

# Reducing the Risk of Back Injuries on the Farm





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## Introduction

Work activities on the farm by their nature involve physical manual work, which is a healthy thing. However, farmers should be aware that some aspects of this physical work involve a risk of musculoskeletal injury, particularly back injury.

This guide will:

- present findings on the prevalence of musculoskeletal injury among Irish farmers and on the impact of such injuries,
- describe the main risk factors for back injury,
- explain how to manage these risks when planning work activities on the farm, and
- suggest ways of organising work activities to reduce risk.

## Musculoskeletal injuries among Irish farmers

Recent evidence-based research identified a **high prevalence** of musculoskeletal injury among Irish farmers.

A survey of 600 Irish farmers (100 farmers from each of the six main farm enterprise systems in Ireland) found that 56% of farmers had experienced a musculoskeletal injury. The most common types of injury or disorder were related to the back (37%).

To get a better understanding of the lived experience of back pain/injury among Irish farmers, detailed interviews were conducted with a number of farmers. These interviews explored how the farmer suffered the injury in the first place, the type of work that they could no longer carry out on the farm, the changes that they had made on the farm due to their back pain/injury, and how they manage their pain on a day-to-day basis.

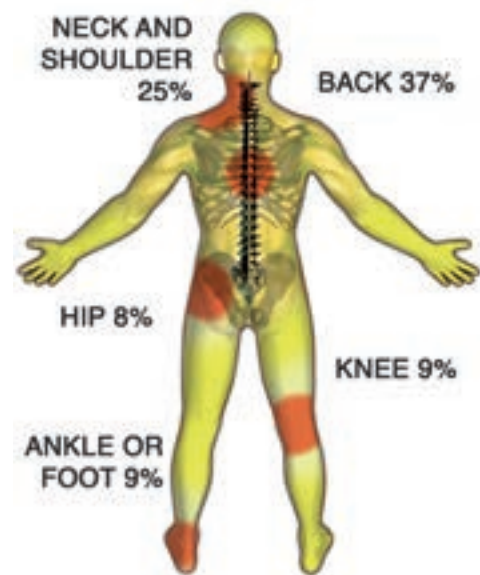


Figure 1: Musculoskeletal injuries among Irish farmers

The two case studies below reflect some of the main findings from this research (Osborne et al., 2014).

### Case study 1

Farmer profile	Cause of back pain/ injury	Difficulties in work activities due to injury	Strategies to allow participation in day- to-day work
			
<p><b>MICHAEL</b> 52-year-old, full-time dairy farmer; farming 32 years on 64 acres</p>	<p>'I was breaking rock with a hand rock- breaker and I overdid it. I should've got a rock breaker machine.'</p>	<p>Unable to carry buckets, to lift anything or to roll out a bale of straw</p>	<p>Gets some help through the farm relief services</p>

### Case study 2

Farmer profile	Cause of back pain/ injury	Difficulties in work activities due to injury	Strategies to allow participation in day- to-day work
			
<p><b>MARTIN</b> 50-year-old, full-time dairy farmer; farming 28 years on 64 acres</p>	<p>'I had built a pier and it broke. I was impatient and I decided I would try to remove it myself. It was too heavy and I tore ligaments in my sacroiliac joint.'</p>	<p>Had to leave his sheep enterprise; has to be careful when forking or shovelling</p>	<p>Invested in a re-adjusted farming system, including mechanisation (automatic scrapers, tractor attachments for bales); redesigned the milking parlour with a herringbone system to lift buckets</p>

These case studies illustrate the potential consequences of a musculoskeletal injury caused during physical work activities on the farm. The two activities highlighted carried a clear risk of back injury. It is important to be aware of the risks of injury. The next section of this guide will look more closely at the key risk factors for manual handling.

### Risk factors for manual handling on the farm

Farms tend to be a hive of activity. There are always jobs to be done and some tasks require the farmer to engage in manual handling. Examples include lifting a bag of feed or carrying a calf.

It is good for people to be active and dynamic, and a certain level of physical manual work is healthy. However there are risks associated with manual handling.

Risk factors for manual handling include:

- excessive force or load weight,
- very awkward posture during lifting activities, and
- highly repetitive bending and/or twisting postures.

The presence of one or more of these risk factors increases the risk of injury, particularly of back injury. Such injuries can have serious consequences for the farmer, reducing his or her mobility and capacity to engage in farming activities.

The main risk factors for musculoskeletal disorders are described in more detail below.

#### Excessive force

Force refers to the weight of a load that is to be lifted. Lifting a heavy load places excessive demands on the limited motion capabilities of the spine. Overloading the spine can cause permanent damage.

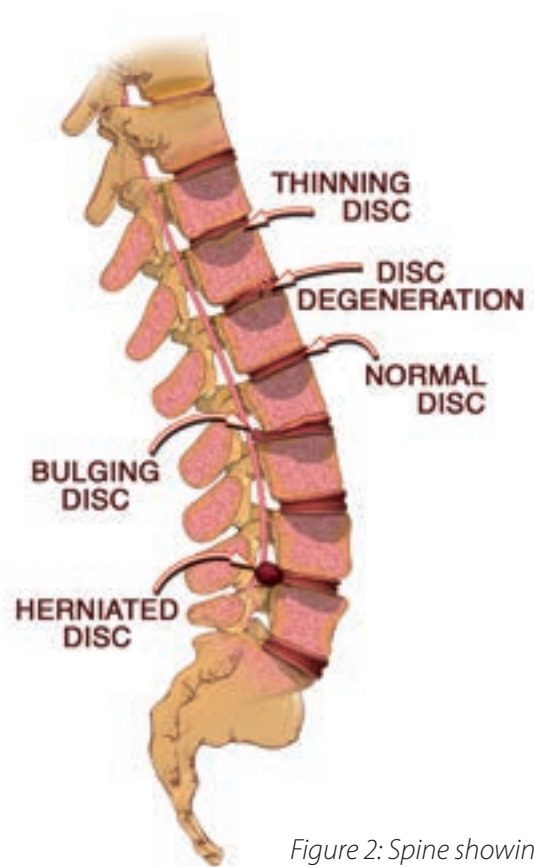


Figure 2: Spine showing damaged discs



Figure 3: Force lifting a 50kg bag

An example of a task that results in increased risk on the farm is the handling of 50kg fertiliser bags. According to the UK Health and Safety Executive, having one person handle a load weight of 50kg represents a serious risk of injury and *should be avoided at all times*. Other methods of handling should be considered or the load should be broken down prior to movement.

The risk posed by excessive force is made worse if the person lifting a heavy load is also bending over. Such action increases pressure on the discs in the back.

### Awkward posture

If a load is bulky or hard to grasp, such as a restless animal, it will be more difficult to hold while lifting and carrying. The holder may adopt an awkward posture, which is tiring and increases the risk of injury.

Sometimes the size of an item, or a shortage of space for movement, results in a load being held away from

the body. This results in increased stress on the back. Our handling capability is reduced significantly the further our hands move away from the trunk of our body during a lifting or carrying task. Holding a load at arm's length imposes about five times the stress that holding the same load very close to the body would.

### Repetitive movements

Another risk related to awkward posture is repetitive bending and twisting when carrying out a task. For example, fitting clusters on cows. Bending increases the stress on the lower back because the back muscles have to support the weight of the upper body as well as the weight of the load, which in turn increases the risk of injury.

The weight that we can handle comfortably will decrease as the frequency of handling increases. Work should be planned in a way that alternates tasks or includes time for breaks from a repetitive activity.

### Lack of recovery time

If physical stresses are prolonged, then fatigue will occur. Efforts need to be made to plan or schedule work activities on the farm to reduce fatigue and allow time for recovery during physically demanding work.



## Other risks

Other risk factors to consider include:

- excessive carrying distance (greater than 10 metres),
- lifting loads above shoulder height,
- lifting loads with no handles, and
- lifting loads in an area that is difficult to access. For example, where there are space constraints, uneven or slippery surfaces and/or poor housekeeping practices.

## Actions to take to avoid/reduce risk







The range of manual handling activities on the farm is wide. Examples include handling of fertiliser, feed and small animals; carrying buckets for feeding; lifting loads from the back of a trailer to the shed; or lifting netting reels onto a bailer.

Recognition that all manual handling activities are **potential workplace hazards on the farm** is the first step in managing the risk of back injury on the farm.

Risk-reducing measures to consider **before** carrying out a manual handling activity on the farm include: reducing load size, using attachments on tractors and other handling aids, improving seating in tractors, improving storage facilities, raising work platforms or benches, fitting wheels to heavy loads, using hitch three-point linkage systems and taking the time to plan each activity.

Planning ahead and taking steps to reduce the risk of injury should make the job easier and less strenuous, as well as safer. The table on the next page lists some useful risk reduction measures.

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Risk factor	Examples of farm activities	Risk reduction measures to consider	Aids to reduce risk
Heavy load weight	Carrying heavy buckets of feed to the field	Can the feed be transferred to the field using a tractor with a transport box or other means? Would a meal bin be more effective than handling a large number of bags of meal?	
	Carrying a 50kg bag of fertiliser	Can the load be broken down into smaller containers so that the full weight is not being lifted or carried at once?	
Heavy load weight and a long distance	Carrying buckets of water or bales of straw from one part of the farm to another	Are there useful attachments for the tractor to make it easier to transport heavy loads (e.g. powered barrows; pallet forks to transport large water units to the field)?	
	Carrying a calf from one part of the farm to another	Are there handling aids that can be used to reduce the need for lifting or carrying animals over a distance (e.g. calf trolleys)?	
Excessive pulling forces	Handling calves during calving	Are there handling aids or ways to reduce the exposure of the farmer to heavy physical lifting, pushing or pulling (e.g. calving jacks)?	
Awkward posture	Bending down to carry out welding work on a gate left on the ground in the yard	Can the job be performed on a work bench, reducing the need for a prolonged bending posture?	
	Fitting clusters on cows	Is it possible to fit a height-adjustable platform in the dairy pit?	
Repetitive handling of loads	Moving a stack of tractor wheels, gas cylinders or other heavy items from one part of the farm yard to another	Can changes be made in the farm yard to ensure that loads are stored securely in mobile storage units, ensuring good housekeeping and limited need for handling? Are there useful aids to handle large tractor wheels safely?	
Lack of safe access	Handling or moving loads in an awkward space due to, obstacles, slippery surfaces, poor housekeeping or lack of safe storage of materials	Is it possible to set up storage units or storage locations to improve housekeeping and to find it easier to locate materials when required?	

## Conclusion

Back injuries can have serious long-term or permanent consequences. Farmers can protect their backs by being aware of the risks associated with handling loads and taking action to reduce those risks.

Risk factors include heavy loads, awkward postures, repetitive tasks and poor access in the area in which the work is being carried out. Farmers should identify these risks on their farm and explore their options for reducing the risk of injury before they tackle a manual handling activity.

The back needs to be looked after, so take the time to plan ahead. Find a way to work that reduces the strain on the back and still gets the job done.

## Further information

Health and Safety Executive (UK) Mac tool: <http://www.hse.gov.uk/msd/mac/>

HSA Business electronic safety management and risk assessment tool: [www.besmart.ie](http://www.besmart.ie)

Osborne, A., Blake, C., Fullen, B.M., Meredith, D., McNamara, J., Phelan, J. and Cunningham, C. (2012), 'Prevalence of musculoskeletal disorders among farmers: a systematic review'. *American Journal of Industrial Medicine*, 55(2): 143–158.

Osborne, A., Blake, C., Meredith, D., McNamara, J., Phelan, J. and Cunningham, C. (2014), 'The lived experience of low back pain among Irish farmers: case studies'. *Journal of Agromedicine*, 19(2): 181–190.

### Further Information and Guidance:

Visit our website at [www.hsa.ie](http://www.hsa.ie), telephone our contact centre on **1890 289 389** or email [wcu@hsa.ie](mailto:wcu@hsa.ie)

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