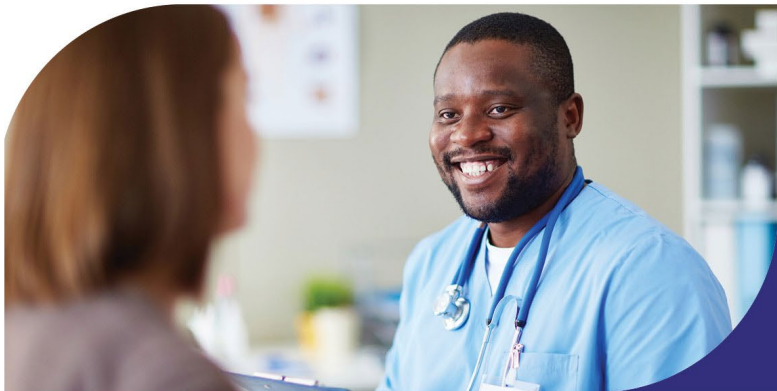




HSA

An tÚdarás Sláinte agus Sábháilteachta
Health and Safety Authority

How to manage manual handling risk in the workplace?



Frank Power

Senior Ergonomist (Inspector)

May 2026

Ergonomics Defined “Fitting the Task to the Human” Granjean



What is manual handling?

Transporting or supporting of a load

Lifting a Load

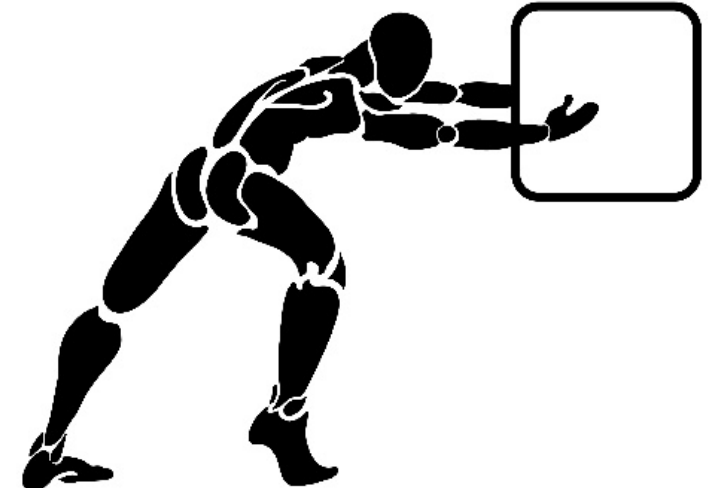
Pushing/Pulling a load

which involves
risk”



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What you need to consider ?

What is the activity/task type?

Lifting a defibrillator



What are the characteristics of the load? Size of load, weight of load, bulky

Are there unfavourable Ergonomic Conditions (Risk Factors)? Awkward leaning posture, Load too heavy

Manual Handling Risk Factors

Excessive Force(e.g.: very heavy load weight)

State Examinations Commission Case Study

Task: Lifting heavy crates

Load Characteristics: Bulky, 30kg

Risk factors: Load too heavy,
Repetitive lifting,
Difficult to grasp



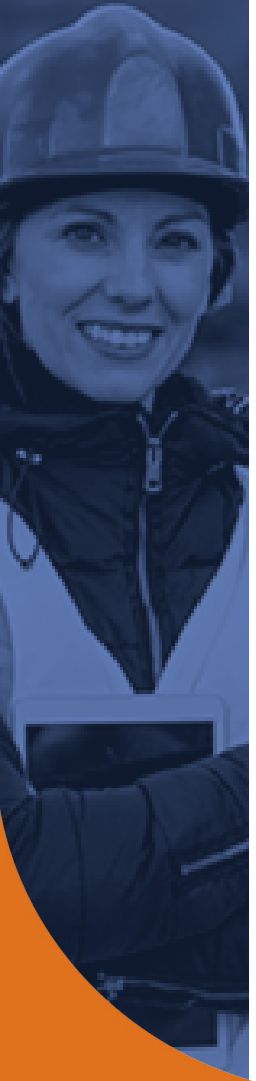
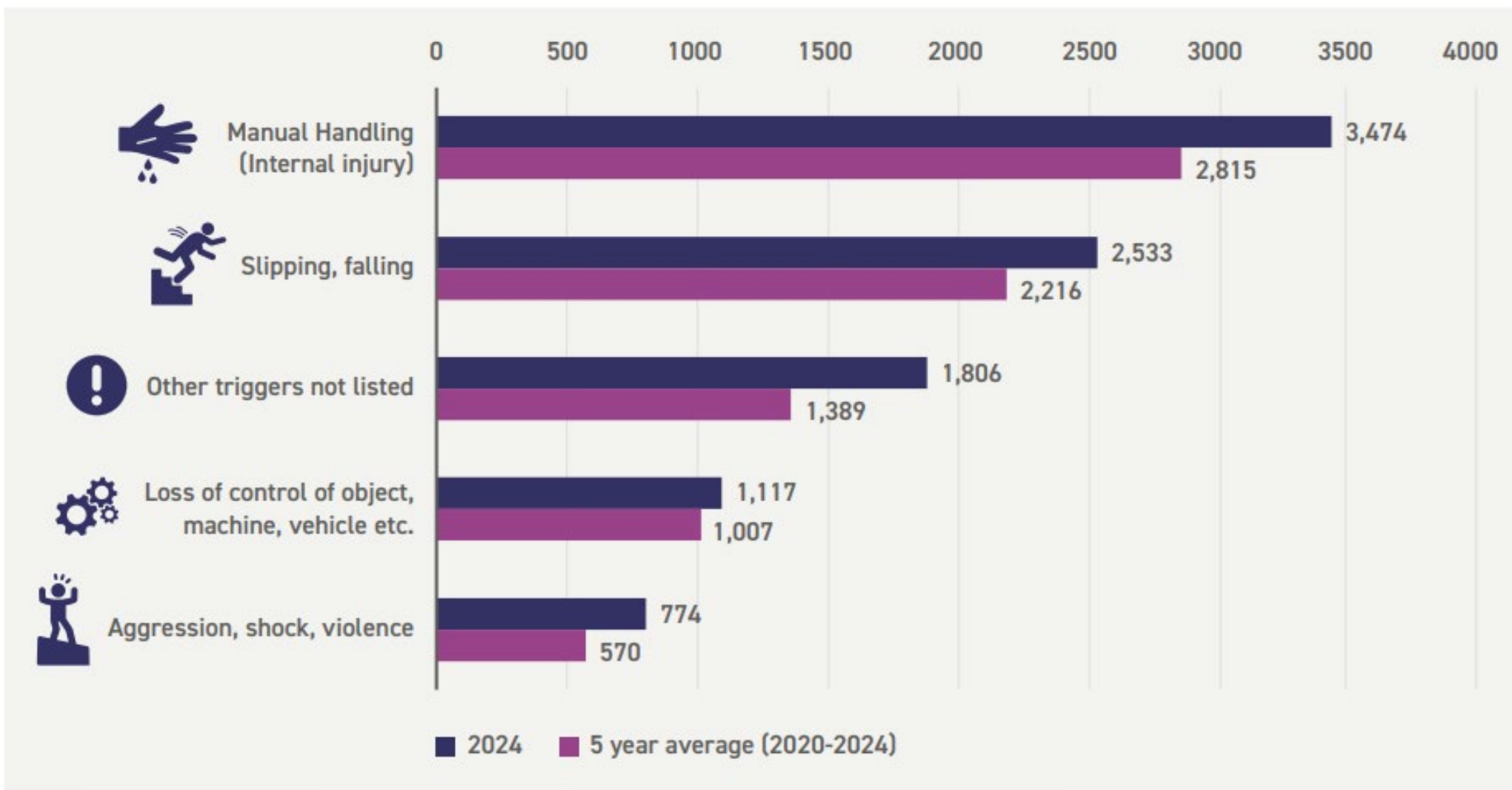
Manual Handling Risk Factors

Awkward posture e.g. (bending to lift a load from ground level , reaching above head, twisting)



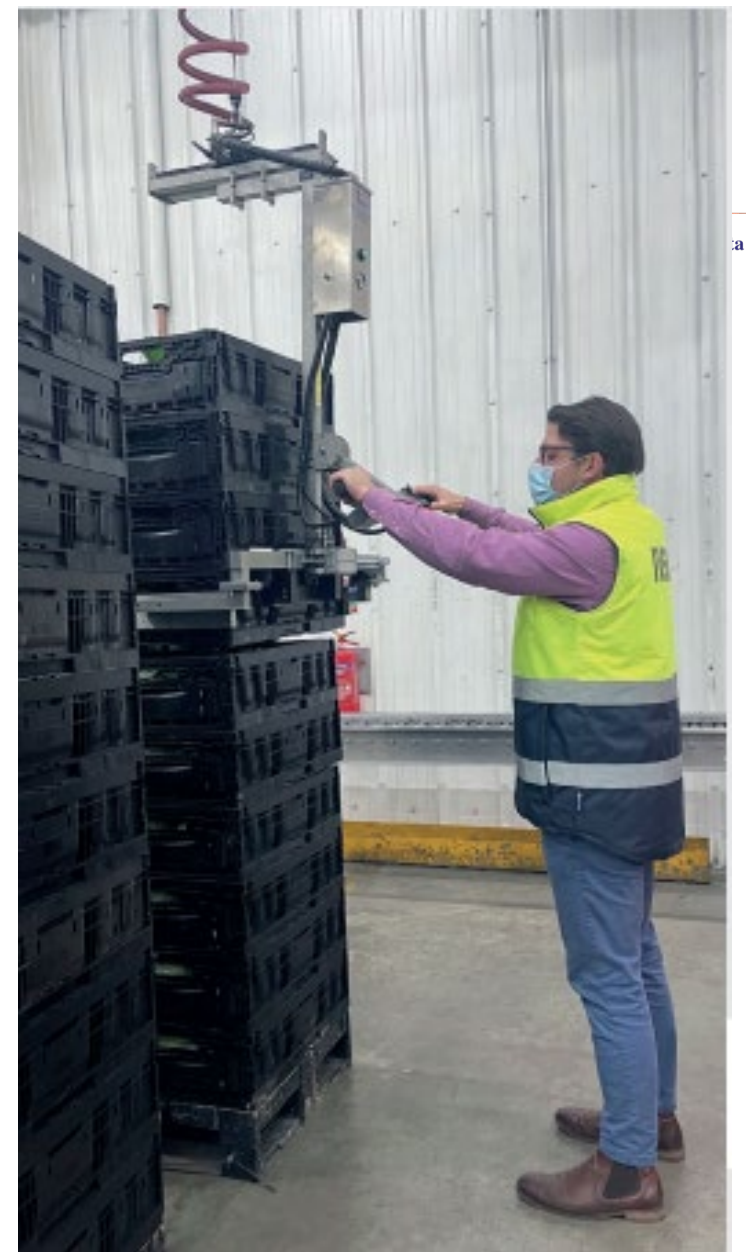
Prevalence of injuries due to exposure to manual handling risk factors

Top five reported non-fatal injuries by trigger, 2024 and five-year average 2020–2024 (HSA)



Key Point: The Legal angle

*“use the appropriate means in particular mechanical means, to **avoid** the need for the manual handling of loads”*



Key Point: The Legal angle

*“use appropriate means or provide such means in order to **reduce** the risk in the manual handling of loads”*




Key Point: The Legal angle

*“**risk assess** the health and safety conditions of the type of work involved and take appropriate measures to **avoid** or **reduce** the risk, particularly of back injury. “*



Risk Assessment of Manual Handling work activities: The five step model: Step 1

<p>Step 1</p>	<p>Task description</p>	<p>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.</p> 
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Risk Assessment of Manual Handling work activities: The five step model: Step 2

Step
2

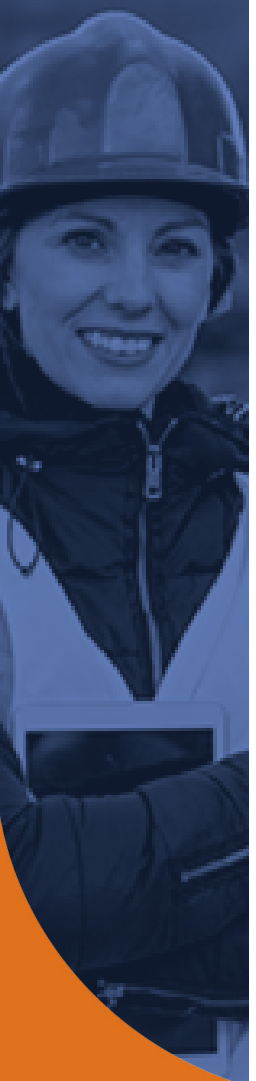
Collect
technical
information

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.



Risk Assessment of Manual Handling work activities: The five step model: Step 3



Step 3	Identify the risk factors using the relevant risk assessment tool and fill in the relevant score sheet	<p>Complete the MAC tool score sheet for this task:</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> 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 </div> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">Risk Factors</th> <th colspan="3">Colour Band (G,A,R or P)</th> <th colspan="3">Numerical Score</th> </tr> <tr> <th>Lift</th> <th>Carry</th> <th>Team</th> <th>Lift</th> <th>Carry</th> <th>Team</th> </tr> </thead> <tbody> <tr> <td>Load weight and lift/carry frequency</td> <td style="background-color: purple;">P</td> <td></td> <td></td> <td>10</td> <td></td> <td></td> </tr> <tr> <td>Hand distance form the lower back</td> <td style="background-color: red;">R</td> <td></td> <td></td> <td>6</td> <td></td> <td></td> </tr> <tr> <td>Vertical lift region</td> <td style="background-color: green;">G</td> <td style="background-color: gray;"></td> <td></td> <td>0</td> <td style="background-color: gray;"></td> <td></td> </tr> <tr> <td>Trunk twisting / sideways bending Asymmetrical trunk / load carrying</td> <td style="background-color: red;">R</td> <td></td> <td></td> <td>2</td> <td></td> <td></td> </tr> <tr> <td>Postural constraints</td> <td style="background-color: orange;">A</td> <td></td> <td></td> <td>1</td> <td></td> <td></td> </tr> <tr> <td>Grip on load</td> <td style="background-color: red;">R</td> <td></td> <td></td> <td>2</td> <td></td> <td></td> </tr> <tr> <td>Floor surface</td> <td style="background-color: green;">G</td> <td></td> <td></td> <td>0</td> <td></td> <td></td> </tr> <tr> <td>Other environment factors</td> <td style="background-color: green;">G</td> <td></td> <td></td> <td>0</td> <td></td> <td></td> </tr> <tr> <td>Carry distance (carrying only)</td> <td style="background-color: gray;"></td> <td></td> <td style="background-color: gray;"></td> <td style="background-color: gray;"></td> <td></td> <td style="background-color: gray;"></td> </tr> <tr> <td>Obstacles en route (carrying on)</td> <td style="background-color: gray;"></td> <td></td> <td style="background-color: gray;"></td> <td style="background-color: gray;"></td> <td></td> <td style="background-color: gray;"></td> </tr> <tr> <td>Communication and co-ordination (team handling only)</td> <td style="background-color: gray;"></td> <td style="background-color: gray;"></td> <td></td> <td style="background-color: gray;"></td> <td style="background-color: gray;"></td> <td></td> </tr> <tr> <td>Other risk factors e.g. individual factors, psychosocial factor, etc.</td> <td colspan="3">TOTAL SCORE:</td> <td>21</td> <td></td> <td></td> </tr> </tbody> </table> <p>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.</p>	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		
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Example of use of Mac Tool Score Sheet: Load Weight

- **Load Weight: 90kg**

A Load weight

Note the weight of the load and the number of workers performing the task. Enter the colour band and numerical score on the score sheet. For teams of five people or more, a full risk assessment is needed. If the colour band is purple you should examine the task very closely as it may represent a serious risk of injury and must be improved.


2 people < 35 kg 3 people < 55 kg 4 people < 75 kg	2 people 35–65 kg 3 people 55–95 kg 4 people 75–130 kg	2 people 65–85 kg 3 people 95–130 kg 4 people 130–170 kg	2 people > 85 kg 3 people > 130 kg 4 people > 170 kg
G/0	A/4	R/6	P/10



P

Very high level of risk

Risk Assessment of Manual Handling work activities: The five step model: Step 4

Step 4	Identify the improvements to be put in place	<p>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.</p> <p>A custom-engineered billet loader was fixed to the floor at each CNC machine centre and all operators were trained to use it.</p> 
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Risk Assessment of Manual Handling work activities: The five step model: Step 5

Step 5	Review the effectiveness of the improvements made	<p>The new engineering intervention is very effective in that it has eliminated the ergonomic risk factors completely.</p> <p>The billet loader eliminates the manual lifting of the billet and can be operated with a neutral standing posture.</p>
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MAC, RAPP, ART Risk Assessment Tools



HSA Learning Module:



Username Password

[Forgotten your username or password?](#)



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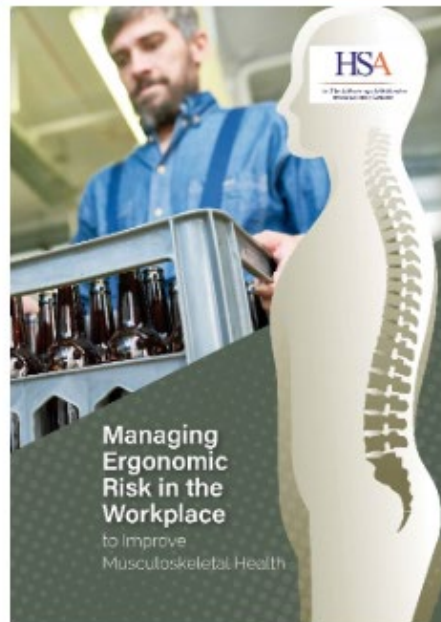
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Ergonomics



The Introduction to Ergonomic Risk Assessment course is CPD approved by Engineers Ireland.

An Introduction to Ergonomic Risk Assessment



This short course is suitable for practitioners including managers, supervisors, safety officers and occupational health professionals who may be assessing work activities involving manual handling and/or repetitive upper-limb tasks. The course has a particular emphasis on the 5-step risk assessment process.

Please note that this course is intended to raise awareness and provide an overview of ergonomics and its relationship to the risk assessment process.

The course is not intended to replace workplace-specific information and training required by health and safety legislation and does not denote competency in ergonomic risk assessment. Specific training and/or specialised advice may also be required.

20 minutes

Learning outcomes:

- Understand the meaning of ergonomics and its relation to manual handling and repetitive upper-limb tasks
- Understand why ergonomic risk factors must be managed
- understand the ergonomic risk factors that impact on musculoskeletal health
- Recognise risk assessment tools for assessing ergonomic risk
- Apply a 5-step ergonomic risk assessment process to work activities

[Enter course](#)

Managing Manual Handling Risk: Things to do when you go back to your work place

- Identify work activities that involve manual handling of loads
- Consult with workers and listen
- Collect information (load weight, etc)
- Complete the HSA Learning Module Introduction to Ergonomic risk Assessment
- Use the five-step manual handling risk assessment to manage risk



Resources

The screenshot shows the HSA website interface. At the top left is the HSA logo with the tagline 'Healthy, safe and productive lives and enterprises'. To the right are navigation links for Home, Careers, News, Events & Media, About Us, Contact Us, and Customer Service. Social media icons for RSS, YouTube, Facebook, and Twitter are also present. A search bar contains the text 'How can we help you?'. Below this is a dark blue navigation menu with categories: Topics, Your Industry, Chemicals, Legislation, Publications and Forms, Safety Alerts, Employer and Employee Supports, Education, Vehicles at Work, and Workplace Health. The breadcrumb trail reads 'Home / Workplace Health / Manual Handling & Display Screen Equipment'. The main content area is titled 'Manual Handling & Display Screen Equipment' and features five resource boxes: 'Guidance' (with an image of a person at a computer), 'Risk Assessment Videos' (with a film strip icon), 'Research and Statistics' (with a pie and line chart), 'FAQs' (with a speech bubble icon), and 'Useful Resources' (with a signpost icon). Each box contains a list of links to specific resources.

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Home / Workplace Health / Manual Handling & Display Screen Equipment

Manual Handling & Display Screen Equipment

Guidance

- > Ergonomic Risk Assessment Tools
- > Manual Handling
- > Display Screen Equipment
- > Ergonomics

Risk Assessment Videos

- > Manual Handling Videos Series 1
- > Manual Handling Videos Series 2
- > BeSMART Videos
- > Miscellaneous Videos

Research and Statistics

- > Infographics
- > Research
- > Statistics

FAQs

- > Display Screen Equipment FAQs
- > Manual Handling Risk Management FAQs
- > Manual Handling Training System FAQs

Useful Resources

- > Other Links
- > Further Reading and Information
- > Ergonomics Podcast
- > Introduction to Ergonomics Risk Assessment

https://www.hsa.ie/eng/workplace_health/manual_handling_display_screen_equipment/



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Go raibh maith agaibh
Thank you

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