these have more of an impact on the general ability to cope rather than any direct impact on the musculoskeletal system.[15]

Occupational diseases

Occupational diseases are diseases primarily caused by physical, chemical or biological factors at work. Compensation for occupational diseases is paid by the accident insurance company in which the employer has accident insurance at the time when the occupational disease appears. According to the Work-Life Knowledge Service of the Finnish Institute of Occupational Health, the three most common occupational diseases in the manufacturing sector are noise-induced hearing loss, allergic/irritant contact dermatitis and vibration syndrome of the hands caused by prolonged vibration exposure.

The key to the prevention of occupational diseases is the systematic management of occupational hazards and risk factors. In manufacturing, this means, for example, the management of risks related to noise, chemical exposure, dust and vibration. Management of occupational hazards and risk factors can be planned on different levels. The primary approach should be to remove anything potentially harmful and hazardous from the working environment. If the harm or hazard cannot be entirely removed, for example, due to the nature of the work, the risks should be managed and the employees protected by means of adapted working methods, work processes, technical solutions and personal protective equipment. The effectiveness of the management methods should be assessed regularly. Changes in working conditions, methods or equipment always require a reassessment of risks and further induction of employees. Management methods that work well for occupational hazards and risks are described in more detail in the section Solutions for the workplace.

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Management of physical work-related strain

Ergonomics means to adapt the work and working environment to the worker in a way that minimises the strain on the employee and helps to prevent health risks. In manufacturing work, good ergonomics is a key means of managing physical work-related strain. Versatile ergonomic measures can reduce the prevalence and severity of musculoskeletal disorders in the workplace.[12]

Ergonomic planning in the workplace

Workspaces and equipment should be designed so that they are suitable for employees of different sizes and strengths. For example, the possibility to adjust the height of workstations, a good working height and positioning and sufficient space to move around are important for work ergonomics.

In a well-designed workplace, employees can work in a balanced position without the constant need to reach or bend, the equipment does not require a heavy use of force and control devices are placed within easy reach. Work equipment must be appropriate: e.g. lifting equipment or lifts should be used to handle heavy items and equipment suitable for repetition (such as feeders, racks) should be used to reduce strain on the body. Studies have shown that ergonomic changes and device improvements in the workplace had a statistically significant link to a reduction in neck pain, reducing the risk of neck pain by 40%. According to research, improvements to the work environment can provide concrete health benefits for employees.[16]

Tools to facilitate lifting and moving tasks

Whenever technical equipment can be used instead of manual work, it should be used. This means, for example, the use of forklifts, cranes, hoists, rollers, conveyors and other equipment for the transfer of heavy loads. The use of machines reduces the direct load on employee's body, thereby reducing both the risk of an acute accident and longer-term degenerative changes.

> **Example:** Occupational safety and health inspections pay attention to whether the workplace has managed the risks of manual lifting by, for example, acquiring appropriate devices. If these are missing, a notification will be issued, since any lifts performed without assistive devices has been identified as a clear risk. Companies that have their lifting ergonomics in order report fewer back injuries and absences due to illness.

The trend is also to make use of technology: in recent years, the market has expanded with the development of exoskeletons (external frames) for use in manufacturing work. Exoskeletons support an employee's body (e.g. back or shoulders) when performing lifting and installation tasks. Early studies suggest that exoskeletons can reduce muscle load in certain tasks, but more research evidence is needed on their long-term effects.

Arrangement of shifts and task rotations

Work rotation is an effective way to prevent unilateral physical strain. When an employee changes their task or position during the day (e.g. alternating periods of standing and sitting, or lighter inspection work after heavy lifting), it ensures that no single part of the body is subjected to continuous strain. Diverse tasks allow muscle groups to alternate and rest.

In the same way, breaks are of paramount importance: studies have shown that short, regular breaks prevent, in particular, the symptoms of overload associated with repetitive work and improve recovery.[16]

Weight training and physical fitness

Studies in recent years highlight the central role of weight and fitness training in supporting the work ability of those performing physically heavy manufacturing work. Exercises that develop muscle strength and endurance have been shown to reduce work-related musculoskeletal disorders.[17]

The findings of a broad review[18] confirm that workplace exercise interventions in physically demanding sectors (such as manufacturing, construction and nursing) can improve employees' work ability and reduce musculoskeletal problems. The review analysis covered 47 different studies, of which 18 reported significant improvements in work ability because of interventions. Positive results were achieved through a variety of means: strength training, aerobic fitness training, combination programmes, stretching and yoga, as well as individually tailored exercise programmes all proved to be beneficial in terms of work ability. It seems essential for the training to specifically target the demands of the actual work. For example, if the work unilaterally burdens certain parts of the body, the training programmes aim to strengthen and balance the load on other parts of the body.

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Psychosocial strain

Psychosocial strain refers to factors related to the work content, work arrangements or work community that can put harmful strain on employees. Psychosocial risks may be, for example, an excessive workload and time pressure, unclear responsibilities, conflicts in the work community or inappropriate behaviour or harassment. Properly targeted measures can be taken to prevent and manage psychosocial strain.

Changes in the manufacturing sector also affect psychosocial risks. Technological changes and changing skill requirements increasingly emphasise the importance of competence for sustaining work ability. The increase in knowledge work also places greater emphasis on ensuring the balance between work and other aspects of life. Hybrid work sets new demands on leadership and the maintenance of a well-functioning work community.

Psychosocial strain is also reflected in physical risks

The total number of occupational accidents has decreased in the manufacturing sector in Finland over the past 10 years, but serious personal injuries are still occurring. In 2024, approximately 11,000 accidents occurred in the manufacturing sector, most of which were related to the handling of goods, tools or materials, or to slipping, falling or stumbling. (Statistics application Pakki, Finnish Workers' Compensation Center, accessed 5 March 2026). Psychosocial strain also plays a role in occupational accidents. Extensive research shows that a high level of stress increases the risk of accidents in manufacturing sector workplaces. For example, in a Finnish longitudinal study that monitored 16,385 forest industry employees over a period of eight years, the risk of the group with a high stress level having an accident that would require hospitalisation was approximately 40% higher than for those experiencing less stress. A higher risk also occurred when age, gender, education and work-related physical work-related strain were considered.[19] Stress exposes employees to accidents by, among other things, reducing perception and alertness. Stress and work pressures can also increase risk-taking and, thus, increase the likelihood of accidents.[20,21,22]

Psychosocial strain at work is also associated with symptoms and incidence of musculoskeletal disorders. Harmful stress activates the nervous system and muscle tension in ways that increase the body's load sensitivity and expose the individual to musculoskeletal symptoms. As the stress reaction is prolonged, the ability to recover declines. Psychosocial strain not only affects the physiology of the body but also changes the way work is done: when the work pace and time pressures increase the speed of the work, work ergonomics are all too often forgotten. At the same time, it leaves less time for regular work breaks and varying working positions.[23,24,25,26,27,28,29]

Impact of psychosocial strain

1. **Increased risk of accidents**
- Weakened state of **alertness and observation**
- **Reduced focus** on safe working practices
- **Increased risk-taking and deviations from safe working practices** in response to stress and a hectic pace

2. **Increased susceptibility to musculoskeletal disorders**
- **Mental strain** increases constant muscle tension and susceptibility to, e.g. neck, shoulder and back problems
- **Stress** reduces the body's recovery from work-related strain
- **A hectic pace and timetable pressures** increase the speed of work, whereby work ergonomics, breaks and posture changes get less attention

Elo's Pulse Survey allows you to measure workplace conditions quickly.

Shift work

In the manufacturing sector, shift work is a common way to organise the work and is often necessary to ensure the continuity of production. However, shift work puts a strain on the sleep–wake rhythm of the body and can impair sleep, alertness and recovery, especially when working hours are poorly planned. The planning of shifts plays a vital role when it comes to the work ability and health of employees. Well-planned shift work coordinates the needs of production and conditions that ensure employee health. Shift planning is a key preventative mean of reducing work-related strain, accidents and work-related health hazards in manufacturing.

- **Enough time** must be left between work shifts to enable proper recovery. The rest period between shifts should be at least 11 hours. Short intervals reduce the ability to recover and have been shown to increase the risk of absences due to illness.
- **The number of consecutive shifts** should be limited to a maximum of five to avoid excessive work-related strain.
- **It is recommended not to schedule more than two consecutive night shifts**, which must then be followed by sufficient leisure time to enable recovery.
- **A morning–evening–night and forward shift rotation**, in which the shift types do not accumulate for long periods, support the sleep rhythm better than a backward shift rotation system.

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The possibility to influence work shifts and participate in shift planning promotes job satisfaction and reduces absences due to illness. At the same time, it is important to consider the health and recovery impacts of working hours and to apply clear ground rules to the planning.

Recovery should also be supported during the workday. Recovery within the workplace can be promoted by, for example, predictable working hours, job rotation for demanding tasks and functional break practices, and by providing staff with information and guidance on matters related to sleep and alertness. Training meant to support sleep quality, and alertness can reduce the symptoms of insomnia and shift work sleep disorder. The expertise of the occupational health care provider can be called on to help support shift planning in a way that promotes work ability. Research evidence shows that the best results are achieved when organisation-level solutions and individual-level approaches support one another.[30-33]

Core resources for work ability

A smooth and well-functioning work environment is a key resource for work ability. It is built on effective ways of organising work, reliable tools, a clear division of responsibilities, and supportive work community. Smooth workflow depends not only on well-designed processes and tools, but also on how interaction and collaboration are managed within the work community.

Experience of smooth workflow, as captured through employee surveys, provides a key indicator of the quality of day-to-day work management and the early identification of work ability risks. Declining scores typically indicate a need to improve working conditions or organisation of work.

Another key resource for work ability is sufficient recovery from work. Work recovery refers to the process of allowing your body and mind to recuperate from the stress and strain of working. A reasonable workload, manageable timetables and suitably challenging tasks create the conditions for recovery. Recovery should take place during the workday by means of, for example, regular breaks. This prevents work-related strain from accumulating and ensures that the time off is sufficient for body and mind to recover. A feeling of inadequate recovery is often an early sign of overload and a signal that more attention should be paid to work-related strain.

Elo's data from Finnish manufacturing sector companies show a link between smooth workflow, work recovery and work ability. Of those employees who rate their smoothness of workflow and recovery as being sufficient, 93% view their work ability as good and only 6% perceive a high level of stress.

When there are deficiencies in recovery, even if smoothness of workflow is still viewed as good, the level of work ability is already clearly declined and the risks have increased. Work ability risks are even higher when an employee experiences challenges related to smooth workflow and there are also deficiencies in the work recovery. In this group, only 39% rate their work ability as good, and up to 41% report a high level of stress.

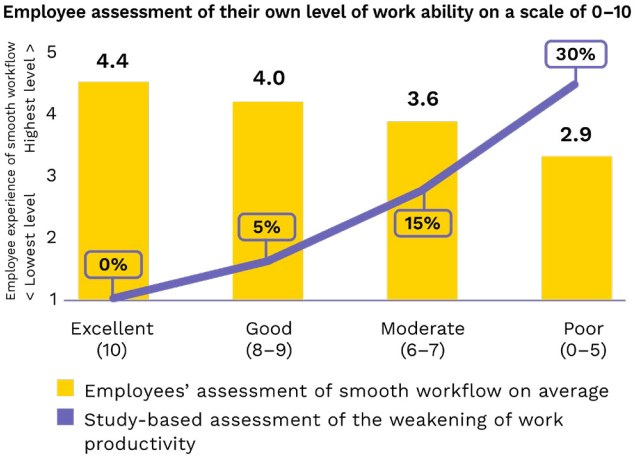
Daily challenges in terms of smooth workflow and a lack of recovery from work are reflected in work ability and increasing work ability risks. Simply monitoring absences due to illness only reveals part of the cost of declining work ability. Studies have shown that poor work ability can reduce work productivity by as much as one third.[34]

Declining work recovery is an early sign of overload and risks to work ability. The risks increase when any aspects of smooth workflow are lacking.

Source: Elo's Work community survey, manufacturing sector (2025)

Declining work ability and smooth workflow are reflected in work productivity. According to studies[34], a perceived low level of work ability can reduce work ability by as much as one third.

Source: Elo's Work community survey, manufacturing sector (2025)



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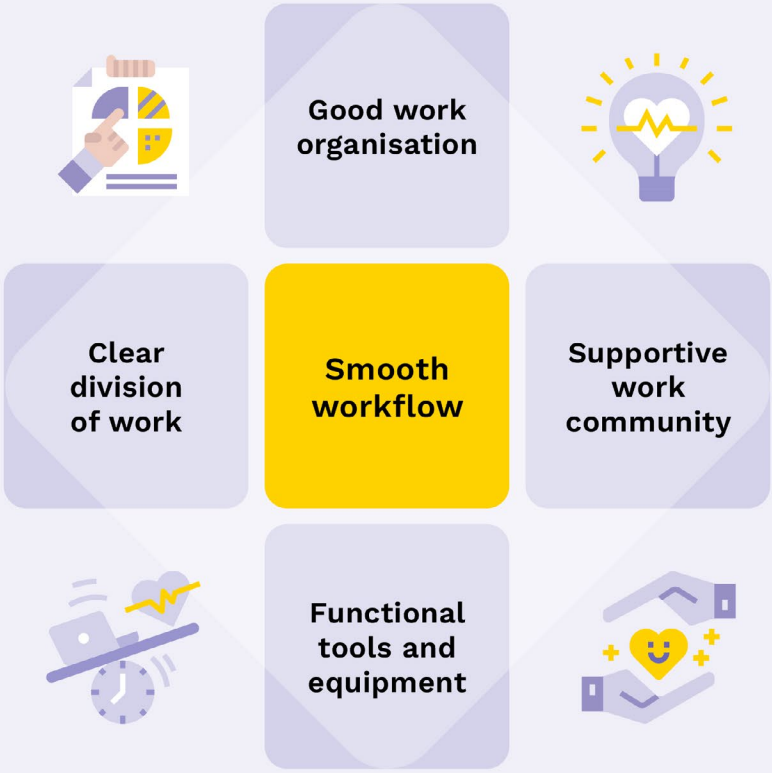
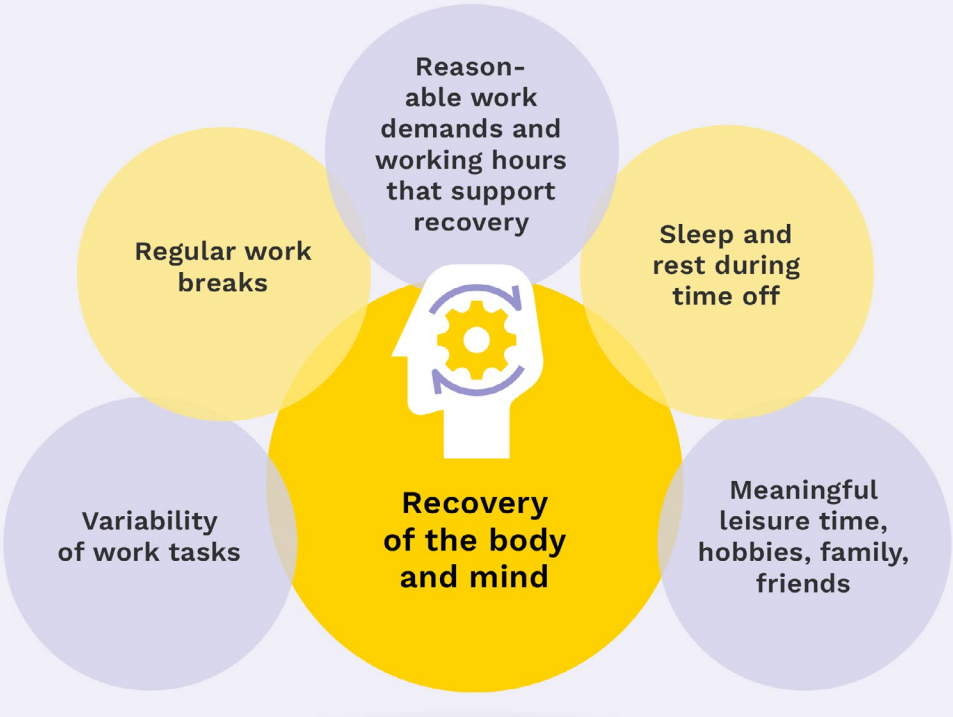
What are the building blocks of smooth workflow?



What promotes work recovery?



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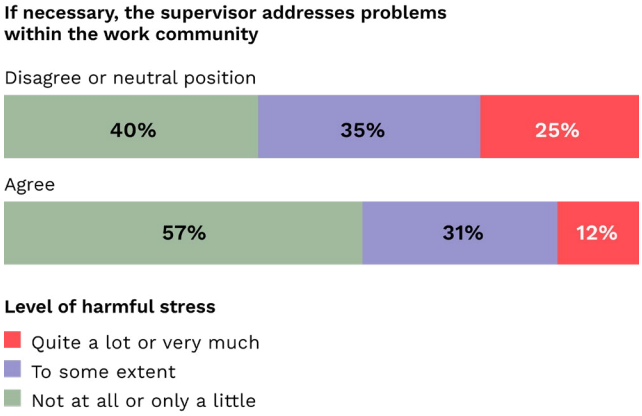
The success of first-line management is reflected in the work ability of personnel

First-line management plays a key role in supporting smooth workflow and work ability. Studies have demonstrated how servant leadership can promote improved well-being at work, a lower risk of burnout and a more efficient work performance.[35] Servant leadership involves the individual consideration of employees, a stated clear direction, an empowering approach and the assurance of structures that support success at work. In practice, it includes, for example, two day-to-day leadership practices: encouraging feedback that helps guide work performance and support for problem-solving in everyday work and within the work community.

Elo's Work Community Survey tool includes a research-based measure of harmful stress that predicts the risk of sickness absence.[36] The results indicate that the number of those who experience a lot of harmful stress is reduced by half when they perceive that their supervisor actively intervenes in problems at work. Addressing problems in the work community is a leadership act that is directly reflected in the employees' level of work ability.

A supervisor's involvement in addressing problems in the work community is reflected in employees' level of work ability. The number of those who experience a high level of stress is reduced by half when a supervisor is perceived to be actively intervening in problems within the work community.

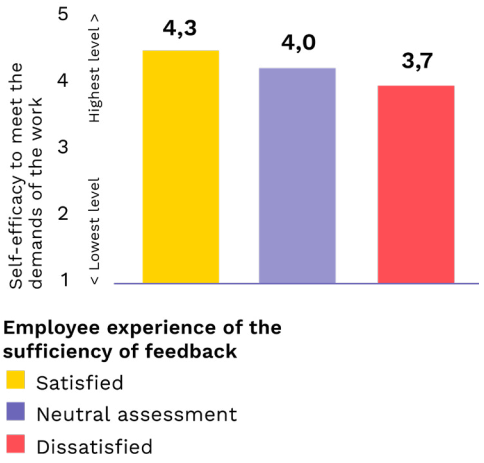
Source: Elo's Work community survey, manufacturing sector (2025)



Self-efficacy refers to an employee's belief in their own abilities, skills and possibilities to solve the challenges ahead. Research has shown that self-efficacy is associated with mental well-being and work performance[37,38]. Elo's data from the manufacturing sector shows that the feedback of a supervisor has an impact on the employees' self-efficacy.

Self-efficacy to meet the demands of the work is stronger when the employee receives feedback on their work.

Source: Elo's Work community survey, manufacturing sector (2025)



Feedback makes employees' work contribution visible and acknowledged. It helps employees understand the impact of their own work, reinforcing a sense of accomplishment and the meaningfulness of what they do. Feedback guides performance and clarifies expectations. It also helps employees recognise what is working well and where there is room for improvement. Feedback is important in all types of work, but the growing share of self-directed knowledge work further increases its importance. When employees receive feedback that they are on the right track, it strengthens their sense of control at work, which is a well-established resource for mental health. At the same time, it reinforces a shared understanding that the work community is working toward common goals.

Based on Elo's Work community survey, we can calculate your company's Personnel Productivity Index (HTI) – a key metric that summarizes three productivity drivers: employee competence, motivation and work ability.

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Employee voice: What do employees value in manufacturing work?

When a workplace takes the time to gather employees' thoughts on key issues, it captures daily phenomena that might otherwise go unnoticed. Open feedback is an essential part of personnel surveys, as it enables respondents to express their experiences in their own words and to provide ideas on how to develop common issues.

It is particularly valuable to hear the viewpoints of employees who are showing early signs of the need for work ability support. Their feedback provides information on how the functionality of the work community and the conditions for work ability might be improved. Another important group is employees who take a neutral or critical attitude towards the likelihood of recommending the workplace. Their experiences help identify areas of development that could reduce employee turnover.

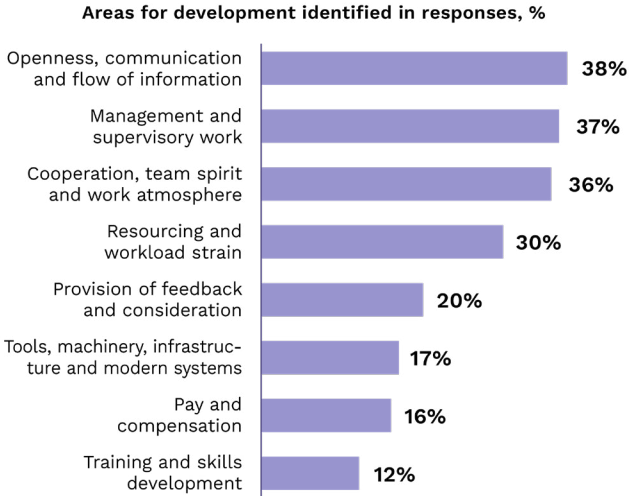
Elo's survey tools provide a way to gather employee feedback on everyday working life. Based on the experiences of employees in the manufacturing sector, the analysis examined open-ended feedback collected through personnel surveys. The focus was on respondents who rated their work ability as at most moderate and rate their likelihood of recommending the workplacescore of no higher than 8 (eNPS). Listening to the experiences of this group is important, as their feedback helps identify everyday factors that, if improved, could strengthen their work ability and enhance the workplace's ability to retain employees.

Extensive data, consisting of more than 2,000 open responses (2023–2025) describing employees' own experiences and development wishes were analysed in Elo's protected environment using AI-based language models. The language model scoured the open responses to identify recurring themes and word choices from the given feedback. Elo's expert ensured the reliability of the analysis and results at different stages of the process. This approach extracted the messages within employees' own experiences and highlighted those everyday factors that employees considered most important as well as development areas that they felt should receive the most attention.

The results of the analysis show that this group of employees emphasises factors that are essential for the functioning of the entire workplace. In open feedback, employees expressed the importance of communication and the flow of information, management and team atmosphere, and it was specifically these areas in which they were looking for further development. What these findings have in common is that the most valued aspects are linked to how the work community functions and how people interact.

Employees in the manufacturing sector see the functioning of the work community and leadership as the most important areas to develop in the workplace.

Solurce: Elo's Work community survey, manufacturing sector (2023–2025)



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Phenomena and trends

Learning requirements change as the work evolves

Work in the manufacturing sector has undergone significant changes over the past few decades. Automation, digitalisation, robotics and AI have reduced the amount of physical work and increased machine supervision, process control and the use of information systems. The work has not necessarily become less demanding but rather, changed in form. Learning is an integral part of the daily work routine. Employees' competence requires regular reinforcement.

Employees in the sector are increasingly required to have:

- **skills** to use digital applications and systems
- **the ability to understand** the underlying causes of disruptions in work processes
- **readiness to engage** in continuous learning alongside daily work

Digitalisation and automation are increasing the requirements for lifelong learning in all manufacturing sector.[39,40]

Learning takes place within the work

In the manufacturing sector, learning is an integral part of daily activities. It arises from situations in which processes or tools do not work as expected or where employees identify, during their work, aspects that need further development or changes. Learning opportunities can be less frequent if there is not enough time or support at work for such considerations.

Learning is supported by:

- systematic **onboarding and guidance** at work
- **opportunities** to ask, experiment and practice safely
- **constructive feedback** that highlights strengths and areas for development

The key issue is figuring out how competence and knowledge will be shared. In manufacturing work, competence is often accumulated as tacit knowledge. For example, employees learn to identify factors that cause disruptions and ways to improve smooth workflow through practical experience while using systems and equipment. If the structures of the workplace do not allow questioning and sharing of experiences, this type of competence can remain individual rather than being shared across the work community.

A sustainable work pace is necessary for employees to have the opportunity to learn in the workplace. A rapid work rotation or constant introduction of new systems can be stressful and prevent any deeper system orientation. On the other hand, job descriptions that remain static and unchanging can lead to a situation where learning stops altogether. The work becomes repetitive and the employee no longer faces any new challenges. When this occurs, job satisfaction and the sense of control at work decline, even though the work itself is technically progressing well.

In the case of automated work, employees are required to maintain their competence even during extended periods with little or no need for active intervention. Without intentional practices to support learning, such as brief reviews, joint consideration of anomalies or the possibility to participate in improvements, competence can imperceptibly diminish. Small daily practices often support learning more than training programmes. That is why it is useful to take a pause to discuss an anomaly or disruption and learn something together. For example:

- **What** was learned from that situation?
- **What** can be done differently in the future?
- **How** can processes be developed?
- **What** can each employee do differently in terms of their own work?

When an employee feels that their perceptions and insights matter, their motivation increase. In the manufacturing sector, learning is an integral aspect of smooth workflow and safety. When learning is embedded in everyday work processes, it supports both competence development and work ability. At the same time, it increases the variety and meaningfulness of work.[41]

Work-related strain can be excessive or insufficient

In automated production environments, the work often involves a lot of supervision, and even though the content of the work rarely changes, it still requires constant vigilance. As automated work increases, it raises the possible risk that the work will become monotonous and result in work bore-out. This phenomenon is not due to a lack of motivation, but a

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situation in which the work does not provide appropriate challenge or is no longer perceived as meaningful. Occasional negative feelings are normal and do not cause health problems, but frequent or persistent negative feelings can impact health.

In work, bore-out is defined as an unpleasant psychological state in which an employee views their work as uninteresting and their own role as irrelevant.[42] This phenomenon is associated with insufficient work demands, a low level of autonomy and limited learning opportunities. Bore-out can impair safety and performance, especially in control and supervision tasks, where the consequences of errors can be severe.

Bore-out can show in daily working life as:

- a decreased state of alertness and lack of concentration
- mistakes and errors in routine work
- irritation or lack of motivation

Bore-out and burnout

Bore-out is often confused with burnout, but they are distinct phenomena. Burnout is caused by overload, while bore-out occurs when there are minimal requirements and few challenges[1]. Research shows, however, that these phenomena can occur concurrently. An employee may be simultaneously burdened with responsibility and a constant state of alertness as well as bored by the monotony of the work content.

Prolonged bore-out increases the risk of burnout, mental health symptoms and disengagement from work, especially when an employee has no opportunity to influence their work or develop their competence.[42,43] In manufacturing, AI and automation often change the rhythm of the work faster than is even recognised. Physical work-related strain may decrease and the work routine may be smoother, but at the same time, the pace of the work is faster and the cognitive load increases. The key change in terms of work ability is not what is being done but how quickly and uninterruptedly it is being done.

Accelerated work pace

Automation and AI can process things at a much faster rate than humans. When this pace extends into the everyday work, it creates a work rhythm that requires constant reaction to situations without any natural breaks. The work requires uninterrupted attention, rapid data processing and alertness. Cognitive workload increases, even though the work appears externally to be less demanding than it has been earlier.[2]

At the same time, the elements of the work that support recovery are diminishing. Time for reflection, consideration and rest are easily left out since the work no longer stops on its own. Systems are constantly updating, more alarms and suggestions are being generated, and the rhythm of the work is beginning to be determined by technology rather than the humans involved. An employee's inability to recover cannot immediately be detected since its impacts build gradually.

The accelerating rhythm of the work also brings with it an assumption of increased capacity; since each work phase moves faster, it seems as though more can be accomplished. Tasks increase, responsibilities rise and optimisation is more frequent. Thus, the structural load of the work increases, while the individual tasks seem easier. The work never feels finished, since there is always an opportunity to do a little more or to improve further.

Suggestions and optimisations created by AI push the human role towards continuous assessment and consideration. People are responsible for interpreting anomalies, assessing risks and making decisions in situations that have no established answers. Such responsibility requires peace and concentration. If the work pace is constantly hectic, a burdened brain will be unable to carry out assessments properly and the result will be shallow and stressful.

In such cases, the decrease of the employee's work ability rarely becomes obvious right away as absences or accidents. It generally manifests as a lack of concentration, an increase in the risk of errors, a variation in quality and a decrease in motivation. The work may appear to proceed normally but is silently depleting the employee's key resources.

Without conscious management of the work rhythm, recovery and responsibility, AI and automation can become an indiscernible risk to work ability. It's not about the technology itself, but rather the increasing density, continuity, and boundlessness of work enabled by it.

What does this mean for work ability?

Changes in work and work methods should not be viewed merely from the viewpoint of technological advances. Changes should also involve discussions about the people they affect and the learning required. In the manufacturing sector, work ability increasingly refers to:

- learning capacity
- management of alertness
- a feeling that the work is meaningful.

Research evidence is clear: work ability is best maintained when the work provides suitable variation, learning opportunities and an experience that one's own work makes a difference.[41] In practice, this means that support for work ability requires the identification of:

- risks of excessive work-related strain
- risks of underload, i.e. bore-out
- risks caused by accelerating work pace

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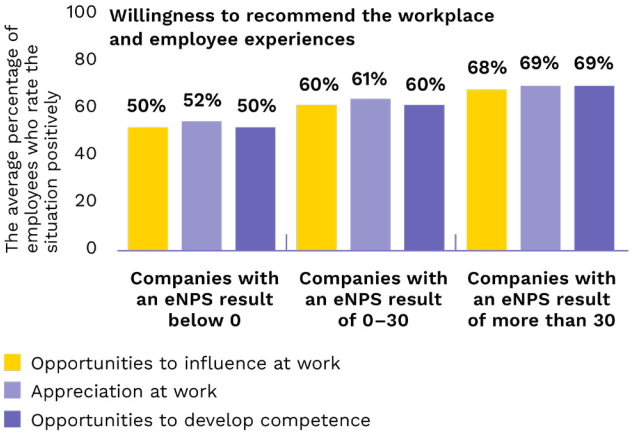
Job accommodation, a planned work rotation, the possibility for employees to participate in the development of common issues in the workplace, and everyday practices that support learning increase the variability and meaningfulness of work. At the same time, this creates better conditions for occupational safety, motivation and smooth workflow.

In a changing working life, the key factors for meaningfulness and learning capacity are reflected in the strategic indicators of companies. The appreciation experienced by the personnel, the opportunities to influence the work and support for the development of competence can be directly seen in the ability to retain employees and job satisfaction figures for the workplace. Elo's analysis shows that the employee experience of opportunities for influence, work appreciation and competence support is reflected in the eNPS result of manufacturing companies.

In manufacturing companies with stronger eNPS results, employees are more positive about their opportunities to influence their work, the appreciation of their contributions, and their chances to develop their competence.

Source: Elo's Work community survey, manufacturing sector (2024–2025)



The importance of social capital will increase in the manufacturing sector

Social capital refers to trust within the work community, respectful interaction, shared responsibility and a common desire to achieve results. Social capital is visible in everyday life: how information flows, how responsibility is shared, and what kind of team spirit exists within the work community. Social capital plays an increasingly important role in today's working life. This can be examined through two different phenomena.

1. Demographic change and competence sharing

In work communities, active knowledge sharing across career stages is essential to ensure the transfer of tacit knowledge as workforce demographics evolve. The expertise of more experienced employees is best transferred in environments that are characterised by trust and smooth cooperation.

2. Hybrid work

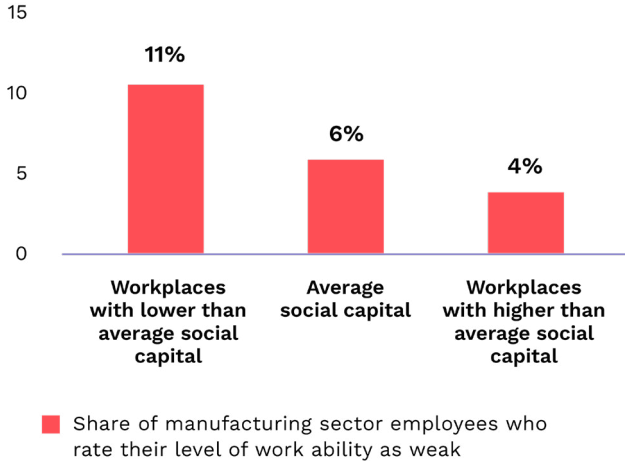
There are benefits to remote work, such as support for the reconciliation of work and other areas of life. At the same time, the latest research data shows that remote work can undermine trust within the work community and support from co-workers.[44] Hybrid work imposes new demands for management, and increases the need to reinforce the sense of community and trust among employees. Digital tools facilitate new ways of sharing information and communicating, while, at the same time, making the need to build community ever more essential.

Social capital is reflected in work ability within the manufacturing sector

Elo conducted an analysis at manufacturing sector workplaces to measure social capital from three different perspectives: respectful interactions within the work community, shared responsibility, and a shared will to achieve common goals. The results showed that social capital is reflected in the employees' current level of work ability and expectations for the future. Employees who reported low work ability were nearly three times more common in workplaces where social capital was below average. The social capital of the work community is also reflected in the employees' expectations for their future level of work ability.

The social capital of the work community is reflected in the employees' current level of work ability and expectations for the future.

Source: Elo's Work community survey, manufacturing sector (2025)



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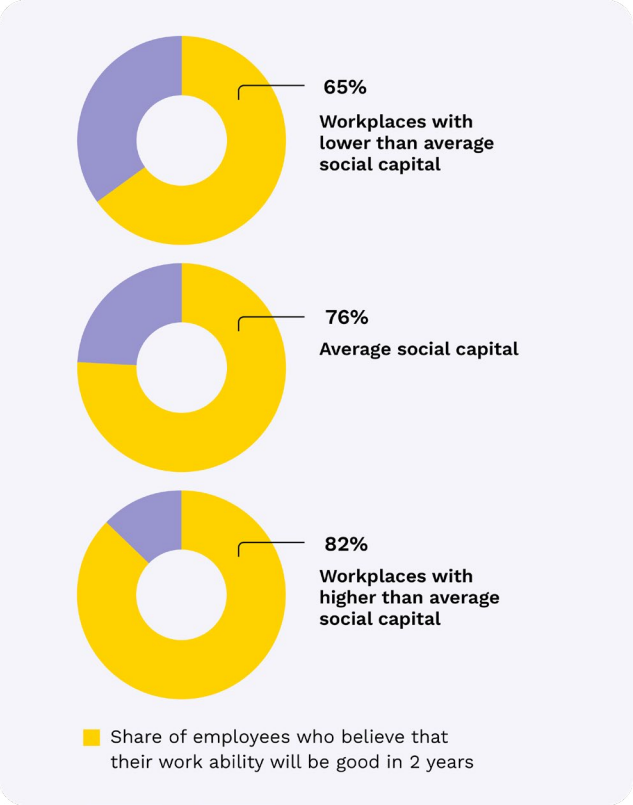

The impact of social capital on work ability operates through multiple pathways. Social capital is visible in the everyday life of the workplace, as people take responsibility together, share information and support one another. When the work-related strain is distributed equally and the endeavour to solve problems is supported, the level of workload strain is reduced, and smoothness of workflow improves. It also strengthens the company's ability to function in the face of disturbances and changes.

The shared will to achieve and respectful interactions are protective factors, especially when work ability is lower or risks are increasing. The shared will to achieve gives meaning to the work. Respectful interactions, in turn, foster mutual respect and convey support during a busy everyday work environment.

The power of joint responsibility based on shared objectives is reflected in the effectiveness of internal cooperation. In the manufacturing sector, work often progresses as a process, through planning, procurement, production, sales and logistics. Social capital is reflected in how smoothly the process goes based on the organisation's internal cooperation. At its best, information is transferred and responsibilities are commonly understood. If there is any friction in the interfaces of cooperation, this causes an increase in uncertainty, disturbances and work strain.

You can explore solutions and tools that support your company's organisational resilience in our learning environment, Elokanava.

Work community diversity as a resource

According to statistics[45] the number of employees with foreign background in the manufacturing sector has increased in recent years. In 2024, manufacturing was the second largest employer of foreign background workers in Finland. Altogether 13.5% of all employed persons aged 20–64 with a foreign background were employed in the manufacturing sector. According to the results of the Entrepreneur Gallup[46] in 2025, 44% of SMEs in manufacturing reported hiring an immigrant.

In practice, genuine equality means that equal opportunities are provided for everyone and that everyone in the workplace is treated fairly and with respect. The background and personal history of each employee affect how they work and experience their work.

Diversity can be seen in the workplace in, for example, languages, norms and values. The impacts of diversity depend on how the work community is managed and the operational models that are nurtured in the workplace. Without strategic diversity management, the benefits may remain unrealized, and the flow of cooperation may weaken.

Diversity management refers to actions on two different levels[3]:

- **Structures and work approaches** (e.g., strategy, operational principles, common practices)
- **Behaviour** (e.g., daily interactions, addressing inappropriate behaviour, language considerations).

Properly managed, a diverse work community offers significant strengths:

- **Different perspectives** enrich decision-making and development
- **A diverse knowledge base** strengthens innovations and renewal
- **An understanding of different customer groups** supports the development of products and services
- **A workplace that values diversity** strengthens the employer image and attracts experts.

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Psychological safety helps prevent a culture of silence

Psychological safety is a key foundation for work ability and resilience in the manufacturing sector. When a workplace is psychologically safe, employees dare to present their own ideas, to ask when something is unclear, to ask for help and to openly raise concerns and highlight areas that need development. Mistakes can be discussed openly without fear of embarrassment, negative judgement or punishment, which reduces stress, improves proactive safety, and supports the smooth flow of work as well as both mental and physical work ability. However, psychological safety does not require everyone to agree or all proposals to be accepted. It also does not mean giving up performance management or highlighting shortcomings without focusing on solutions. When interaction is valued, it also makes it possible to talk about difficult issues and easier to address the need for support related to work ability and work functionality at an early stage.

From a culture of silence to a conversation

In industrial settings, silence is seldom a sign of indifference or poor cooperation. Employees and supervisors often identify early what disrupts work, adds strain, or threatens safety, yet these concerns are not always raised in time. A culture of silence emerges over time from structures, history, and ingrained ways of working rather than individual attitudes.

In manufacturing work, production is typically organised around a defined rhythm, often involving shift-based and production-driven processes. Workflow relies on predictability and uninterrupted continuity, which can make discussing incomplete observations, uncertainties or strain feel like a disruption. As a result, the priority of keeping production running tends to outweigh the space for dialogue, leaving little natural opportunity for discussion during the working day.

A culture of silence can also be reinforced by structural distance. In shift work, supervisors and employees do not always share the same schedules, and observations often arise in fleeting moments that may not be recalled later. When conversations depend on the right timing or the presence of specific people, many important issues risk remain unspoken. Meetings may be infrequent and focused on essential matters such as schedules and technical issues. As a result, discussions about coping, stress or everyday sources of friction are easily overlooked. Over time, this creates an environment where speaking up is not a natural part of everyday work.

Additionally, talking is prevented by an uncertainty about the proper procedure. Even if a workplace has early support practices in place, it is not always clear to everyone how they should be applied. If it is not clear when and how things will be discussed and what will happen as a result, silence may feel like a safer alternative. This is particularly emphasised in themes concerning health and coping at work.

In the manufacturing sector as well, there seems to be a historical sense of opposition between the employee and employer. If a discussion is perceived as control or a judgement, it throws a shadow over transparency. In this case, talking is not seen as a way to support the common work, but as a personal risk.

One possible underlying factor is the historical divide in the manufacturing sector between employees and employers. If speaking up is perceived as control or evaluation, openness is easily suppressed. In such cases, speaking up is not seen as supporting shared work, but rather as a personal risk. From a work ability perspective, silence is problematic because challenges often develop gradually. Work-related strain, fatigue and reduced alertness initially appear as small changes. When these are not articulated early on, they tend to accumulate and can lead to sickness absence or a decline in work ability. Preventive dialogue is then replaced by more reactive and corrective measures. Moving from a culture of silence to a culture of open communication requires intentional leadership. Clear and predictable structures for dialogue must be created and linked to the flow of work, safety and the support of work ability. When speaking up is understood as a natural part of everyday work, it is no longer seen as an extra discussion, but as an essential means of ensuring continuity of work and sustaining employees' work ability.

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Solutions for work

Management of physical work-related strain

The starting point for the management of physical work-related strain is a risk assessment to identify workload factors and evaluate the harm they may cause. The most effective way to prevent harmful workload is to completely eliminate the factor causing the strain, for example, by replacing a physically demanding work method with an easier method. If the strain cannot be eliminated, it should be controlled and reduced, for example, by means of ergonomics and work planning.

Key measures:

- **Strive** primarily to eliminate the sources of harmful work-related strain.
- **Develop** ergonomics and focus on the design of workspaces to ensure that work positions and movements minimise work-related strain.
- **Ensure** adequate onboarding and work guidance on healthy and safe working practices.
- **Avoid** unilateral physical strain and vary the work as much as possible.
- **Involve** employees in identifying smooth working practices and areas of the work. environment that require further development.
- **Ensure** adequate rest and recovery also during the working day.
- **Take advantage of the expertise of the occupational health provider** in identifying and reducing work-related strain.
- **Call on the expertise of occupational physiotherapists** and involve them in the procurement of work equipment, machines and tools as well as in the development of working conditions from the planning phase onwards.

Examples of task-specific solutions

Work task	Ways to reduce physical workload
Repetitive work (e.g. assembly, packaging) 	• **Guide** proper working postures and movements, and ensure high-quality induction. • **Modify** work arrangements by increasing task variety and implementing job rotation. • **Reduce** constant standing or sitting: short breaks and changes in working postures. • **Use** of technical solutions and tools to reduce repetitive work. • **Ensure** sufficient workspace, remove unnecessary items, and keep the flow of goods and materials smooth.
Standing work (e.g. process work, supervision) 	• **Plan** the work in such a way that the employee needs to twist and bend as little as possible throughout the workday. • **Use adjustable workstations and fixtures;** ensure the functionality of the workstation. • **Enable** variation between sitting and standing work, as well as movement and job rotation. • **Provide** support for the feet through anti-fatigue mats, suitable flooring, and appropriate work footwear.
Lifting and moving tasks (e.g. raw materials, items, pallets) 	• **Guide on safe lifting techniques and work positions;** avoid lifting and rotation at the same time. • **Keep the load close to the body and lift at an ergonomic height** (avoid lifting over the shoulder or below knee level). • **Use of assistive tools:** forklifts, lifts, lift tables, trolleys. • **Plan routes well:** flat surfaces, threshold-free, sufficient space and turning circles. • **Keep routes clear;** prevent slipping (floor materials, cleanliness) and ensure good lighting.
Use of hand tools (e.g. screwing, grinding, drilling) 	• **Choose ergonomic tools** (weight, vibration damping, handle design) and keep them maintained. • **Avoid working with your hands far from the body or above the shoulder level;** support your hands and arms if necessary. • As far as possible, **reduce tasks that require compressive force/gripping**.

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Ways to manage occupational hazards and risks

Removal of the issue causing a hazard or risk

The primary means is to entirely remove harmful factors or risks from the work or process. This will ensure that exposure does not occur at all. Removal is often most effective at the planning stage of the work, process or production.

+

Replacement of the factor causing the hazard or risk

If the factor causing the hazard or risk cannot be entirely removed, it should be replaced by a less harmful alternative. The aim is to minimise the intensity, duration or detrimental health impacts of exposure. When replacing work methods, make sure that any new solution does not present a new or equally harmful risk. Examples: use of a less allergenic chemical, purchase of a quieter machine, vibration-damping device.

+

Technical management methods

Technical solutions can be used to prevent or reduce exposure already at the source of the danger before it reaches the employee. Such solutions do not require continuous active input of a user and are, therefore, often reliable. Examples: noise and vibration insulation, local exhaust ventilation and air exchange.

+

Administrative measures and guidance

Administrative measures guide work and limit exposure, but do not eliminate risk factors. They complement other preventive measures. Examples: work rotation and breaks, guidance, induction and training on healthy work practices that support work ability.

+

Personal protective equipment

Personal protective equipment is the last means of protection when exposure cannot otherwise be adequately prevented. In terms of personal protective equipment, it is important to ensure that sufficient equipment is available for all users and that it is tailored to the specific requirements of the work. Examples include hearing protection in noise exposure, respiratory protection for dust and chemicals, protective gloves, and eye and face protection.

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Solutions to promote smooth workflow and work recovery

What enhances smooth workflow?

- **Clear work objectives and priorities**
- **Clarification** of task distribution and responsibilities
- **Timely and smooth flow** of information
- **Appropriate and functional tools**
- **Removal** of harmful disruptions
- **Intervention** by supervisors in problem situations

What promotes work recovery?

- Reasonable **work-related strain**
- **Variation** between heavy and less demanding tasks
- **Sufficient breaks** from and during work
- **Possibility to influence** breaks, working hours and shifts
- **Encouragement and exchange of information** about recovery during the workday (e.g., break exercise, maintaining body fitness)
- **Information and training** for recovery during time off (e.g., benefits of physical activity, support for lifestyle changes)

Ways to strengthen social capital in contact and hybrid work

1 Build a shared story and vision

- **Highlight ways** in which the work objectives, professional competence and everyday work unite the members of the work community.
- **Demonstrate** how each employee's input is reflected in the final work output.
- **Create and foster traditions** (e.g., celebrate successes and other team moments).
- **Show the impact of cooperation:** results, customer feedback and examples of what can be achieved together.

2 Create space and structures for daily interaction

- **Decide with the team** which situations require in-person meetings and when remote meetings are sufficient.
- **Ensure regular meetings** (e.g., weekly meetings).
- **Opt for face-to-face working,** especially in tasks where ideas are created and planned in collaboration.
- **Organise the work environment and meeting practices** to support interaction in remote work and in-person meetings.

3 Clearly specify roles, responsibilities and interfaces

- **Describe** how roles are interconnected and where responsibilities meet or overlap.
- **Jointly review key areas of interface:** at which point does the work shift from one person to another and what does it require from all parties involved.
- **Set aside regular time** for interface discussions, focusing on what works well and where further clarification is needed
- **Highlight the interdependencies of the work:** how success in one work phase supports the next.

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Solutions for managing a diverse work community

1

A safe work atmosphere facilitates cooperation

Psychological safety is a prerequisite for smooth cooperation in all work communities. When the atmosphere is safe, employees dare to express their thoughts, incomplete ideas and new perspectives, even if they are communicating in a language that is not their native language.

Psychological safety can be strengthened by, among other things:

- an open and respectful **culture of discussion**
- providing space for **learning** and the **sharing** of unpolished ideas
- establishing **shared practiced** to deal with errors
- ensuring **fair and equitable** treatment
- actively listening and keeping **employees involved**
- addressing any **inappropriate behaviour** in a consistent manner

2

Daily work and common goals unite people regardless of background

Common objectives, work content and shared competence in a specific industry create a sense of community, regardless of the background of the employees. These are connecting factors for diverse work communities.

Supervisors play a key role in strengthening this common identity. They can:

- **highlight** the team's values and practices
- **create** opportunities for encounters and shared experiences
- **emphasise** the objectives, shared competence and results of cooperation
- **demonstrate** constructive and respectful interaction approaches

3

Cultural and language awareness creates mutual understanding

Cultural and linguistic awareness refers to an understanding of the impact that different backgrounds and practices have on work. This also includes a critical examination of our own assumptions and mental models.

Key practices include:

- recognition of the **importance of language** as part of everyday cooperation
- setting of **clear, commonly agreed policies for meeting languages**, guidelines, feedback and everyday communication
- **removal of barriers to participation** (clear guidelines, illustrative materials, accessible systems)
- **use of easy-to-read language** and translations as needed

4

Training of supervisors and employees in diverse team leadership and cooperation

Training is most effective when it meets the real needs of the workplace. It can be used to strengthen skills and ensure that diversity becomes a resource for functional cooperation in everyday working life.

The objectives of the training can be, for example:

- to raise **awareness of the impact** that language and culture have on cooperation
- **to strengthen intercultural interaction skills**
- **to develop** practical language skills and professional terminology

5

Promotion of diversity as part of the strategy

Sustainable change comes from everyday actions and long-term development. Diversity management requires clear goals and structures so that the responsibility for the work does not just fall on specific individuals.

The promotion of strategic diversity requires:

- **clear diversity objectives**
- **the inclusion** of the objectives in the strategy and management system
- **examination** of processes and practices from the perspective of equality
- **regular monitoring** of the atmosphere and level of participation, e.g., by means of a personnel survey

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Prevention of work ability risks caused by an accelerated work pace

Manage the pace of work consciously and be ready to continuously adjust it
Do not automatically convert the speed of efficiency or AI into additional tasks or tighter schedules. Decide separately where speed improves the work and where it increases the risk of error and work-related strain. Make adjustments on time, not after problems have already occurred.

Determine when the work is good enough
Clarify the level of work that is adequate for a particular task and situation. Set expectations, priorities and limits – continuous optimisation and 'just a bit more' mindset allows the work pace to get out of control.

Establish a work rhythm that allows for recovery and breaks
Ensure that the workday has sufficient microbreaks and time to think, also when the work is physically light but requires attentiveness. Recovery should also take place during work, not just during breaks or between shifts.

Set limits for the amount of data and processing requirements
Define how many alerts, suggestions and data an employee is expected to monitor and respond to. Not everything that is possible needs and should be addressed.

Clarify the division of responsibilities between employee and system
Concretely show in which situations technology should be used to support work and where a person is need for consideration, prioritisation and decision-making. An unclear division of responsibilities increases mental strain and the risk of errors.

Safeguard the meaningfulness of the work and relevant tasks
Identify tasks that increase the sense of control, the use of skills and the meaningfulness of the work. Utilise technology as support, but do not deprive a person of all the meaningful and mentally challenging aspects of the work.

Jointly discuss how everyone experiences the work pace and work-related strain
Create regular moments for the team to discuss the pace of the work, the work-related strain and the sufficiency of recovery time and methods. An accelerated work pace quickly becomes normalised unless it is recognised and discussed.

Monitor the signs of work-related strain and address it early on
Pay attention to losses of concentration, errors, impatience and signs of fatigue. Check the amount of work and the working methods regularly rather than waiting until the workload has built up and is causing issues.

Elo's Pulse Survey provides a tool for assessing psychosocial workload and identifying risk groups.

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Methods to improve learning management

Learning management in the everyday work environment

- **Focus learning on what is essential**
  Select the focal points for development and learning based on the areas in which disruptions, work-related strain and instability are currently weakening smooth workflow. Not everything can be developed at the same time.
- **Include learning in everyday critical moments**
  Take advantage of anomalies, disruptions, maintenance, shift changes and observations as opportunities to learn. Focus on real work situations rather than organising separate training sessions.
- **Build psychological safety through everyday responses**
  Ensure that there is space at work to ask questions, make mistakes and vocalise insecurities. A calm, appreciative and curious response from a supervisor is more impactful than established principles.
- **Set the pace and work-related strain for learning**
  Assess realistically the number of new things the team can take on at a time. Allow time for new ways of working to become established before making further changes.
- **Express the importance of tacit knowledge in daily actions**
  Support the transfer of competence from more experienced employees to new employees. Encourage employees to explain why things are done in a certain way, not just how they are done.
- **Direct learning through questions**
  Take a moment during situations to ask what happened, what was surprising, what we learned and what we would do differently next time. Leading with questions guides learning more effectively than leading with answers.
- **Utilise anomalies and data to support learning**
  Use disruption situations and information generated by systems to gain a common understanding rather than simply relying on monitoring or reporting.
- **Make learning concrete through changes to activities**
  Show first how the things learned have paid off: what was decided to do differently and how it is reflected in smooth workflow, safety and work-related strain. Make learning as important as production and safety.

Tips for recovering from demanding knowledge work

- **Schedule the work in a way that allows the brain to rest**
  Alternate the tasks between those requiring concentration and lighter, more routine tasks. The brain cannot recover if it is in a constant state of readiness, even if the work feels controlled or is physically light.
- **Take restorative breaks throughout the workday, not just during official break times**
  Take advantage of microbreaks, movement and pauses for thought throughout the day. Stepping away from the work for short periods of time support recovery more effectively than the period of rest waiting at the end of the workday.
- **Reduce interruptions and avoid taking on simultaneous tasks**
  Just focus on handling one thing at a time whenever possible. Limit alerts, notifications and the amount of information so that the brain does not have to constantly switch from one task to another.
- **Allow time for reflection and validate the experience of completing something**
  There is no need to react immediately to everything. When work requires assessment and decision-making, taking some time will help to prevent errors and stress. Also, endeavour to consciously recognise each individual task you complete – always feeling that the work is incomplete puts unnecessary strain on the brain.
- **Recognise the signs of stress and support recovery during and outside of work**
  Loss of concentration, irritability and memory blocks are often signs of brain overload. Adequate sleep, restful leisure time and restorative activities are essential when work requires constant learning and attentiveness.

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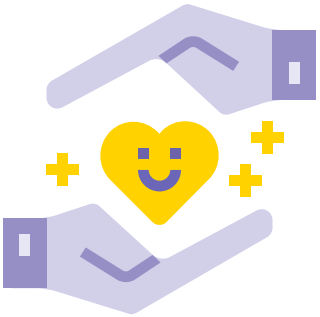
Methods to reinforce psychological safety

Supervisors and HR

1. **Highlight** the importance of psychological safety as part of the company's strategy and broader objectives, such as the strengthening of innovation, learning and wellbeing at work.
2. **Encourage** open and honest discussion.
3. **Talk** openly and acceptingly about failures.
4. **Encourage** creativity and the sharing of preliminary ideas.
5. **Ensure** fair treatment and that personnel are being treated according to the same guidelines and operating models.
6. **Emphasise** the need to say things out loud to enable learning from mistakes.
7. **Invite** everyone to participate and allow space for different viewpoints.
8. **Respond** to inappropriate behaviour consistently and in a timely manner.
9. **Establish** clear expectations and common operating models for maintaining psychological safety.
10. **Act as a role model.**

Methods for the whole work community

1. **Listen to** and respect the opinions of others.
2. **Be present and interested** in others' thoughts, also in remote meetings.
3. **Ask for feedback** on your own work and encourage others.
4. **Have a positive attitude** when others are presenting work-related ideas and needs for development.
5. **Show appreciation** for others' work.



> *"Psychological safety is a key foundation for work ability and resilience in the manufacturing sector."*

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Early support model and discussion

Concrete ways to safeguard against a culture of silence

Shift work

- **Establish** routine moments for talking during shift changes and as part of the everyday rhythm of the workplace.
- **Use** common written or digital channels to share observations with one another.
- **Reinforce** the feeling that issues can also be raised afterwards.
- **Remember** to return to issues that were raised in the past and give an update on the progress.

Large number of subordinates

- **Take advantage** of teamwork and the observations of experienced employees.
- **Support discussion** in small groups, not just between two people.
- **Use repetitive, simple questions** to ask about smoothness of workflow and the work-related strain.
- **Strengthen** the view that speaking up is not a complaint but a means to improvements.

A common understanding of operating models

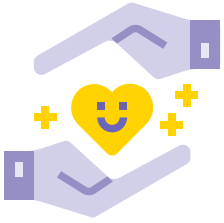
- **Review** the operating models using concrete examples.
- **State out loud** when, how and why things will be discussed.
- **Emphasise** the fact that raising issues early on is a form of support rather than a disciplinary action.
- **Revert** back to the operating models on a regular basis.

Opposition: employee vs. employer

- **Highlight common goals**: functionality of work, safety and coping at work.
- **Keep** conversations focused on work issues, not on people.
- **Show** through actions that discussion leads to change.
- **Avoid** using language that suggests guilt or creates opposition.

Uncertainty about what can be discussed

- **Make sure** everyone knows the difference between personal health information and work ability.
- **Focus** on how things impact the work and smooth workflow.
- **Commend** supervisors and personnel for appropriate verbalisations.
- **State** clearly when the input of occupational health care is required.



Open dialogue is a proactive measure that contributes to work ability

Establishing a culture in which talking and discussion is the norm should not be a separate HR project. It is a key aspect of smooth workflow, safety and sustaining work ability. When issues are raised in a timely manner, employees know what they can say and how to say it, and supervisors act and react consistently. This prevents any challenges associated with work ability from escalating. If a supervisor or anyone is questioning whether an issue should be discussed, the answer will always be YES.

You can explore Elo's early support tools in our online learning environment, Elokanava.

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Sources

Reading guide concerning sources

For the purposes of this report, when the reference number is within a sentence, the reference only refers to the portion of the text preceding the specific reference number in question. If the reference number comes after the full stop at the end of a sentence, the source reference applies to the whole paragraph or to the sentences from the previous to the current reference number.

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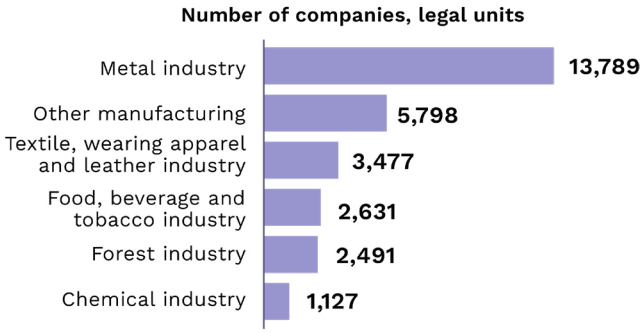
Stasitics and graphs

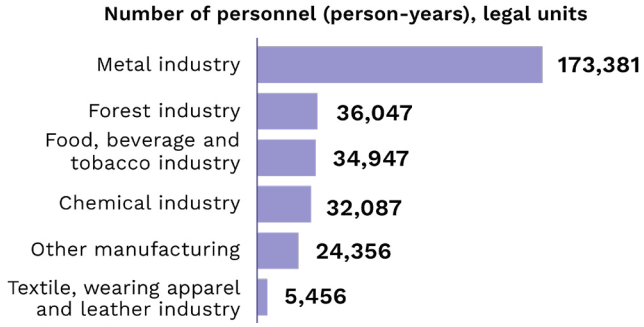
The metal industry is the largest industry in the manufacturing sector in terms of the number of companies.

Source: Statistics Finland, Structural business and financial statement statistics (2024)



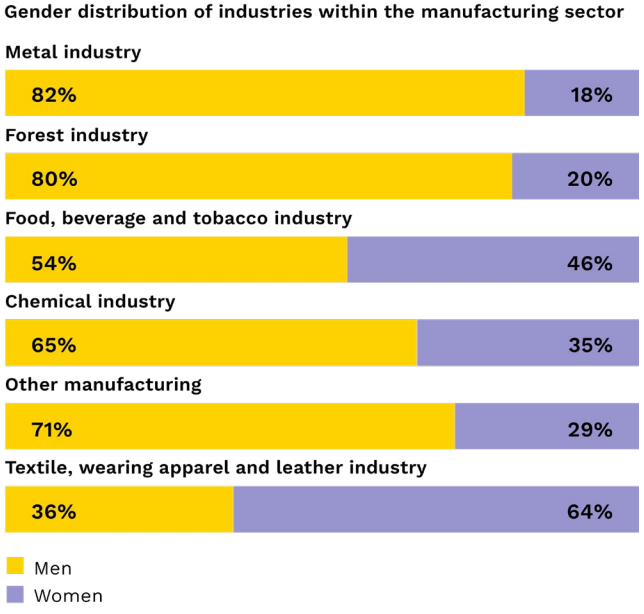
The metal industry is the largest employer within the manufacturing sector.

Source: Statistics Finland, Structural business and financial statement statistics (2024)



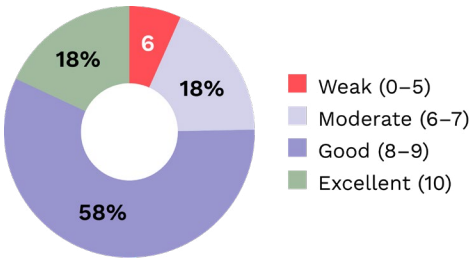
Gender distribution varies between industries within the manufacturing sector.

Source: Statistics Finland, Employment statistics (2023)



More than half of the employees in the manufacturing sector view their work ability as good (scale 0–10). On average, the perceived work ability has remained the same between 2022–2025.

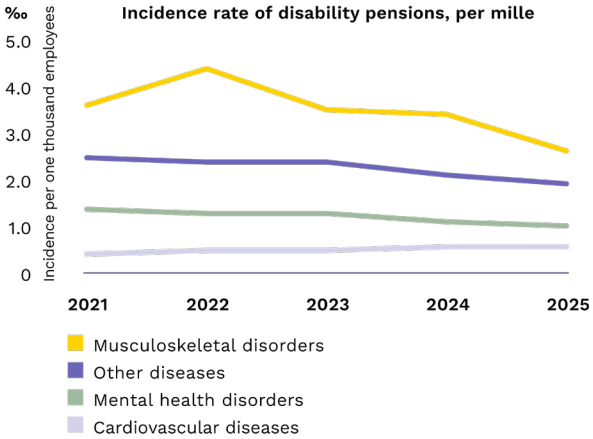
Source: Elo's Work community survey* (2022–2025)



Average perceived work ability in the manufacturing sector 2022–2025 (scale 0–10)

According to Elo's data, the leading cause of work disability in the manufacturing sector during 2021–2025 was musculoskeletal disorders. There has been no significant change in the incidence of disability pensions caused by mental health issues.

Source: Elo's data (2021–2025)



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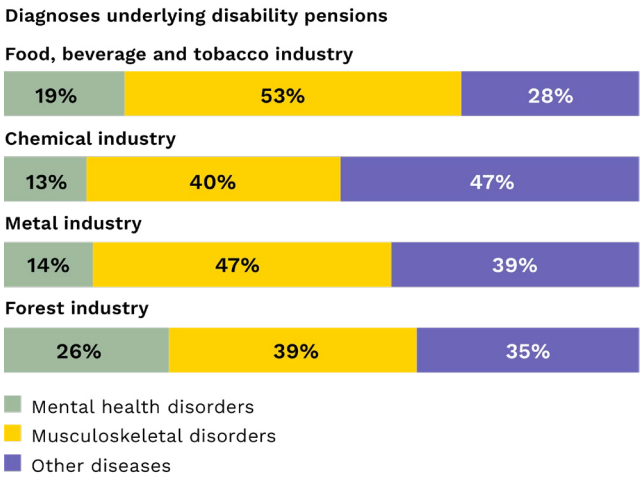
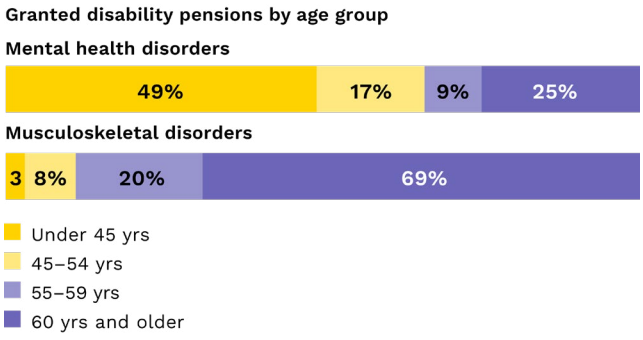
According to Elo's data, there are only minor differences between manufacturing industries in the diagnoses underlying disability pensions. In the chemical industry, a larger share of disability pensions are granted on the basis of other disorders.

Source: Elo's data (2021–2025)



For disability pensions granted between 2023–2025, mental health disorders have most often been the underlying diagnosis in younger age groups, whereas musculoskeletal disorders are more common among older age groups.

Source: Elo's data (2021–2025)



Rehabilitation initiated at an early stage increases the likelihood of success

In the manufacturing sector, 2/3 of Elo's vocational rehabilitation cases were successful at the end of the rehabilitation *

* Rehabilitation periods for musculoskeletal diseases and mental health disorders in the manufacturing sector during 2023–2025

The musculoskeletal diagnoses are relatively evenly distributed across different parts of the body and diagnostic subgroups. Lower limb diagnoses are more prevalent in the forest industry.

Source: Elo's Data (2020–2025)

Metal industry

18% Upper limb diagnoses	**38%** Back diseases
26% Lower limb diagnoses	**18%** Other musculoskeletal diagnoses

Chemical industry

9% Upper limb diagnoses	**42%** Back diseases
34% Lower limb diagnoses	**15%** Other musculoskeletal diagnoses

Forest industry

18% Upper limb diagnoses	**16%** Back diseases
45% Lower limb diagnoses	**21%** Other musculoskeletal diagnoses

Food, beverage and tobacco industry

14% Upper limb diagnoses	**34%** Back diseases
26% Lower limb diagnoses	**26%** Other musculoskeletal diagnoses

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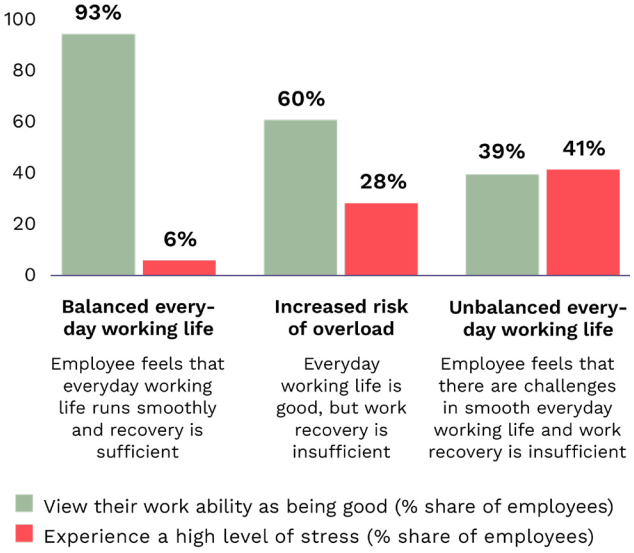
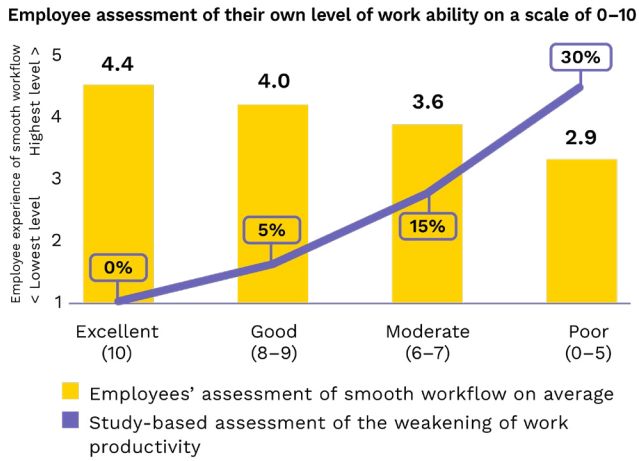
Declining work recovery is an early sign of overload and risks to work ability. The risks increase when any aspects of smooth workflow are lacking.

Source: Elo's Work community survey, manufacturing sector (2025)



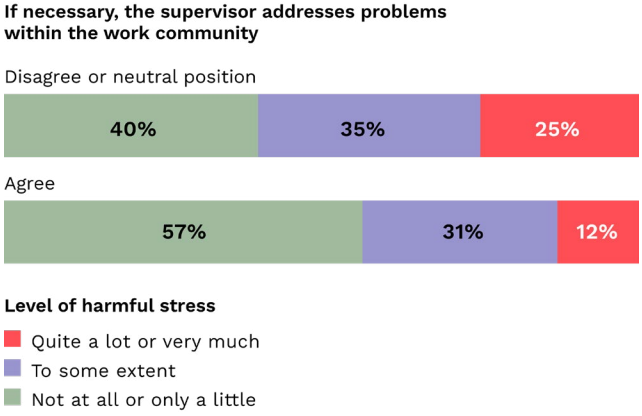
Declining work ability and smooth workflow are reflected in work productivity. According to studies34, a perceived low level of work ability can reduce work ability by as much as one third.

Source: Elo's Work community survey, manufacturing sector (2025)



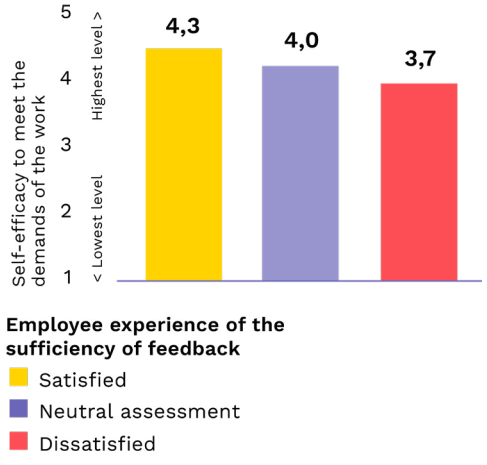
A supervisor's involvement in addressing problems in the work community is reflected in employees' level of work ability. The number of those who experience a high level of stress is reduced by half when a supervisor is perceived to be actively intervening in problems within the work community.

Source: Elo's Work community survey, manufacturing sector (2025)



Self-efficacy to meet the demands of the work is stronger when the employee receives feedback on their work.

Source: Elo's Work community survey, manufacturing sector (2025)



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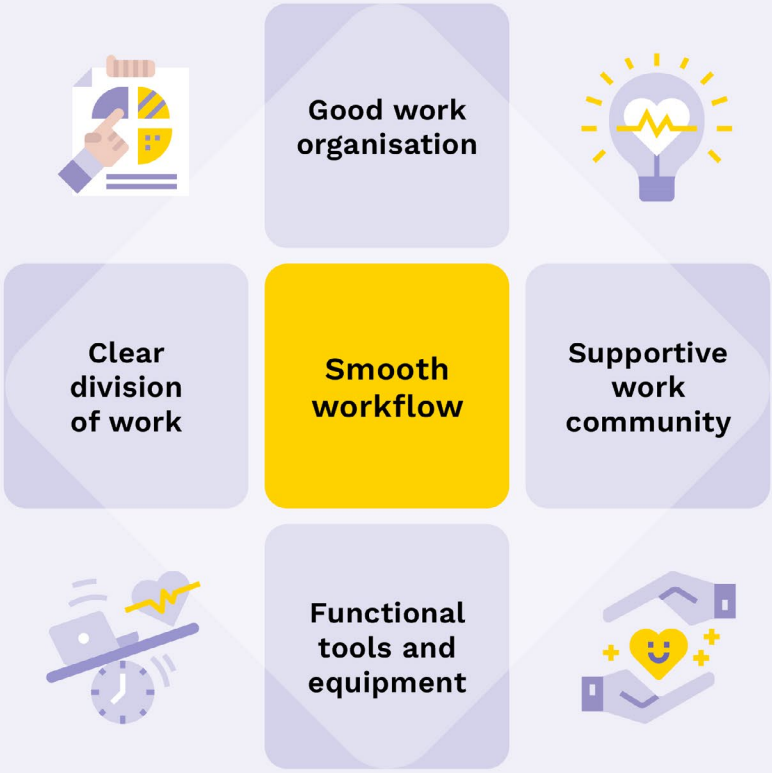
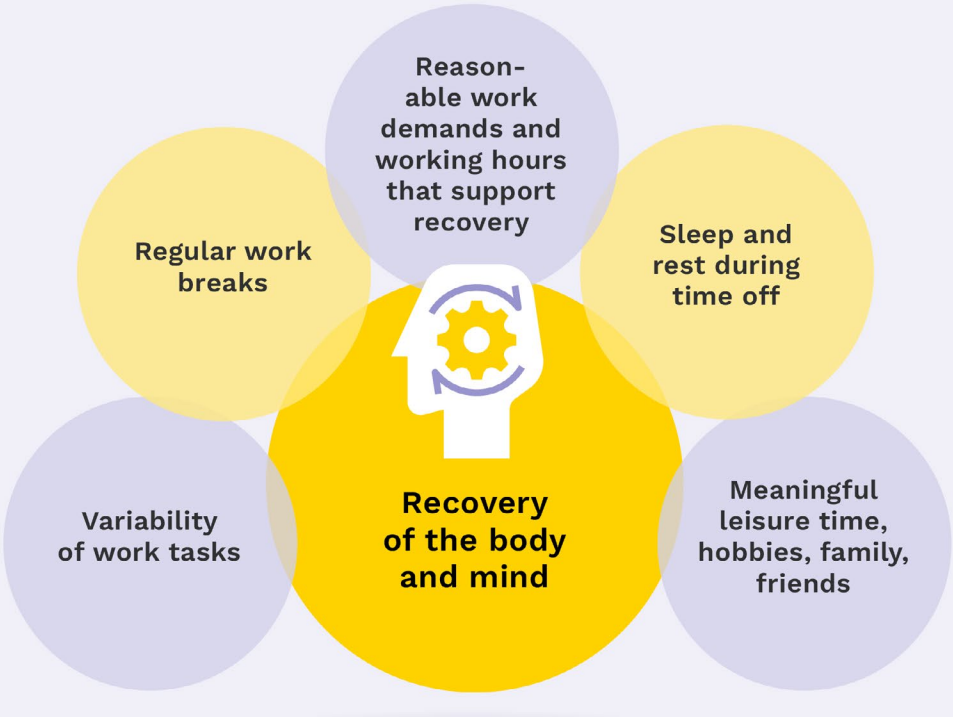
What are the building blocks of smooth workflow?



What promotes work recovery?



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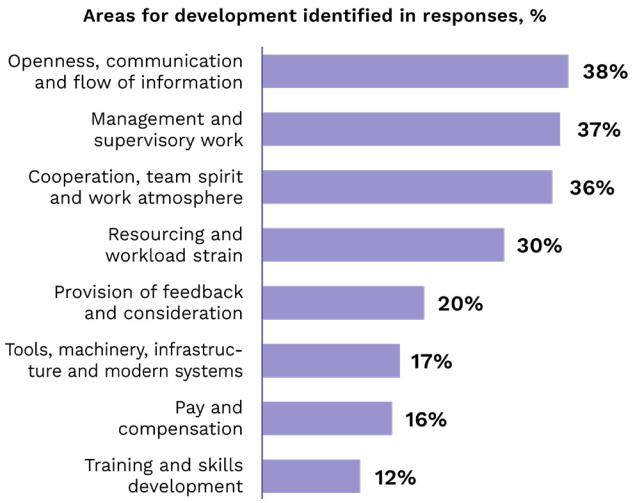
Employees in the manufacturing sector see the functioning of the work community and leadership as the most important areas to develop in the workplace.

Solurce: Elo's Work community survey, manufacturing sector (2023–2025)



In manufacturing companies with stronger eNPS results, employees are more positive about their opportunities to influence their work, the appreciation of their contributions, and their chances to develop their competence.

Source: Elo's Work community survey, manufacturing sector (2024–2025)

The social capital of the work community is reflected in the employees' current level of work ability and expectations for the future.

Source: Elo's Work community survey, manufacturing sector (2025)