



# Health and Safety in the Food and Beverage Industry



**labour**

Department:  
Labour  
REPUBLIC OF SOUTH AFRICA

## Health and Safety in the Food and Beverage Industry

Workers in this industry are exposed to a wide range of hazards which include the following:

- Same level falls which are often caused by slippery conditions can result in sprains and strains
- Exposure to sharp instruments such as knives
- Collision with internal transport such as forklifts and containers
- Lifting, repetitive work and work posture injuries. Workers in this industry can be exposed to heavy manual lifting and repetitive work, as well as poor work posture which is often resulting from inadequate workspace and poor design of the process flow
- Exposure to noise
- Exposure to biological hazards - exposure to biological and microbiological agents may be associated with inhalation and ingestion of dust as well as working in high levels of humidity. This dust may be from ingredients used during processing and the high levels of humidity may cause skin irritations
- Exposure to chemical hazards - exposure may be from chemical handling activities which may include cleaning operations and disinfection of process areas
- Exposure to heat and cold. This industry can create changing temperature conditions from activities such as heat treatment, chilling and freezing. Workers may be exposed to heat during pasteurisation and canning processes and exposed to cold conditions in refrigerated areas
- Work in confined spaces. Some examples in this industry are: storage tanks and bins, pits and sumps, fuel tanks, grape presses and crushers, fermentation tanks and vessels.

### Same level fall hazards, use of knives, collision, lifting and repetitive work

- Maintain walkways and working surfaces to be clean and dry by preventing spillages during operation and also providing workers with anti-slip footwear

- Provide workers with gloves that will protect them from knife cuts
- Reduce opportunities for collision when laying out process flow activities
- Demarcate transport passages and working areas. Also ensure placement of handrails on platforms and stairs
- Prevent spillage of water/liquids
- Workers must be trained in proper lifting techniques and workstations should be designed to ensure that the worker has enough workspace.

### Exposure to noise

- Some operations such as the canning, bottling, and the use of conveyors cause workers to be exposed to excessive noise levels. Engineering control measures should be used to reduce the noise levels, and personal protection should be emphasised.

### Biological hazards

The following may control exposure to biological hazards in this industry:

- Install exhaust ventilation at the the source to reduce dust
- Provide workers with suitable personal



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- protection equipment and ensure training on its proper use
- Promote personal hygiene and ensure physical segregation of work and welfare facilities.

## Chemical hazards

Workers should be trained on safe working procedures for each activity inclusive of first aid measures.

## Heat and cold

A registered medical practitioner or registered nurse must certify workers as medically fit.

## Confined spaces

The employer is responsible for determining if confined spaces are present in the workplace. If there are any, all access points must be secured against entry or signs must be used to identify confined spaces.

- Work permits must be issued for work to be conducted in a confined space
- Workers must be provided with proper breathing apparatus prior to entering a confined space and they must be trained on how to use the apparatus.

## Falling objects

- Ensure items stored above ground level (e.g. on storage shelving) are stable and will not fall easily if disturbed. Store heavier items on or near the ground and lighter items higher up
- Give careful consideration to methods of stacking, handling and movement of goods to prevent articles falling
- Make sure tall self-standing objects (e.g. gas cylinders) or objects leaning against walls are stable if knocked, and secured.

## Handtools

- Hand knives cause the greatest number of injuries and should be safely stored/sheathed when not in use
- When hand knives are in regular use, knife resistant protective clothing should be worn as determined by the risk assessment (e.g. for butchering an apron and forearm guard/glove for the non-knife hand)
- Hand tools should be maintained in good condition so that undue force is not required to use them.

## Moving objects

- Pedestrian operated pallet trucks, racks, trolleys etc. should use designated routes away from other workers where possible. The person pushing/pulling should have good visibility
- Risk assessment should consider which other work area specific hazards may be present (e.g. rolling barrels or kegs, hoist hooks, items ejected from machines).

## Food and drink manufacture

The food and drink manufacturing industry actually comprises more than 30 different industries. These range from slaughterhouses, sugar refineries and grain mills to malt manufacture and whisky distilling.

The combined injury rate for food and drink industries is among the highest. However injury rates vary considerably between the different food and drink industries.

The main causes of injuries continue to be:

- manual handling/musculoskeletal injury
- slips on wet or food contaminated floors
- falls from heights
- workplace transport (including forklift transport)
- struck by something (e.g. sharp knives or falling objects)



- machinery.

Of these, the main causes of fatal injury continue to be workplace transport, including falls from heights and machinery.

- musculoskeletal injuries
- dermatitis
- noise
- occupational asthma
- rhinitis
- work related stress.



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## Industries

- Meat and fish processing
- Milling, animal feeds
- Bakery products
- Dairy products

- Fruit and vegetables
- Confectionery
- Alcoholic and soft drinks.

## Chilled and frozen products

The food production chain has three stages - farming, manufacturing and retailing/catering. Food and drink manufacturing takes place in factories ranging in size from those employing only a few workers to those employing hundreds. Indeed, many medium or larger sized food and drink factories are themselves part of a national, or even international, multi-site organisations, employing thousands of workers.

The Department of Labour's field of responsibility primarily covers the first two stages in this chain – farming and manufacturing. Retailing and catering fall within the responsibility of local authority environmental health departments, although the Department of Labour works with these departments to ensure some consistency of approach on health and safety issues.

## The big picture

Occupational health is generally more difficult to manage than safety. The causes and consequences of poor safety at work are immediate and often relatively easy to deal with. Work-related causes of ill health can be more difficult to spot. It can often take some time for symptoms to develop so the connection between cause and effect is less obvious, but once the problems have been recognised and acknowledged, solutions are documented.

For the most common occupational health problems, such as back injuries, there may be other causes that have nothing to do with work. Workers may be unwilling to admit themselves that they have work-related health problems because of fears about their job or the stigma attached to certain types of illness. For these reasons it is very important to identify and reduce aggravating factors arising from work.

Despite the availability of information on solutions to work related health problems, local knowledge about the most effective solutions can be limited. Some of the larger businesses in the industry employ specialist occupational health staff, usually with a medical background. However, for most businesses, especially small businesses, access to reliable medical advice on occupational health is very limited. When most people have a health problem they visit their General Practitioner, but most General Practitioners are not well-qualified to deal with occupational health issues.

Most businesses do not need to set up specialist departments or pay for medical advisors to control occupational health on a day-to-day basis. The vast majority of occupational ill health results from a small number of basic causes, all of which can be controlled by management and workers working together to identify practical control measures that are suitable for their workplace. However, use of occupational physicians and other experts can be cost effective in appropriate circumstances.

This section explains the common causes of occupational ill health in the food and drink industries and provides advice on how to manage them.

## Main causes

The main causes of occupational ill health in the food and drink industries are:

- **musculoskeletal disorders (MSDs):** mainly comprising work-related upper limb disorders (WRULDs) and back injuries
- **work-related stress:** which can be caused by poor work organisation
- **occupational asthma:** caused by inhalation of bakery and grain dusts
- **occupational dermatitis:** from handwashing, contact with foodstuffs, etc.
- **rhinitis:** caused by irritant dusts such as bakery and grain dusts, spices and seasonings
- **noise-induced hearing loss:** where noise levels exceed 85 dB(A).



Of the above risks, MSDs (both WRULDs and back injuries) are by far the most common. However other risks are significant and apply where conditions permit.

### Main causes of musculoskeletal injury

In the food and drink industries, most musculoskeletal injuries arise from just five causes:

- stacking/unstacking containers (such as boxes, crates and sacks)
- pushing wheeled racks (such as oven racks and trolleys of produce)
- cutting, boning, jointing, trussing and evisceration (such as meat and poultry)
- packing products (such as cheese, confectionery and biscuits)
- handling drinks containers (such as delivery of casks, kegs and crates)
- These are key tasks to which attention should be paid when carrying out risk assessments.



*Provide workers with gloves that will protect them from knife cuts.*

### How do we know if we have a problem?

Injury and health problems show up in different ways, such as:

- cases of injury to backs and limbs
- aches and pains
- poor product quality
- high material waste
- low output
- frequent worker complaints and rest stops
- do-it-yourself improvements to work stations and tools (e.g. seat padding)
- workers wearing bandages, splints, rub-ons, copper bracelets or magnets.

If you have a problem it will be costing money from sickness absence, high staff turnover, retraining, loss of production, etc. Compensation cases are increasing and problems may affect your insurance premiums.

### Occupational asthma

Data sources record a significant level of asthma in food and drink manufacturing. The main causes of asthma are inhalation of dust from grain and flour, with bakers having the second highest incidence rate of all occupations in any industry.

### Causes of occupational asthma

Work-related asthma affects workers inhaling dust which is respiratory sensitisers - such as dust from grain, flour, enzyme additives, egg protein, fish protein, spices and wood - so workers involved in milling, malting, baking, fish processing, etc. are at particular risk. Asthma is an extremely distressing and potentially a life-threatening disease.

### Occupational dermatitis

Data sources record a significant level of dermatitis.

## Causes of occupational dermatitis

Occupational dermatitis affects workers handling meat, fish, poultry, fruit and vegetables, as well as bakers, confectioners, cooks, cleaners and many other workers.

- In food preparation, it usually affects the hands and forearms
- It results in redness, scaling and blistering of the skin, often sufficiently badly to keep people off work and serious enough to force them to change jobs
- Occupational dermatitis is caused by contact with water, soaps and detergents (55% of cases) and contact with a wide variety of food such as sugar, flour/dough, citrus fruits, vegetables, spices and herbs, fish and seafoods, meat and poultry (40% of cases).

## Rhinitis

Rhinitis (runny or stuffy nose) results in inflammation of the nasal mucous membrane caused by irritant dusts.

## Causes of rhinitis

Grain, flour, spices, seasonings and wood dust can cause rhinitis, conjunctivitis (watery or prickly eyes) and other irritant effects.

## Noise-induced hearing loss.

### Causes of noise-induced hearing loss

Exposure to high levels of noise at work can cause irreversible hearing damage, which can be difficult to detect as the effects build up gradually over time. Noise levels can be high, either in large areas (e.g. bottling halls) or locally from noisy plant and machinery (e.g. product impact on hoppers). If your site-level assessment of risks identifies noise to be a priority, this is best controlled at source.

## Developing an occupational health policy

There are three broad issues to consider in the development of effective occupational health management:

### 1. Prevention

There is a legal and moral responsibility on the employer to do whatever is reasonably practicable to prevent work related ill health.

In order to safeguard workers' health, the cause of occupational health risks must first be known. In most cases these will be self-evident. Once the main risks (MSDs, dust, noise, etc.) are determined, action can be taken to risk assess these topics individually in the same way as safety issues. It is important to determine not only the individuals (or groups of individuals) exposed to these risks but also the degree to which they are exposed and likely consequences. This knowledge will also be useful when recruiting personnel, or during rehabilitation, to ensure the work



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environment does not adversely affect any pre-existing medical condition.

### Monitoring sickness absence

Attendance management has become a major issue with many large employers. Information obtained from more tightly-managed attendance can be very useful in spotting possible work-related health problems. If there are certain jobs or parts of the workplace where absence is higher, this may be an indication of a problem. High levels of back pain or WRULD symptoms may be associated with certain types of work.

### Listening to the workers

A lot of information can be gained from the workers themselves. Workers may be reluctant to admit to health problems to management if they think it might damage their job prospects or if the information is sensitive. However, there are a number of ways of gathering their experience or collecting their opinions that can protect confidentiality and ensure a more honest response.

### Managing the risk

As with any health and safety problem, the hierarchy of control measures should be followed. Where possible, removing the hazard is the best option. Reliance on individual protection through personal protective equipment (PPE) should normally be a last resort.

Often the process of managing occupational health only requires good communication between managers and workers. There is usually no need to employ specialist assistance or experts; however, involvement of occupational physicians and specialists can be cost effective in appropriate circumstances. When expert advice is needed it may not be medical, e.g. for many MSD problems, an ergonomist might be more appropriate, or for an asthma problem an occupational hygienist.

## 2. Rehabilitation

Even if everything possible is being done to prevent people suffering ill health from their work, there still will be occasions where someone does become ill. The initial cause of their health problem may not be work related, but the consequences still need to be managed. It is quite possible that someone might develop backache or a stress-related illness because of non-work-related factors, but if they work in a job that involves heavy lifting or that is very intensive then there is a real chance that their work could aggravate the condition and turn it into something more serious. Failure to manage an episode of ill health could result in more permanent illness and the loss of a valued worker.

### Have you assessed and met your occupational health needs?

An assessment of risk can identify the main activities and situations likely to be harmful to health so you can then decide how to meet these occupational health needs in your company. Health surveillance is particularly needed for hazards which have no occupational exposure standards for judging whether the control measures are adequate.

Examples of when health surveillance is likely to be required include where there is a risk of occupational asthma (e.g. exposure to sensitisers such as grain dust, flour dust, bakery dust, fish or egg protein or spices), MSDs (including WRULDs) exposure to microbiological infections (e.g. in slaughterhouses), risk of dermatitis and work in hot or cold environments. Remember: food materials may have a sensitising effect even at very low exposures.

A professional approach is needed to occupational health. This could usefully be linked with food safety/hygiene needs.

### Musculoskeletal disorders

Do you have a management package of measures to prevent, investigate and control musculoskeletal injuries, such as strains from



frequent and heavy lifting or WRULDs from repetitive work? Preventive measures are cost effective. It is not possible to prevent all cases of MSDs, so early reporting of symptoms, proper treatment and rehabilitation are essential.

## A successful approach for managing WRULDs

### Work design

Incorporate ergonomics into the design of tools, machines, workplaces and work methods. Pay attention to reducing vibration, the force required and to postural changes.

### Duration of exposure

Look at job rotation, speed of working, breaks and provision of assistance. Take particular care when the duration of exposure is



*Give careful consideration to methods of stacking, handling and movement of goods to prevent articles from falling.*

increased during overtime or peak demand working.

## Environment

Make sure it is warm and that there is adequate space, seating and daylight.

## Risk assessment

In your risk assessment, identify injury-causing tasks which require one or more of the following:

- force
- repetition
- awkward posture.

Reduce the injury potential in tasks where possible by tackling these three causes.

## Pre-employment screening

This will help ensure people are not placed in jobs that will aggravate existing or past musculoskeletal or other conditions.

## Job placement

Ensure likely injury-producing tasks are not given to known sufferers and injury-aggravating tasks not given to past sufferers.

## Training of workers

Workers should have training and information on the nature of likely injuries and causative factors, safe lifting methods (especially posture and methods of carrying) and the need to report injuries.

## Monitor workers

Check on workers in injury-producing or aggravating tasks early in a new job, e.g. after four weeks, to ensure no contra-indications to placement.

## Occupational health provision

Several tasks are identified above, but you can also undertake rehabilitation and monitoring of sufferers.

## Review sickness-absence records

Consider medical review of workers, e.g. after four weeks absence; also consider access to physiotherapy treatment, etc. as required.

## Monitor the effectiveness of the strategy

To ensure the approach to managing WRULDs is effective, it should be regularly monitored.

## Managing the risk

- Identify which tasks present a serious risk of acute injury (e.g. from lifting) or chronic injury (e.g. from repetitive upper body work)
- Assess these tasks in detail to decide what factors lead to the risk
- Introduce mechanisation where this is reasonably practicable, e.g. powered trucks, conveyors, vacuum lifters, bulk handling or automation
- Where mechanisation is not possible, introduce measures to prevent injury, e.g. reduce weights of sacks/boxes to 25kg or below, improve ergonomic design of work stations and work areas, job rotation, training, medical surveillance and job transfer
- Consult fully with trade union safety representatives or other worker representatives and workers to ensure effective and workable solutions to problems.

*Exposure to heat and cold. This industry can create changing temperature conditions from activities such as heat treatment, chilling and freezing.*



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