

# Handling with Care

A practical guide to the prevention and management of musculoskeletal disorders in the healthcare sector





Ultrashield Basic  
Direct Splash Face Protection  
www.ab-med.com

ULTRASHIELD  
BASIC  
DIRECT SPLASH FACE  
PROTECTION  
QUANTITY

Ultrashield Basic  
Direct Splash Face Protection  
www.ab-med.com

MVF16  
MVF16  
MVF16  
MVF16

AGILE  
HANDLE WITH CARE  
FRAGILE  
HANDLE WITH CARE

OXYPAS  
OXYFOAM UNK C3524

HENLEY'S MEDICAL  
CLASS

NO. 2  
CABLE TIES  
MADE IN CHINA  
N. WEIGHT: 3.0 KGS.  
G. WEIGHT: 9.0 KGS.  
MEAS: 60x22x29 CM.

SMART SLEEVE GOWN  
GREEN  
DRAIN BLUE  
100 PIECES  
MADE IN CHINA  
N. WEIGHT: 3.0 KGS.  
G. WEIGHT: 9.0 KGS.  
MEAS: 100x60x20 CM.

LONG SLEEVE GOWN  
WHITE  
100 PIECES  
MADE IN CHINA  
N. WEIGHT: 3.0 KGS.  
G. WEIGHT: 9.0 KGS.  
MEAS: 100x60x20 CM.



# CONTENTS

Introduction	04
Musculoskeletal Disorders	06
Postural factors contributing to Musculoskeletal Disorders	08
Legal duties and responsibilities	11
Prevention and management of manual handling risk	12
Patient/Client handling	15
Inanimate load handling	22
Examination and maintenance of work equipment	25
Additional sources of information	26

## APPENDICES

APPENDIX 1 - Example Risk Assessment for Patient Handling (TILEO)	27
APPENDIX 2 - Worked example of Manual Handling Assessment Charts (MAC) for a lifting operation	31



# INTRODUCTION

## About this book

This publication is a joint initiative between The Health and Safety Executive for Northern Ireland (HSENI) and members of the Northern Ireland Back Exchange. The Northern Ireland Back Exchange is a multidisciplinary group comprised of members with an interest in back care and the prevention of work-related musculoskeletal disorders. This group is affiliated to the National Back Exchange (NBE).

'Handling with Care' is a revision of the original Backs in Action guide. This new publication is intended to be used as a practical resource for those who work in the healthcare sector and whose work involves the moving and handling of people or inanimate loads. Handling with Care contains a sample generic manual handling risk assessment and a worked example of HSE's Manual handling assessment charts (MAC). It also illustrates examples of how you can avoid or reduce the risk of injury from common handling activities found within the healthcare sector.

It is hoped this resource will be used to compliment formal training that must be provided to employees.

## Scale of the problem

The term musculoskeletal disorders (MSDs) covers any injury, damage or disorder of the joints or other tissues in the upper/lower limbs or the back.

Occupational ill-health conditions, including MSDs, have a serious impact upon an individual's quality of life and that of their family. It is estimated that between 60% and 90% of people will suffer from some type of lower back disorder during their working life. Employees in the healthcare sector are at risk of MSDs simply due to the nature of the work they perform.

The cost to an individual of an ill-health absence extends to loss of income and possible job opportunities, living with pain and discomfort, as well as the mental burden of being away from work for a prolonged period of time. In the long term it can result



in employees having to leave employment permanently which can prevent them from leading a full and active life.

Employee ill-health also places a financial burden upon local employers and society in general. A recent study conducted by HSE suggests the cost to an employer of an ill-health absence to be in the order of £8000 per case.

Injuries relating to handling activities in the workplace have a significant impact upon employers including loss of production, additional training to upskill new employees, and increased salary and compensation costs.

Figures relating to the 2018-19 Northern Ireland Labour Force Survey estimate 18,000 cases of MSDs were caused or made worse by work within a 12 month period across all work sectors. An analysis of 2019 RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (Northern Ireland) 1997) statistics within the

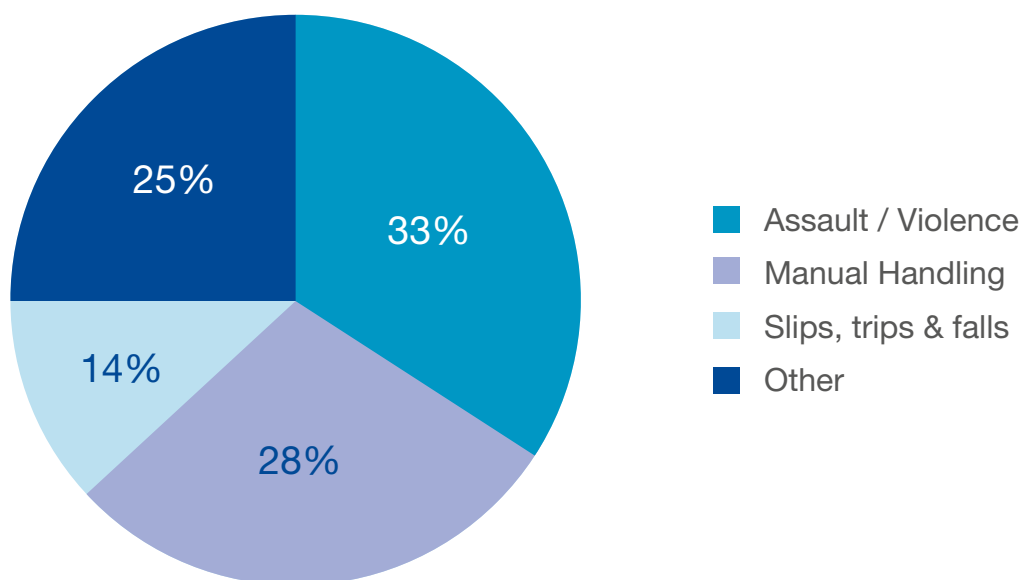
Northern Ireland healthcare sector identified 123 cases relating to manual handling type activities. These injuries were reported to HSENI as a result of an employee's absence of more than 3 days or as a result of a major injury to an employee. Figure 1 shows that approximately 28% of all 'over-three-day' injuries reported from 2015-2019 by the healthcare sector were manual handling related which include sprains and strains while lifting, handling or carrying.

The figures quoted do not take into account those employees who suffer for prolonged periods silently and their work-related injury is not reported. In addition there are thought to be a significant number of employees that return to work within three days and do not fit into a specific category of injury as defined within the regulations.

Although manual handling related fatalities are rare, it is worth noting a small number have been associated with the improper use of patient handling aids.

**Figure 1**

Breakdown of healthcare sector RIDDOR statistics (over 3-day injuries) by incident type 2015-2019





## MUSCULOSKELETAL DISORDERS

Musculoskeletal disorders are conditions that can affect muscles, joints and tendons in any part of the body including the upper/lower limbs and the back. They tend to develop over a period of time with a cumulative effect, often progressing from mild to more severe conditions. However, they can also arise as a result of being exposed to a one-off injury. Though rarely seen as life threatening, musculoskeletal disorders can be life changing. They can impair the quality of a person's life with the individual often experiencing intermittent or chronic symptoms.

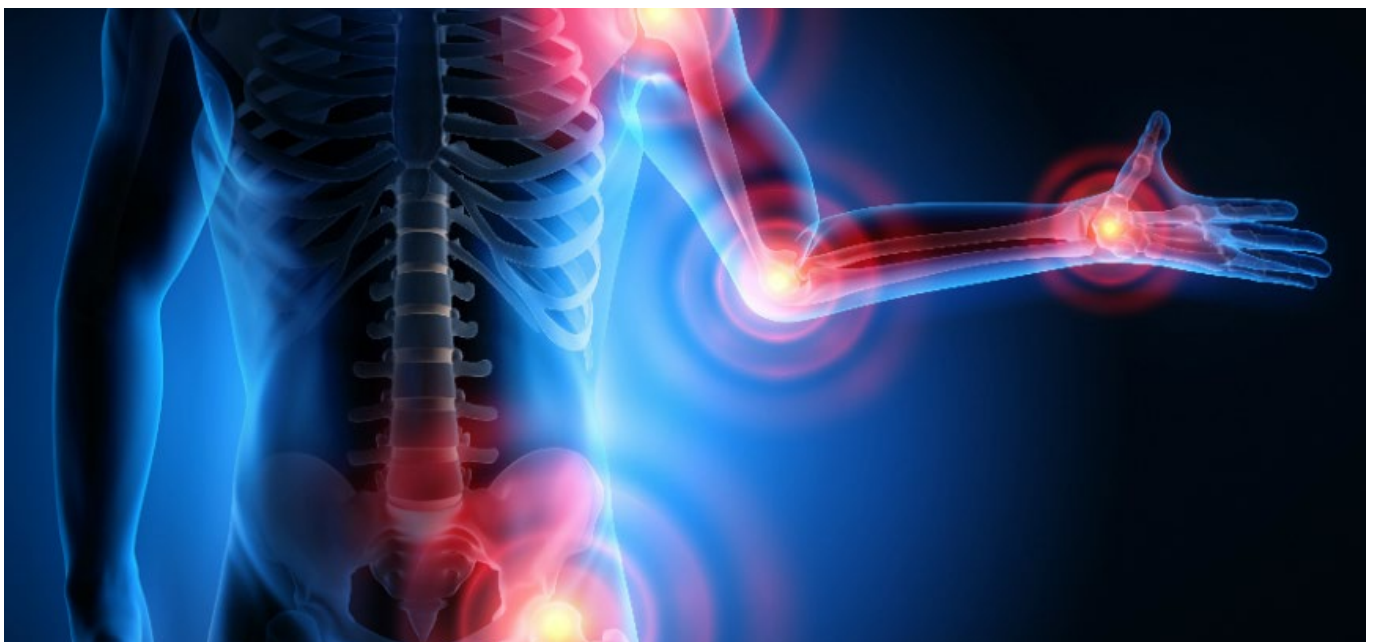
MSDs may arise out of physical activities that individuals carry out. Whilst they are not exclusively linked to work-related activities, pre-existing conditions may be exacerbated at work.

The activities within the healthcare sector are wide ranging and may result in employees

experiencing symptoms associated with MSDs.

Risk factors associated with work-related MSDs may include the following:

- Weight and stability of the load
- Awkward working postures and/or prolonged static postures
- Repetitive handling
- Concentrated force on small parts of the body such as the hand or wrist
- A pace of work that does not allow sufficient recovery between movements
- Poor communication and coordination during handling activities
- Lack of suitable handling aids
- Environmental issues
- Pre-existing health conditions
- Psychosocial factors



Back pain is any ache, pain, tension, or disorder felt in the lower or upper back. Low back pain is common and can be extremely painful. It can be difficult to cope with the severe pain but fortunately it is rarely serious. It is worth remembering that back pain can also be as a result of other factors such as a urinary tract infection and period pain.

Upper limb disorders can arise out of repetitive tasks that involve a sequence of movements of the upper limbs that are repeated e.g. laboratory tasks such as pipetting large numbers of test tubes. Disorders may also develop where forces are exerted through the smaller joints of the upper limb e.g. in sonography.

Similarly, disorders of the lower limbs may affect the hips and knees and are typically as a result of overuse.

It is also well recognised that psychosocial factors can influence MSD development and the person's response to treatment. Psychosocial factors are things that may affect workers' psychological response to their work and workplace conditions.

Examples may include high workload, tight deadlines, lack of control of the work and working methods and other influences outside of work.

Previously, it was accepted that the best way to manage back pain, and some types of MSD's, was to rest and keep the affected part immobile. However, the evidence would now suggest that it is much better to keep active. Movement avoidance, designed to reduce pain, can actually have the opposite affect resulting in prolonged recovery time.

It must be emphasised that there may be occasions when certain injuries or signs and symptoms will require further investigation and medical treatment. If you are in any doubt you should seek medical advice.

It's also worth remembering that eating a well-balanced diet, and keeping fit and active, will not only prove beneficial to your musculoskeletal system but it is important for your general health and well-being.



# POSTURAL FACTORS CONTRIBUTING TO MUSCULOSKELETAL DISORDERS

When standing with a natural upright posture the discs and ligaments (of the spine) are in a position where they are under least stress. Positions that increase stress on the back or joints include:

## ✓ A - Bending forwards with a rounded back

Excessive repetitions of these movements can lead to increased pressure on the discs and stretching of the ligaments. (Images 1 & 2)

**Reduce risk:** Get in close to the load; keep your 'spine in line'. Adopt a stable dynamic base of support with one foot in front of the other. (Image 3)



Image 1



Image 2



Image 3

## ✓ B - Turning to the side while bending forwards

This position places the greatest amount of stress on the back particularly on the discs.

(Image 1)

**Reduce risk:** Avoid twisting the back or leaning sideways especially when the back is bent. Keep shoulders level with and facing the same direction as the hips. Turn by moving the feet rather than twisting.

(Image 2)



Image 1



Image 2



## ⏏ C - Grasping a load while leaning backwards

This position places a lot of pressure/compression on the lower part of the back.

(Image 1)

**Reduce risk:** Avoid lifting above shoulder level if possible. Store heavier loads at waist height. Place only lighter items on higher shelving and provide a suitable means of access for higher items e.g. a suitable ladder.

(Image 2)



Image 1



Image 2

## ⏏ D - Kneeling or squatting for long periods of time

Prolonged periods of time in a kneeling or squatting position, or any prolonged static position may result in joint pain.

(Image 1)

**Reduce risk:** Avoid prolonged kneeling or squatting. If you need to lift loads off the floor consider changing the position of the load to make it easier to grasp and stage the lift or break down the size of the load. Get in close, keep your 'spine in line', try to maintain a stable base and use your leg muscles.

(Image 2)



Image 1



Image 2



## ⌵ E - Prolonged static postures or “static loading”

This relates to the physical exertion of maintaining the same posture during an activity. These types of activities put increased loads or forces on the muscles which contribute to fatigue or muscle imbalance. (Image 1)

**Reduce risk:** If possible, avoid or reduce prolonged static postures. Adjust equipment to enable comfortable working positions. Vary your tasks and use pause exercises e.g. stand and stretch. (Images 2 & 3)



Image 1



Image 2



Image 3

## ⌵ F - Prolonged sitting

Prolonged sitting postures can result in discomfort. (Image 1)

**Reduce risk:** Commence by completing a workstation risk assessment. Adjust the chair to a suitable height and position the backrest to provide maximum comfort and support. Change your position regularly by taking a break or changing activity. Consider pause exercises e.g. stand and stretch.

(Image 2)



Image 1

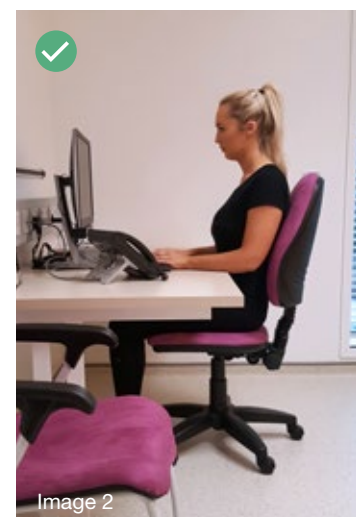


Image 2

## LEGAL DUTIES AND RESPONSIBILITIES

The Health and Safety at Work (Northern Ireland) Order 1978 is the primary piece of legislation covering workplace health and safety in Northern Ireland. This legislation places general duties on employers to ensure the health, safety and welfare of employees and others at work.

Specific legislation on manual handling at work is contained within the Manual Handling Operations Regulations (Northern Ireland) 1992. These regulations define manual handling as:

*“...any transporting or supporting of a load (including the lifting, putting down, pushing, pulling, carrying or moving thereof) by hand or bodily force”.*

Within the context of the healthcare sector, a load may be an inanimate object or a person.

The Regulations set out very clearly the approach employers must take when managing the risks associated with musculoskeletal disorders (MSDs).

In the first instance employers are required to **avoid** the need for hazardous manual handling, so far as is reasonably practicable. ‘Reasonably practicable’ means balancing the level of risk against the measures needed to control the real risk in terms of money, time or effort.

In some cases it may be possible to avoid manual handling. An example of avoiding manual handling may include enabling a patient/client to move independently.

Other examples of avoiding manual handling of inanimate loads might involve automation or mechanisation e.g. using a roller conveyor or a wheeled trolley to transport items rather than carrying them.

Where hazardous manual handling can’t be avoided, employers are required to **assess** the risk of injury. An effective risk assessment will consider relevant hazards and the likelihood of exposure to risk.

A hazard is something that has the potential to cause harm e.g. awkward postures associated with patient handling activities. The risk in this example is the likelihood of the handler developing a work-related musculoskeletal condition.

The regulations also require employers to **reduce** the risk of injury to employees, so far as is reasonably practicable. Examples of different measures to control such risks are considered further within this guide.

Whilst legislative requirements focus largely on employers, employees are also legally obliged to ensure that they adhere to any guidance, instruction or training provided by their employer. They should always use any equipment that has been provided in a safe and appropriate way and report any accidents, incidents or near misses.

Employees will often know what the risks are within the workplace and are well placed to offer practical solutions to controlling those risks.



# PREVENTION AND MANAGEMENT OF MANUAL HANDLING RISK

It is important to work in a systematic manner and to structure the approach to the prevention and management of risk.

The implementation of a manual handling policy will clarify the agreed organisational measures. These will include the completion of risk assessments, safe systems of work and the provision of manual handling training for staff to enable them to work safely.

In the healthcare sector, risk assessments will need to be completed for patients/clients and inanimate load handling activities. Whilst most risk assessments will be completed on handling activities that are routinely performed, there will also be a requirement to risk assess activities that are foreseeable, though occur less commonly e.g. handling a patient/client during a cardiac arrest.

## Risk Assessment

Risk assessment is simply a structured way of analysing risks and should enable the assessor, in consultation with relevant employees, to develop practical solutions.

A general duty to assess the risks to health and safety of employees while at work is contained within the Management of Health and Safety at Work Regulations (Northern Ireland) 2000. A specific requirement for employers to make a suitable and sufficient assessment of the risks associated with manual handling activities is contained within the Manual handling Operations Regulations (Northern Ireland) 1992.

Where a risk of injury is identified for manual handling operations and avoidance of the risk is not reasonably practicable, a more specific risk assessment is required by law.

Key factors must be considered as part of any manual handling assessment and should include the following, for which the acronym TILEO is often used:

- The Task
- Individual capability
- The Load
- The Environment
- Other factors

A completed example of a generic manual handling risk assessment template used by Health Care Trusts in Northern Ireland is contained within Appendix 1. Although the example in Appendix 1 relates to a patient/client handling activity, the template risk assessment form may also be used for inanimate load handling activities.

For activities not involving patient/client handling, the Health and Safety Executive has produced a series of tools designed to guide users through logical processes to identify high-risk manual handling operations.

The *Manual Handling Assessment Charts* (MAC) is a tool to help with the assessment of the most common risk factors in lifting (and lowering), carrying and team handling operations.

A worked example of the MAC tool is contained within Appendix 2.

The *Risk assessment of pushing and pulling* (RAPP) tool helps with the assessment of pushing and pulling activities. A further tool known as the Assessment of Repetitive Tasks (ART) tool is also available to help employers assess repetitive tasks involving the upper limbs.

Because the MAC and RAPP tools do not include all the risk factors listed as described by the acronym TILEO, using them alone may not comprise a full risk assessment. Where an assessment has been completed using any of the HSE tools, additional information can be added to ensure adequate coverage of all the factors required by the regulations.

Detailed guidance on how to use each of the assessment tools is available at [www.hse.gov.uk/msd/toolkit.htm](http://www.hse.gov.uk/msd/toolkit.htm)

### Application of numerical guidelines

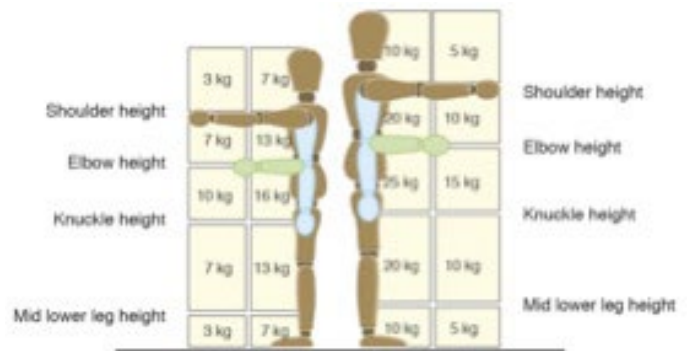
Guidance on the regulations introduces the concept of risk filters or numerical guidelines. These guideline figures set out an approximate boundary within which the load is unlikely to create a risk of injury. In general terms, if the load is within the numerical guidelines then it may not be necessary to do any other form of risk assessment. An assessment would need to be considered if the task relates to the handling of a load which exceeds the numerical guidelines, if employees are experiencing or reporting difficulty in completing the task, if there has been a manual handling incident, or if an individual employee may be at risk e.g. a pregnant worker or a young person or someone with an underlying health condition.

In addition to the need for formal risk assessments, an 'on the spot' assessment will enable the employee to consider whether they are capable of performing the activity and whether it is safe to proceed.

Risk filters or numerical guidelines exist for the following manual handling operations:

- Lifting and lowering
- Pushing and pulling for up to 20m
- Carrying for up to 10m
- Handling while seated

The guidelines relating to lifting and lowering are shown in Figure 2.



**Figure 2**

Lifting and lowering risk filter (HSE, L23, Guidance on Regulations)

The numerical values for lifting and lowering are reduced if handling is done with arms extended, or at high or low levels. The guidelines assume the load is easy to grasp with both hands, the operation takes place in reasonable working conditions and the handler is in a stable body position. An assumption is also made that the employee is in reasonable health.

Guideline weights should be reduced if the handler twists to the side during the operation. As a rough guide, reduce the guideline figures by 10% if the handler twists beyond 45°, and by 20% if the handler twists beyond 90°. Where assumptions have not been met or where weights exceed the numerical guidelines, then a risk assessment will be required.

Guidelines in relation to pushing and pulling are shown in Figure 3. As would be expected, the initial push or pull force required to start moving an object or to change direction are greater than those required to keep the same object moving. Employees tasked with pushing or pulling loads should avoid jerky movements and high sustained forces. Adopting a comfortable, stable posture is important, as is avoiding twisted or bent postures.



**Figure 3**

Guidelines for safe pushing and pulling (HSE, L23, Guidance on Regulations)

	<b>Men</b>	<b>Women</b>
Guideline figure for stopping or starting a load	20kg (i.e. about 200 newtons)	15kg (i.e. about 150 newtons)
Guideline figure for keeping the load in motion	10kg (i.e. about 100 newtons)	7kg (i.e. about 70 newtons)

When pushing or pulling a load, a force is required. The estimated force required to move a load by pushing or pulling, can be calculated as 2% of the load weight, assuming the load can be moved on wheels and on a smooth, flat surface. For example, if a hospital bed weighs approximately 200kg then the force required to push or pull it along a smooth, level surface would be 4kg.

Further information on the risk assessment process, how detailed a risk assessment should be and application of the risk filters can be found within Manual Handling Operations 1992, Guidance on Regulations (L23).

### Manual handling training

Health and safety legislation requires employers to provide health and safety information and training to employees. This includes more specific information and training on manual handling risks and prevention measures.

The risk of injury from a particular manual handling activity will be increased where workers do not have the information and training necessary to enable them to work safely. For example, employees should be made aware of any unusual characteristics of loads and understand clearly the systems of work designed to ensure their safety.

Manual handling training programmes must be specific to the types of activities conducted in the work environment and need

to be supported by follow-up supervision to ensure that techniques and practices learnt in training are continuously applied.

There must be a system in place to manage the training and education requirements of staff and to ensure that their training is kept up to date. A number of principles must be considered when designing manual handling training programmes:

- It is important to ensure that trainers understand the training material they are delivering and have an appropriate level of competence.
- The implementation of the skills taught at training must be supported and supervised in the workplace.
- Staff will need to be instructed on the safe use of equipment through formal and on-the-job training.
- Training programmes should be planned to ensure all staff, including new starters, receive relevant training and any updates when necessary.

Managers should ensure the findings of risk assessments and risk reduction measures are communicated to all relevant members of staff.

Providing information and training alone will not ensure safe handling practice. The first objective in reducing the risk of injury should always be to design the activity to be as safe as reasonably practicable by considering each of the relevant risk factors.

## PATIENT/CLIENT HANDLING

The best approach to injury prevention is to eliminate the risk by avoiding the manual handling activity or automating it. Meeting the health and social care needs of patients/clients makes this difficult to implement. Risk reduction measures therefore need to be identified taking into account the needs and wishes of the patient/client as well as the safety of staff.

National Back Exchange (NBE) in collaboration with Backcare has developed a comprehensive range of guides for the moving and handling of people. They are the leading source of evidence based instruction and guidance. The lessons of research, best practice and professional judgement

are combined into a resource that has been developed for managers, trainers and practitioners working within health and social care. The guides are available to purchase from National Back Exchange.

All patients/clients who require assistance to move must have a suitable and sufficient moving and handling risk assessment completed as part of their overall care plan to meet their specific needs. This type of assessment will typically be completed by a nurse, occupational therapist or physiotherapist. Specialist advice may also be required from an ergonomics or manual handling advisor.



*Professional guidelines for the moving and handling of people (National Back Exchange)*



## Manual Handling Aids

Mechanical aids such as hoists, height adjustable and electrically operated profiling beds, trolleys, chairs and a large range of non-mechanical aids can make handling tasks easier. It should be noted that the provision of some handling aids may bring about other risks such as those caused by unsuitable equipment or untrained staff.

Before using work equipment check the maximum user weight and safe working load. You will need to have an idea of the patient/client weight and ensure that they don't exceed the weight bearing capacity of the equipment.

Do not use equipment unless trained to do so.

Visually inspect the equipment to ensure that it is in good working order and suitable for the task. Follow the manufacturer's instructions and any safety information. If the sling and hoist are made by different manufacturers, a hoist/sling compatibility risk assessment must be completed.

Additional considerations will be required when moving and handling the plus sized, heavier patient/client. Specialist equipment with a higher maximum user weight and larger dimensions is likely to be required. Additional space will also be necessary to facilitate the larger items of equipment. Handling activities are likely to take longer to perform and require extra staff.

### ▼ A - Patient Lifting Hoists

Hoisting equipment can be used to perform a passive lift and the transfer of a fully dependent person from surface to surface. Hoists are mostly battery powered and are categorised as mobile, fixed or overhead. Mobile hoists should be able to fit around chairs and under beds and there needs to be sufficient space to manoeuvre them. (Image 1)

Overhead hoists are becoming more common as they significantly reduce the amount of effort required when moving and positioning the client/patient. Overhead hoists can help address issues such as lack of space or unsuitable floor coverings. (Image 2)





▼ B - Adjustable equipment

Adjustable equipment such as beds, couches, cots etc. can enable good working postures for carers and promote a level of patient independence. Some bed frames and alternating mattresses have a turning facility which enables the equipment to turn the patient/client from side to side.



*Electric height-adjustable profiling bed*



*Treatment room couch/chair with removable armrests*



*Adjustable height incubator*



*Adjustable height cot*



## ▼ C - Bedside Chairs



*Drop down arms on chairs and trolleys allow patients/clients to perform a slide seat to seat transfer more easily.*



*A height adjustable riser recliner chair will assist with sit to stand and stand to sit manoeuvres.*

## ▼ D - Slide sheets and lateral supine transfer devices

Slide sheets are made of low friction material and are primarily used for repositioning someone on a flat surface. They can also be used to aid insertion of slings and other items.

Simple lateral supine transfer devices come in the form of rigid or rolling boards that bridge the gap between two surfaces during a lateral transfer. They are normally used in conjunction with slide sheets.

An inflatable mattress used in conjunction with an air blower for performing lateral supine transfers significantly reduces the amount of handling effort. This type of device is particularly useful when transferring the larger, much heavier patient/client.



▼ E - Seat to seat transfer aids

These may aid a level of independent movement. Electrically operated standing and raising aids or active hoists provide additional assistance to move from sit to stand. Transfer aids come in a range of sizes and safe working loads.



*Transfer board*



*Sit to stand transfer and transport equipment*



*Use of a handling belt with transfer and transport equipment*



## ▼ F - Range of small handling aids



There is a wide variety of small handling aids that will allow the patient/client to remain as independent as possible or enable the carer to provide minimal assistance.

## ▼ G - Emergency handling

Having to deal with emergency handling situations within the healthcare environment is foreseeable. The provision of emergency handling equipment must be considered.

An emergency handling pack should contain slide sheets with long handles which can be used for sliding someone out of a restricted space or away from danger. The pack should also contain an emergency lifting sheet for use in a life threatening situation.



In addition to hoisting equipment there is also a range of portable patient/client devices available that will allow someone to be lifted off the floor.



*A battery operated lifting chair*

An emergency inflatable cushion allows someone to be lifted off the floor in supine position. Other inflatable devices come with backrests.

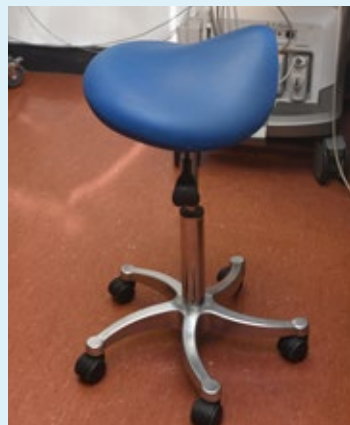


Emergency evacuation from a building or down a flight of stairs can be achieved by using evacuation chairs. Evacuation chairs can often be seen strategically placed along evacuation routes.



## ✓ H - Prolonged sitting for procedures

Use of a comfortable, wheeled and height adjustable stool will promote good sitting posture and enable the user to move more easily during tasks such as sonography, dentistry, phlebotomy, ophthalmology, etc.



## ✓ I - Kneeling



Use of basic kneeling pads to make kneeling tasks more comfortable during short kneeling activities.

Ergonomically designed aids enable the user to alternate between a sitting and kneeling posture for tasks of longer duration e.g. applying leg ulcer dressings.





# INANIMATE LOAD HANDLING

The following examples identify practical solutions to reduce the risks associated with common manual handling tasks.

## ▼ A - Mechanical lifts / hoists

Mechanical lifting devices can be used to significantly reduce the risks associated with the lifting and transportation of inanimate loads.



## ▼ B - Trucks and Trolleys

Trucks and trolleys allow staff to transport loads between different locations. In some locations, accessibility to upper floors is often only possible via stairs. Some trucks are fitted with special wheels for climbing and descending stairs.



## ▼ C - Managing liquid loads

A liquid load has a tendency to be unstable during movement. As a guide 1 litre water = 1kg in weight. A mop bucket weighing 3 kg that contains 5 litres of water will weigh approximately 8kg. When the mop squeezer is added to the bucket the load becomes significantly heavier. Consider having a drain at floor level for emptying the bucket or decant using a small container.



## ▼ D - Improved load storage



Distribute items safely in storage areas to reduce the risk of injury. Ideally items should be stored at waist height. Realistically it will be necessary to store items on higher or lower shelving. Store heavier items at waist height and lighter items on the higher and lower shelves. Make sure the shelving is capable of taking the weight of the load. A suitable means of access should be provided for accessing higher shelves.



## ✓ E - Reduce long carrying distances

Roller and belt conveyor systems are simple ways of minimising the amount of carrying an employee has to perform. They can be powered or non-powered. Conveyors can also be portable and used for occasional or semi-permanent use in different work areas. Some versions have wheels to increase their mobility.



## ✓ F - Adjustable workstations



Portable, height adjustable workstations facilitate good standing working postures during activities such as ward rounds.



# EXAMINATION AND MAINTENANCE OF LIFTING EQUIPMENT

In the context of the healthcare sector there are many examples of lifting equipment that are used on a day to day basis. Some examples of lifting equipment and their accessories used within the workplace include mobile lifting hoists and slings. Lifting equipment and any lifting accessories, used in the context of work, are subject to the requirements of the Lifting Operations and Lifting Equipment Regulations (Northern Ireland) 1999 or LOLER as the regulations are commonly known.

Lifting equipment must be fit for purpose, appropriate for the task, suitably marked and, in all cases, subject to statutory periodic 'thorough examination' by a competent person.

## When does LOLER apply?

These regulations only apply to work equipment used to lift or lower loads as its principal function. Although many items of equipment within the work setting might involve an element of 'lifting', if its principal function is not for lifting or lowering of loads then LOLER does not apply e.g. a riser recliner chair or a profiling bed.

## What is thorough examination?

Thorough examination is a systematic and detailed inspection of lifting equipment and the accessories that are used. It must be carried out at specified intervals by a competent person who must then complete a written report outlining the condition of the device. Records of all thorough examinations and inspections must be kept.

Where (in the opinion of the person undertaking the examination or inspection) a defect is identified which is (or could become) a danger to people, the employer or self-employed person should be notified immediately. Such defects must be confirmed in writing in the report, even if it is remedied immediately (e.g. by destruction of a sling). The person making the report must also notify the relevant enforcing

authority with a copy of the report. The relevant enforcing authority may follow up on such reports to check that risks are being adequately managed.

## When should thorough examinations be carried out?

Periodic thorough examinations during the life of the equipment are required for lifting equipment and accessories exposed to conditions which cause deterioration likely to result in dangerous situations. Typically, equipment used for lifting people must be examined every 6 months. Other lifting equipment should be examined every 12 months or more frequently if identified in an examination scheme, drawn up by a competent person.

## Who is a 'competent person'?

Although the term 'competent person' is not defined in law, they should have enough practical and theoretical knowledge and experience of the lifting equipment to detect defects or weaknesses, and assess how important they are in relation to the safety and continued use of the equipment.

Although the competent person may often be employed by another organisation, this is not necessary, provided they are sufficiently independent and impartial to ensure that in-house examinations are made without fear or favour.

## Is there a responsibility to maintain lifting equipment?

All work equipment, including lifting equipment, must be maintained in good working order and in good repair. The duty to maintain work equipment is a specific requirement of the Provision and Use of Work Equipment Regulations (Northern Ireland) 1999. Routine maintenance might typically involve checking and replacing worn or damaged parts, lubrication, and making routine adjustments.



## ADDITIONAL SOURCES OF INFORMATION

### Regulations

Health and Safety at Work (Northern Ireland) Order 1978

Lifting Operations and Lifting Equipment Regulations (Northern Ireland) 1999

Management of Health and Safety at Work Regulations (Northern Ireland) 2000

Manual Handling Operations Regulations (Northern Ireland) 1992

Provision and Use of Work Equipment Regulations (Northern Ireland) 1999

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (Northern Ireland) 1997

### Guidance on the regulations

Lifting Operations and Lifting Equipment Regulations 1998. Approved Code of Practice and Guidance L113 HSE 2014

Manual Handling - Manual Handling Operations 1992 Guidance on Regulations L23 HSE 2016

Provision and Use of Work Equipment Regulations 1998 Approved Code of Practice and Guidance L22 HSE 2014

### Other guidance

*Assessment of repetitive tasks of the upper limbs (the ART tool); Guidance for employers* Leaflet INDG438 HSE 2010

*Back in Work, The Staff Guide* NHS Employers 2014

*Guidance for safer handling during cardiopulmonary resuscitation in healthcare setting* Resuscitation Council (UK) July 2015

*How the Lifting Operations and Lifting Equipment Regulations apply to health and social care* HSIS4 HSE 2012

*Manual handling assessment charts (the MAC tool)* Leaflet INDG383 HSE 2018

*Manual handling at work: A brief guide* Leaflet INDG143 HSE 2020

*Providing and using work equipment safely, a brief guide* Leaflet INDG291 HSE 2013

*Risk assessment of pushing and pulling (RAPP) tool* Leaflet INDG478 HSE 2016

*The Back Book* (2nd edition) The Stationary Office 2002

### National Back Exchange (NBE) Guides

*The Guide to the Handling of People* (5th edition) 2005

*The Guide to the Handling of People (HOP 6)* 2011

*Manual Handling of Children (Vol 2)* 2011

*Moving and Handling of Plus Size People (Vol 3)* 2013

*Moving and Handling in the Community and Residential Care (Vol 5)* 2015

*Safer Moving and Handling in the Perioperative Environment (Vol 4)* 2014

# APPENDIX 1

## EXAMPLE GENERIC MANUAL HANDLING RISK ASSESSMENT FOR A PATIENT/CLIENT MOVING AND HANDLING ACTIVITY

Ref No. 123/20	Activity being assessed <i>Moving and handling a client in bed in a Nursing Home.</i>	
<b>Section A – Administration Details</b>		
Site: <i>Anywhere Nursing Home</i>		Precise Location: <i>Floor 1 (standard bed)</i>
Name of Assessors: <i>Al Smith &amp; Bee White</i>		
Designation: <i>Nurse</i>		
Name of Manager: <i>Al Smith</i>		Initial Assessment Date: <i>01.06.2020</i>
Date of review	Signature	Outcome
<i>01.12.2020</i>	<i>Al Smith</i>	<i>All actions complete</i>
<b>Section B: Manual Handling Activity</b>		
<p>Description Of Activity: <i>(record details of the activity for which the assessment applies e.g. moving people/heavy equipment etc. Include issues e.g. challenging behaviour)</i>  <i>Activity involves the promotion of independent movement, provision of verbal supervision and/or the moving and handling of a client for the purpose of repositioning or the provision of personal care in bed.</i></p>		
<p>Current Control Measures &amp; Equipment currently in use: <i>(list control measures currently in use eg. staff training/ written information/protocols)</i>  <i>All clients are assessed to establish specific handling needs and a care plan implemented. Client independence is promoted. Clients are referred to appropriate professional e.g. District Nurse, Community Physiotherapist or Community Occupational Therapist when a client's needs dictate. Other controls include:</i>  <i>Electric height adjustable profiling beds in use.</i>  <i>Hoist and range of hoist slings available for use. Hoist is on a service contract and undergoes thorough examination as per LOLER every 6 months. SWL clearly identified on hoist and slings.</i>  <i>Slide sheets available for use.</i>  <i>Staff visually inspect equipment before use and follow established processes for the removal and reporting of faulty equipment.</i>  <i>Manual Handling Training Programme in place for Staff.</i>  <i>Uniforms and footwear allow unrestricted movement.</i></p>		
List people affected by activity: <i>Clients, Staff and anyone else exposed to the activity</i>		
Signature of Assessor:	<i>Al Smith</i>	Date: <i>01.06.2020</i>



### Section C: Manual Handling Risk Level

In each of the sections, **Task, Individual Capabilities, Load, Environment/Equipment** – tick the appropriate ‘yes’ or ‘no’ box. A ‘yes’ response indicates that further action may be required to reduce the risk.

Section C: Manual Handling Risk Level			
In each of the sections, <b>Task, Individual Capabilities, Load, Environment/Equipment</b> – tick the appropriate ‘yes’ or ‘no’ box. A ‘yes’ response indicates that further action may be required to reduce the risk.			
<b>Initial assessment:</b> <b>Does the activity involve:</b>	<b>Task</b>	<b>Initial assessment:</b> <b>Is the patient/load:</b>	<b>Patient/load</b>
Holding the load away from the trunk (reaching across the bed)	Yes x	Heavy - indicate weight if possible Average adult weighs > 60kg but heavier clients can weigh in excess of 200kg	Yes X
Twisting (poor postures)	Yes x	Bulky/unwieldy – one side heavier/ >75 cms in diameter (medical condition / bariatrics)	Yes X
Stooping (if bed too low or 2 staff of significantly different heights working together)	Yes x	Difficult to grasp eg. no handles (particularly very large heavy clients)	Yes X
Reaching upwards above shoulder	No x	Unsteady/unpredictable (Uncooperative or weight shift of client during handling)	Yes X
Large vertical movements eg. from floor	No x	Harmful eg. sharp/hot/contaminated patient behaviour	Yes X
Long carrying distance > 10 metres	No x		
Work rate imposed by a process	No x		
Repetitive handling > 30 times/hr or 3 times/min	No x		
Strenuous pushing or pulling (if heavier client needs assistance)	Yes x		
Prolonged stationary holding of the load (if providing personal care to an uncooperative or very heavy client)	Yes x		
Team handling (if client heavy or difficult to handle)	Yes X		
		<b>Initial Assessment:</b> <b>Are there:</b>	<b>Environment</b>
		Constraints on posture eg. poor space/low work surfaces	Yes x
		Poor floors eg. slippery/unstable/ uneven	No x
		Variations in levels eg. steps/stairs	No x
		Strong air movements (if adverse weather conditions)	No x
		Poor lighting conditions	No x
		Hot/cold/humid conditions (if moving outdoors in cold weather)	No x
<b>Initial Assessment:</b> <b>Does the activity:</b>	<b>Individual capability</b>	<b>Initial Assessment:</b> <b>Equipment is:</b>	<b>Equipment</b>
Require unusual capability eg. strength, height, age (<18 >55) (if the client is heavy)	Yes X	Unavailable	Yes X
Constitute a hazard to those who are pregnant (Awkward handling activities)	Yes X	Unsuitable	No X
Constitute a hazard to those with health problems (may exacerbate and existing health problem if poor postures or working beyond own capability)	Yes X	In poor working order	No X
Require special information and or training (manual handling training)	Yes X	Insufficient quantity	Yes X
Require personal protective clothing/ equipment (if exposure to body fluids)	Yes X	Specify: <i>Bariatric Slide sheets not available</i> <i>Leg lifting sling not available</i>	

**Other factors, staffing levels/uniform etc.**

Extra staff members may not always be readily available for assisting with the handling and moving of very heavy clients.

Wider bariatric beds require more space and result in increased reaching postures – additional specialist equipment may be required that staff are unfamiliar with.

Working with heavier immobile clients will require additional resources and activities take much longer to complete.

Consideration needs to be given to the safety of other clients – the area cannot be left unattended in order to meet the needs of one client.

Signature of Assessor: Al Smith Date: 01.06.2020

**Section D: Initial Risk Rating Figure**

**Initial Risk Rating (to calculate, refer to Trust Risk Rating Matrix)**

(level of risk will depend on current control measures)

Impact Minor Likelihood Possible Risk Rating Low

**Section E: Additional Risk Reduction Measures Recommended**

No.	Risk Reduction Measures
1	Staff should inform their Manager when extra resources may be required e.g. larger/heavier clients may require extra staff, more space, a wider bed, equipment that has a higher safe working load, wider slide sheets, additional turning equipment, etc.
2	Staff should have access to an up to date list of available equipment and equipment that is available to hire. As a minimum suitable slings and slide sheets should be available.
3	Consider provision of leg lifting slings to assist with the holding of heavy legs during dressings / the provision of personal care.
4	Each department should establish a process for staff to follow when specialist equipment needs to be installed and advice regarding processes for accessing additional training that will be required by all staff using it.
5	Staff should remember to adjust height of a bed to enable good working posture. Avoid twisting and other poor postures. Use pause exercises and stretches before and after manual handling activities. Work within own capability and ask for help if required. Try to adjust the equipment so that you can get in close to the client.
6	When handling very large heavy clients, the activities may need to be broken down and shorter periods spent performing tasks in various stages rather than trying to complete in one long period.
7	If turning a very large heavy client in bed, raise the bed side rails on the side that the client is turning towards as sudden weight shift could pose a risk of the client rolling out of bed.
8	A risk assessment should be carried out for new and expectant mothers. Staff should inform their managers so that a risk assessment can be completed to determine their ability to participate in manual handling activities. This risk assessment should be reviewed on a monthly basis. Refer to the your policy for the protection of new and expectant mothers.
9	When working as a team, nominate a team leader who will give the command to move e.g. ready steady move.
10	Staff should report and record any accidents incidents or near misses so that systems of work can be reviewed and additional risk reduction measures considered.



11	Personal protective equipment should be worn when required.
12	Refer to the appropriate Professional involved if the client's needs change / need to be reviewed or additional advice is required

### Section F: Action Plan agreed with Manager

No.	Action Plan	Responsible person	Projected completion date	Date completed/ signature
1	Create an up to date equipment list for staff. Information should include safe working load	Manager	Within 6 months	Completed 11.11.2020 Al Smith
2	Establish a protocol for ordering of specialist equipment and associated training	Manager	Within 6 months	Completed 01.10.2020 Al smith
3	Purchase bariatric slide sheets and leg lifting slings	Manager	Within 3 months	Completed 15.09.2020 Al smith
4	Check training records to ensure staff have completed training	Manager	Ongoing	Ongoing Al Smith
5	Bring this reviewed risk assessment and recommended system of work to the attention of all staff	Manager @ next Team Meeting	Within 3 months	Completed 15.09.2020 Al smith
6	Review incident reports and systems of work regularly and keep staff abreast of any issues	Manager	Ongoing	Ongoing Al Smith

Once the actions are implemented, calculate the final Risk Rating Figure

Impact *Minor*                      Likelihood *Unlikely*                      Risk Rating *Low*

### Section G: Additional Comments

Although the risk rating has remained unchanged, the likelihood of injury occurring has been reduced. N.B. The level of risk may increase when handling very large, heavy clients.

Signature of Assessor: *Al Smith / Bee White*

Date: *11/11/2020*

Signature of Manager: *Al Smith*

Date: *11/11/2020*

## APPENDIX 2

### WORKED EXAMPLE OF MANUAL HANDLING ASSESSMENT CHARTS (MAC) FOR A LIFTING OPERATION

Detailed information on the application and use of the scoring system for the MAC tool is available at [www.hse.gov.uk/msd/toolkit.htm](http://www.hse.gov.uk/msd/toolkit.htm)

Step 1	Task description	Transfer of 10kg boxes of intravenous fluids from pharmacy stores unto a flatbed trolley.																																																																																																														
Step 2	Collect additional information	The stores operative conducts this task four times a week. Loading takes place within the pharmacy stores adjacent to product shelving. Each box contains 10 litres of intravenous fluids weighing approximately 10 kilograms. The boxes are 30cm square with no handles or handholds. The activity takes place in a comfortable working environment albeit a relatively poorly lit area of the stores.																																																																																																														
Step 3	Identify the risk factors using the MAC assessment tool and complete the score sheet	<table border="1"> <thead> <tr> <th rowspan="2">Risk Factors</th> <th colspan="3">Colour band (G, A, R or P)</th> <th colspan="3">Numerical score (for comparison)</th> <th rowspan="2">Comments</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/frequency</td> <td>G</td> <td></td> <td></td> <td>0</td> <td></td> <td></td> <td>Store operative lifts 1 box approximately every 10 seconds.</td> </tr> <tr> <td>Hand distance from the lower back</td> <td>R</td> <td></td> <td></td> <td>6</td> <td></td> <td></td> <td>Upper arms angled away from torso and torso bent forward when loading flat-bed trolley.</td> </tr> <tr> <td>Vertical lift zones</td> <td>A</td> <td>N/A</td> <td></td> <td>1</td> <td>N/A</td> <td></td> <td>Hand level between knee and floor level during loading of flatbed trolley.</td> </tr> <tr> <td>Torso twisting and sideways bending OR Asymmetrical torso or load (carrying)</td> <td>R</td> <td></td> <td></td> <td>2</td> <td></td> <td></td> <td>Torso twisted and bent sideways during loading of flatbed trolley.</td> </tr> <tr> <td>Postural constraints</td> <td>G</td> <td></td> <td></td> <td>0</td> <td></td> <td></td> <td>No postural constraints noted. Good access for loading between shelving.</td> </tr> <tr> <td>Grip on the load</td> <td>A</td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td>No handles or hand holds but fingers clamped at 90 degrees under cardboard boxes.</td> </tr> <tr> <td>Floor surface</td> <td>G</td> <td></td> <td></td> <td>0</td> <td></td> <td></td> <td>Floor surface good condition. Smooth concrete, clean and dry.</td> </tr> <tr> <td>Carry distance</td> <td>N/A</td> <td></td> <td></td> <td></td> <td>N/A</td> <td></td> <td></td> </tr> <tr> <td>Obstacles on route</td> <td>N/A</td> <td></td> <td></td> <td></td> <td>N/A</td> <td></td> <td></td> </tr> <tr> <td>Communication, co-ordination and control</td> <td>N/A</td> <td>N/A</td> <td></td> <td>N/A</td> <td>N/A</td> <td></td> <td></td> </tr> <tr> <td>Environmental factors</td> <td>A</td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td>Lighting levels poor above shelving area.</td> </tr> <tr> <td colspan="4" style="text-align: right;">Total score:</td> <td>11</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Risk Factors	Colour band (G, A, R or P)			Numerical score (for comparison)			Comments	Lift	Carry	Team	Lift	Carry	Team	Load weight/frequency	G			0			Store operative lifts 1 box approximately every 10 seconds.	Hand distance from the lower back	R			6			Upper arms angled away from torso and torso bent forward when loading flat-bed trolley.	Vertical lift zones	A	N/A		1	N/A		Hand level between knee and floor level during loading of flatbed trolley.	Torso twisting and sideways bending OR Asymmetrical torso or load (carrying)	R			2			Torso twisted and bent sideways during loading of flatbed trolley.	Postural constraints	G			0			No postural constraints noted. Good access for loading between shelving.	Grip on the load	A			1			No handles or hand holds but fingers clamped at 90 degrees under cardboard boxes.	Floor surface	G			0			Floor surface good condition. Smooth concrete, clean and dry.	Carry distance	N/A				N/A			Obstacles on route	N/A				N/A			Communication, co-ordination and control	N/A	N/A		N/A	N/A			Environmental factors	A			1			Lighting levels poor above shelving area.	Total score:				11			
		Risk Factors		Colour band (G, A, R or P)			Numerical score (for comparison)				Comments																																																																																																					
			Lift	Carry	Team	Lift	Carry	Team																																																																																																								
		Load weight/frequency	G			0			Store operative lifts 1 box approximately every 10 seconds.																																																																																																							
		Hand distance from the lower back	R			6			Upper arms angled away from torso and torso bent forward when loading flat-bed trolley.																																																																																																							
		Vertical lift zones	A	N/A		1	N/A		Hand level between knee and floor level during loading of flatbed trolley.																																																																																																							
		Torso twisting and sideways bending OR Asymmetrical torso or load (carrying)	R			2			Torso twisted and bent sideways during loading of flatbed trolley.																																																																																																							
		Postural constraints	G			0			No postural constraints noted. Good access for loading between shelving.																																																																																																							
		Grip on the load	A			1			No handles or hand holds but fingers clamped at 90 degrees under cardboard boxes.																																																																																																							
		Floor surface	G			0			Floor surface good condition. Smooth concrete, clean and dry.																																																																																																							
		Carry distance	N/A				N/A																																																																																																									
		Obstacles on route	N/A				N/A																																																																																																									
		Communication, co-ordination and control	N/A	N/A		N/A	N/A																																																																																																									
		Environmental factors	A			1			Lighting levels poor above shelving area.																																																																																																							
Total score:				11																																																																																																												
<b>G = GREEN - Low level of risk</b> Although the risk is low, consider the exposure levels for vulnerable groups such as pregnant women, disabled, recently injured, young or inexperienced workers																																																																																																																
<b>A = AMBER - Medium level of risk</b> Examine tasks closely																																																																																																																
<b>R = RED - High level of risk</b> Prompt action needed. This may expose a significant proportion of the working population to risk of injury.																																																																																																																
<b>P = PURPLE - Unacceptable level of risk</b> Such operations may represent a serious risk of injury and must be improved.																																																																																																																
Step 4	Identify possible control measures to reduce the risk of red / amber factors	<p>Possible control measures:</p> <p>Provide a self-levelling trolley to minimise vertical lift zones and hand distance from lower back.</p> <p>Store product at waist height to minimise vertical lift zones.</p> <p>Improve lighting above store room shelving area.</p> <p>Provide job specific information, instruction and training to stores operatives to avoid twisting and sideways bending during lifting.</p> <p>Ensure adequate supervision and monitoring of the work activity.</p>																																																																																																														



Health and Safety Executive for Northern Ireland  
83 Ladas Drive  
Belfast  
BT6 9FR  
Northern Ireland

**Helpline:** 0800 032 0121  
**Telephone:** 028 9024 3249  
**Email:** [mail@hse ni.gov.uk](mailto:mail@hse ni.gov.uk)

[www.hse ni.gov.uk](http://www.hse ni.gov.uk)

