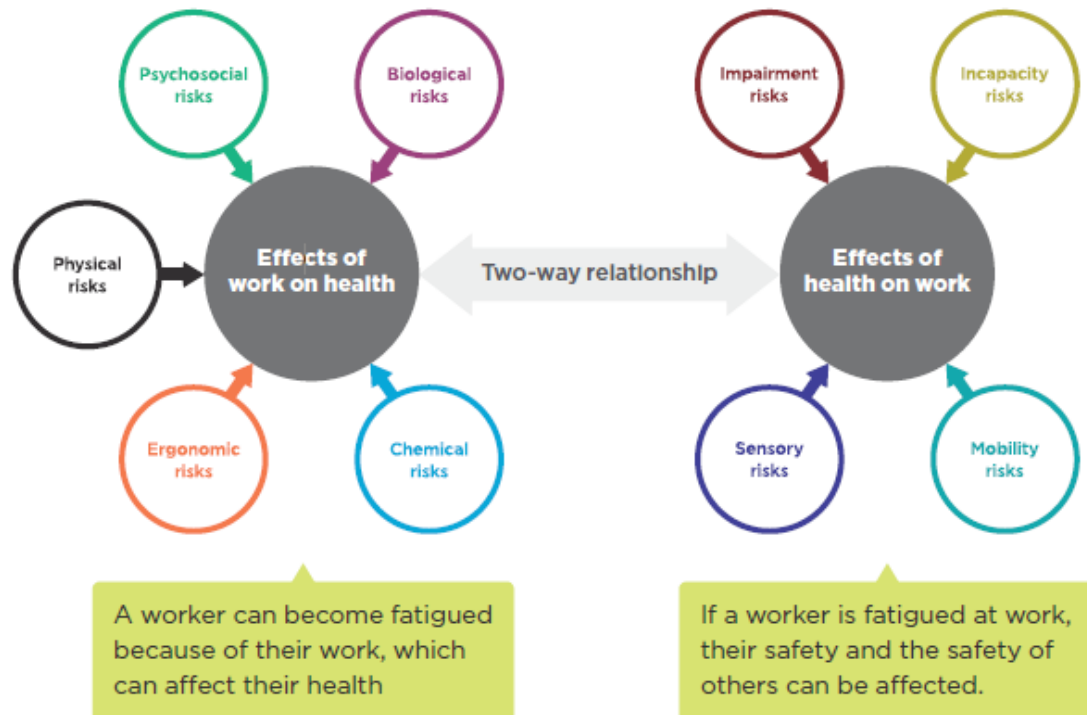


FATIGUE IMPAIRMENT PREVENTION GUIDE



THE TWO-WAY RELATIONSHIP BETWEEN WORK AND HEALTH

Work can affect a person's health, and health can affect a worker's ability to work safely.



There is clear evidence that badly designed and managed work can result in negative health outcomes, both for the individual and the community at large. It can also lead to poor employment relations and less than optimal productivity.

Creating healthy work is a shared, co-operative venture, where both employees and employers have roles and responsibilities, including the maintenance of a balance between work and non-work activities.

It is not something that can be imposed – and it will require mutual understanding, accommodation, respect, and the normal processes of give and take for its success.

'Stress management' is a popular way of addressing individual stress. This guide encourages instead a focus on the prevention of stress and the provision of healthy work. While 'stress management' can be considered one of the components of hazard management, it is not a sufficient solution in its own right and there is no convincing, consistent evidence that it is effective. A focus on the amount, content and organisation of work is essential if it is to be healthy, safe, and productive.

WHAT IS FATIGUE?

Fatigue is more than tiredness. It is a state of physical and/or mental exhaustion which results in a loss of alertness and reduces a person's ability to perform work safely and effectively. This loss of alertness is accompanied by poor judgement, slower reaction time, and impaired coordination and decision making.

Fatigue can lead to errors and in turn an increase in workplace incidents and injuries. Physically demanding jobs can increase fatigue.

SIGNS OF FATIGUE

If you are fatigued your mind, eyes or hearing can be off task and cause you to make a critical error. Signs of fatigue include:

- Lack of concentration
- Trouble recalling conversations or thoughts
- Making errors – trouble focusing
- Lack of energy and constantly tired
- Job quality reduced
- Trouble problem solving
- Near-miss accidents
- Bad moods or headache

Check in with yourself and others around you and know the signs of fatigue. You may be fatigued if you regularly experience some (or several) of the following:



Physical fatigue concerns the inability to exert force with one's muscles to the degree that would be expected. It may be an overall tiredness of the whole body or be confined to particular muscle groups. Physical fatigue most commonly results from physical exercise or loss of sleep. Physical fatigue often leads to mental fatigue.

Mental fatigue, which may include sleepiness, concerns a general decrease of attention and ability to perform complex, or even quite simple tasks with customary efficiency. Mental fatigue often results from loss or interruption of the normal sleep pattern and is therefore of great concern to those who are frequently required to work early in the morning or at night.

Sleep patterns are naturally associated with the body's circadian rhythms. Shift patterns and transit across time zones can interrupt circadian rhythms so that, for example, it may be difficult for flight crew or pilots on duty in the early hours of the morning or flight crew operating long-haul routes through multiple time zones to achieve satisfactory rest prior to commencing duty.

It is important to note that people are not the best evaluators of their own alertness state. They are often sleepier than they report.

FATIGUE TYPES

There are three types of fatigue: transient, cumulative, and circadian:

- Transient fatigue is acute fatigue brought on by extreme sleep restriction or extended hours awake within 1 or 2 days.
- Cumulative fatigue is fatigue brought on by repeated mild sleep restriction or extended hours awake across a series of days.
- Circadian fatigue refers to the reduced performance during nighttime hours, particularly during an individual's "window of circadian low" (WOCL) (typically between 2:00 a.m. and 05:59 a.m.).

Research shows that the accumulation of "sleep debt", e.g., by having an hour less of sleep for several consecutive days needs a series of days with more-than-usual sleep for a person to fully recover from cumulative fatigue.

HOW TO AVOID FATIGUE

Plenty of sleep: On average people need between 7.5 and 9 hours of sleep a night. The best sleep is deep, undisturbed, and taken in a single continuous period. Avoid using electronic devices like phones or computers before sleeping.

Eating correctly: Eat and drink regularly, along with a balanced diet; Avoid eating large meals directly before sleep. Drink water regularly throughout the day. Stimulants such as nicotine and coffee only provide short-term relief from the effects of fatigue.

Exercise regularly: Keeping fit and healthy reduces time off work.

Work schedules: Remember to take regular scheduled rest breaks during the workday. Try to avoid skipping breaks. Make sure that working hours are not too long. Employers should monitor and place limits around how much overtime is worked.

Work conditions: i.e., too hot or, too cold. Fatigue can be increased when working in conditions that are too hot or too cold.

DID YOU KNOW?

Your brain can only properly recover with sleep. A lack of sleep can lead to long-term health issues, such as heart disease and diabetes.

While working, consider:



WHY IS FATIGUE A PROBLEM?

By preventing fatigue in the workplace, you will have greater health and safety outcomes, and reduce workplace incidents and injuries.

Fatigue in the workplace is a problem as it can:

- Increase the chance of workplace injuries.
- Prevent a person from performing work safely.
- Increase work-related error rates and mistakes.
- Increase risk taking behaviour.
- Decrease work efficiency.
- Decrease motivation.

WHAT HEALTH FACTORS CAN CAUSE OR ADD TO FATIGUE

Diet – Exercise – Rest

- Skipping meals
- Diet choices – Junk food and large meals
- Poor hydration levels
- Lack of regular exercise
- Poor relaxation and rest habits
- Unmanaged illness / chronic pain

WHAT ARE SOME OF THE CAUSES OF FATIGUE?

- Stress
- Use of alcohol or drugs (often related to stress)
- Health (diet & fitness)
- Overdoing it

WHAT CAN CAUSE STRESS?

- Environmental factors; (Weather, traffic congestion, crowds, inappropriate workloads, noise levels)
- Chronic pain / Health issues
- Financial issues
- Relationship issues

THE DANGERS OF FATIGUE

Fatigue can lead to

- accidents
- errors
- compliance violations
- absenteeism
- long term health issues

These can result in reputational damage in the long term and financial harm in the short term, as well as the potential for harm to people (injury and loss). Absenteeism in 2018 cost NZ \$1.79 billion with an estimated 1.79 million lost days of work in 2019.

In 2020 there were 26 fatal crashes, 89 serious injury crashes, 438 minor injury crashes where fatigue was identified as a contributing factor. From these crashes 29 people died, 114 people were seriously injured and 558 people suffered minor injuries.

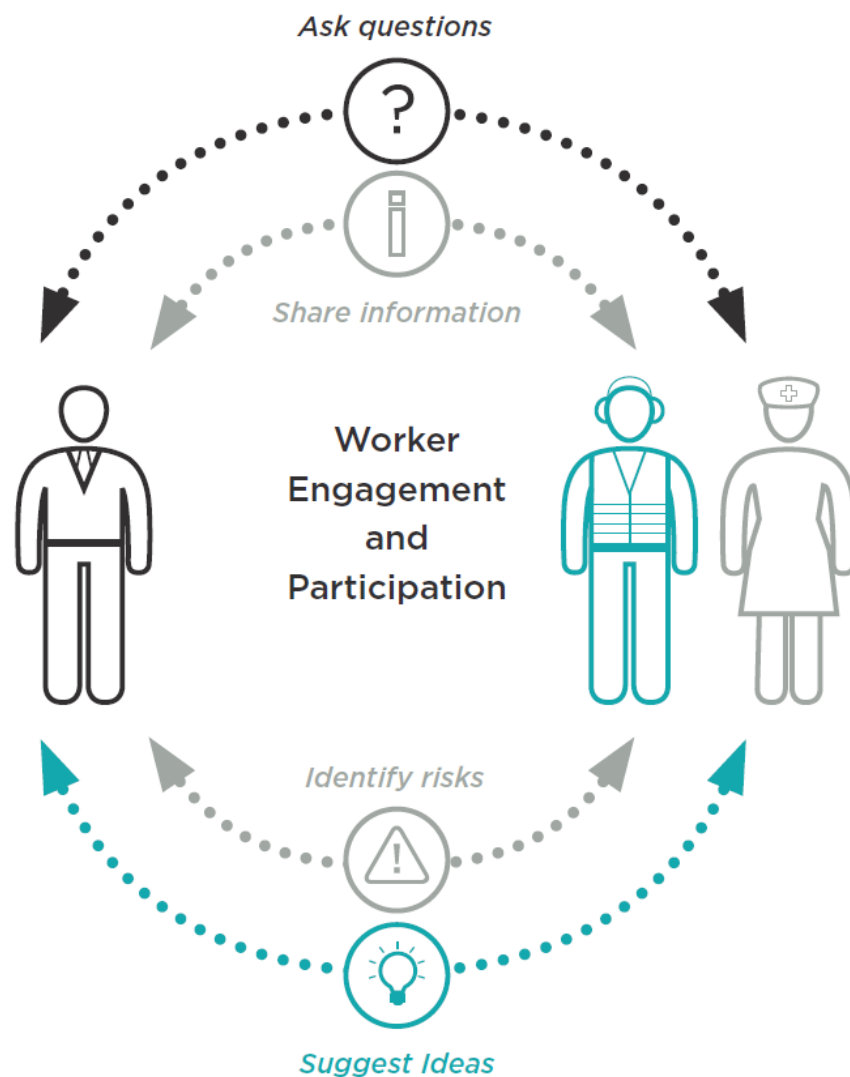
WHO IS RESPONSIBLE FOR MANAGING FATIGUE?

Fatigue reduces your ability to perform work safely and effectively. Under the Health & Safety at Work Act, we all have a responsibility to manage fatigue.

WORKER ENGAGEMENT AND PARTICIPATION

PCBU's have an on-going duty to engage with their workers when making decisions about how they will manage the risk of fatigue at their work, because it is a health and safety matter that directly affects them.

Ask your workers for ideas about how to manage the risk of fatigue at work, because they know what happens at work every day. Strong worker engagement, participation and representation leads to healthier and safer work. They are also good for business performance and productivity – because they help inform better decisions. Workers who help shape safer work systems can suggest practical, cost-effective solutions. They are more likely to make them happen in practice.



FOUR CATEGORIES OF WORK

There are four 'categories of work' that should be considered with regards to fatigue management. These categories aren't necessarily fixed as they will overlap with each other, circumstances change and work that one person finds stimulating will be work that another person finds stressful (see Category Two). However, these broad categories may give you a useful starting point for thinking about whether you can eliminate as far as reasonably practicable the stressors associated with work, and then how you may go about doing so.

Category One – Healthy work is work that is enjoyable, interesting, rewarding and stimulating, such as task variety and personal control over how the tasks are performed. It is well-organised, with realistic deadlines and a balance of effort and rest, and the worker receives good recognition and rewards.

Ideally, an evaluation of this kind of job will reveal that the stressors that exist in it are challenges rather than a constant drain on resources, or that the healthy features of the work outweigh its unhealthy features. Any significant stressors that do show up can probably be eliminated through primary (work-focused), secondary (training and person focused) and tertiary (person-focused) prevention methods.

Category Two – Self-generated stress. This is where the person creates their own stressors because of personal choices. A person in Category Two might be trying to hold multiple jobs or agreeing to unreasonable demands on themselves (saying 'yes' instead of 'no', which may imply a degree of management responsibility), pursuing agendas that are not those of the organisation, refusing to ask for help when they should or refusing reasonable change.

An evaluation of a Category Two job will reveal that the employee is creating stressors. The stress prevention programme will aim to eliminate the stressors through secondary (person-job fit) and tertiary (person-focused) prevention methods, and to alert supervisors not to take advantage of the person.

The identification, assessment, and control of problems in Category Two work may require the consideration of all the factors in the person's life to find out if the person is choosing to behave that way or is constrained to behave that way by various pressures.

Category Three – Badly organised work. This is work that is free from the intrinsic stressors that characterise Category Four work, is normally enjoyable and satisfying, but is organised so that it has become difficult for a number of people doing the work to cope with. Jobs in this category typically can be done safely and enjoyably but are often being worked too many hours in each week or needlessly contain uncontrolled stressors.

An evaluation of a Category Three job will reveal stressors in the job that will often relate to time and other organisational pressures.

Category Four – Intrinsically stressful work. This kind of work could involve activities that are emotionally challenging, draining or even repugnant, require intense, prolonged concentration, or have very high consequences of error.

An evaluation of a Category Four job will reveal a high number of intrinsic stressors that may, at times, be intense and unmanageable.

DETAILS OF PREVENTION METHODS

Primary prevention (elimination of work organisation stressors) focuses on identifying and removing stressors in the workplace and creating a healthy place of work.

Examples are:

- designing work so it is safe and healthy
- creating flexible, balanced work schedules
- providing family-friendly work (e.g., flexible hours, assistance/leeway in times of emergency);
- hazard identification – having systems for detecting the presence of stressors – either by hazard ID methods or the ability for employees to report stress
- avoiding isolation and crowding in the workplace
- providing physical barriers to deter violence.

Secondary prevention focuses on improving the 'goodness of fit' between people and tasks.

Examples are:

- providing needed training
- providing any needed mentoring and supporting for the person in the skills required for the job
- providing performance feedback
- assessing the workload – ability match
- moving the person to a more suitable job
- using best practice personnel selection procedures.

Tertiary prevention focuses on helping the person who is regularly exposed to stressors and/or who is suffering the effects of stress or harm related to stress. This is also called 'stress management'.

Examples are:

- controlling the timing and duration of the exposure to stressors;
- inducting/training employees into ways of dealing with shiftwork (and perhaps including partners);
- training in dealing with the demands posed by the work. This should be directed at helping the person achieve the required results – rather than on how to deal with the effects of not coping (e.g., training in how to identify the levels of threat posed by aggressive customers and how to respond to each different level is more effective than training in how to deal with the effects of customer aggression);
- training in time management, priority setting, and clarifying goals;
- providing practical assistance for specific personal issues;
- temporary reduction of workloads;
- making short personal exercise programmes a reality (e.g., is there enough time for a short run at lunchtime?);
- appropriate management after a traumatic incident
- promoting employee involvement
- providing contact details for centres that can assist staff.

Note that evidence suggests that stress management by itself produces only short-term improvements in self-reported well-being and no effects on job satisfaction.

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Prevention methods for Category Four work

For this category of work, prevention methods can also mean:

- careful selection of people best suited to the type of work:
People that are more suited to the work involved and have the appropriate skills and experience are more likely to cope with its demands. However, other measures will be required to manage the stressors they face
- short-term rotation of staff away from stressful situations.
- long-term rotation of staff – sabbatical arrangements.
- scheduling training and retraining into the working year
- ensuring that the administrative requirements of this sort of work are effective and expedited (senior staff duties are supported by junior staff)
- providing mechanisms for 'stressed' staff to share their experiences and learn from each other in safety:
Suggestions box; Anonymous incident reports (which make it possible to raise concerns about near hits in safety).
- ensuring that the inherently difficult aspects of Category Four work are not made less tolerable by work organisational structures.

Healthy work systems in organisations have the following characteristics:

- 1 Open and transparent performance review systems – the golden rule is 'no surprises'.
- 2 Clear job descriptions and performance criteria – with prompt positive and negative performance feedback.
- 3 Communication – letting staff know what's happening and providing for discussion and dialogue. Listening to staff feedback.
- 4 Relationship management – there are ways to tell when relationships deteriorate and there are repair mechanisms that can be used when they become dysfunctional.
- 5 Process review – examination of the ways work is done to remove unnecessary or redundant tasks and devise better ways of doing things.
- 6 Expectations held of people – realistic expectations about performance and output by all parties.

Features of New Zealand small businesses that may affect stress and fatigue:

| Work Feature | Possible Advantages | Possible Disadvantages |
|--|---|--|
| Definition of the work role | <ul style="list-style-type: none"> • Implied variety of tasks • Implied discretion and opportunities for initiative • Implied ability to take breaks. | <ul style="list-style-type: none"> • An atmosphere of uncertainty • Employees take on too much or too little work. • Uncertainty as to who does what, when – and who is responsible. • Problems with accountability/ responsibility. |
| Employer participation in the work | <ul style="list-style-type: none"> • Knowledge of local conditions • Open communication • Problems dealt with promptly. | <ul style="list-style-type: none"> • Extended working hours • Employer expertise concentrated on work may mean others do not develop skills • A lack of autonomy. |
| Involvement of family members and friends | <ul style="list-style-type: none"> • Work is sociable and supportive • High loyalty, trust, commitment and motivation • Family and personal support | <ul style="list-style-type: none"> • Employment status may be unclear • Loyalty may be abused (unintentionally) • Things can go badly wrong if there are disputes • Training may be shallow – or it may be assumed it is not needed. |
| Employees are scattered across a number of work-sites. | <ul style="list-style-type: none"> • Independence encourages initiative • Greater variety, autonomy and control. | <ul style="list-style-type: none"> • Difficulties of communication • Difficulties in consistency and quality control. |
| Options are affected by the behaviour of larger businesses | <ul style="list-style-type: none"> • Large business approach to contracting may improve health and safety • Large businesses may mentor small business health and safety efforts. | <ul style="list-style-type: none"> • Large businesses may exploit the dependency of small businesses through pricing competition • Non-communication about health and safety issues. |
| Access to resources | <ul style="list-style-type: none"> • Industry Associations can act to create and disseminate information. | <ul style="list-style-type: none"> • Difficult to find succinct, comprehensible, reliable, specific information. |
| Precarious employment | <ul style="list-style-type: none"> • People may cycle rapidly through unpleasant work. | <ul style="list-style-type: none"> • Reduces incentive for employer to train and employee to learn |
| Family commitments | <ul style="list-style-type: none"> • Employers can choose to provide good conditions to work around family commitments. | <ul style="list-style-type: none"> • Poor conditions for family commitments • Pressure on other employees when people with family commitments are away from work. |

FATIGUE ASSESSMENT CHECKLIST FOR DRIVERS

In addition to our recommendations detailed in the Master Electrician Fatigue – Impairment Prevention Guide, Master Electricians recommends all drivers review this checklist prior to driving to assess the driver’s fitness to drive.

The law says you must not drive if the amount of alcohol in your blood or breath exceeds certain age-related limits.

Under 20

There’s a zero-alcohol limit if you’re under 20. That means if you drive after consuming even one drink you can be charged with drink-driving.

[Alcohol and drugs limits for driving](#)

| Fitness to drive checklist. | Yes/No |
|--|--------|
| Are you over 20 with less than 250 micrograms of alcohol per litre of breath or less than 50 milligrams of alcohol per 100 millilitres of blood. If you answer no, you must not drive | |
| Are you feeling unwell, or do you have any unmanaged medical issues? If you answer Yes, you must not drive. | |
| Have you performed any work-related activities other than driving? If you have performed other work-related activities, these hours must be added to your driving hours. | |
| | Hours |
| Total sleep obtained in last 24 hours – Note: Consider all activities. | |
| Total sleep obtained in last 48 hours – Note: Consider all activities | |

Sleepiness assessment

| How alert or sleepy I am feeling right now. | SCORE |
|---|-------|
| Extremely alert | 1 |
| Very alert | 2 |
| Alert | 3 |
| Rather Alert | 4 |
| Neither alert nor sleepy | 5 |
| Some signs of sleepiness | 6 |
| Sleepy, but no difficulty remaining awake | 7 |
| Sleepy, some effort to keep alert | 8 |
| Extremely sleepy, fighting sleep | 9 |
| Total Score | |

Risk assessment classification

| | | |
|----------------------|--|-----|
| Low Risk | 6 or more hrs sleep in last 24 hrs OR Driver's sleepiness score is 7 or less | < 7 |
| Moderate Risk ➤ 7 | Between 5.5 & 6 hrs sleep in last 24 hrs OR Driver's sleepiness score is more than 7 | > 7 |
| High Risk | Between 5.0 and 5.5 hrs sleep in last 24 hrs OR Driver's sleepiness score is more than 7 | > 7 |
| Extreme Risk | Less than 5.0 hrs sleep in the last 24 hrs and/or less than 12 hrs sleep in last 48 hrs OR Driver's sleepiness score is more than 7 | > 7 |

Risk assessment controls

| | |
|---------------|---|
| Low Risk | Driver is fit to commence work |
| Moderate Risk | Driver needs to be on high alert of risk of fatigue management factors. |
| High Risk | Driver poses a significant risk and must not drive. |
| Extreme Risk | Driver poses significant risk and must not drive. |