ERGONOMICS BEST PRACTICE SEMINAR: CORK

#EUHealthyWorkplaces

19th October 2022

European Agency for Safety and Health at Work

Healthy Workplaces

Strategies and Interventions on managing Ergonomic Risk to improve Musculoskeletal Health

Frank Power, Senior Ergonomist (Inspector)
H.S.A.

European Agency for Safety and Health at Work

Healthy Workplaces

What we will cover

- Introduction to Ergonomics and it how it relates to the workplace and its legal context
- Where Ergonomics fits in the Health and Safety Authority Strategy?
- Health and Safety Authority Interventions on managing Ergonomic Risk
- What does an Ergonomic Inspection involve? Examples of key activities
- Key Elements in managing ergonomic risk in the workplace

Definition of Ergonomics

“Fitting the task to the human”(Grandjean)

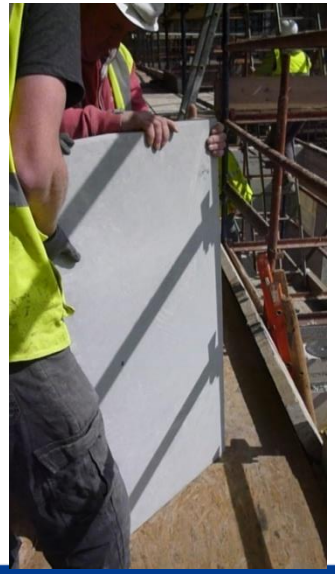
Observing how physical work activities (e.g. lifting/carrying a load, moving a patient, repetitive upper body work) are carried out and how it impacts on the individual in terms of their health and performance

Quantifying risk exposures using evidence based methods or tools

Developing better ways of working so that people can work within their capabilities and protect their musculoskeletal health and maximise performance

Example of ergonomic risk exposure

- Manual lifting of 90kg stone cladding units on site
- Very High risk exposure to physical ergonomic risks including excessive force and sustained awkward postures

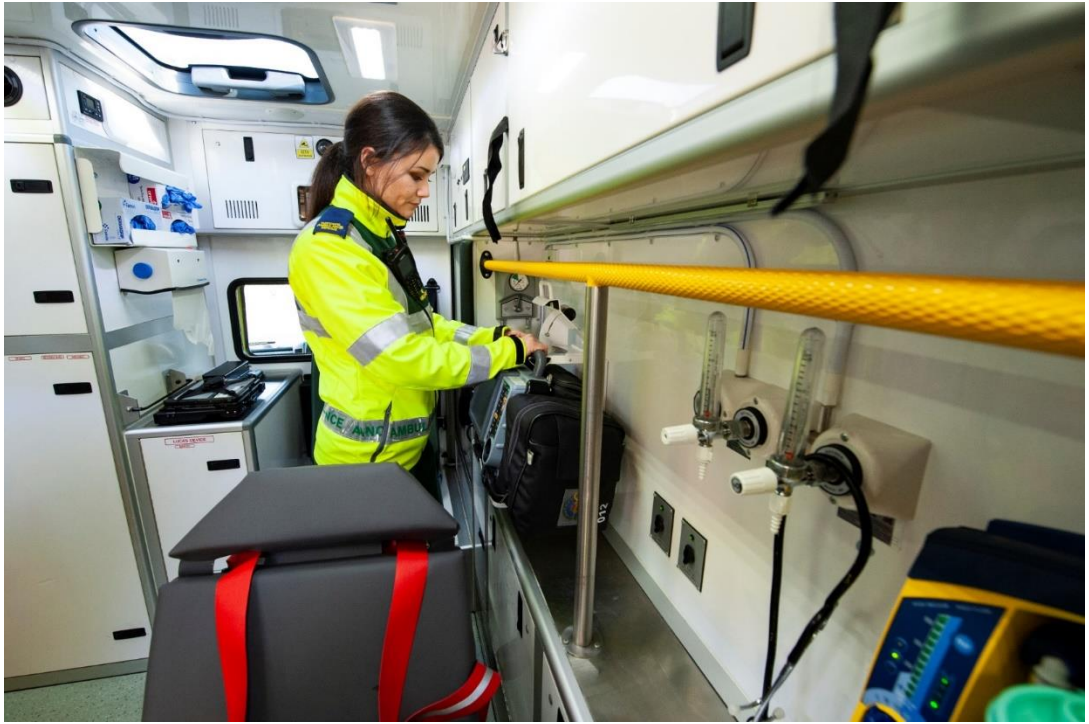


Solution

Engineering system to avoid lifting Stone Cladding Unit

Example of ergonomic risk exposure

Solution



Ergonomics and its legal context

- The 2005 Safety, Health and Welfare at Work Act and the Hierarchy of Controls
- The Manual Handling of Loads Regulation
- The Display Screen Equipment Regulation


Risk Management
Avoidance of Risk
Prevention of risk to health at work
Adapt work to the Individual
Use appropriate means to avoid or reduce risk
Evaluate Unavoidable Risk

Where Ergonomics fits in the Health and Safety Authority Strategy

An Increased focus on Risk Management of occupational health risks in the workplace.

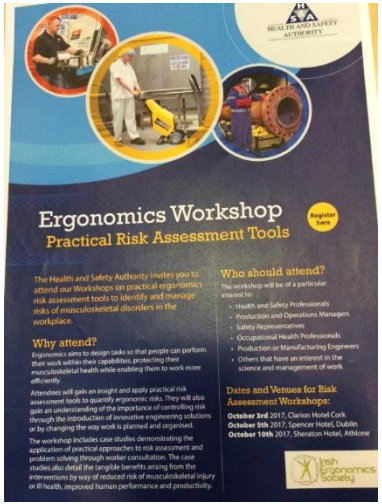
- Increase the knowledge and understanding of occupational health risks (e.g. Musculoskeletal injury/illnesses)
- Raise awareness of the value of controlling occupational health risks and promoting positive health and well-being
- Ensure legal compliance through proportionate enforcement

Health and Safety Authority Interventions on managing Ergonomic Risk

- Develop Inspector Competency in addressing ergonomic risk during inspection
- Ergonomic Risk Assessment Workshops/Webinars for Industry
- Ergonomic Risk Assessment Guidance
- Case Studies of Good Practice
- Proportionate inspection and enforcement to address manual handling risk at workplace level

Ergonomic Risk Assessment Workshops/Webinars for Industry

- **Raise awareness amongst stakeholders on the need to manage ergonomic risks at workplace level: Practical Ergonomic Risk Assessment Workshops**

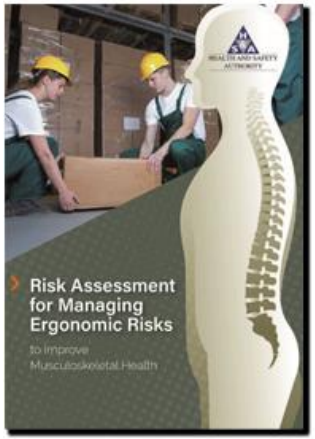


MAC, RAPP, ART

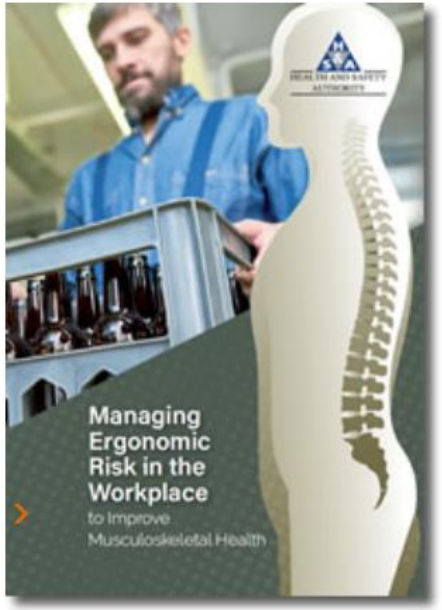

HSE
Manual handling assessment charts (the MAC tool)

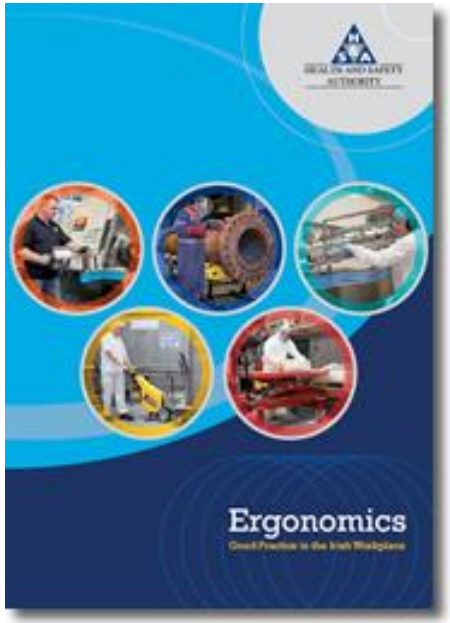

HSE
Risk assessment of pushing and pulling (RAPP) tool

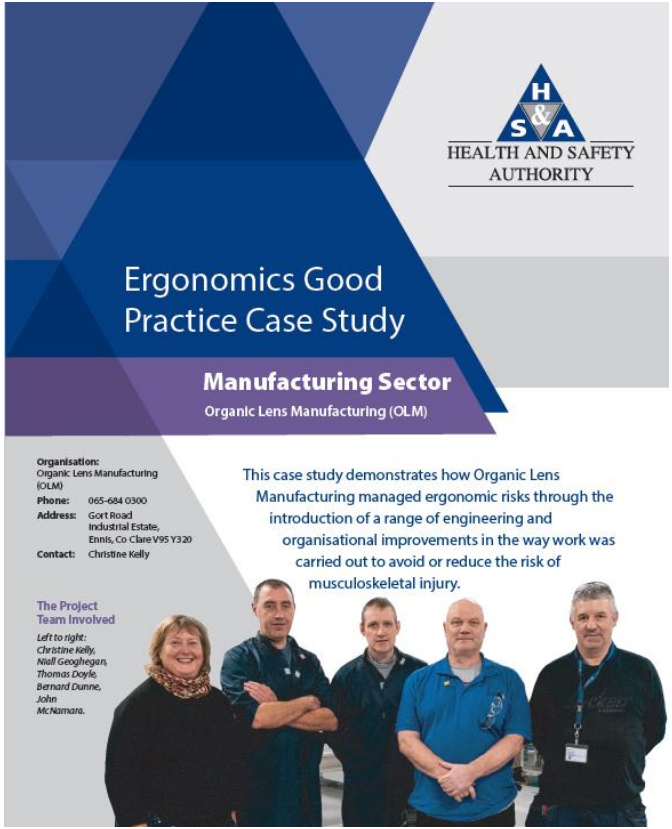

HSE
Assessment of repetitive tasks of the upper limbs (the ART tool)

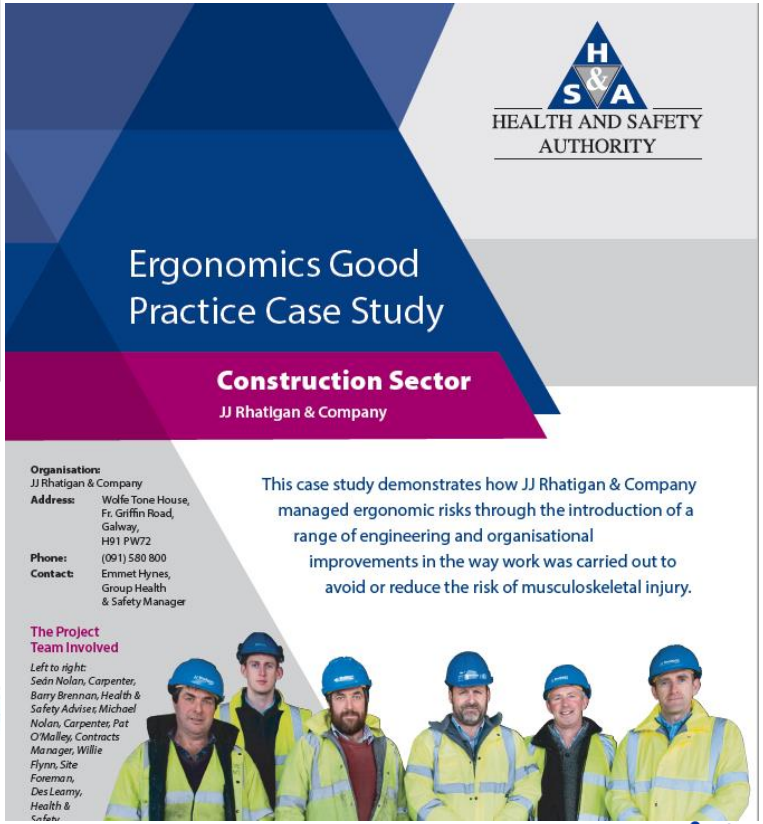

Risk Assessment for Managing Ergonomic Risks
to Improve Musculoskeletal Health

Ergonomic Risk Assessment Guidance






HEALTH AND SAFETY AUTHORITY
Ergonomics Good Practice Case Study
Manufacturing Sector
Organic Lens Manufacturing (OLM)
Organisation: Organic Lens Manufacturing (OLM)
Phone: 065-684 0300
Address: Gort Road Industrial Estate, Ennis, Co Clare V95 Y320
Contact: Christine Kelly
This case study demonstrates how Organic Lens Manufacturing managed ergonomic risks through the introduction of a range of engineering and organisational improvements in the way work was carried out to avoid or reduce the risk of musculoskeletal injury.
The Project Team Involved
Left to right: Christine Kelly, Niall Geoghegan, Thomas Doyle, Bernard Dunne, John McNamara.


HEALTH AND SAFETY AUTHORITY
Ergonomics Good Practice Case Study
Construction Sector
JJ Rhatigan & Company
Organisation: JJ Rhatigan & Company
Address: Wolfe Tone House, Fr. Griffin Road, Galway, H91 PW72
Phone: (091) 580 800
Contact: Emmet Hynes, Group Health & Safety Manager
This case study demonstrates how JJ Rhatigan & Company managed ergonomic risks through the introduction of a range of engineering and organisational improvements in the way work was carried out to avoid or reduce the risk of musculoskeletal injury.
The Project Team Involved
Left to right: Seán Nolan, Carpenter, Barry Brennan, Health & Safety Advisor, Michael Nolan, Carpenter, Pat O'Malley, Contracts Manager, Willie Flynn, Site Foreman, Des Leamy, Health &

HSA

An tÚdarás Sláinte agus Sábháilteachta
Health and Safety Authority

Ergonomics Good Practice Case Study

Manufacturing Sector
Iverk Produce

Organisation:
Iverk Produce

Address: Ardclone Road, Piltown, Co. Kilkenny

Phone: (051) 643 733

Contact: Jason Dunphy

This case study demonstrates how Iverk Produce managed ergonomic risks through the introduction of a range of engineering and organisational improvements in the way work was carried out to avoid or reduce the risk of musculoskeletal injury.

Pictured (left to right): Carol Madden (Inspector), Health and Safety Authority, Jason Dunphy (Supply Chain co-ordinator and Health and Safety Committee member), Iverk Produce, Frank Power (Senior Ergonomist, Inspector), Health and Safety Authority.

- Inspection and enforcement to address manual handling risk at workplace level

What does an Ergonomic Inspection involve? Examples of key activities

- Introduction (agenda for inspection, key contacts, overview of operations at workplace (e.g. flow process), areas where there is human interaction in the process, examples of materials used on site)
- Review of Documentation (e.g. policies, manual handling risk assessments, accident records review, training records,)
- Tour of Site involving observation and consultation
- Ongoing communication throughout inspection
- Wrap up and follow up (e.g. verbal advice/Report of Inspection/notice)

Key Elements in managing ergonomic risk in the workplace: Manual Handling Risk Management Policy (example of information in policy)

- The main activities that take place in the workplace and highlighting tasks where manual handling is a core part of task completion
- An acknowledgement that there is a manual handling of loads regulation and a summary of the key requirements
- An explanation of how the organisation will meet the requirements set out in the regulation (e.g. task-specific risk assessments, implementation of measures to avoid or reduce risk)
- An explanation that consultation with staff will take place during the risk assessment process
- An explanation that there will be a monitoring and review process in place to flag the need for new risk assessments where required

Key Elements in managing ergonomic risk in the workplace: Manual Handling Task specific Risk Assessment

- Complete a review of activities onsite and identify work activities where manual handling is a core **activity**

Key Elements in managing ergonomic risk in the workplace: Manual Handling risk Assessment

- Carry out a manual handling risk assessment:

Step 1	Task description	The metal billets have to be transferred manually from a table into a CNC machine. The employee takes the billet from the table and carries it to the machine and then reaches in to place the billet in position in the machine.  

Key Elements in managing ergonomic risk in the workplace: Manual Handling risk Assessment

- **Carry out a manual handling risk assessment:**

Step 2	Collect technical information	As this is a manual handling task, the appropriate risk assessment tool to use is the MAC tool. There are changes in posture as the billet is transferred from the table to the CNC. The billet can weigh 20–130kg. The table is at waist height. The floor is clean and free of debris. There are no handles on the load and it is difficult to carry.

Key Elements in managing ergonomic risk in the workplace: Manual Handling risk Assessment

- **Carry out a manual handling risk assessment (Quantifying risk exposures (useful KPI):**

Step 3	Identify the risk factors using the relevant risk assessment tool and fill in the relevant score sheet	Complete the MAC tool score sheet for this task:

Insert the colour band and numerical score for each of the risk factors in the appropriate boxes below, with reference to your assessment using the tool

Risk Factors	Colour Band (G,A,R or P)			Numerical Score		
	Lift	Carry	Team	Lift	Carry	Team
Load weight and lift/carry frequency	P			10		
Hand distance form the lower back	R			6		
Vertical lift region	G			0		
Trunk twisting / sideways bending Asymmetrical trunk / load carrying	R			2		
Postural constraints	A			1		
Grip on load	R			2		
Floor surface	G			0		
Other environment factors	G			0		
Carry distance (carrying only)						
Obstacles en route (carrying on)						
Communication and co-ordination (team handling only)						
Other risk factors e.g. individual factors, psychosocial factor, etc.	TOTAL SCORE:			21		

There are a number of ergonomic risk factors with respect to this handling task. These include the load weight (billet weight up to 130kg), hand distance from the lower back (upper arms angled away from the body and trunk), trunk twisting and sideways bending when placing the billet into the CNC machine, and grip on load.

Key Elements in managing ergonomic risk in the workplace: Manual Handling risk Assessment

- **Carry out a manual handling risk assessment:**

Step 4	Identify the improvements to be put in place	High-risk and very high-risk ergonomic risk factors were identified in step 3. As a result, the employer consulted with the person who does the job and a number of other colleagues to identify an appropriate solution to avoid the handling of the billets. A custom-engineered billet loader was fixed to the floor at each CNC machine centre and all operators were trained to use it. 

Key Elements in managing ergonomic risk in the workplace: Manual Handling risk Assessment

- **Carry out a manual handling risk assessment:**

Step 5	Review the effectiveness of the improvements made	The new engineering intervention is very effective in that it has eliminated the ergonomic risk factors completely. The billet loader eliminates the manual lifting of the billet and can be operated with a neutral standing posture.

Key Elements in managing ergonomic risk in the workplace

- **Ensure that appropriate instruction is provided on any new risk reduction intervention put in place.**

Develop a safe system of work plan (SSWP) or a method statement as a useful way of demonstrating and documenting the interventions that have been put in place

Provide appropriate training so that workers understand what changes have been put in place

Ensure that the introduction of a new control measure to address ergonomic risk does not introduce any new risks

Conclusion

- Take account of the risk assessment process and importance of a clear policy or statement of intent
- Try to use the risk assessment tools
- Look at work activities in your workplace
- Talk to your staff
- Refer to our website and guidance www.hsa.ie
- Refer to EUOSHA Campaign Website healthy-workplaces.eu
- Register for our Ergonomic Risk Assessment Webinars: November 10th/15th 2022

Thank You

Iverk Produce – Manufacturing Sector

Ergonomic Good Practice Case Study

European Agency for Safety and Health at Work

Healthy Workplaces

About Iverk

- **Iverk Produce is a major supplier of fresh fruit and vegetables, serving the daily needs of wholesale and retail outlets across Ireland since 1980. Our modern facilities in Piltown, Co. Kilkenny include temperature-controlled storage and packing facilities.**
- **High quality standards are maintained throughout our production process while strict quality protocols ensure our food standards are fully compliant with Bord Bia, BRC and HACCP.**

Building a Team

- It was important for us to build an inclusive team
- Involved were senior management, middle management, operations operatives that were directly involved in the process

Risk Assessment and Problem Identification

- HSA UK MAC Tool risk assessment used
- Areas with manual handling in process assessed
- Two areas identified in our operations needing corrective action

Identified areas in the process

- **Finished product assembly from Pack house**

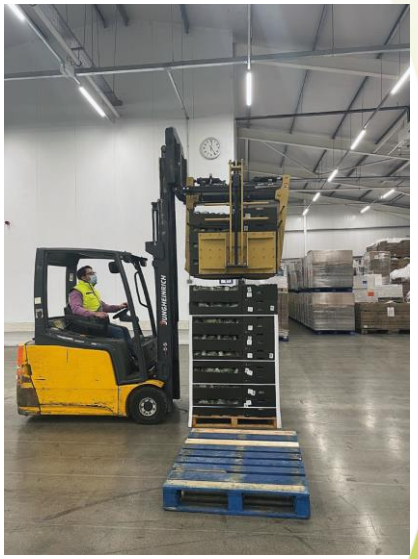
- Finished product assembly in warehouse

Finished Product Assembly from Pack house

- Concept & Design of Pneumatic Clamping Attachment that could engage and lift multiple plastic crates up to a weight of 70 kg with no manual handling issues
- The work process was improved by safer, faster and easier lifting of product
- The use of the crate gripper meant that the operator could avoid awkward twisting and repetitive heavy lifting
- The lifting mechanism had simple up and down controls for lifting and lowering
- System was ergonomic and easy to use

Finished Product Assembly in Warehouse

- The project team carried out research and procured a Tygard Claw attachment for the forklift, which was appropriate for de-stacking of high pallets
- This was hugely beneficial, eliminated unnecessary exposure to manual handling risk factors, and resulted in a quicker turnaround of loads for ass



Benefits of the Project

- Elimination of manual handling risk factors including over frequent or over prolonged physical effort
- Ongoing consultation with staff during the project to get a better understanding of the issues with the existing system of work and to ensure that they were comfortable with the new engineering solution
- Introduction of the new equipment is a preventive measure towards accidents or ill health reduction
- Increase efficiencies and greater investment in people in terms of their wellbeing and safety
- It created constructive discussions amongst the staff. This was positive as employees recognized that potential health risks were being addressed

IVERK PRODUCE

HEALTH AND SAFETY AUTHORITY

Thank you

Risk Assessments in the Workplace – HSA resources for Employers and Employees

Inspector: Brian Molloy

European Agency for Safety and Health at Work

Healthy Workplaces

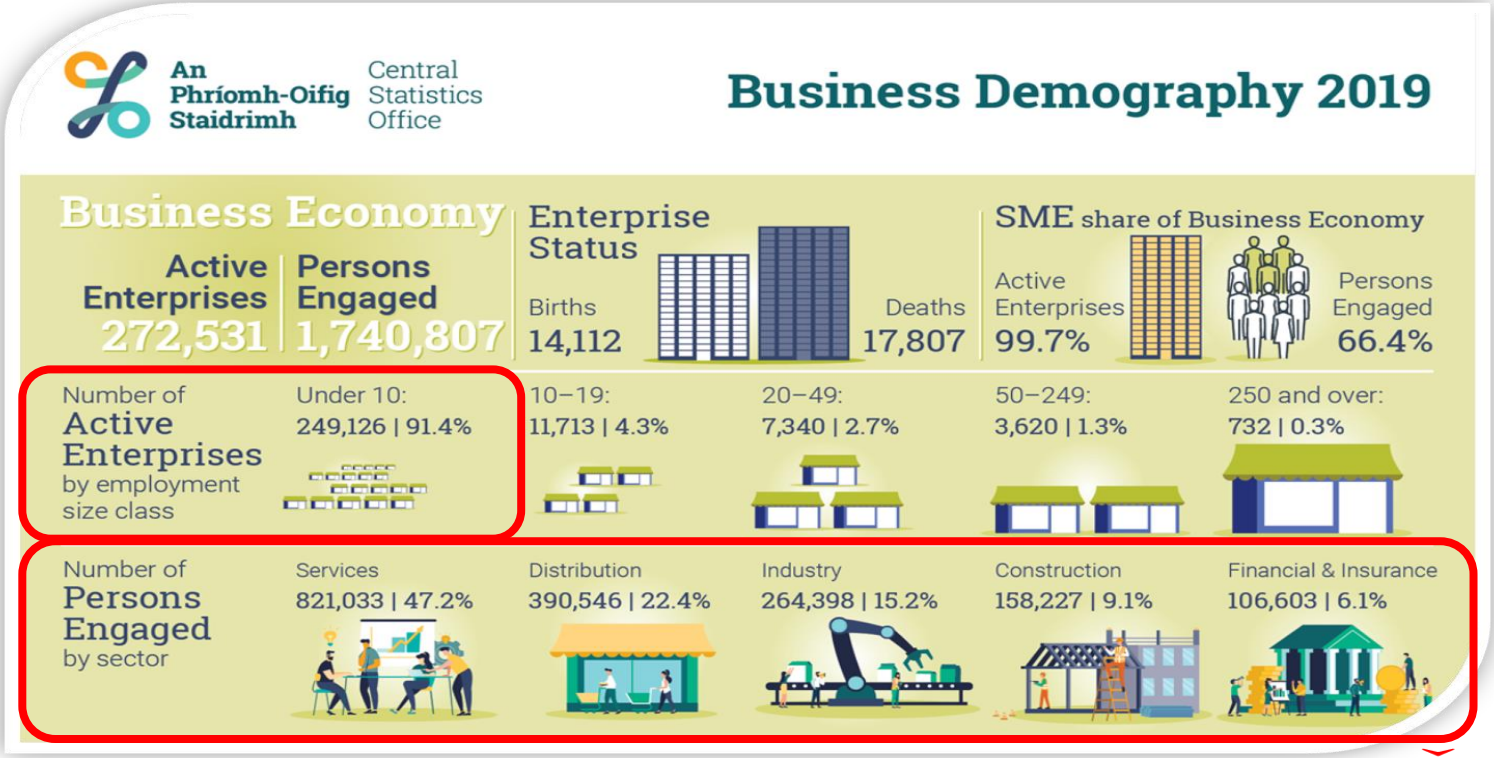
Introduction

- **Health and Safety Authority**
  - Strategy / Programme of Work
- **Enterprise & Employee Support Unit**
  - Focus Areas
    - BeSMART.ie
    - hsalearning.ie
    - Choose Safety
    - Consultation / Safety Representatives
    - COVID19
- **Framework Directive 89/391/EEC (1) on measures to encourage improvements in the safety and health of workers at work**

Enterprise and Employee Supports Goals

- Empower businesses to proactively engage in health and safety
- HSA Strategy and Programme of Work
- Safety statement and risk assessment for every business
- Education - Learn by doing
- Customer focused – what do they want and need?
- Consultation – employee engagement in health and safety
- Free
- Confidential
- Keep updated / new features

Small and Medium Enterprises



BeSMART.ie Statistics and Growth

2011 - 2021

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Healthy Workplaces

BeSMART.ie Timeline

2011
- BeSMART.ie Launched
- 30 Business Types
- Closed Source - Handson

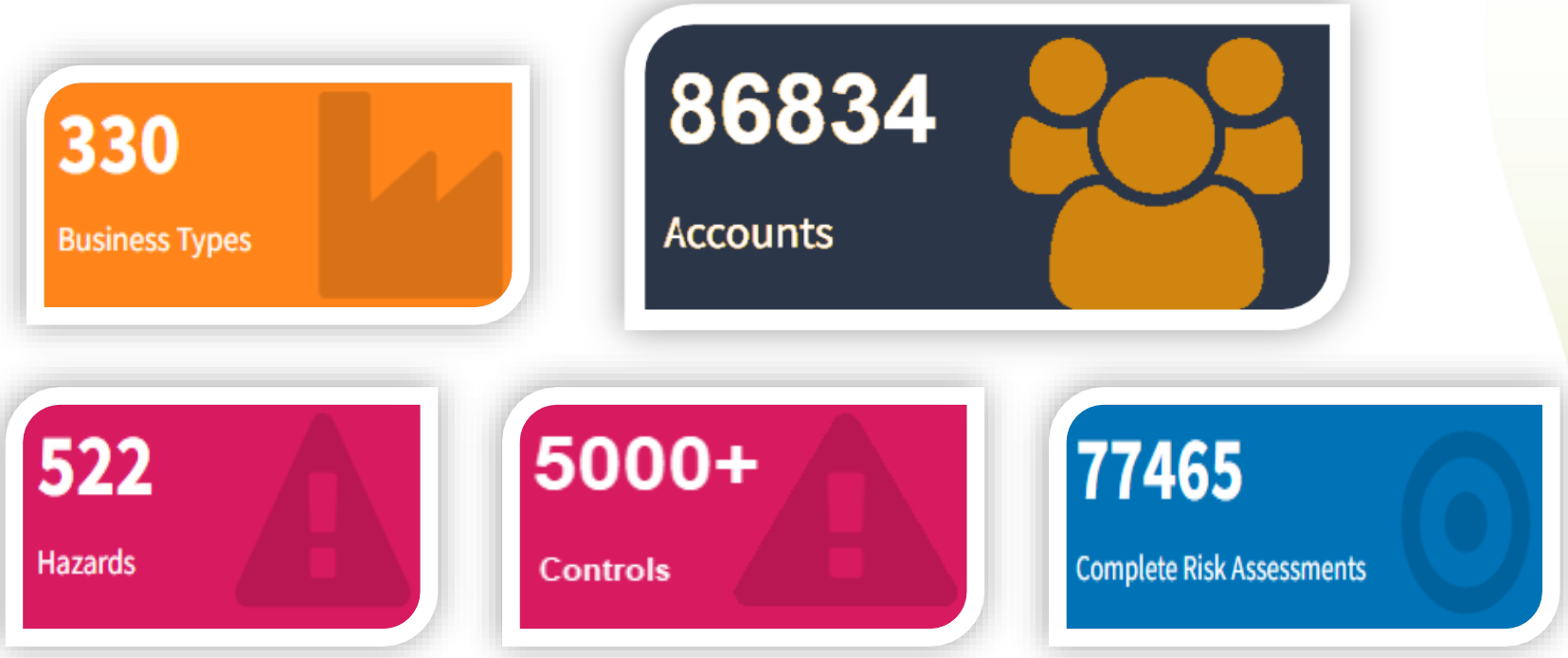
2013
- Redesign focus on customer user interface and experience
- Responsive Design

2015
- High risk sectors added:
  - Construction
  - Agribusiness

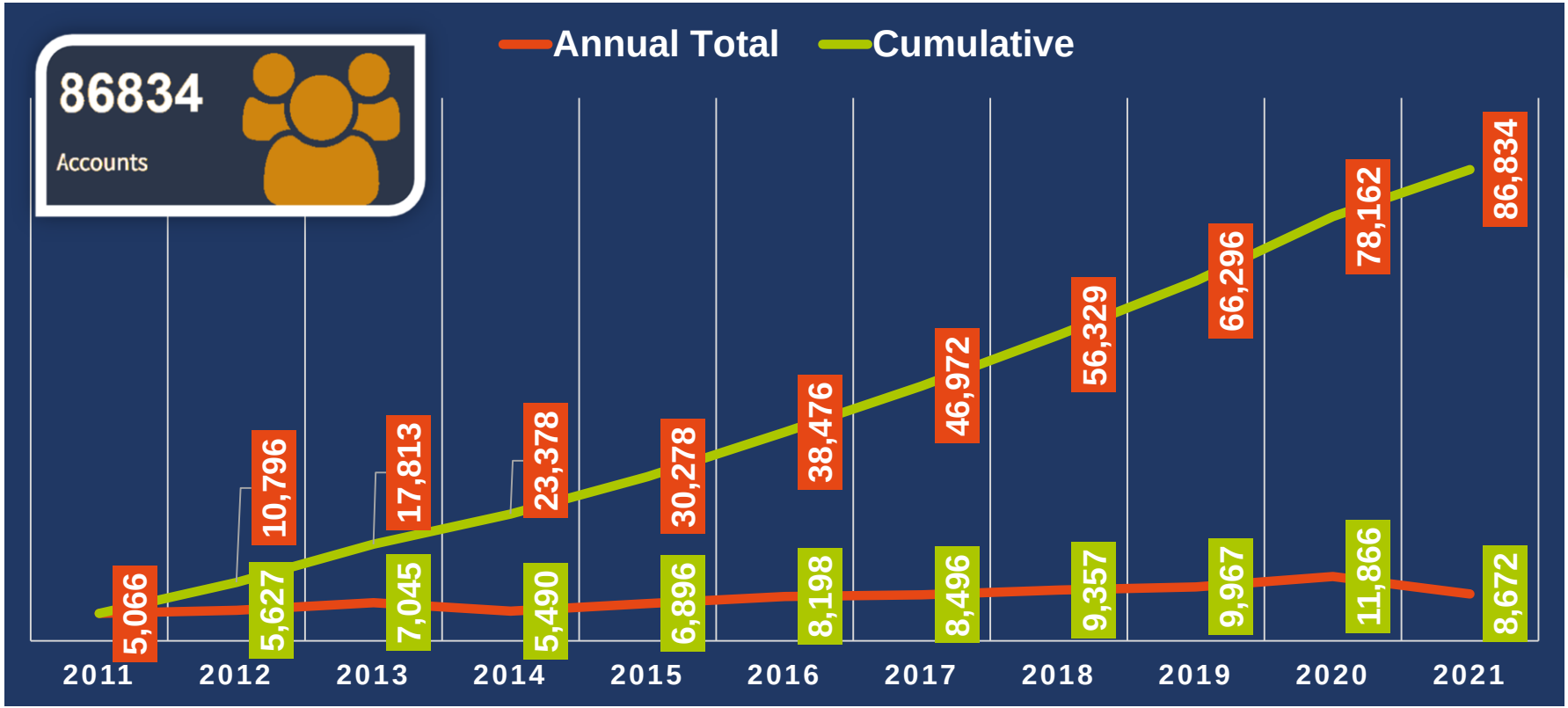
2018
- Website
  - Front end redesign
  - PSCS business type integration

2022
- User can create custom business type
- Option to Add or Remove Hazards from a Business Type

BeSMART.ie Overview

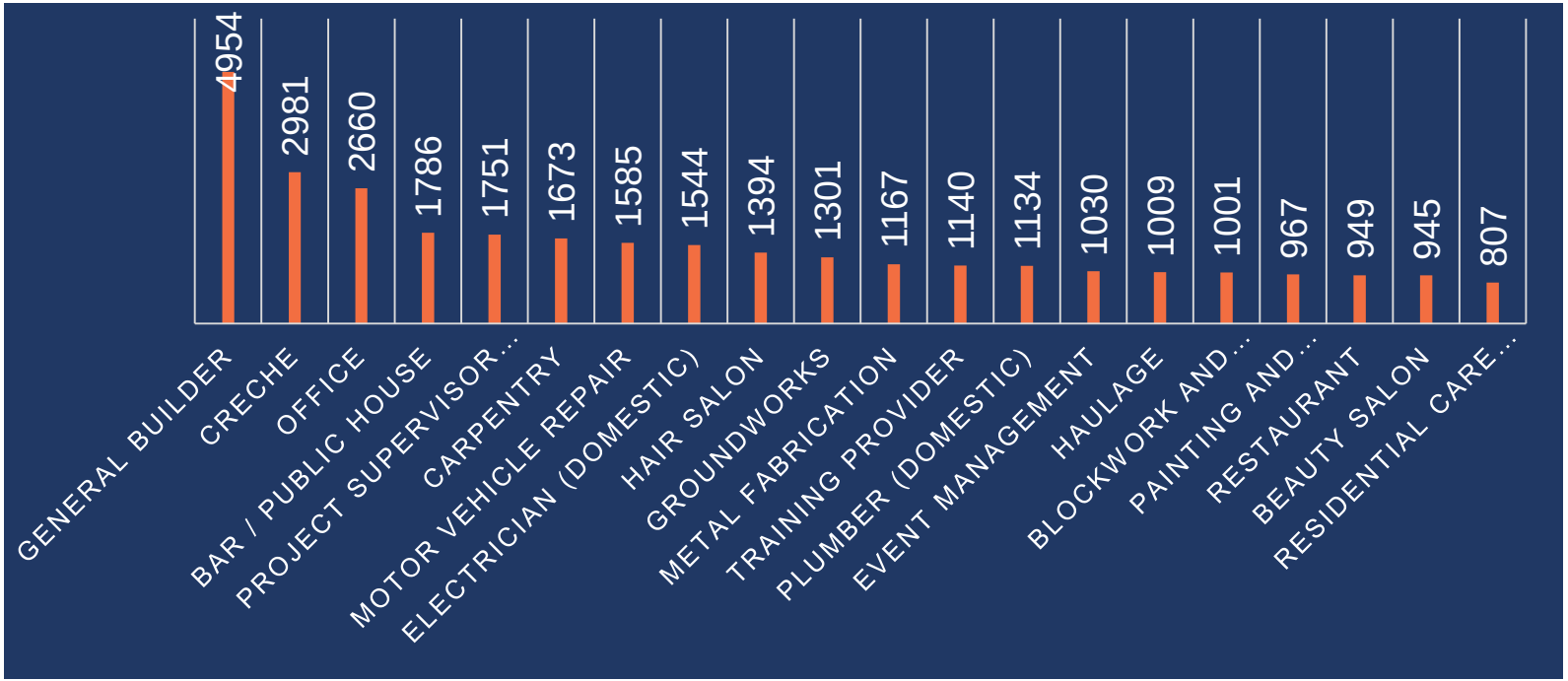


BeSMART.ie Registrations 2011 – 2021



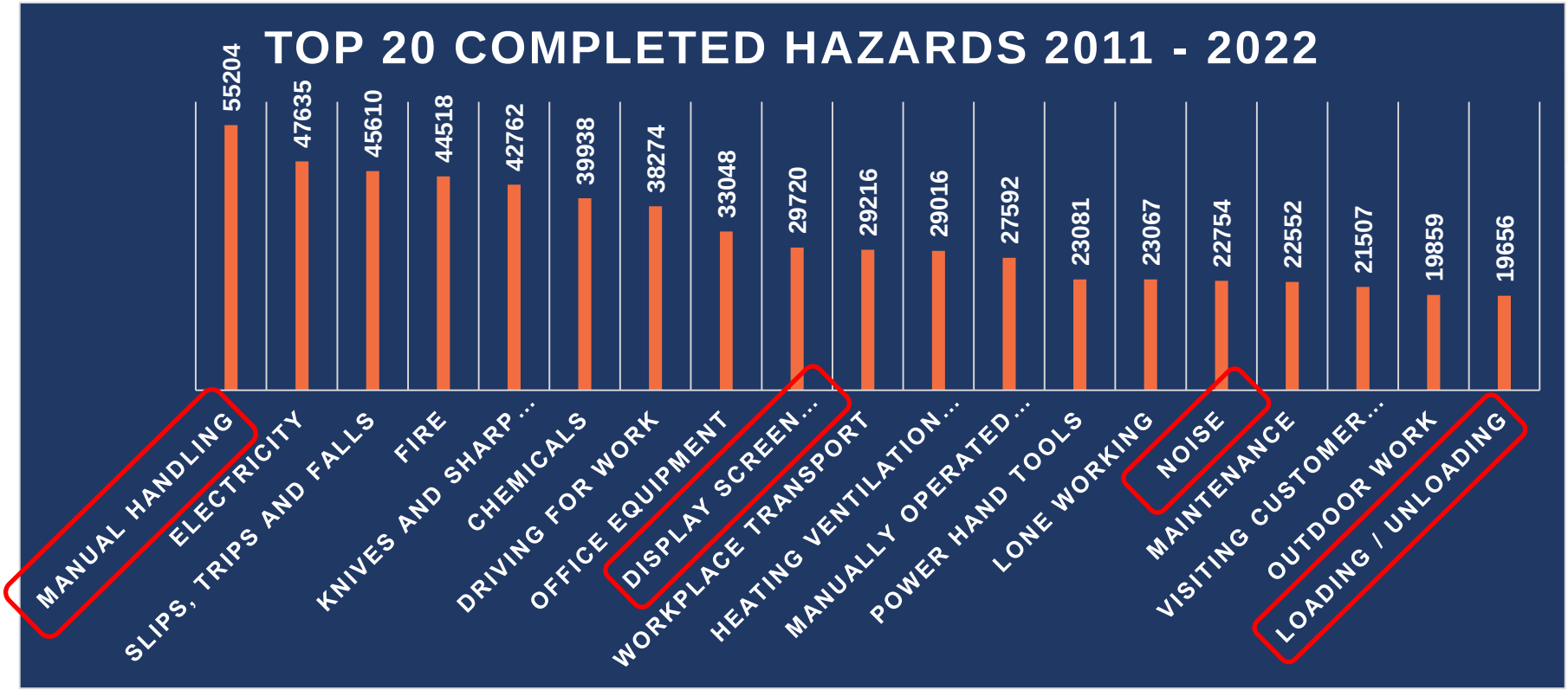
Top 20 Completed Business Types 2011 - 2021

77465
Complete Risk Assessments



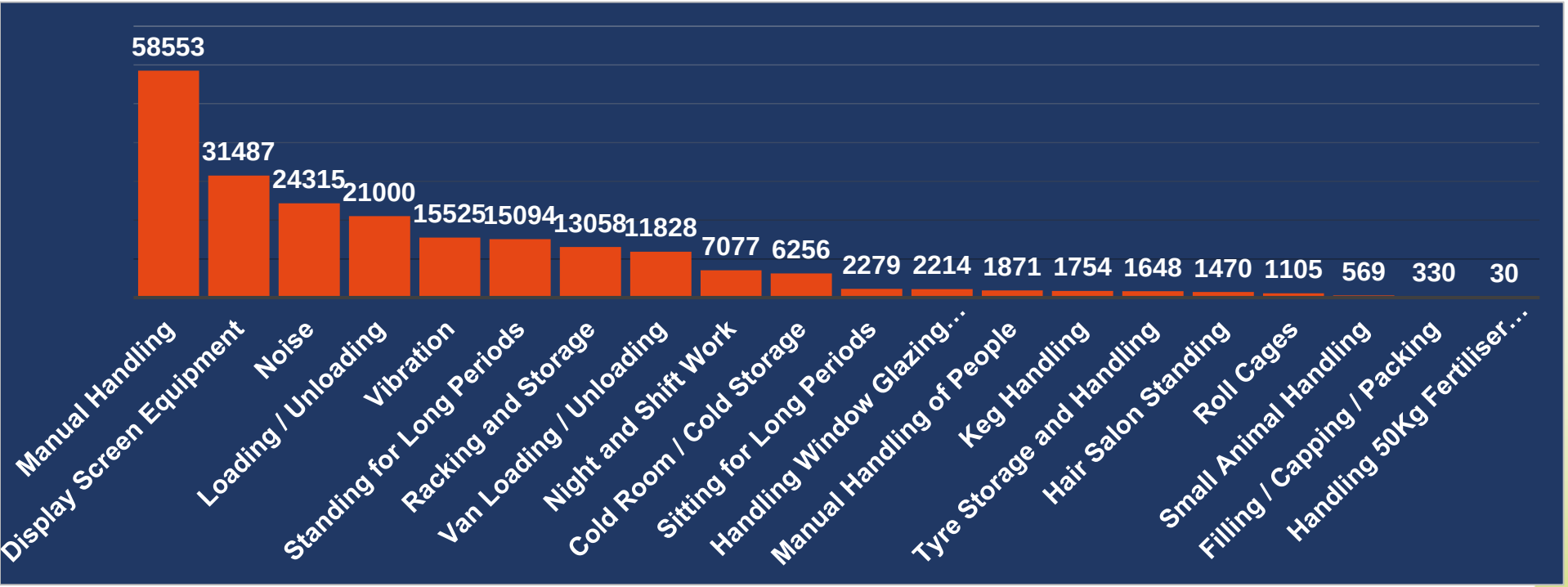
Completed Hazards

1,45m
Hazard Assessments

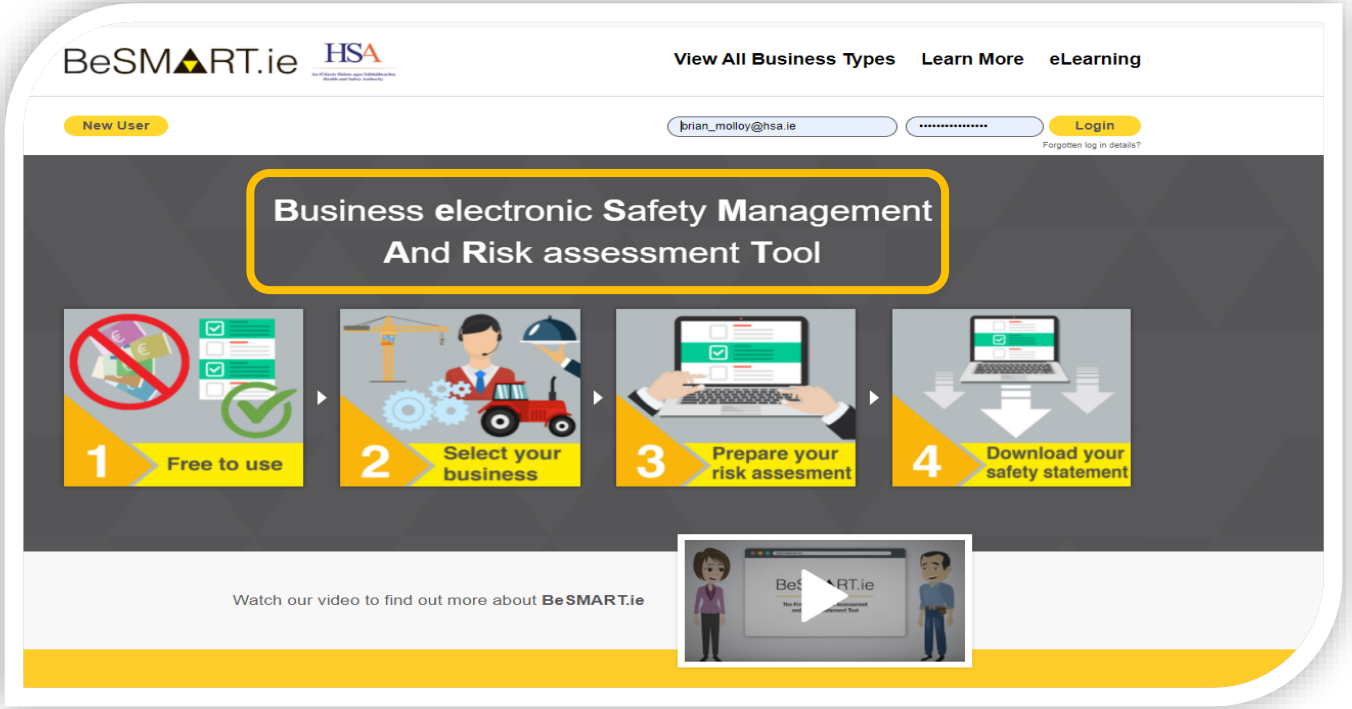


Completed Ergonomic Hazards

1,45m
Hazard Assessments



The Platform



BeSMART.ie Structure

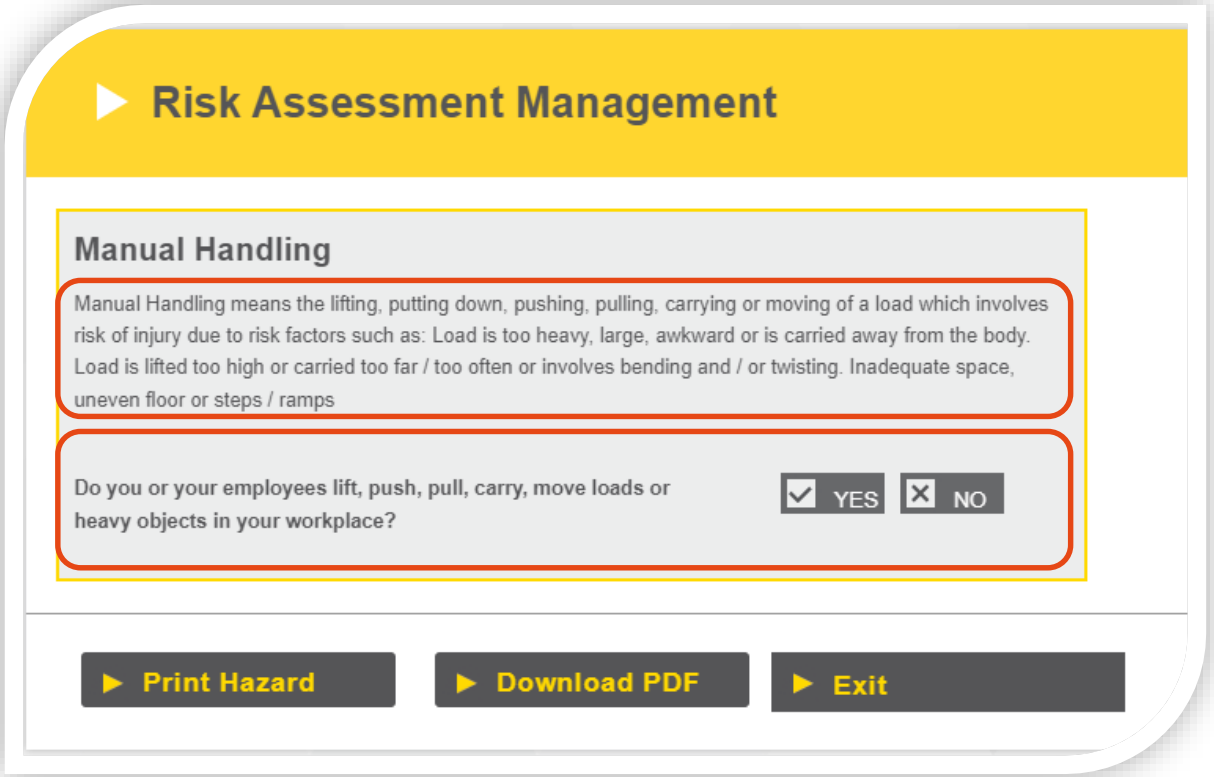
- **Landing Page**
- **Registration**
- **Business Selection**
  - Other Business
  - Construction Business
  - Agribusiness
  - Linked business types
  - Custom Business Type*
- **Learn More**
  - Sector Specific Information
  - Safety Representatives
  - FAQ’s
- **4 Step Process**

BeSMART.ie Risk Assessment

- **Risk assessments written using simple English**
  - No technical jargon
  - No legislative terms
  - NALA Guidelines – National Adult Literacy Agency
  - Around 25% adult population difficulty in reading and writing

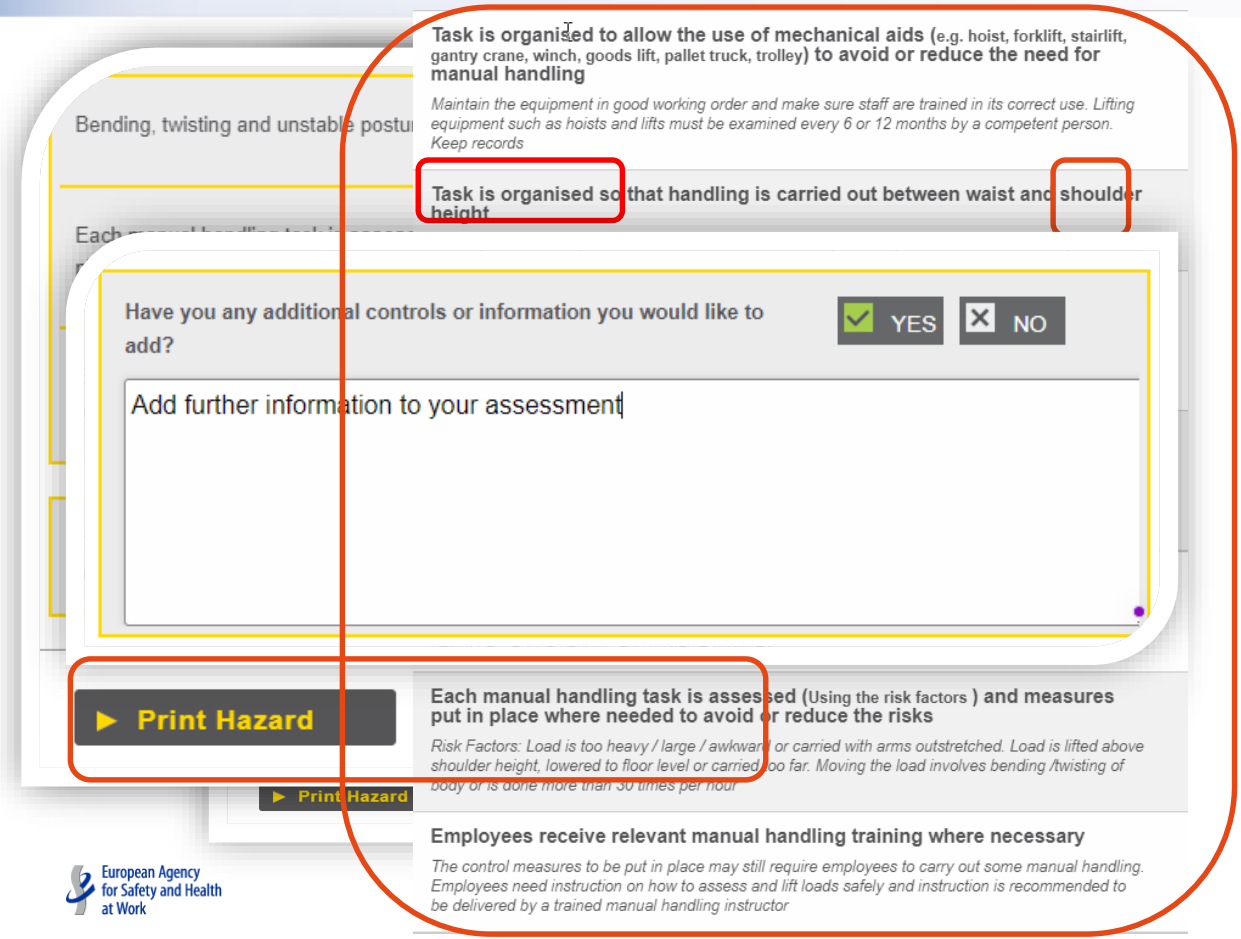
- **The BeSMART.ie risk assessment is based on the following standard and technique;**
  - Standard – IS EN31010:2019 Risk Management – Risk Assessment Techniques
  - Technique Used: B4 Checklists - A simple form of risk identification. A technique which provides a listing of typical uncertainties which can be considered. Users refer to a previously developed list, codes or standards. The technique does not provide a quantitative output

Risk Assessment Process



Mandatory Hazards
10 Pack Hazards
Hazard Definition
Hazard Question

Risk Assessment Process



Mandatory Hazards
10 Pack Hazards
Hazard Definition
Hazard Question
Hazard Controls
Safety Statement

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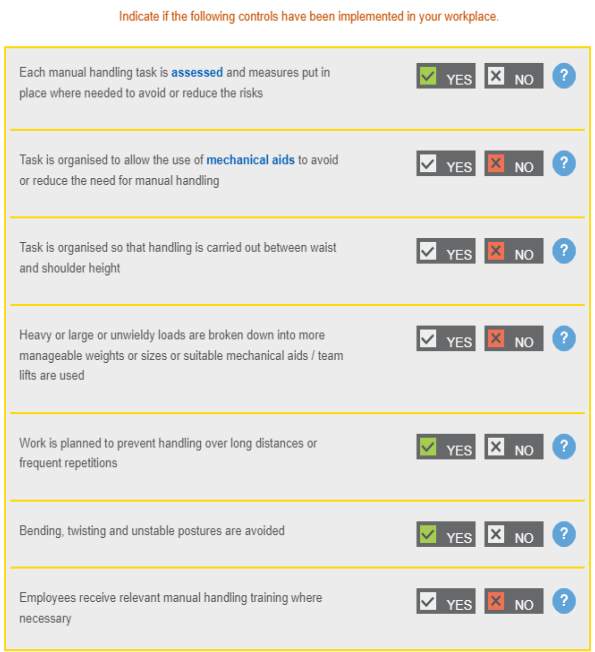
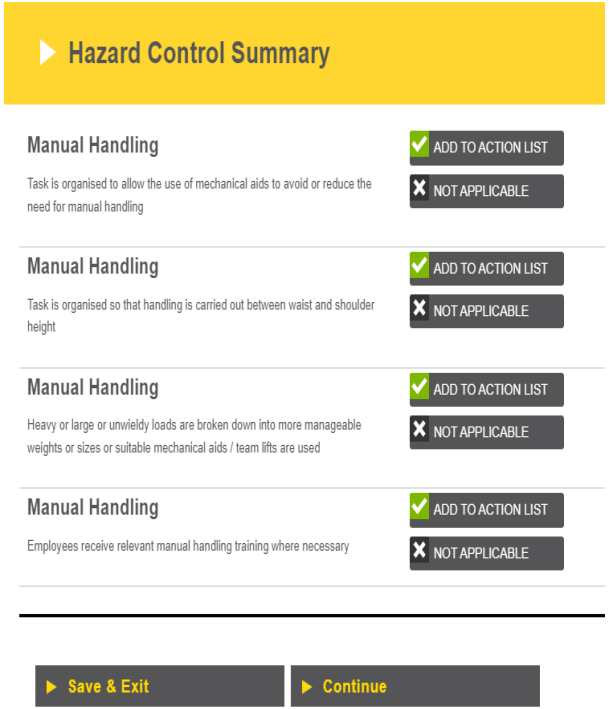
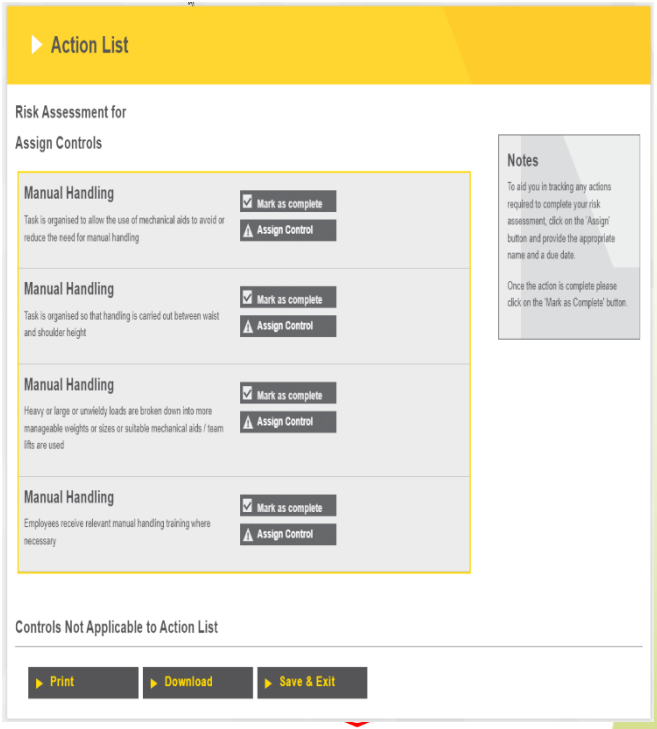
Action Lists – Follow Through







Consultation – Employee Engagement

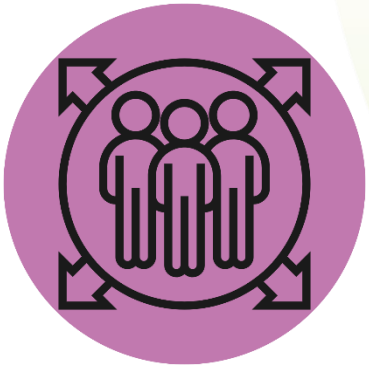
Risk Assessment for

Consult

To complete your risk assessments you must consult with your employees on hazards that may affect them. You must also check that you have risk assessed all the hazards in your workplace.

Watch the video to learn how to do this

Print Consult List | Return to hazards | Confirm & Continue



hsalearning.ie

HSA Online Courses

European Agency for Safety and Health at Work

Healthy Workplaces


Sector of Employment


Topic


Further and Higher Education


Primary Schools

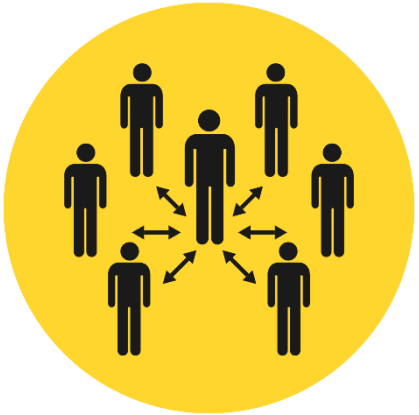

Post-Primary Schools


Small Business

Workplace Induction

hsalearning.ie
HSA Online Courses

- **8 Modules**
  - Module 1 & 2 Mandatory – 45 mins each
  - Modules 3 – 8 Optional – 20 mins each



Induction - Ergonomics Components

Unit 3: Manual handling

On completion participants should be able to:

- define manual handling
- outline the main causes of manual handling injuries
- understand the employer's role in conducting manual handling risk assessments
- outline some of the control measures for preventing manual handling injuries

Induction - Ergonomics Components

Unit 4: Display Screen Equipment

On completion participants should be able to:

- define ergonomics
- list some ergonomic hazards and the effects of poor ergonomics
- identify some of the measure's workplaces take to reduce the risk of injury
- outline ergonomic improvements that can be applied to a computer workstation

HSA

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Health and Safety Authority

Accidents

Health & Safety

BeSMART.ie

hsalearning.ie
HSA Online Courses

WORKPOSITIVE

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Healthy Workplaces

HSA

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Health and Safety Authority

Ergonomics Best Practice: Future of Work

Padraig Delaney

19 Oct 2022

- **Requested by the Senior Labour Inspectors Committee (SLIC) committee to chair a group of inspectors from across Europe to come up with a paper “digitalisation and the use of machinery and robotics using artificial intelligence”**

Areas Considered

- Robots, Cobots, Mobots
- Platform Workers
- AI for Recruitment and Management.
- Remote Control of Equipment.
- Wearable and implanted devices

Elon Musk

- “the scariest problem" is artificial intelligence — an invention that could pose an unappreciated "fundamental existential risk for human civilization."

- **Artificial intelligence (AI) refers to systems that display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals. AI-based systems can be purely software-based, acting in the virtual world (e. g. voice assistants, image analysis software, search engines, speech and face recognition systems) or AI can be embedded in hardware devices (e. g. advanced robots, autonomous cars, drones or Internet of Things applications).”**

EUROPEAN
COMMISSION

Brussels, 21.4.2021
COM(2021) 206 final

2021/0106 (COD)

Proposal for a

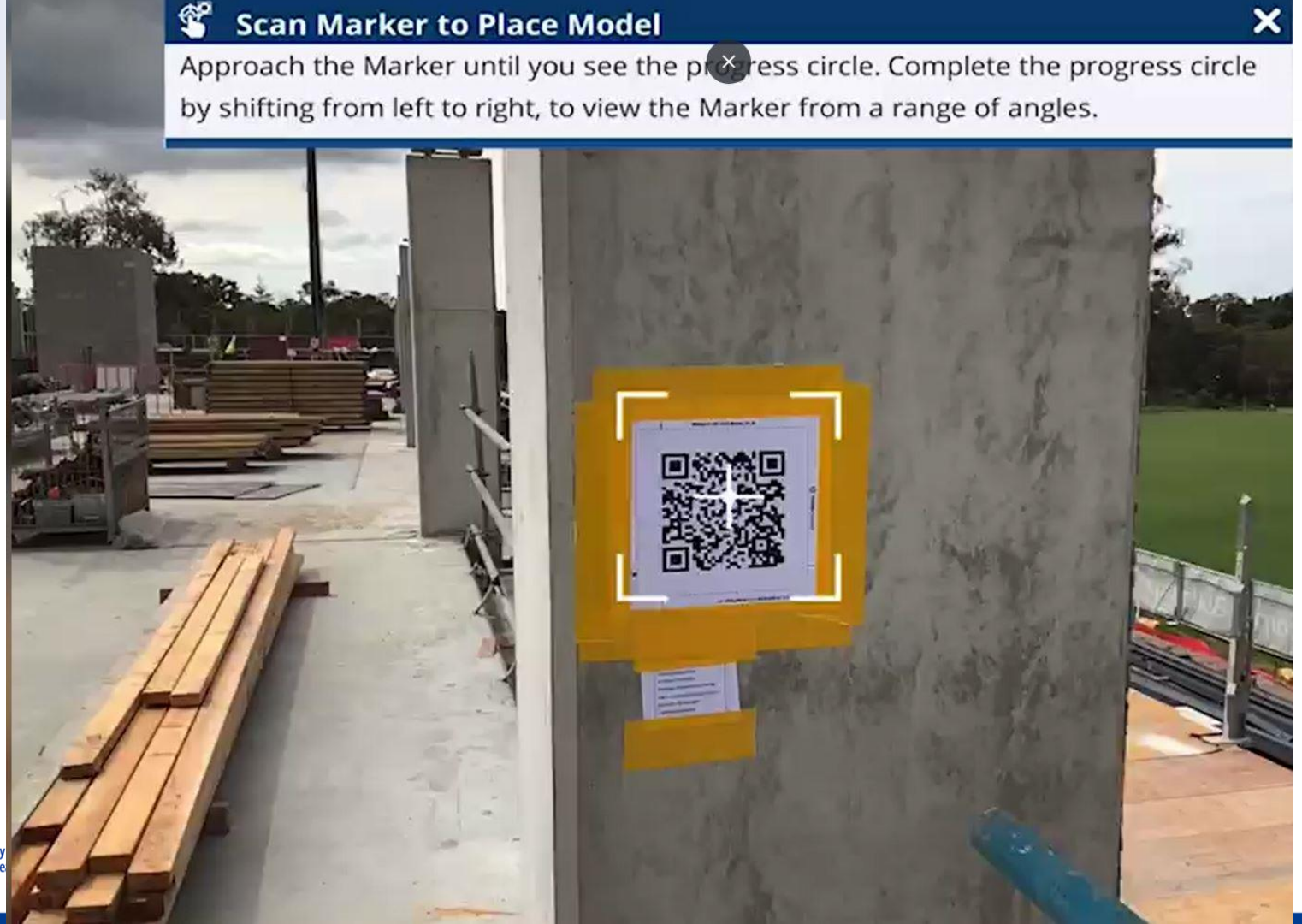
REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

LAYING DOWN HARMONISED RULES ON ARTIFICIAL INTELLIGENCE (ARTIFICIAL INTELLIGENCE ACT) AND AMENDING CERTAIN UNION LEGISLATIVE ACTS

{SEC(2021) 167 final} - {SWD(2021) 84 final} - {SWD(2021) 85 final}

Positives

- Technology Used to increase safety
- Reduction in certain types of strenuous work
- Reduction in in repetitive work
- Platform work can offer more flexibility, employment opportunities and additional income to people who might find it difficult to enter the traditional labour market.

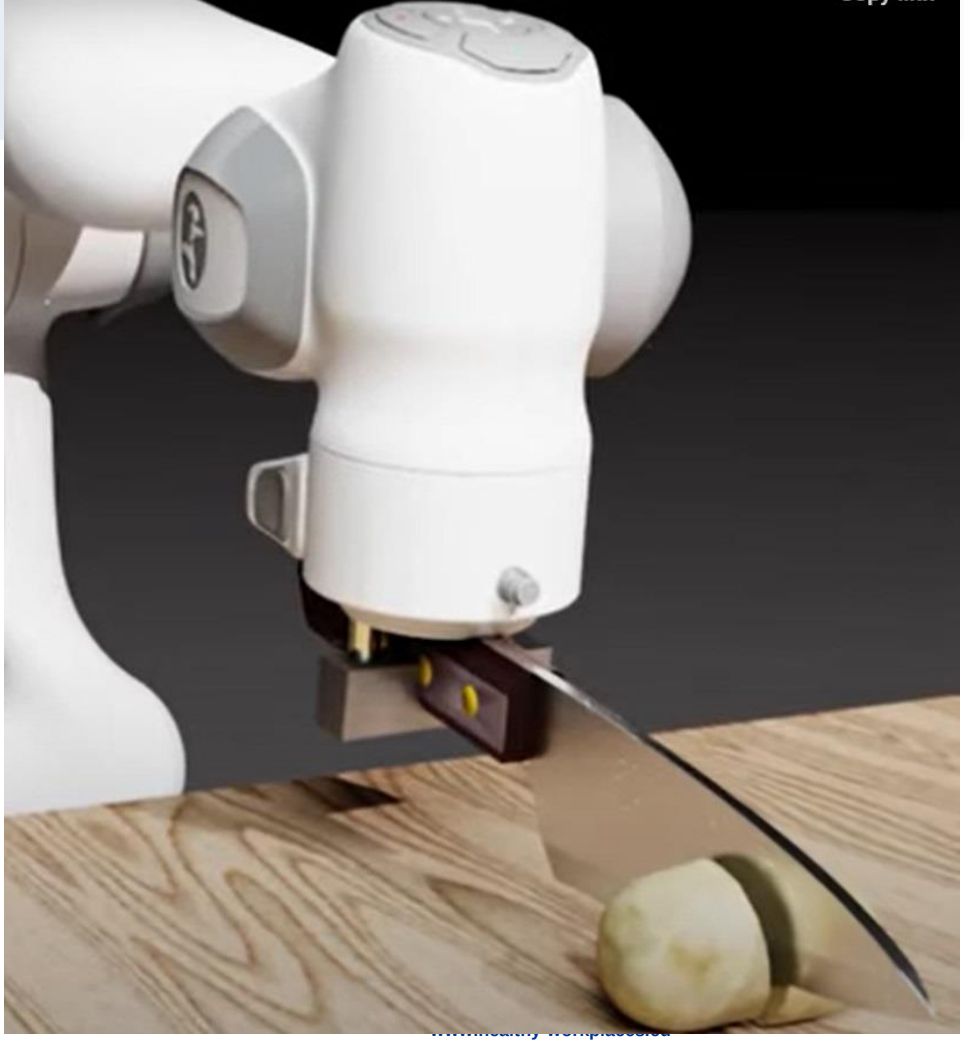

Scan Marker to Place Model
Approach the Marker until you see the progress circle. Complete the progress circle by shifting from left to right, to view the Marker from a range of angles.

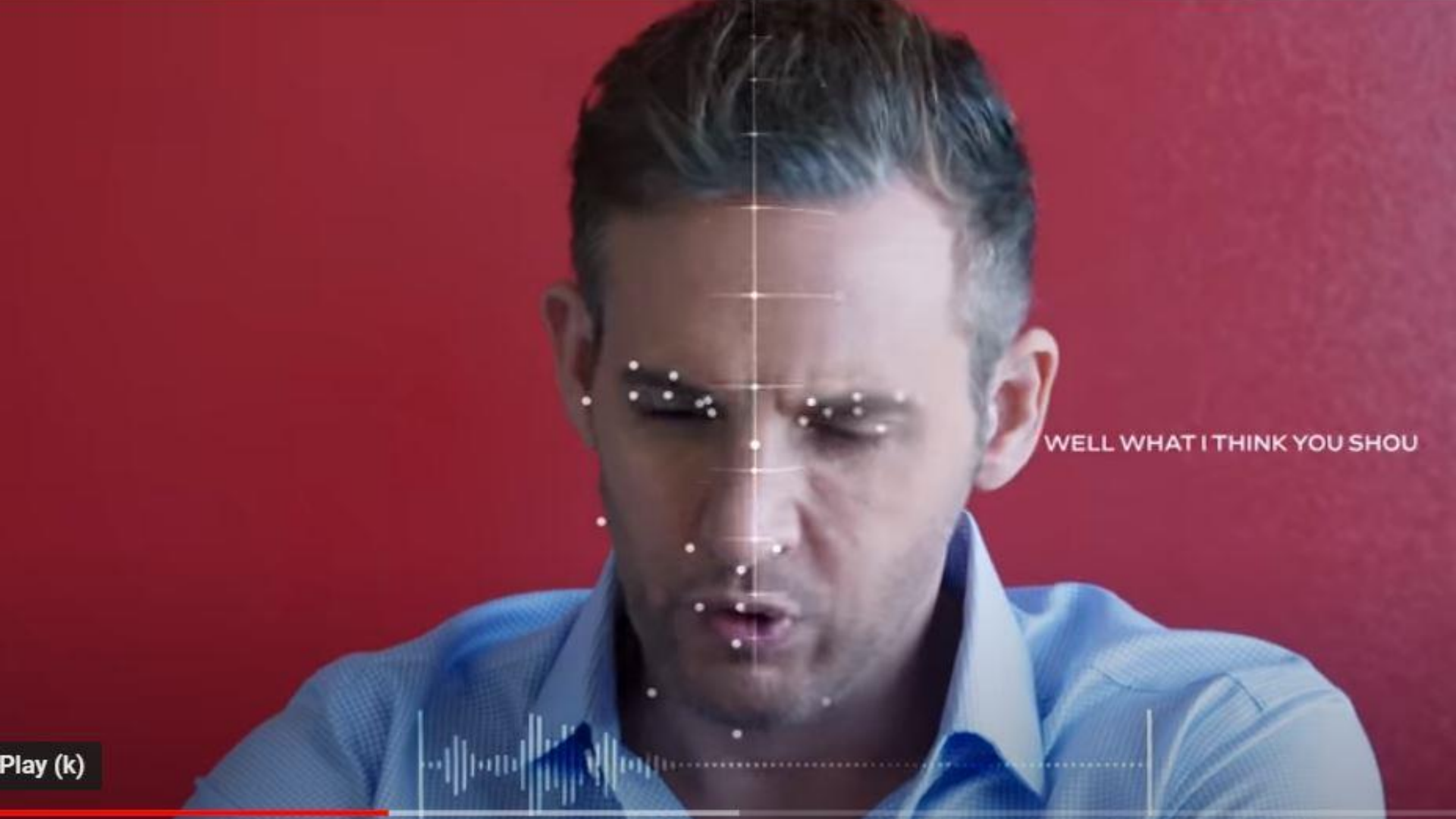

Cross-section
Transparency
0:02

Negative Effects

- For Platform Workers, lack of infrastructure concerning the presence of infrastructure for the bike couriers, e. g. toilets, washing facilities, showers and possibilities to change clothes is problematic
- psychological impacts like anxiety, anger or depression which has a potential to cause workers to absent themselves from work
- “Black Box” where it’s impossible to analyse the steps being taken by AI


Yahoo Movies Canada
Chess robot breaks seven-year-old boy's finger during match in Moscow




WELL WHAT I THINK YOU SHOU
Play (k)

- Future Move towards analysis of “White Collar” workers
- Monitoring of Time in front of screen
- Keystrokes
- Keyboard Activity

Summary

- **Potential for Change is limitless**
- **All change associated with technology is not necessarily positive**
- **In many respects, true artificial thinking intelligence appears to be a distance into the future.**

HSA

An tÚdarás Sláinte agus Sábháilteachta
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Thank you

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ANY QUESTIONS?

Thank You.