Fatigue Chart

Hazard Identification

Risk Assessment

Lower Risk > Moderate Risk > Higher Risk

Risk Control

MENTAL & PHYSICAL DEMANDS OF WORK

Hazard Identification

These include, for example:

1. Repetitive or monotonous work
2. Sustained physical or mental effort
3. Sustained and/or complex physical or mental tasks

Risk Assessment

Low Risk	Moderate Risk	High Risk
1. Varying tasks demand		Highly repetitive work and/or high concentration work, with high demands over an extended period of time
2. Minimal physically demanding work		Highly physically demanding work that results in muscle fatigue
3. Minimal periods of high concentration and/or mentally demanding work		Long periods of high concentration and/or mentally demanding work

Risk Control

Options

- Re-design jobs to eliminate boring, repetitive tasks
- Improve communication
- Provide training to allow multi-skilling and effective job rotation
- Use alarms and monitors, particularly for solo work (eg driving vehicles)
- Use plant, machinery and equipment to eliminate or reduce the excessive physical demands of the job
- Reduce the amount of time employees/workers need to spend performing sustained physically and mentally demanding work
- Ensure there are adequate employees/workers and other resources to do the job without placing excessive demands on staff
- Roster enough employees/workers during peak times and demands
- Ensure adequate breaks during shifts to allow recovery
- Allow supervisors and employees/workers to reschedule tasks if fatigue becomes a problem
- Ensure work demands gradually increase towards the middle of the shift and decrease towards the end
- Eliminate sources of risks that might exacerbate fatigue (eg lack of job control, manual handling, extremes of temperature)
- Improve communication processes
- Improve the duration and timing of work
- Ensure safe and efficient shift hand-over

WORK SCHEDULING & PLANNING - NIGHT WORK

Hazard Identification

1. Shift end (for those working eight hours or more between 10.00pm and 6.00am)
2. Length of shift
3. Sequential night shifts
4. Period of non-work following a sequence of night shifts
5. Breaks during work - frequency
6. Breaks between work periods
   - recovery time
7. Seasonal work arrangements
   - hours worked

Risk Assessment

Low Risk	Moderate Risk	High Risk
1.	After 10.00 pm	Before 6.00 am
2.	8 Hours	10 Hours / 12 hours
3.		6 or more 8 hour shifts 5 or more 10 hour shifts 4 or more 12 hour shifts
4. 48 Hours		Less than 48 hours
5. Adequate and regular breaks		Infrequent or no breaks
6. Adequate time for sleep, travel, meals, etc		Inadequate time for sleep, travel, meals, etc
7. Regular hours over 12 months		Long hours during peak season

Risk Control

Options

Night shifts, including the number of consecutive night shifts

- Eliminate or limit night work where possible
- Eliminate the use of nightshifts for particular jobs or activities
- Schedule complex tasks for daytime
- Schedule work for hours when the risks may be lower – for example, complex and safety-critical tasks are best undertaken during normal day shifts when employees/workers are less likely to be fatigued, rather than during low body clock periods (ie don't schedule tasks between 2am and 6am and, to a lesser degree, between 2pm and 4pm)
- Avoid scheduling higher risk tasks on the first night of a night shift cycle. If unavoidable, when planning the task consider additional controls such as job rotation or additional rest breaks
- Minimise or redesign routine administrative tasks to ensure employees/workers can focus on core duties during their night work
- Allow for naps during night shifts
- Limit the number of consecutive night shifts worked – no more than four night shifts in a row
- Allow regular night employees/workers periods of normal nights' sleep to catch up on their sleep deficit
- Ensure that rosters allow for at least two full nights' sleep after the last night shift
- Arrange shifts so that day sleep is adequate
- Use a forward-rotation shift system (ie morning to afternoon, afternoon to night)
- Improve the order, speed, direction and length of rotation of the shift cycle
- Except for emergencies, give at least 24 hours notice before night work. Consider providing a longer period of notice so that employees/workers have time to adjust their activities

WORK SCHEDULING & PLANNING - SHIFT WORK

Hazard Identification

1. Length of shift
2. Time of shift
3. Speed and direction of shift
4. Split shifts/variable shifts

Risk Assessment

Low Risk	Moderate Risk	High Risk
1.	10 Hours	13 hours
2. Day shifts	Afternoon shifts	Night shifts
3. Forward rotation (morn/afternoon/night)		Backward rotation (night/evening/morn) Slower rotation (weekly/3-4 week)
4.		13 hour period

Risk Control

Options

Hours of work in a single shift. This includes travel time, especially for remote sites

- Reduce working hours
- Increase resourcing
- Eliminate the use of extended hours for particular jobs or activities
- Control the length of shifts
- Limit the use of overtime, especially unscheduled overtime
- Monitor hours of work
- Provide alternative transport at end of overtime/long shift

WORK SCHEDULING & PLANNING - HOURS

Hazard Identification

1. Average weekly hours
2. Total hours over a three-month period
3. Daily work hours
4. Daily work hours and work-related travel
5. Scheduling of work

Risk Assessment

Low Risk	Moderate Risk	High Risk
1. 35-40 Hours (working week)	48 Hours (working week)	56 Hours (working week)
2.	624 working hours	
3. 9 working hours		12 working hours
4.	10 working hours	13 working hours
5. Regular and predictable hours		Irregular and unpredictable hours, short notice of schedule, extended overtime on call across shift cycle

Risk Control

Options

Hours of work across a shift cycle

- Develop a working-hours policy on daily work hours, maximum average weekly hours, total hours over a three-month period and work-related travel
- Reduce working hours
- Reduce the number of consecutive day shifts that can be worked
- Eliminate or reduce the need to work long shifts for more than four consecutive days
- Allocate shift employees/workers consecutive days off, including some weekends, depending upon their fatigue risk level
- Avoid working arrangements that provide incentives to work excessive hours
- Control overtime, shift swapping and on-call duties
- Offer alternatives to employees/workers who may have difficulties adjusting to working hours

On call duties

- Limit use of standby and on-call duties
- Ensure that exchange of shifts does not result in excessive hours
- Ensure that responding to emergencies does not result in excessive hours

Breaks between work shifts

- Increase the length of breaks between shifts
- Allow for recovery between work periods
- Defer non-urgent work to allow appropriate rest and recuperation for employees/workers
- Provide rest days; (opportunity for two consecutive night sleeps)
- Improve the timing of shifts
- Allow for family and social commitments between shifts and shift cycles
- Make sure that there is enough time in a break for six hours uninterrupted sleep

Breaks within work shifts

- Provide more and/or longer breaks to allow for recovery within work periods
- Provide adequate resources to cover breaks
- Ensure adequate number and location of crib and toilet facilities
- Reduce the use of split shifts
- Where split shifts are used, arrange timing so sleep of employees/workers is not disrupted due to the times they are required to work

Shift start/finish times

- Don't start or finish between 10pm and 6 am
- Ensure time for adequate communication at shift handovers
- Match shift times to the availability of public transport

Changes to rosters

- Set shift rosters ahead of time and avoid sudden changes of shifts to allow employees/workers to plan leisure time
- Reduce irregular and unpredictable work schedules

EXCESSIVE COMMUTING TIMES NECESSARY

Risk Assessment

Low Risk	Moderate Risk	High Risk
Minimal commuting time		Long commuting time

Risk Control

Options

- Start work at long distance commute sites on the day after arrival and start travel home on the day after the shift cycle is finished
- Assist with travel arrangements, eg provide transport
- Reduce active working time to account for long commuting time or distance

WORK ENVIRONMENT CONDITIONS

Hazard Identification

1. Exposure to hazardous substances and atmospheric contaminants
2. Exposure to noise
3. Exposure to extreme temperatures
4. Exposure to vibration
5. Effect of exposure during extended shifts

Risk Assessment

Low Risk	Moderate Risk	High Risk
1. For hazardous substances, low risk calculated using national exposure		For hazardous substances high risk calculated using national exposure
2. Low risk calculated according to formulae in AS/NZS 1269.1		High risk calculated according to formulae in AS/NZS 1269.1
3. Minimal exposure		Long period exposure
4. Minimal exposure		Long period exposure
5. Minimal exposure		High exposure

Risk Control

Options

Hours of work across a shift cycle

Stress

- Improve job control and the other risk factors associated with stress
- Ensure opportunities to clarify stress-related issues

Physical conditions

- Avoid working during periods of extreme temperature
- Control exposure to hazardous substances and environments
- Provide effective protective clothing and equipment, allowing for different shifts.
- Use heating and cooling to control ambient temperatures to support alertness
- Provide adequate facilities for rest, sleep, meal breaks, onsite accommodation (if appropriate) and other essential requirements, such as bathroom facilities
- Install adjustable, vibration-free seats in appropriate machinery and vehicles
- Ensure the workplace and surroundings are well lit, safe and secure
- Employees/workers who perform repetitive manual tasks should have regular rest breaks
- Ensure exposures are carefully monitored and exposure levels adjusted. For example, exposure during a 10-hour shift may not equate to 1.25 times the exposure experienced during an eight-hour shift

INDIVIDUAL & NON-WORK FACTORS

Hazard Identification

1. Sleep (amount and quality)
2. Health
3. Fitness for work
4. Lifestyle factors

Risk Assessment

Low Risk	Moderate Risk	High Risk
1. Night sleep 8 hours night sleep (in 24 hours)		Day sleep 6 hours night sleep (in 24 hours)
2.		Poor diet Recent illness/injury Sleep disorders
3.		Influence of alcohol, drugs or amount of sleep
4.		Activities/responsibilities that limit amount of sleep, eg second job or long commute

Risk Control

Options

- Maintain vigilance in identifying non-work related factors
- Subsidise modifications to private homes to improve sleeping conditions (eg air conditioning)
- Provide information and education about how non-work related factors can increase the risks of fatigue
- Provide a mechanism to encourage employees/workers to report non-work factors that might affect fatigue management