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This publication is available on the Workplace Safety and Health Council website, www.wshc.sg



Don't ignore everyday risks at work.

A Guide to Workplace Safety and Health.



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About the Workplace Safety and Health Council

The Workplace Safety and Health (WSH) Council was established on 1 April 2008. It comprises leaders from major industry sectors (including construction, manufacturing, petrol-chemical and logistics), the Government, unions, and professionals from legal, insurance and academic fields. The Council works closely with both government and industry stakeholders to raise WSH standards in Singapore to realise the national vision to create safe and healthy workplaces for everyone. These include the Ministry of Manpower, other Government agencies, industry, unions and professional associations. The Council's main functions are to build capabilities to manage WSH, promote WSH, recognise companies with good WSH records and set acceptable WSH practices.

For more information on these hazards and how to prevent them, visit the Workplace Safety and Health Council's website, www.wshc.sg

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**SAFETY
STARTS
WITH
ME**



How does safety and health at work affect me?

An introduction to workplace safety and health laws

Introduction

Whether you are a business owner, a manager, a supervisor or a rank-and-file employee, workplace safety and health (WSH) affects you.

All of us can be affected by everyday risks at work, be it tripping over stray wires, falling off office chairs or being hit by poorly stored objects. We need to pay attention to these everyday risks which can lead to work incidents.

In any incident, there can be losses. Employees who are the victims of work incidents will experience the pain of ignoring safety risks at work. Companies can lose hard-earned profits and suffer reputation damage from poor staff morale, lost productivity and even missed precious business opportunities.

Whether it is about protecting lives or protecting your business, safety is critical. We need everyone to understand this and do their part as the Workplace Safety and Health Act will cover all workplaces from September 2011.

This section will help you understand what it means to be covered by the Act.



What you need to know about the WSH Act

On 1 March 2006, the WSH Act replaced the 33-year-old Factories Act to kickstart a new approach to managing safety and health at work. It covers every single stakeholder, including employers, employees, owners of workplaces, and even manufacturers and suppliers. All who are responsible for creating work risks must take steps to eliminate or reduce them. Those who do not do so or show unsafe work behaviour are subject to higher penalties under the WSH Act.

The WSH Act started with covering the same group of higher risk workplaces under the Factories Act, including construction sites and factories. It was then extended to cover more workplaces gradually. The diagram below shows the coverage of the WSH Act in three phases:



Who is covered by the WSH Act?

All workplaces and all stakeholders will be covered by the Act in September 2011. This will include office buildings, shopping malls, educational institutions and entertainment venues.

Employers, employees and other stakeholders like manufacturers and suppliers will also be covered under the Act.

What is my role under the WSH Act?

If you are an employer, a manager or have control over WSH risks at work, you must take reasonable measures to keep your employees safe when carrying out work. Occupiers of workplaces such as building owners must also ensure that work carried out in their premises are done safely.

What am I expected to do to keep my workplace safe?

Every stakeholder, such as employers, has to find out the risks that are present in a work task or a workplace. These risks must then be eliminated or managed through safe work methods. Everyone involved in the work must be briefed on these methods. This is the risk management process and more details are available in the next section on risk management.

Who am I?	What is my role?	What do I need to do under the WSH Act?*
I am an owner of a shopping mall.	Occupier	I must provide a safe loading and unloading area for my tenants.
I own a retail shop and I hire a sales assistant.	Employer	I must provide proper step stools for my sales assistant to retrieve goods from an overhead shelf (prevent risks of falling from height).
I run my own retail shop.	Self-employed person	I must display my goods on shelves in a stable manner so that they will not topple easily (prevent risks of being struck by falling objects).
I own a business and hire another company to deliver my goods.	Principal	I must pack my items to be delivered into smaller loads (prevent risks related to manual handling).
I work for someone as an office employee.	Person at work	I must use step stools to retrieve goods from overhead shelves.
I supply a lorry crane to deliver goods for a company.	Manufacturer or supplier	I must ensure that my lorry crane is properly maintained.
I help install tower scaffolds to access high ceilings.	Erector or installer	I must ensure that the tower scaffolds I erect are safe for use.

*These examples are not exhaustive and situations will vary from workplace to workplace.

What you need to know about reporting incidents

Since 1 March 2006, all workplaces have been covered by the WSH (Incident Reporting) Regulations.



Employers must report work incidents to the Ministry of Manpower (MOM) if an employee is injured or develops an illness because of work. MOM will analyse these reports to determine national trends of injuries and illnesses. These trends will be shared with employers so that preventive measures can be taken.

When you report incidents, it will also help you understand your workplace hazards better, so that you can improve safety standards at your workplace.

How do I make a report?

You can make an online iReport at www.mom.gov.sg/ireport

What needs to be reported?

What to report?	Who makes the report?	What needs to be done?
Workplace accident that caused death of an employee.	Employer of deceased employee	Notify Commissioner for WSH immediately via +65 6317 1111 (phone) or +65 6317 1220 (fax). and Submit report within 10 days of the incident via iReport.
Workplace accident that caused injury to an employee: <ul style="list-style-type: none"> given more than three consecutive days of medical leave, or hospitalised for at least 24 hours 	Employer of injured employee	Submit report within 10 days of the incident via iReport. If the employee subsequently dies from the injury, the employer must notify the Commissioner as soon as he or she knows about the employee's death.

What to report?	Who makes the report?	What needs to be done?
Workplace accident that involves a self-employed person or member of public, causing him or her to die or be sent to hospital for treatment of injury	Workplace occupier	Notify Commissioner for WSH immediately via +65 6317 1111 (phone) or +65 6317 1220 (fax). and Submit report within 10 days of the incident via iReport.
Dangerous occurrence	Workplace occupier	Notify Commissioner for WSH immediately via +65 6317 1111 (phone) or +65 6317 1220 (fax). and Submit report within 10 days of the incident via iReport.
Occupational disease	Doctor who diagnosed the disease and Employer of the employee with the disease	Doctor to submit report within 10 days of diagnosis. Employer to submit report within 10 days of receiving the written diagnosis via iReport.

What you need to know about work injury compensation

To provide basic protection and compensation to employees, those who are injured or sick because of work are eligible for work injury compensation. Depending on the type of work and salary earned, employers must also purchase insurance for their employees.

These requirements are stated in the Work Injury Compensation Act enacted on 1 April 2008. Compensation includes medical expenses, medical leave wages and/or a lump sum payment (for permanent incapacity or death only).

For more information on the WSH Act, incident reporting and work injury compensation, visit www.mom.gov.sg



How can I implement risk management at work?

A simple guide to managing risks

What you need to know about risk management

As a business owner, you are responsible for the smooth operation and success of your company. You can only achieve this if your employees perform their work safely.

Risk management keeps your employees safe by helping you identify risks at your workplace so that you can minimise and control them. This is a requirement under the Workplace Safety and Health (Risk Management) Regulations.

By putting risk management effectively in place, it helps you comply with the WSH Act as you would have shown that you have made reasonable efforts to protect your employees at work.

Why is risk management important?

Keeping employees safe and healthy at work can help them perform better. If an employee is injured at work, it will disrupt your business operations. You may also face prosecution under the Act.

Businesses can benefit from a proactive attitude towards risk management. If you manage risks well at your workplace, you can keep employees safe, ensure smooth business operations and increase productivity in the long run.



How do I implement risk management?

There are six steps involved in a risk management programme.

Step 1 Preparation	Risk Assessment			Step 5 Record Keeping	Step 6 Implementation and Review
	Step 2 Hazard Identification	Step 3 Risk Evaluation	Step 4 Risk Control		
Form a Risk Assessment (RA) team to gather relevant information	Identify hazards or potential incidents	Estimate the risk levels of each hazard identified and rank them in order of priority	Plan control measures and evaluate residual risks	Keep risk assessment reports for at least three years	Review risk assessment whenever there is new information on risks or changes to work processes
Ongoing communication amongst management, the RA team and the employees					

Hazards and risks are both used in this guide – what is the difference?

A hazard is anything that can cause your employees harm, such as electricity, fire and sharp objects. A risk is the likelihood, whether high or low, that your employee could be injured by these hazards and how serious the injury would be.

What you need to know about conducting risk assessments

A key part of risk management is risk assessment. By identifying the kind of hazards your employees face, you can then take the right measures to protect them.

If you already know your business operations very well and the hazards faced by your employees, you can choose to conduct a risk assessment for your company with this guide. But if you run a large company with complex operations, you can consider getting a WSH professional to help you.

The following section is a guide to starting risk management in your workplace. Requirements may vary from workplace to workplace and may also depend on business operations.

How can I get started on conducting a risk assessment for my workplace?

You can first assemble a team of staff who are familiar with the work that is required to be done by your employees. This Risk Assessment (RA) team should also be aware of hazards faced by your employees. If needed, you can also send your employees for risk management training. Information on such training is available at www.wshc.sg



Your RA team will need to gather as much relevant information as you can. Some things that will be useful are:

- A layout or plan of where you work;
- A list of all work activities;
- A list of equipment, tools and chemicals used at work;
- Records of past injuries and illnesses because of work; and

What do I do after forming a risk assessment team?

Step 1: Identify the hazards

- Guides on the law, safe practices as recommended by the WSH Council. Visit www.wshc.sg for codes of practices, technical advisories and guidelines. The third section of this book, *An Introduction to Common Workplace Safety and Health Hazards*, will also be a useful resource.

Your RA team can follow these steps.

The RA team needs to work out the potential hazards that your employees may encounter. These tips will help you look out for hazards:

- Walk around your workplace. Think about the hazards that your employees face.
- Ask your employees about the work they do and the concerns they may have about injuring or harming themselves at work.
- Check manufacturer's instructions for equipment or safety data sheets for chemicals. They are helpful in directing you to hazards that you may not immediately see.
- Check company records on injuries or work injury compensation claims.
- Do not forget that these hazards may have a long term effect on your employees' health. For example, prolonged exposure to loud noises can harm hearing.

Step 2: Evaluate the risks

After developing a list of potential hazards, you need to know the hazards each employee faces. This list is determined by the type of work an employee does. For example, employees manning a storeroom may face the hazard of being struck by an object.

You then need to evaluate the risk level of the hazards by looking at:

- Likelihood and frequency — Is there a high chance that your employee will be injured because of this hazard?
- Seriousness — How serious will the injury be?

Step 3: Control the risks

After evaluating the risk level of each hazard, you need to decide how you want to prevent and minimise these hazards. If the hazard is highly possible and can lead to serious injuries, you should remove the hazard completely. If removal is not possible, adopt other control measures. Some questions you should ask yourself, in order of preference, are:

Can I ELIMINATE the hazard totally? Is there a safer option?

- For example, replacing an electrical power cord with a cordless one to prevent trips.

Can I use another work method as a SUBSTITUTE?

- For example, replacing solvent-based paint with water-based paint.

Can I use ENGINEERING CONTROLS to physically minimise the possibility of harm?

- For example, use guardings on paper shredders to prevent hand injuries.

Can I adopt ADMINISTRATIVE CONTROLS and educate my employees?

- For example, set up a safe work method for the proper use of a new machine at work, teach your employees this method and constantly remind them to follow the right method.

Can I provide PERSONAL PROTECTIVE EQUIPMENT for my employees?

- This is the least preferred approach but may be necessary in certain work processes.
- For example, if an employee has to handle a chemical at work and there is no available substitute for this chemical, he or she must be given gloves and masks (if the chemical emits harmful gases).

Refer to the section on common WSH hazards to help you identify and control hazards.

Step 4: Keep records and review them regularly

Review your RA at your workplace every three years. You should also review your plans when an injury occurs, when you purchase new equipment or chemicals or when new information on WSH is made available.

A good RA plan can only be effective if your employees know and understand the procedures. Make sure that the plan and all changes to the plan are communicated to each employee.

And despite your efforts, if your employee is injured at work or develops an illness because of work, keep a record of it and store it for at least three years.

What you need to know about Personal Protective Equipment

Personal Protective Equipment, or PPE, as they are commonly known, should only be used as your last line of defence. They are used as a precaution and only when all your other risk controls have failed.

Some examples of PPE are goggles, gloves, protective clothing and helmets.

Remember that the successful use of PPE to minimise the seriousness of injuries and illnesses depends on a few factors. They include the type of PPE chosen, its proper use, the correct fit and the regular maintenance of the equipment.

For more information on risk management and sample RAs, visit www.wshc.sg



bizSAFE – A programme to help you comply with the risk management regulations

Now that you have more information on the WSH Act and risk management, you can kickstart your company's safety and health journey by tapping on the WSH Council's bizSAFE programme.

What is the bizSAFE programme?

bizSAFE helps small- and medium-sized (SME) companies develop in-house safety and health capabilities. Through a simple five-step process, it allows an employer to gain better understanding of WSH, and then systematically train employees and implement risk management.

How will taking part in bizSAFE benefit me?

By taking part in the programme, you will belong to a network of businesses that are committed to establishing a safe workplace for their employees. Today, over 5,000 businesses have come onboard the bizSAFE programme.

The bizSAFE programme is also used as a benchmark by big organisations to assess a SME's ability to carry out work safely. In addition, some of these organisations even require an SME and their subcontractors to be bizSAFE Level 3-certified (or completion of risk management) before they can be allowed to provide products and services to them. These include government agencies, major shipyards and large manufacturing companies.

How can I kickstart risk management or join the bizSAFE programme?

You can kickstart risk management by calling an approved risk consultant. You can visit www.wshc.sg for more information on risk management and the list of consultants, or direct your enquiries to bizSAFE@wshc.sg

RISK MANAGEMENT CHECKLIST*: Is your Risk Management (RM) approach suitable and sufficient? You can check the efficiency level of your RM through the checklist below. Tick the boxes that most apply to you.

Management's Commitment	Consultation	Risk Assessment (RA)	Training and Supervision	Incident Reporting and Work Injury Compensation	Summary
<ul style="list-style-type: none"> <input type="checkbox"/> Safety responsibilities are clearly understood and acted upon by all staff in the workplace <input type="checkbox"/> Resources are allocated to meet safety responsibilities (time, money, etc.) <input type="checkbox"/> Total management involvement in setting out safety initiatives <input type="checkbox"/> Management leads by example 	<ul style="list-style-type: none"> <input type="checkbox"/> Agreed consultation arrangements are used to discuss safety issues and are working effectively <input type="checkbox"/> All staff are involved in safety decisions and developing procedures <input type="checkbox"/> Views of staff are valued and taken into account 	<ul style="list-style-type: none"> <input type="checkbox"/> All hazards in the workplace are identified with control measures implemented <input type="checkbox"/> Staff are involved in development of the RA <input type="checkbox"/> All staff are informed of the RA and control measures implemented <input type="checkbox"/> RA is reviewed and updated when necessary 	<ul style="list-style-type: none"> <input type="checkbox"/> All staff are informed about work safety before commencement of task <input type="checkbox"/> Staff undergo required training before commencement of task <input type="checkbox"/> Staff are supervised to ensure work is carried out safely 	<ul style="list-style-type: none"> <input type="checkbox"/> All work-related incidents are reported within the required timeline and acted upon as stipulated by the law <input type="checkbox"/> All staff are covered by work injury compensation insurance policy 	<p>Each tick in this zone means you have established a good RM System in your workplace</p> <p>Follow-up: Monitor and review for continuous improvement</p>
<ul style="list-style-type: none"> <input type="checkbox"/> Safety responsibilities identified but not understood or acted upon <input type="checkbox"/> Limited resources allocated to meet safety responsibilities (time, money, etc.) <input type="checkbox"/> Limited management involvement in setting out safety initiatives <input type="checkbox"/> Management do not always lead by example 	<ul style="list-style-type: none"> <input type="checkbox"/> Consultation arrangements in place but not working effectively <input type="checkbox"/> Not all staff are involved in safety decisions and developing procedures <input type="checkbox"/> Views of staff not always valued and taken into account 	<ul style="list-style-type: none"> <input type="checkbox"/> Only some hazards in the workplace are identified and some control measures are implemented <input type="checkbox"/> Not all staff are involved in development of the RA <input type="checkbox"/> Not all staff are informed of the RA and control measures implemented <input type="checkbox"/> RA is neither reviewed nor updated 	<ul style="list-style-type: none"> <input type="checkbox"/> Not all staff are informed about work safety before commencement of task <input type="checkbox"/> Not all staff undergo required training before commencement of task <input type="checkbox"/> Minimum supervision to ensure work is carried out safely 	<ul style="list-style-type: none"> <input type="checkbox"/> Not all work-related incidents are reported within the required timeline and acted upon <input type="checkbox"/> Not all staff are covered by work injury compensation insurance policy 	<p>Each tick in this zone means you have a basic RM system but more work has to be done</p> <p>Follow-up: Improve and upgrade to the zone above</p>
<ul style="list-style-type: none"> <input type="checkbox"/> No clear understanding of safety responsibilities <input type="checkbox"/> No resources allocated to meet safety responsibilities (time, money, etc.) <input type="checkbox"/> No safety initiatives <input type="checkbox"/> Management does not lead by example 	<ul style="list-style-type: none"> <input type="checkbox"/> No consultation arrangements in place <input type="checkbox"/> No staff is involved in safety decisions and developing procedures <input type="checkbox"/> Views of staff not valued and not taken into account 	<ul style="list-style-type: none"> <input type="checkbox"/> No RA developed at workplace 	<ul style="list-style-type: none"> <input type="checkbox"/> Staff are not informed about work safety before commencement of task <input type="checkbox"/> Staff do not undergo required training before commencement of task <input type="checkbox"/> No supervision to ensure work is carried out safely 	<ul style="list-style-type: none"> <input type="checkbox"/> Incidents are not reported <input type="checkbox"/> Staff are not covered by work injury compensation insurance policy 	<p>Each tick in this zone means your system is not suitable or sufficient</p> <p>Follow-up: ADDRESS THESE AREAS IMMEDIATELY</p>

*This checklist is not exhaustive and situations will vary from workplace to workplace.



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What can I do to prevent injuries from work hazards?

An introduction to common workplace
safety and health hazards

Work injuries hurt businesses and employees

Do you know that last year over 10,000 people were injured or sick because of their jobs? Some even lost their lives because of work. This can affect businesses which are highly dependent on their workforce.

Keeping your employees safe keeps your business safe. A safe and healthy workplace ensures the smooth operation of your business and increases productivity in the long run.

Common safety and health hazards in your workplace

It is a common misconception that safety and health hazards are only present in traditional high risk workplaces like factories, construction sites or shipyards. But different types of hazards are present in different workplaces. A repairman may slip and fall, possibly with serious injuries, if he uses an unstable ladder to change a bulb for a high ceiling light. A shop assistant may suffer serious head injuries if a heavy item she is trying to reach on a high shelf falls on her. An office clerk overburdened with a huge stack of files may trip over a loose cable while rushing to another end of the office.

You, your employees or your colleagues have probably encountered similar situations or you may even have been injured. What can you do to prevent injuries and deaths at your workplace? This section on common workplace hazards will tell you how. Read this alongside the step-by-step introduction to risk management.

Slips, trips and falls

Slips, trips and falls are the most common causes of injuries in workplaces, hurting more than 1,000 employees in 2009¹. Besides sprains and strains, they can also cause more serious injuries like fractures and head injuries.

These injuries greatly harm your employees' health, and if they cannot work because of injuries, it will affect your business and productivity.

What you need to know about slips, trips and falls

There are simple, straightforward things you can do to prevent slips, trips and falls, such as maintaining the right floor conditions and good housekeeping.

- **Floors** need to be kept clean and dry all the time. Mop wet or greasy floors immediately. Repair broken and cracked floors promptly.
- **Good housekeeping** can significantly reduce hazards. Secure loose or wrinkled carpets, mats and rugs. Clear walkways of boxes, cables and open drawers.
- **Other factors** that can cause slips, trips and falls are poor lighting, wearing the wrong type of footwear, rushing and carelessness.



¹Workplace Safety and Health Council, 2010. *Workplace Safety and Health, 2009: National Statistics*. Singapore: Workplace Safety and Health Council.

Some things you can do to prevent slips, trips and falls:

Hazard	Suggested Safety Tips
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Wet or dirty floors
(e.g., liquids, grease and dust)

- Keep floors and stairs dry and clean. Clean up any spills or leaks immediately.
- Use anti-slip mats or flooring at areas that are prone to getting wet, like areas with sinks.
- Wear non-slip shoes.
- Put signs to warn passers-by about slippery floors during and after cleaning of floors.



Uneven walking surfaces
(e.g., potholes, unlevel ground, and broken or cracked floors)

- Take prompt actions to repair such defects.
- Use highly visible tread makers such as reflective markings to highlight changes in the level or slope.

Uneven, loose or wrinkled carpets, mats or rugs

- Ensure carpets and rugs are free of holes and loose edges.
- Replace torn or worn carpets if they cannot be repaired.

Some things you can do to prevent slips, trips and falls:

Hazard	Suggested Safety Tips
--------	-----------------------

Obstruction or protruding objects in walkways
(e.g., boxes, cables and open drawers)

- Keep work area neat. Do not leave materials and boxes around in corridors and other common walkways.



- Keep drawers or doors of cabinets closed after use.
- Place equipment so that the cords and cables do not cut across corridors or common walkways. Use cable covers to secure power cords to surfaces.

Dimly lit or uneven stairs

- Keep stairs clear from objects, debris, grease and oil.
 - Provide adequate lighting.
 - Install anti-slip strips at the edges of each step.
 - Make sure that handrails are firmly fixed and stable.
 - Encourage employees to use handrails when using the stairs.
-

Falls from height

Fatal falls from height are more often seen in sectors like construction, manufacturing and marine. But falls can also happen in offices and shops, such as when employees need to retrieve or place objects on high shelves, or change overhead light bulbs.

Falls from height in such workplaces might not result in death compared to falls from heights in a construction site. But they may still lead to serious or permanent injuries, such as head injuries or broken bones, in addition to less severe ones such as sprains.

Employees should be considered to be “working at height” so long as the work activity cannot be carried out while they are standing at normal ground level. Common scenarios of “working at height” in workplaces, such as offices or retail outlets, are when using ladders, whether mobile or fixed, or step stools.

You can prevent falls from height by providing your employees with such equipment, and educating them on their proper and safe usage.

What you need to know about falls from height



What you need to know about using ladders safely

Choose the right ladder based on the work activities to be carried out. There are a variety of ladders available in the market to cater to different needs, for example, the height to be accessed.

Select a ladder that is appropriate in size, height and the task at hand. Some good tips include:

- Inspect ladders before and after each use. Do not use ladders that are shaky or have loose screws, nuts, bolts and hinges.
- Make sure that the feet and rungs are in a good condition and are clear of grease or soil.
- Use ladders on hard, even-levelled surfaces.
- Make sure that the locks and braces are fixed and properly engaged before use.
- Face the ladder when standing or climbing on it.
- Put up warning signs and a barrier in the area when using a ladder.
- Make sure you have a firm hold of the ladder. Always maintain a three-point contact (hands and feet) with the ladder. Do not work at the top rung of a ladder.
- When climbing up or down a stepladder, if possible, avoid carrying anything as this will prevent you from maintaining a three-point contact.
- When using the ladder, do not jerk or wobble. If possible, have another person to help hold the ladder steady when in use.
- If the ladders are fixed, for example, in the storage area of retail shops or a bookstore, check regularly that the ladders are still secure for use.



Example of using a stepladder to access higher shelves


Struck by falling objects

When retrieving or storing goods, employees might be injured from being struck by falling objects. The severity of the injuries sustained depends on the weight of the object and the height from where it fell.

What you need to know about being struck by an object

Such injuries can be caused by being hit by a falling or flying object. It can happen when overloaded shelves topple or when employees reach for objects on a high shelf without the use of a step stool or ladder.

Some things you can do to prevent from being struck by a falling object:

Hazard	Suggested Safety Tips
<p>Over stacked or overloaded shelves</p> 	<ul style="list-style-type: none"> • Provide stable shelves that are able to withstand the weight that they are expected to be used for. • Do not store boxes, papers and other materials on top of tall lockers or file cabinets. • Stack materials in a stable way. • Do not overload shelves and cabinets. • Inspect storage areas regularly to detect and rectify any unsafe stacking. • Replace shelves that are showing signs of being overloaded.
<p>Pictures, ceiling fans and boards not securely fixed</p>	<ul style="list-style-type: none"> • Ensure that all fixtures like pictures, ceiling fans and boards are well-secured.

Some things you can do to prevent from being struck by a falling object:

Hazard	Suggested Safety Tips
<p>Storing heavy or frequently used objects above shoulder height</p>	<ul style="list-style-type: none"> • Store heavy or frequently used objects on lower shelves.  <p>Example of storing heavy items on lower shelves</p>
<p>Reaching for objects stored on shelves where objects cannot be clearly seen</p>	<ul style="list-style-type: none"> • For lifting tips, refer to the section on lifting hazards. • Use stepladders or ladders to reach high shelves. • Educate employees on the safe use of stepladders or ladders.  <p>Example of proper use of stepladders when retrieving items</p>
<p>Standing or working underneath works being carried out at height</p>	<ul style="list-style-type: none"> • If the work being performed is over an extended period of time, put up barricades and clear signs to warn other employees about the overhead work.

Struck against objects

Bumping into obstacles or sharp corners, or being struck by an opening or closing door, are common incidents in workplaces. The extent of injuries range from minor bruising to fractures depending on the force of the impact, such as how fast the person was moving.

What you need to know about being struck against an object

Being struck against objects may result in injuries when someone collides into other objects while moving around the work premises. An example of such hazards is a collision with protruding objects like open drawers.

Some things you can do to prevent from being struck against an object:

Hazard	Suggested Safety Tips
Bumping into doors or glass panels	<ul style="list-style-type: none"> • Mark glass doors with coloured or translucent tape, or use signs to warn employees. • For commonly used doors, insert a glass panel so employees from both sides of the door can see each other. <div data-bbox="645 1088 924 1374" data-label="Image"> </div> <div data-bbox="941 1317 1071 1379" data-label="Caption"> <p>Example of placing a glass panel in a door</p> </div>
Bumping into a person or an object (e.g., open drawers or cabinet doors)	<ul style="list-style-type: none"> • Make sure that there is enough space to move around in the work area, especially in common corridors.

Manual handling

Manual handling covers any activity requiring the use of force to lift, lower, push, pull, carry or move a load. If carried out without proper postures or use of suitable tools, manual handling may cause injuries like musculoskeletal disorders that affect muscles, joints, tendons and nerves. Workers may experience symptoms such as numbness, pain, swelling, tingling sensations, weakness in a part of the body and stiffness of joints.

What you need to know about musculoskeletal disorders

Lifting loads, especially from below arm or shoulder levels, increases the risk of back injuries. Besides being more difficult and heavy to handle, lifting a bulky object increases the stress placed on various muscles as it cannot be brought close to the body. In addition, when lifting a bulky object, one is likely to adopt an awkward and unbalanced position or have his vision obstructed by the load. Correct lifting postures must be adopted to minimise injuries.

Follow these steps to lift objects safely:

Step 1

Place one foot on side of the object and the other foot behind the load.

- Where possible, use tools to help with the lifting, for example, a lift truck.
- Where possible, distribute a bulky object into smaller, more manageable parcels.
- Before you lift, ask yourself if you need help
- Then, clear the path of any obstruction.

Step 2

Distribute your body weight equally between both feet.



- Bend your knees and keep your back straight.
- Bring the object close to your body, grasp the object firmly and hold it close to your body.
- Keep your arms, elbows and chin as close to your body as possible.

Step 3

Lift the object by using your legs.



- Avoid jerking or twisting your back.

Step 4

Make sure that you have a firm grip on the object before moving off.



- Make sure that your feet are stable.
- Keep your head up while moving.

Follow these steps to lower objects safely:

When lowering objects, follow the steps on lifting in reverse order.



Example of getting a colleague to help when lifting heavy or bulky objects

When lifting or lowering, do not:

- lift with wet or oily hands;
- rotate your waist;
- lift heavy items if you are not feeling well;
- jerk to lift an object off the floor;
- drop the object, place it down carefully instead;
- run while carrying an object;
- hurry down stairs or ramps; and
- carry boxes by the straps or tapes.

Repetitive movements

Repetitive movements become hazardous when the same joints and muscle groups are used in the same motion, too often, too quickly, too strenuously or over an extended period. Examples of such work activities include packing bread or labelling price tags.

Injuries related to repetitive movements include inflammation, pain and swelling, muscle strains and tissue damage.

What you need to know about injuries from repetitive movements

These injuries happen when too much stress is placed on one part of the body and there is not enough time for recovery. The human body needs to rest from time to time to recover.

For employees involved in repetitive work, make sure that they have a balance between physically demanding and less demanding work. This reduces monotony, stress and fatigue.

Suggested tips for preventing injuries:

- Plan work schedules so that employees can take regular breaks (effective breaks can be short but regular).
- Review the work speeds and loads of your employees. Make sure that work targets are realistic.
- Encourage employees to do simple stretching exercises to warm up and cool down working muscles.
- If you can, rotate jobs. This can include rotating different work activities during an employee's shift to prevent the same repetitive movement.

Awkward postures

An awkward posture is one where the muscles are not in a natural relaxed position. Examples of such activities are when employees stretch their arms to reach for objects kept on a high shelf, or when employees cradle their telephone handset on their shoulders.

When the body is in an awkward position, stress is put on specific muscles and tendons. Over time, this increases a person's chances of developing work-related musculoskeletal diseases (WRMD).

Suggested tips for preventing injuries:

- Provide adjustable work surfaces or chairs.
- Provide trolleys or carts for transporting heavy or bulky items.
- Use proper lifting techniques when lifting or carrying objects.
- Provide a headset for employees who need to use the phone for long periods.
- Store frequently used objects on mid-level shelves.
- Use a stepladder or ladder to retrieve objects stored on high shelves.
- Encourage employees to do simple stretching periodically.

What you need to know about injuries related to awkward postures



Example of using trolleys to transport heavy items

Static postures

Static postures, like repetitive motions, can lead to injuries. Similar to repetitive motions, when the body is in the same unchanged position for long periods, excessive stress is placed on particular parts of the body or it can cause poor blood circulation. The type of injury related to static postures depends on the posture. For example, standing for long hours may cause painful and swollen feet, locked joints, lower back pain and varicose veins.

Static postures may occur in workplaces that require their employees to stand or sit in the same position for long hours.

When the body is static, muscles tire more easily than when the body is moving around. This is because blood is poorly circulated in static postures, and this causes insufficient delivery of nutrients and oxygen to the muscles.

Suggested tips for preventing injuries:

- Provide anti-fatigue mats or chairs for employees to stand or sit on.
- Provide a place for employees to sit and rest, such as a pantry.
- Encourage employees to stretch or move about regularly at their workstations.



Example of an employee using an anti-fatigue mat during work

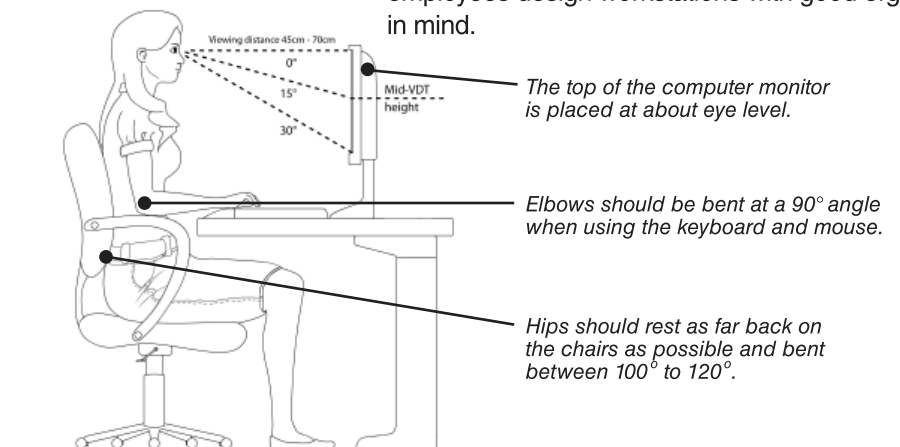
What you need to know about office ergonomics

Office ergonomics

In the office, the workstation should enable employees to maintain comfortable and neutral body postures. This reduces stress and strain on the muscles.

Workstations have to be set up with the needs of the employee and task at hand in consideration. There is no single correct arrangement that will fit every employee's needs.

These are some tips that can help you and your employees design workstations with good ergonomics in mind.



Additional tips:

- There should be enough space for the thighs and knees to move.
- Knees should ideally be bent at 90° or at a range between 70° to 110°.
- Feet should be supported.

Monitors

- Adjust the monitor so that the top of the screen is at about eye level.
- Place the monitor at a distance between 45 cm and 70 cm or about an arm's length.

- The centre of the screen should be placed at an angle of 15° below your eyes.
- Documents should be placed between the keyboard and screen, or next to the screen.

Keyboards and computer mouse devices

- Adjust the height of the keyboard so that the forearms are parallel to the floor or positioned slightly downward.
- Place the mouse next to the keyboard on the same worktop.
- Avoid raising the keyboard at an inclined angle.
- Provide different sizes and shapes of computer mouse devices to cater to different employees' needs. For example, a mouse that is too small may result in cramping of the wrist and fingers.
- At work, employees' shoulders should be relaxed. They should not be hunched.

Chairs and sitting positions

- Sit upright or slightly reclined.
- Support the back using the chair. If the chair does not come with a back rest, use a cushion.
- Adjust the chair so that the feet can rest on the floor. If this is not possible, use a footrest.
- Knees should be kept at a right angle or between 70° to 110°.

Work surfaces

- Position frequently used objects (like telephones and stationery) within reach.
- Keep the area below the workstation clear of clutter. Allow room for movement and for legs to stretch.
- Place document holders at the same distance and height as the computer monitor.

A workstation using laptops

The use of laptops is increasingly common in many workplaces.

To avoid sprains and strains associated with prolonged use of laptops, employers may provide a laptop docking station.

A docking station comprises a keyboard and an external monitor connected to the laptop which serves as the hard drive. An external keyboard is also desired for such set-ups. The laptop riser or a stack of books can be used to elevate the laptop screen to eye level.



Poor working posture for laptop users

A workstation using a laptop and docking station

Additional tips:

- Avoid placing a laptop directly on your thighs for long periods.
- Carry laptops in a case with wheels or in a backpack with wide, padded shoulder straps.

Noise hazards

Long term exposure to loud sounds may lead to hearing loss.

What you need to know about noise hazards

To prevent hearing loss, a person should not be exposed to sound levels exceeding (permissible exposure level) 85 dBA for eight hours a day or its equivalent. Refer to the table on the next page for the permitted exposure times of other sound levels. You can use a sound level meter to measure noise levels in your workplace.

If employees have to work in an area where the permissible level is likely to be exceeded, here are some suggested tips:

- If machines or equipment produce loud noises, replace them with quieter ones.
- If that is not an option, build a barrier around the machines or equipment to reduce the noise being emitted where possible.
- For employees who have to work in a noisy area, rotate their jobs so that their exposure time can be reduced.
- Provide employees with ear plugs or muffs to protect their hearing.



What you need to know about noise levels

The louder the noise level, the less time employees should be exposed to them. For every increase in 3 dBA, the permitted exposure time is halved. As a general guide, at 85 dBA, people will have to shout to be heard if they are about two metres apart.

Permissible exposure levels showing the corresponding length of time allowed for the various noise levels:

Sound Levels (dBA)	Maximum Exposure Per Day
85	8 hrs
88	4 hrs
91	2 hrs
94	1 hr
97	30 mins
100	15 mins
103	7.5 mins
106	4 mins
109	2 mins
111	1 min

What you need to know about noise in an office environment

Although noise levels in an office rarely exceed 85 dBA unlike industrial premises, noise generated in the office is typically nuisance noise and can be a source of stress or annoyance to employees.

Sources of Nuisance Noise in Offices Suggested Safety Tips

People (e.g., loud and frequent conversations)	Encourage employees to use meeting rooms for long and frequent conversations. Design meeting rooms with walls containing sound absorbing materials where possible.
Office equipment (e.g., photocopying machines, loud ringing of telephones and printers)	Place equipment in a separate room. Lower the ringing volume for telephones.
Environment (e.g., air conditioning systems and lifts)	Maintain equipment and machinery regularly.
External sources (e.g., traffic and general industrial noise)	Install double-glazed windows and solid walls.

Chemical hazards

Employees may be required to handle chemicals that are toxic, flammable or corrosive during the course of their work. However, chemicals are not just present in places such as manufacturing plants and labs. Chemicals are all around us in the form of everyday household items such as cleaning agents and paint. Improper handling and excessive exposure to such chemicals may cause illnesses and injuries.

What you need to know about chemicals



Understanding the type of chemical being handled and the correct handling method is important to prevent injury or illness resulting from chemical exposure. Information about a chemical can be identified from the label on containers and from safety data sheets (SDS). It is important for all chemical users to read this information before handling any chemicals.

Users of everyday household chemicals should refer to the chemical labels for information on safe usage.

Suggested tips:

- Before use, read chemical labels for instructions on how to use the chemicals properly.
- Store chemicals in their original containers and keep them tightly closed when not in use.
- Use chemicals according to manufacturer's instructions and only as per the intended use.
- Avoid mixing chemicals together unless instructed by the manufacturer.
- Wear personal protective equipment (PPE) according to manufacturer's recommendations.

Educate your employees

Instruct and train employees on the safe use of chemicals to prevent incidents. The training should cover:

- How to read and understand the container label and/or SDS of chemicals.
- Understanding the safety and health hazards related to the use of chemicals.

- Procedures on using chemicals in a safe manner.
- Using appropriate PPE.
- How to handle emergency situations, for example, chemical spills or splashes onto eyes or body.

Here are some common chemicals and safety tips. Follow manufacturer's instructions before using the chemical.

Products and Chemicals	Proposed Preventive Measures
Common household cleaning agents (e.g., bleach and floor cleaner)	<ul style="list-style-type: none"> • Ensure area has adequate ventilation, such as open windows and doors. • Clean up spills immediately. • Keep chemical container lids closed when not in use. • Ensure that all chemical containers are properly labelled. • Practise good personal hygiene. Wash hands before eating, drinking or smoking.
Solvent-based products (e.g., paints, turpentine)	<ul style="list-style-type: none"> • Use water-based or low solvent-based paints if possible. • Ensure that area has adequate or proper ventilation. • Ensure that all chemicals have proper labelling. • Remove or protect all porous materials, if possible, prior to painting work. • Discard contaminated rags and cloths into an enclosed bin. • Practise good personal hygiene. Wash hands before eating, drinking or smoking.

Products and Chemicals

Proposed Preventive Measures

All chemicals

- Do not eat while working with chemicals.
- Allocate proper areas to store and consume food or drinks.
- Practise good personal hygiene. Wash hands before eating, drinking or smoking.
- Ensure that all chemicals have proper labelling.

Electrical hazards

Electrical hazards can cause injuries like electric shocks, electrical burns, fires or explosions. Some of these accidents may be fatal and may contribute to further injuries. For example, an electrician doing work on a ladder may lose his balance and fall off the ladder due to an electric shock.

What you need to know about electrical hazards

When someone experiences an electric shock, what he or she feels can range from a slight tingling sensation to an immediate heart attack. The severity of an electric shock depends on the strength of the electric current, its path through the body and the length of time it comes in contact with the body.



Unsafe equipment or installation, environments or work practices can lead to electrical hazards. Electrical hazards happen when power circuits are overloaded, electrical appliances are used with wet hands or are placed on wet surfaces, when the equipment's insulation is worn out, or if the electrical equipment or parts have been altered without permission.

Suggested tips for preventing electrical hazards:

- Keep power cords away from heat, water and oil.
- Do not clean electrical equipment with flammable solvents like acetone.
- Do not overload electrical points.
- Remove defective electrical appliances immediately. Send them for repair or discard them.
- Inspect and maintain electrical appliances and their power cords regularly. If the insulation appears worn out, do not use them.
- Avoid placing power cords under carpets or heavy furniture.
- Use power sockets, plugs and cables that are registered with SPRING Singapore. These products bear a safety mark.
- Engage only electrical workers licensed by the Energy Market Authority to carry out electrical work.
- Read all instruction manuals before operating electrical appliances.

Indoor air quality

A workplace with good indoor air quality is where there is enough ventilation, the temperature of the space is at a comfortable range and the levels of airborne contaminants are low. Other things that can affect indoor air quality include lighting, noise, work stress and general cleanliness. Employers and employees can procure a variety of electronic tools to check on the air quality at their workplace.

What you need to know about indoor air quality

Some common indoor air pollutants and potential sources are:

Pollutants	Potential Sources
Carbon dioxide (CO ₂)	People, plants
Carbon monoxide (CO)	Exhaust fumes from cars and cooking fumes
Formaldehyde	Emitted from new building materials like carpets and plastics
Volatile organic compounds (VOCs)	Cleaning products and perfumes
Moulds and fungi	Wet and damp materials, and stagnant water in the heating, ventilating and air conditioning system
Dust	Cleaning of carpets, housekeeping and renovation activities

What you need to know about preventing poor indoor air quality

Building managers should:

- Carry out regular preventive maintenance on air handling units.
- Schedule pesticide applications after office hours, for instance, during evenings or weekends.
- Use low-odour cleaning agents.
- Schedule building renovation works after office hours and clean up all dust before normal business operations begin.

Employees should:

- Avoid blocking air supply or vents with furniture or objects.
- Clean up all spills immediately.
- Avoid using air fresheners with strong scents.
- Seal and store office chemicals like cleaning agents after use in a proper area.
- Place office equipment like photocopying machines in separate, well-ventilated areas.

What you need to know about fatigue hazards



Fatigue hazards

Fatigue is a state of tiredness that affects the mental and physical performance of a person. It may lead to incidents at the workplace so it is important to identify all hazard factors and any potential accidents it may result in.

Fatigue may be caused by organisational, environmental and personal factors. Organisational factors include poor work-rest schedules, poor management of workloads and lack of resources, which lead to heavier workloads.

Environmental factors include lighting and the temperature of the work area. Individual factors include an employee's state of health and lifestyle.

Common symptoms of fatigue include:

- Undue tiredness;
- Higher level of irritability or impatience;
- Speaking less than usual or less clearly during communication;
- Prone to distractions;
- Slower reaction or response speed;
- Reduced short-term memory, forgetful;
- Reduced ability in solving problems;
- Poor judgement of distance, speed, or time; or
- Use and abuse of unhealthy substances like cigarettes and alcohol to cope with work stress.

Suggested tips for preventing workplace fatigue:

- Make sure that the work area is well-lit and well-ventilated.
- Make sure that there are areas for employees to rest, such as pantries.
- Where possible, schedule work such that difficult tasks are to be performed only during the day when fatigue level is the lowest.
- Employees should take a minimum number of breaks on each work day.
- Make sure that the number of working hours allow employees to receive adequate rest, for example, limit overtime.
- Educate employees on managing fatigue.

Fire hazards

Fire hazards are a serious concern as they can cause major disruptions to businesses and potentially cause catastrophes, including loss of property and/or lives.

What you need to know about fire hazards



Besides preventing fires, workplaces should have adequate fire protection systems in place to minimise the impact of fire on the persons within the workplace premises. It may range from a simple evacuation plan and provision of fire extinguisher to a complex system comprising a central controller, trained personnel and immediate notification of the Singapore Civil Defence Force (www.scdf.gov.sg).

A key basic fire prevention method is to raise employees' awareness on fire hazards and how to prevent occurrences of such hazards. They should also be educated on how to evacuate the building safely during an emergency.

Here are some potential sources of fires, their causes and suggested safety tips:

Potential Sources	Cause of Hazard	Suggested Safety Tips
Electrical	<ul style="list-style-type: none">• Using damaged or poorly maintained electrical equipment.• Overloading of power circuits.• Misuse of electrical equipments, like blocking off the air vents that leads to overheating.	<ul style="list-style-type: none">• Ensure that area has adequate ventilation, such as open windows and doors.• Clean up spills immediately.• Keep chemical container lids closed when not in use.• Ensure that all chemical containers are properly labelled.• Practise good personal hygiene. Wash hands after work before eating, drinking or smoking.

Potential Sources	Cause of Hazard	Suggested Safety Tips
Cooking	<ul style="list-style-type: none"> Misuse of kitchen appliances, like microwave ovens, coffee makers, and stoves. 	<ul style="list-style-type: none"> Follow electrical appliances' recommendations and instructions closely. Do not leave cooking unattended.
Poor housekeeping	<ul style="list-style-type: none"> Over storage of boxes and other flammable materials. Storage of flammable materials too closely to heat sources. Poorly stored objects that obstruct exits, passageways, electrical panels or emergency equipment. 	<ul style="list-style-type: none"> Do not block fire emergency equipment, exits, fire extinguishers, hose reels and sprinklers. Reduce the storage of flammable materials.
Work that produces sparks, flames or slag, like grinding and welding	<ul style="list-style-type: none"> Lack of safety procedures, like not ensuring that the work area is clear of flammable materials. 	<ul style="list-style-type: none"> Establish safe work procedures. Ensure that work is compatible. Make sure that employees are trained for such work.