WORK-RELATED FATIGUE

LEARNING OUTCOME

Describe the requirements of the Work Health and Safety legislation as it relates to work-related fatigue.

ASSESSMENT CRITERIA

- Describe the legislative requirements relating to work-related fatigue
- Understand the hazards and factors that impact on work-related fatigue
- Understand the outcomes and implications of fatigue in the workplace
- Understand processes for eliminating and minimising risks associated with work-related fatigue.

REFERENCES

- Work Health and Safety Act 2011
- Guide for managing the risk of fatigue at work
- Fatigue management – a worker's guide

MANAGING THE RISK OF FATIGUE AT WORK

WHAT IS FATIGUE?

Fatigue is more than feeling tired and drowsy. In a work context, fatigue is a state of mental and/or physical exhaustion which reduces a person's ability to perform work safely and effectively.

It can occur because of prolonged mental or physical activity, sleep loss and/or disruption of the internal body clock.

Fatigue can be caused by factors which may be work related, non-work related or a combination of both and can accumulate over time.

Why is fatigue a problem?

Fatigue can adversely affect safety at the workplace. Fatigue reduces alertness which may lead to errors and an increase in incidents and injuries, particularly when:

- operating fixed or mobile plant, including driving vehicles
- undertaking critical tasks that require a high level of concentration
- undertaking night or shift work when a person would ordinarily be sleeping.

The effects of fatigue can be short or long term. In the short term a person may show the signs or report the symptoms of fatigue. The longer term health effects of fatigue can include:

- heart disease
- diabetes
- high blood pressure
- gastrointestinal disorders
- lower fertility
- anxiety
- depression.

How can you tell if someone is fatigued?

The following signs or symptoms may indicate a worker is fatigued:

- excessive yawning or falling asleep at work
- short term memory problems and an inability to concentrate
- noticeably reduced capacity to engage in effective interpersonal communication
- impaired decision-making and judgment
- reduced hand-eye coordination or slow reflexes
- other changes in behaviour, for example repeatedly arriving late for work
- increased rates of unplanned absence.

A fatigued worker may also experience symptoms not obvious to others including:

- feeling drowsy
- headaches
- dizziness
- difficulty concentrating
- blurred vision or impaired visual perception
- a need for extended sleep during days off work.

WHO HAS HEALTH AND SAFETY DUTIES IN RELATION TO MANAGING THE RISKS OF FATIGUE?

Everyone in the workplace has a work health and safety duty and can help to ensure fatigue does not create a risk to health and safety at work. Fatigue is not only caused by work-related activities – it is affected by all activities carried out when a person is awake.

Who	Duties
Person conducting a business or undertaking (section 19)	Has the primary duty to ensure, so far as is reasonably practicable, workers and other persons are not exposed to health and safety risks arising from the business or undertaking. This includes ensuring, so far as is reasonably practicable: • provision and maintenance of a work environment without risks to health and safety • provision and maintenance of safe systems of work, and • monitoring the health of workers and the conditions at the workplace for the purpose of preventing illness or injury of workers arising from the conduct of the business or undertaking. The duty on the person conducting the business or undertaking is not removed by a worker's preference for certain shift patterns for social reasons, their willingness to work extra hours or to come to work when fatigued. The person conducting the business or undertaking should adopt risk management strategies to manage the risks of fatigue in these circumstances.
Officer (section 27)	Officers such as company directors, must exercise due diligence to ensure the business or undertaking complies with its work health and safety duties. This includes taking reasonable steps to ensure the business or undertaking has and uses appropriate resources and processes to manage the risks associated with fatigue.
Worker (section 28)	Workers must take reasonable care for their own health and safety and must not adversely affect the health and safety of other persons. Workers must also comply with any reasonable instruction and cooperate with any reasonable policy or procedure relating to fatigue at the workplace, such as policies on fitness for work or second jobs. Workers' duties in relation to fatigue do not mean they must never work extra hours. However, they should talk to their manager or supervisor to let them know when they are fatigued. They should also avoid working additional hours and undertaking safety critical tasks when they know it is likely they are fatigued.

HOW CAN THE RISKS OF FATIGUE BE MANAGED AT THE WORKPLACE?

Measures to manage the risks associated with fatigue will vary from one workplace to the next, depending on the nature of the work, environmental conditions and individual factors.

Fatigue in the work environment should be managed using a risk management approach, as outlined in the *Work Health and Safety Act 2011*. This includes:

- Identify hazards - e.g. shifts, rosters, type of work being undertaken
- Assess the risk - determine the likelihood and consequences of an incident
- Implement control measures - develop work procedures, training, supervision, communication

- Monitor and review effectiveness of control measures - are measures implemented working, are workers still getting fatigued, review incident records.

Other factors, such as medication and commute times, may also need to be considered in relation work fatigue.

Further guidance on the general risk management process is provided in the Code of Practice: *How to manage work health and safety risks.*

Consulting workers

Consulting workers at each step of the risk management process encourages everyone to work together to identify fatigue risk factors and implement effective control measures. Consultation also helps to raise awareness about the risks of fatigue.

Consultation involves sharing information, giving workers a reasonable opportunity to express views and taking those views into account before making decisions on health and safety matters.

Workers and their health and safety representatives (if any) must be consulted, so far as is reasonably practicable when:

- planning and designing work schedules and rosters
- making decisions on how to manage the risks of fatigue
- proposing changes to working hours, work schedules and procedures
- making decisions about providing information and training on fatigue
- after an incident or ‘near miss’ where fatigue was a factor.

Consulting, co-operating and co-ordinating activities with other duty holders

Sometimes more than one person conducting a business or undertaking may have responsibility for health and safety because they are involved in the same activities or share the same workplace. In these situations, they must communicate with each other to identify and assess health and safety risks associated with fatigue and work together in a co-operative and co-ordinated way so these risks are eliminated or minimised so far as is reasonably practicable.

For example, if a business provides on-hire workers who carry out shift work for a host business, both businesses have a duty of care to the workers. The business owners will need to discuss whether fatigue may be a potential hazard and consider issues such as the mental and physical demands of the job, shift rosters and working hours. The on-hire business will need to take into account the cumulative effect of fatigue arising from all the different workplaces the worker is sent to and agree on arrangements to manage the risks of fatigue with each business.

FACTORS THAT MAY CONTRIBUTE TO AND INCREASE THE RISK OF FATIGUE

The first step in the risk management process is to identify all reasonably foreseeable factors which could contribute to and increase the risk of fatigue. There may not be obvious signs of fatigue at the workplace but this does not mean it is not occurring or factors which may increase the risk of fatigue are not present.

Fatigue is often caused by a number of inter-related factors which can be cumulative. The major factors contributing to and increasing the risk of fatigue involve:

Work schedules – shift work, night work, hours of work, breaks

Work schedules which limit the time workers can physically and mentally recover from work may cause fatigue, for example early shift start times or late finishes, short breaks between shifts, shifts lengthened by overtime or double shifts and not enough non-sleep rest breaks during a shift.

Working at night when the body is biologically programmed to sleep can interrupt a person's body clock. The body clock is the body's natural rhythm repeated every 24 hours. It regulates functions including sleeping patterns, body temperature, hormone levels and digestion. As it is programmed for different levels of wakefulness, people experience different levels of alertness depending on the time of the day.

When a person's body clock is out of step alertness decreases making them feel fatigued. This increases the risk of making errors and causing incidents and injuries, either in the workplace or outside of work, including on the way to and from work.

Job demands

Some types of work, for example concentrating for extended periods of time, performing repetitious or monotonous work and performing work requiring continued physical effort can increase the risk of fatigue.

Workers can be mentally and physically fatigued at the same time. Work which is reactive and performed under high pressure, for example emergency services, may also increase the risk of fatigue.

Sleep – length of sleep time, quality of sleep and time since sleep

While tired muscles can recover with rest, the brain can only recover with sleep. The most beneficial sleep is deep undisturbed sleep taken in a single continuous period.

The optimum amount of sleep varies for each person, however, an adult generally requires seven to eight hours of sleep daily.

When individuals get less sleep than they need in a day, they build up a sleep debt which accumulates until they can get enough sleep to overcome the sleep debt. Each extra day without enough sleep increases the debt, and when it becomes large enough fatigue can occur. It may take several days before a person recovers from a sleep debt. Sleep debt is common with night shift workers as they often experience difficulty getting enough undisturbed sleep during the day.

One sleepless night can have similar effects on someone as drinking too much alcohol.

Environmental conditions

Working in harsh and uncomfortable conditions can contribute to fatigue, for example, exposure to heat, cold, vibration or noisy workplaces can make workers tire quicker and impair performance.

Non-work related factors

Factors occurring outside of work may also contribute to fatigue. A worker's lifestyle, family responsibilities, health (e.g. insomnia, sleep apnoea, some medication), other work

commitments, and extended travel between work and home may all increase the risk of fatigue.

HOW TO IDENTIFY FACTORS THAT MAY CONTRIBUTE TO OR INCREASE THE RISK OF FATIGUE

Methods to identify factors which may contribute to or increase the risk of fatigue can include:

- *Consult with workers*, including managers, supervisors and health and safety representatives (if any) about the impact of workloads and work schedules, including work-related travel and work outside of normal hours (for example work a person has taken home to complete).
- *Examine work practices* and systems of work, for example:
  - the degree of choice and control workers have over work hours, the pace of work and rest breaks, and
  - the type of work culture, for example where there is an accepted practice of working long hours.
- *Examine worker records*, for example sign in-out sheets, billing sheets and shift changeovers, to determine working hours and in particular whether excessive hours have been worked or hours have been worked at times which may have led to body clock disruption.
- *Getting advice and information* on fatigue from relevant experts, research, guidance materials and data published by regulators, industry associations, unions or other sources.
- *Review workplace incident data*, including incidents travelling to and from the workplace, and ask the following questions:
  - What is the likelihood fatigue is contributing to the incidents?
  - What time of day do incidents occur?
  - When incidents have occurred, how long had the workers involved been working? For example time since start of shift, number of hours worked that week and in the preceding three months.
  - Do the incidents often happen when a worker's body clock is slowing the body down and concentration is poor?
- *Review human resource data*, for example rates of unplanned absenteeism, staff turnover and workers compensation claims. Those with an injury or illness may be at greater risk of becoming fatigued.

ASSESSING THE RISKS

A risk assessment can assist in finding out:

- where, which and how many workers (including contractors and subcontractors) are likely to be at risk of becoming fatigued
- how often fatigue is likely to occur
- the degree of harm which may result from fatigue
- whether existing control measures are effective
- what action should be taken to control the risk of fatigue
- how urgently action to control the risk needs to be taken.

When assessing risks, contributors to fatigue should not be considered in isolation. For example, job demands, hours of work and environmental conditions may all increase the risk of fatigue in the workplace. The risks of injury from fatigue may increase if workers work long daily hours in a physically or mentally demanding job. This risk of fatigue may increase when new workers begin their job and are adjusting to work demands.

Risk assessment methods are similar to the methods used to identify factors contributing to fatigue therefore these steps can be carried out at the same time.

It is not necessary to conduct a risk assessment in all circumstances.

CONTROLLING THE RISKS

The best way to control the health and safety risks arising from fatigue is to eliminate the factors causing fatigue at the source.

If elimination is not reasonably practicable, the risks must be minimised.

What is reasonably practicable to do to manage the risk of fatigue will vary depending on the type of industry, the structure of an organisation as well as the person carrying out the work.

For example, control measures a small business implements to manage the risk of fatigue may differ from those implemented by a large corporation with 300 shift or night workers, or those implemented by an emergency service organisation when it is operating under emergency response conditions.

Factors contributing to the risk of fatigue are often inter-related. Incorporating a combination of control measures into general workplace systems, as well as control measures specific to the work, can help to minimise more than one contributor to fatigue. For example, increasing the amount of time between shifts and adjusting shift starting times may improve the opportunity for sleep.

Work scheduling

Control measures for fatigue risks which can be built into a work schedule may include:

- designing working hours and rosters to allow for good sleep opportunity and enough recovery time between work days or shifts for travelling, eating, washing and sleeping
- developing a working-hours policy on daily work hours, maximum average weekly hours, total hours over a three-month period, on-call work and work-related travel
- developing procedures to manage and limit excessive working hours, for example requiring minimum breaks on a regular basis, especially during longer shifts
- ensuring workers have and take adequate and regular breaks to rest, eat and rehydrate
- scheduling safety critical work outside the low body clock periods between 2am and 6am, and between 2pm and 4pm
- managing workload and work-pace change caused by machinery breakdowns or planned and unplanned absences
- avoiding work arrangements which provide incentives to work excessive hours
- managing overtime, shift swapping and on-call duties
- implementing processes to manage accrued leave balances and requests for leave, for example setting maximum limits of leave accrual to encourage workers to use it
- considering future rosters and schedules when approving request for leave or shift swaps, and ensuring leave is reflected in rosters
- having access to on-call workers for unplanned leave, emergencies or where workload increases
- developing plans to deal with workload changes due to absenteeism
- filling vacant positions as soon as reasonably practicable and maintaining a relief pool of staff in high demand areas where fatigue is a risk

- considering alternative options to face-to-face meetings, for example teleconferencing so workers are not required to spend time travelling to meetings.

Shift work and rosters

When planning work schedules and rosters for specific work arrangements, including shift and night work, FIFO, DIDO, seasonal, on-call and emergency services work arrangements, consideration should be given to implementing additional specific control measures.

Specific control measures may include:

- structuring shifts and designing work plans so work demands are highest towards the middle of the shift and decrease towards the end
- avoiding morning shifts starting before 6am where possible
- avoiding split shifts or if there is no alternative to split shifts consider their timing, for instance whether they are likely to disrupt sleep
- setting shift rosters ahead of time and avoiding last-minute changes, to allow workers to plan leisure time
- allocating shift and night workers consecutive days off to allow for at least two full nights' sleep including some weekends
- aligning shift times with the availability of public transport or if required, provide alternative transport at the end of a long shift
- overlapping consecutive shifts to allow enough time for communication at shift handovers
- avoiding overtime allocation after afternoon or night shifts
- consider if night work is necessary and rearrange schedules so non-essential work is not carried out at night
- keeping sequential night shifts to a minimum, and
- providing information to shift workers containing tips for them to prevent and manage the risk of fatigue.

Job demands

Control measures to prevent or minimise the risk of fatigue can include:

- ensuring fit-for-purpose plant, machinery and equipment is used at the workplace (for example, ergonomic furniture, lifting equipment and anti-fatigue matting for repetitive tasks performed while standing)
- encouraging workers to report concerns they may have about work-related fatigue
- redesigning the job to limit periods of excessive mental or physical demands
- introducing job rotation to limit a build-up of mental and physical fatigue
- developing contingency plans for potential situations where workers may have to unexpectedly work longer hours, more shifts or a long sequence of shifts, and
- planning for expected changes in work flow including anticipated peaks and troughs during the year.

Environmental conditions

- Avoid working during periods of extreme temperature or minimise exposure time through job rotation.
- Provide a cool area where workers can take a rest break and rehydrate in hot work environments.
- Install ventilation and mechanical cooling devices in hot, small and enclosed spaces such as truck cabins.

- Provide adequate facilities for rest, sleep, meal breaks, onsite accommodation (if appropriate).
- Install adjustable, low-vibration seats in machinery and vehicles and provide low vibration hand held equipment.
- Provide and maintain a workplace which is well lit, safe and secure.

Non-work related factors

Work and lifestyle often impact each other. For example, if a worker leaves their job tired and exhausted they may be less able to perform out-of-work activities or could be a danger to themselves and others when driving home tired. Likewise, if a worker arrives at work fatigued they may be less productive or could be a danger to themselves and others in the workplace.

A person conducting a business or undertaking cannot control what a worker does outside of work. Workers have a duty to take reasonable care for their health and safety and this includes enough sleep so they can arrive at work ready for duty. However controls can be implemented to avoid potential conflicts between personal and work demands, for example:

- develop a fatigue policy for all workers including managers and supervisors,
- consult workers about managing fatigue not just when at work, the risks associated with fatigue and how it relates to their health and safety duties.

MONITORING AND REVIEWING

Once control measures are implemented, they should be monitored and reviewed to ensure they continue to effectively manage fatigue. Consider implementing trial periods for any new work schedules and encouraging workers to provide feedback on their effectiveness.

To determine the frequency of monitoring and review consider the level of risk — high-risk hazards need more frequent assessments. Control measures should also be reviewed when:

- there is any indication risks are not being controlled
- new tasks, equipment, procedures, rosters or schedules are introduced
- changes are proposed to the work environment, working hours, schedules and rosters
- there is an incident due to fatigue at the workplace
- new information regarding fatigue becomes available, and
- the results of consultation, including a request from a health and safety representative, indicate that a review is necessary.

Note: Content for this module was sourced from the Guide for Managing the risk of fatigue at work. For more information on the identification and management of workplace fatigue, please consult this document.

STUDENT ACTIVITY

Situation	Risk Factors	Potential control measures
At the peak of the bushfire season, a four-person crew from one region where there are no fires is sent to assist another region fighting a fire front which is 50km wide. The area needing the extra crew members is a four hour drive from the region's base. The crew are based at the fire ground for either five-day shifts or three-night shifts. The shifts are 12-hours long, including travel to and from a staging area at a community hall which is also used for meals and sleep. The community hall is used as a staging area for other emergency and support services and is therefore quite noisy and busy. A number of strike teams are in the same situation. The safety coordinator becomes concerned the strike teams are not getting the amount of quality rest and sleep time they need to avoid fatigue. The co-ordinator conducts a risk assessment with the health and safety representative to establish the main risk factors and put in place control measures addressing the fatigue risk factors.	•	•

Working in your groups, use the table to identify the risk factors that may contribute to fatigue in the scenario provided. Determine and document suitable control measures that could be implemented to manage the risk of fatigue.

Additional notes:

Version	Date	Author
1	30/06/2018	WHSQ