

Fatigue Terms and Definitions

Term	Definition
Alertness	The opposite state of sleepiness, the state of cognitive and physiological arousal, and responsiveness to environmental/situation conditions.
Circadian Rhythm	A neural pacemaker in the brain that monitors the day/night cycle (via a special light input pathway from the eyes) and determines our preference for sleeping at night. Shift work is problematic because it requires a shift in the sleep/wake pattern that is resisted by the circadian body clock which remains 'locked on' to the day/night cycle.
Circadian Rhythm Phase Disorders (CRPD)	A family of sleep disorders affecting the timing of sleep. People with CRPD are unable to sleep and wake at the times required for normal work, school, and social needs. They are generally able to get enough sleep if allowed to sleep and wake at the times dictated by their body clocks. Unless they also have another sleep disorder, their sleep is of normal quality.
Circadian Phase	A shift of circadian rhythm due to various circumstances (age, light changes, shiftwork, etc).
Contractor	A company hired by the prime contractor or main company to complete work on site. Employees of the contractor are referred to as employees/workers or managers/supervisors.
Controls	System-level defensive strategies designed to minimize fatigue risk on an ongoing basis.
Cumulative Sleep Debt	Sleep loss accumulated when sleep is insufficient for multiple nights (or 24-hr days) in a row. As cumulative sleep debt builds up, performance impairment and objective sleepiness increase progressively, and people tend to become less reliable at assessing their own level of impairment
Employee/Worker	Any person who works on the site, regardless of their employer. This includes contractors.

Employer/ Company	A legal entity that controls and directs a worker under a contract of employment.
Fatigue	Fatigue is a state of impairment. It is a physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness, circadian phase, or workload (mental and/or physical activity) that can impair a worker's alertness and ability to safely perform their duties.
Fatigue Countermeasures	Organizational, individual and team based fatigue management strategies to reduce the effects of fatigue.
Fatigue Likelihood Assessment	A quantitative measure of the amount of sleep an individual is able to obtain. It is used to determine the likelihood an individual will experience fatigue symptoms or reduced levels of alertness.
Fatigue Risk Management	The management of fatigue in a manner appropriate to the level of risk exposure and the nature of the operation, in order to minimise the adverse effects of fatigue on the safety of operations.
Fatigue Risk Management Plan (FRMP)	A FRMP is an integrated set of management practices, beliefs and procedures for monitoring and managing the risks posed to health and safety by fatigue. It is based in safety management theory.
Fatigue Symptoms Checklist	A list of fatigue symptoms that can be used to assist in identifying when an individual might be experience fatigue.
Five Level Fatigue Trajectory	A model utilising multiple layers of defence to manage the occurrence of fatigue-related incidents. It is the major practical or day-to-day aspect of the FRMS and includes tools and controls for monitoring and managing fatigue-related risk. At each level there are opportunities to put in place control strategies to manage the fatigue related risk. For an incident to occur, each level must have failed in some part to allow the error to pass through.
FRMS Training	Competency-based training programs designed to ensure that all stakeholders are competent to undertake their responsibilities in the FRMS.

Manager/Supervisor	Any person who is directly responsible for the supervision and well being of other employees.
Micro Sleeps	A short period of time (seconds) when the brain disengages from the environment (it stops processing visual information and sounds) and slips uncontrollably into light non-REM sleep. Microsleeps are a sign of extreme physiological sleepiness.
Mitigations	System-level interventions designed to reduce a specific identified fatigue risk.
Nap	A brief period of sleep, usually defined as less than half of a full night time sleep period. Naps as short as 5 minutes have been shown to provide (temporary) relief from the cumulative effects of sleep loss
Performance	The observable/behavioural manifestation of alertness and sleepiness, and the combination of one's efforts and the results of those efforts.
Prior Sleep	The amount of sleep obtained prior to a specific time (ex. the start or end of a shift).
Prior Wake	The amount of time spent awake prior to a specific period (usually assessed at the end of a shift).
Risk	The potential for harm, a concept that denotes a potential negative impact to some characteristic of value that may arise from a future event. Risks are events or conditions that may occur, and whose occurrence, if it does take place, has a harmful or negative effect.
Risk Management	The process of identifying and managing the factors contributing to risk, errors and incidents, at an individual or an organisational level, and determining how to best handle such exposure.
Safety Management System (SMS)	A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

Samn-Perelli Checklist	A subjective checklist used to measure a worker's fatigue levels. The checklist seeks to quantify subjective feelings of fatigue.
Shift	The hours between the start and finish of established daily work schedules.
Shift Worker	A person who works rotating shifts, irregular shifts, evening shifts, afternoon shifts, morning shifts or split shifts. Another term for this work is 'non-traditional work hours.'
Sleep Debt	<i>See Cumulative Sleep Debt</i>
Sleep Disorders	A range of problems that make it impossible to obtain restorative sleep, even when enough time is spent trying to sleep. More than 80 different sleep disorders have been identified, that can cause varying amounts of sleep disruption. Examples include obstructive sleep apnea, the insomnias, narcolepsy, and periodic limb movements during sleep.
Sleep Hygiene	Sleep hygiene refers to the habits, environmental factors, and practices that may influence the length and quality of one's sleep.
Sleep Inertia	Transient disorientation, grogginess and performance impairment that can occur as the brain progresses through the process of waking up. Sleep inertia can occur on waking from any stage of sleep but may be longer and more intense on waking from slow-wave sleep (non-REM stages 3 and 4), or after sleep periods or naps containing a high proportion of slow-wave sleep.
Sleep Need	The amount of sleep that is required on a regular basis to maintain optimal levels of waking alertness and performance. Very difficult to measure in practice because of individual differences.
Sleep Quality	Capacity of sleep to restore waking function. Good quality sleep has minimal disruption to the non-REM/REM cycle. Fragmentation of the non-REM/REM cycle by waking up, or by brief arousals that move the brain to a lighter stage of sleep without actually waking up, decreases the restorative value of sleep.
Sleep Quantity	The total amount of sleep that an individual is able to obtain. It is usually measured to the nearest hour.

Sleepiness	A state of increased motivation to sleep. Difficulty in maintaining the alert state so that if an individual is not kept active and aroused, they will fall asleep. (As opposed to fatigue which is the body's response to sleep loss or to prolonged physical or mental exertion.)
Subjective Fatigue	Self-reported levels of feelings of fatigue, assessed on a seven-point scale ranging from 'fully alert, wide awake', to 'completely exhausted, unable to function'.
Work Rotations/Cycles	The working period scheduled between any significant break away from work.
Work Schedules/Rosters	The hours to be worked for each day, shift, week, month or year, as

Sources are various and include:

Fatigue Management Plan: A practical guide to developing and implementing a fatigue management plan for the NSW mining and extractives industry, 2007

Fatigue Risk Management System Resource Pack, Queensland Government