Managing fatigue in the workplace

Fatigue Information Sheets

THE GLOBAL OIL AND GAS INDUSTRY ASSOCIATION FOR ENVIRONMENTAL AND SOCIAL ISSUES

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WHY ARE BREAKS IMPORTANT?

Breaks allow workers to recover from the mental and physical demands of their positions. Breaks outside of the work day allow for sleep, facilitate rest and recovery, improve morale, and ensure safe, efficient operations. Breaks within the work day reduce task-related fatigue, risk of accidents, and improve productivity.

HOW LONG SHOULD BREAKS BE?

‘Overnight’ breaks between work days should be long enough to allow workers to obtain a recommended amount of sleep, in addition to time for travel, eating, showering, and social and family responsibilities. Overnight breaks of at least 11 hours are preferable to allow for an 8-hour sleep opportunity.

Extended breaks between blocks of work are designed to allow personnel to recover from accumulated sleep loss and the physical and mental demands of work. See Section 2, Extended Hours, for further guidance on scheduling extended working hours and the appropriate amount of breaks associated with them.

Breaks within work days: in addition to statutory breaks (e.g., meal breaks) regular short breaks (e.g., 5-10 minutes every hour) have been shown to improve alertness and productivity. Breaks allow ‘time-on-task’ related fatigue to dissipate. Where tasks are ‘self-paced’, workers benefit from being able to schedule their own breaks, as they can be matched to times when they are most needed. Where pacing of the task is external (e.g., machine-paced), breaks must be scheduled, which may mean that they do not match the time of highest need. Such mismatch may mean that the maximum benefit is not gained from the break — either it occurs too late, after performance decrements have already begun, or too early and so disrupt the workflow without any real performance benefit. For example, a study showed that drivers most effectively managed their fatigue when they were able to choose the timing of their rest breaks to match the time they were feeling fatigued. When judging the need for a break, particularly if working at night, or after an extended period awake, workers should be aware that cognitive impairment may be present alongside physical symptoms such as yawning or ‘fidgeting’, and not wait until the point they are struggling to keep awake before taking a break.

The specific duration of breaks and division of work periods depends very much on the task; for example, very cognitively (e.g., active monitoring) or physically demanding (e.g., rig maintenance) tasks will require more frequent recovery breaks than less demanding tasks. Generally, more frequent short breaks have been shown to be more beneficial in terms of fatigue, productivity, and vigilance than longer breaks of the same total duration. For example, when industrial workers took 10 minute breaks every hour, they were shown to be more productive and less fatigued than those taking 15 minute breaks every 90 minutes; conversely, for those working at computers, frequent short breaks (e.g., 5 minutes every hour, plus a 30 minute lunch break) reduce discomfort and eye strain and do not impact productivity.

While little research has been done in the oil industry, based on the scientific data as described above, the ideal structure for breaks is likely somewhere between scheduled and self-paced. Breaks should be required after a specified work duration, with an agreed total of time to be spent on breaks during the shift, but the worker has some freedom to choose the exact timing of breaks, and how often to take them, based on how demanding the task is. For example, a total of 2 hours of breaks during an 8 hour shift (this example is for 8 hour shifts, as this is where most of the research has been...
undertaken), could be divided in multiple different ways depending on the task:

- High vigilance, low activity (i.e., seated) task, for example computer-based or monitoring: a 5 minute break per hour plus a 30 minute lunch break
- Repetitive ‘Industrial task’ with elevated injury risk: a 15 minute break after every 2 hours of continuous work
- High vigilance tasks with prolonged standing: 45 minutes standing, high vigilance task, alternating with a 15 minute break or seated administrative duty

WHAT SHOULD I DO DURING MY BREAK?

For short breaks (less than 30 minutes), leave the work environment, and have something healthy to eat and/or drink. If you undertake non-physical tasks, stretching or light exercise can benefit you – 10 minutes of flexibility and strength exercises can improve flexibility, alertness, and mood.

On longer breaks (ideally 30 minutes or more), the beneficial effects are significantly increased by taking a nap – if this is permitted by your role and company. See Section 5 of this document, Napping, for additional information on how to maximise the effectiveness of naps.

During extended breaks at home, be mindful of your activities prior to returning to work. Having a second job or undertaking strenuous tasks (e.g., home remodelling, or running a marathon just before returning to work) may impact on your ability to recover, and cope with the following block of work.

WHAT CAN THE COMPANY DO?

Provide sufficient breaks:

- Through the Company Fatigue Management Plan, ensure that adequate breaks for the nature of work are determined and provided
- During work days – to reduce risk of accident and injury, and performance decrements related to reduced alertness and/or time on task
- Between work days – to ensure that workers have sufficient time to obtain adequate sleep for recovery
- Between blocks of work – to recover from the demands of work, and any accumulated sleep loss, as well as maintain a work-life balance

Provide facilities for breaks at work

- Provide break rooms in which workers can prepare/access food and drink, sit down, get out of the heat/cold/noise, with space for light stretching/exercise for sedentary workers, and adequate lighting for reading – which also helps with alertness
- Provide napping facilities (if approved by Business): a dark, quiet, comfortable room with lie-flat surfaces for workers to use during longer breaks

Provide education on performance decrements, and napping

- To prevent workers leaving it ‘too late’ before taking self-paced breaks, educate on the early signs of performance decrements - for example, difficulty in concentrating, problem solving or performing simple calculations, as well as increasing irritability and difficulty in communication and controlling emotions
- Education on napping, sleep inertia, and the importance of recovery from the nap before returning to work
- Educate of the importance of breaks, the benefits of taking them away from the work task, and the impact on productivity and safety

Manage the risk of more frequent starting and stopping work

- While increasing the number of breaks can reduce fatigue-related performance decrements and errors, starting and stopping work for these breaks is also associated with increased distraction, and therefore errors. The company should guard against distraction during these ‘start-up’ and ‘shut-downs’ for breaks by having a set procedure to reduce their impact and the likelihood of errors. This procedure could include, for example, a checklist that must be followed, or requirements for a briefing, to ensure situational awareness is maintained.

Key references


UNDERSTANDING THE RISKS

Sleepiness contributes to approximately 1 in 5 fatal and serious road accidents. When we are feeling sleepy, for example after a night shift, driving is one of the most dangerous things we can do. Sleepiness reduces alertness, slows reaction times, and increases the likelihood of being involved in an accident. Sleep-related vehicle accidents (SRVAs) are more likely to result in serious injury, because they tend to occur at high speed, and there is limited braking or avoidance action.

When? SRVAs typically occur when our alertness is at its lowest (between approximately 0200hr-0600hr). Research has shown that we are 50 times more likely to fall asleep at the wheel at 0200hr than at 1000hr.

Drivers are also at increased risk following inadequate sleep, or working long hours. With less than 5 hours of sleep, we are 3 times more likely to be involved in a SRVA. After being at work for 11 hours, the risk doubles.

Where? Most likely on long, straight stretches of road, such as highways, which require minimum driver input, and where high-speed driving is permitted.

Who? SRVAs typically involve those who work long hours, or are driving at times of the day when alertness is low, in particular truck drivers, high mileage drivers, young drivers and shift-workers. Other personal risk factors include suffering from sleep apnea, insomnia, and the use of some over-the-counter medications. Please contact your doctor if you are concerned that any of these factors may impact your ability to drive safely.

WHAT CAN I DO?

Plan: First, make sure you have had sufficient sleep before driving - most of us need 7 to 9 hours of sleep every day. If you are sleepy, do not drive until you have had some sleep, or take another form of transport. Make a mental plan for your journey, with planned breaks at least every 2 hours.

Assess: Be aware of the early warning signs of driver sleepiness: e.g., repeated yawning, changing position frequently, and frequent eye blinks. Do not wait until you are having difficulty keeping your eyes open or your head is nodding, or if you can’t remember a portion of your journey, as these are signs that you are already very fatigued, or are experiencing brief periods of sleep (microsleeps), and are not safe to drive.

Break: Do not be tempted to keep driving to reach your destination: take breaks as planned, and take additional breaks if needed. Opening the window or turning up the music are not effective ways to keep alert. As soon as you start to show signs of sleepiness, such as yawning, pull over and take a break.

Park somewhere safe, drink 1-2 cups of coffee, lock the doors, set an alarm for 20 minutes and take a nap. On waking, walk around outside for 10 minutes to wake up properly before setting off again. For the next hour or two, you should benefit from the alerting effects of both the caffeine and the nap.
Managing driver sleepiness

WHAT CAN THE COMPANY DO?

Reduce the amount of driving

- Consider company driving in the Company Fatigue Management Plan
- Introduce work from home policies for office workers, and encourage car sharing for example by assuring a parking space to those who share cars
- Provide alternative modes of transport, for example a company mini-bus, taxi vouchers
- Try to limit professional drivers’ hours. Local working time rules vary, but within the EU, drivers cannot drive for longer than a total of 9h between rest breaks of a minimum 11h. Due to elevated sleepiness levels, it is recommended that this maximum be reduced at night, especially between 0200hr-0600hr. Where workload is elevated (for example due to winter driving, or difficult roads), total driving hours should also be reduced. There is limited scientific evidence supporting maximum driving hour rules, so collecting fatigue-related data, and managing risks as they are identified, is recommended.

Enable workers to manage the risk of driving when sleepy

- Create a culture where it is acceptable to report sleepiness and support workers to manage sleepiness
- Educate workers on the importance of sleep and the risks of driving when sleepy
- Provide facilities to enable workers to obtain adequate sleep before driving, for example napping rooms, company accommodation, or hotels
- Provide a napping policy, describing when and how to nap to manage driver sleepiness – for example as described above

Manage the risk of driver sleepiness

- Introduce a policy to limit continuous driving to a maximum of 2 hours before a break must be taken
- Implement processes for planning and undertaking road transport journeys with the goal of arriving safely, particularly taking into account driving at high-risk times (e.g., 0200hr-0600hr)
- Adjust working hours to limit the number of people driving to/from work when sleepy, for example after work hours which result in their being awake for more than 16h
- Consider the inclusion of fatigue-specific medical checks on an annual basis, for example using the Epworth sleepiness scale, or STOP-BANG
- In order to learn from any previous incidents, ensure there is an effective process for investigating the potential role of sleepiness in road accidents

Key references

Extended Hours

Working for extended hours, whether through a shift system, overtime, on-call, or catching up on work at home following a day in the office, can potentially result in fatigue through sleep loss.

In order to maintain a high level of alertness and performance, we are best suited to being awake for no more than about 16 hours following 8 hours of good quality sleep, although these values can differ slightly among individuals. However, you cannot ‘train’ yourself to work for longer or to need less sleep.

After being awake for 19 hours, even with 8 hours of good quality sleep beforehand, our reaction times are around 30% slower than when we are fully rested. The increased sleepiness from being awake all day and the slower reactions are fine if we are at home, at the end of our working day, but for those working overtime, or on-call emergency response workers, this reduced performance and our slowed reactions can have significant impacts for safety and productivity.

If you have not been able to get as much sleep as you might need, or are awake when you would normally be asleep, the reduced performance and longer reaction times occur more quickly.

WHAT CAN I DO ABOUT IT?

Sleep: In order to maximise the length of your period of ‘useful wakefulness’, try and make sure that you sleep as much as you need (between 7-9 hours for most people) as often as possible. If your work schedule makes this difficult during the night, try napping during the daytime to top-up your sleep and increase your total in 24 hours.

Be aware of the early warning signs of reduced alertness: the longer we are awake, the more performance levels decline. It is important to be aware of the early warning signs that you need rest. Problems with concentration, maintaining focus, and visible signs, such as yawning, should not be ignored: they are an early warning that it is time to take a break.

Take breaks: During long work days, planning and taking regular breaks away from the work environment will help slow reductions in your performance. If possible, use the break to get some natural light (or move to a brightly lit area if the break is at night), and to refuel yourself with food and water. If you have a longer (at least 30 minutes) break at night, the best use of time is to take a nap – if this is permitted by your area of the Business. After informing your colleagues, move to a quiet location, ideally where you can lie-down. Set an alarm for 20 minutes and lie-down. When the alarm goes off, get up and walk around for 10 minutes until any post-sleep grogginess has gone. If possible, have 1-2 cups of coffee before attempting to sleep, the caffeine will kick-in while you are sleeping, giving you the dual benefit of sleep and caffeine when you return to work.

WHAT CAN THE COMPANY DO?

Limit duration of on-call periods

Research shows that when workers are on-call, they experience higher levels of anxiety, lower sleep quality, and poorer performance the next day – even if they are not called. If workers are called in during the night, they also suffer sleep loss. Make sure that on-call periods are short, and rotated amongst the team to allow for recovery from both the sleep loss associated with any call outs, and the impacts on sleep of just being on-call. As far as possible, on-call periods should be separated by an off-duty night from the next
work period, to allow for recovery — especially when the worker is highly likely to be called out, and therefore lose sleep.

Reduce uncertainty
One of the major stressors for workers on-call is the uncertainty associated with the possibility of being called out and the impact this has on sleep quality and duration. Where possible, try to build some predictability around the on-call periods, such as a ‘no-contact period’ to allow workers to prepare themselves by planning sleep. Informing the employee of the extended shift as early as possible within the shift allows the worker more time to plan and address their needs, and therefore they are less likely to experience stress during the extended period.

Limit out-of-hours working
As lowered performance in office workers decreases productivity, and out-of-hours working can interrupt sleep, enact a ‘no contact’ policy, turning off work emails for office workers/managers.

Consider shift duration
Twelve-hour shifts may seem an attractive option – the working week is compressed; depending on the shift timing, shifts can be scheduled to encompass times of high circadian alertness as well as the times of low alertness in the middle of the night; and the number of shift handovers (a recognised time of elevated risk) are reduced. However, data shows there was an overall decline in alertness in a workforce who moved from 8 hour shifts to 12 hour shifts, primarily due to the longer working time per day. When comparing longer shifts (12 hours or 16 hours) with shorter shifts (8 hours), generally, there is an overall decline in alertness across the workforce. However, the findings for individual shifts may vary depending on workload during the shift, any nap-opportunity provided, rest time between shifts, and whether workers on the longer shift adjust their behaviour (e.g. by sleeping longer). If the longer shift requires work at the same/similar rate to the shorter shifts, does not allow nap opportunities, and/or is not followed by longer compensatory rest, then it is expected that the fatigue level will be elevated compared to shorter shifts.

Even where 12 hour shifts are not the norm, overtime can result in working for an extended duration, and therefore reduced alertness and performance associated with such extended working times. Be aware of the potential for reduced alertness to affect operational performance if workers are working for longer than normal and put in place mitigations to address this additional risk.

Be mindful of overtime
While normal working hours (e.g. 84 hours per week for North Sea Oil and Gas personnel) usually allow workers to obtain sufficient sleep between shifts, working overtime is associated with sleep loss. One study showed that those working an ‘average’ amount of overtime (16 hours per week), were able to obtain 6.5 hours of sleep per night, less than the 7-9 hours that most of us need. This sleep loss increases as the amount of overtime increases — those working 33 hours or more of overtime per week obtained 6 hours of sleep per night. Evidence suggests that sleep loss at this level is associated with negative health and safety outcomes.

Longer work durations during the day result in less opportunity for sleep. No matter the duration of work, workers should always try to ensure that they have obtained at least 6 hours (but ideally 7-9 hours) of sleep, and the company must provide opportunity for this. The Company Fatigue Management Plan may contain an assessment that supervisors can use prior to authorising overtime, to reduce the likelihood of having a significant impact on sleep.

Be aware of extended roster periods
Working a roster consisting of two weeks on/two weeks off can be associated with different levels of fatigue, depending on the arrangement of shifts and positioning of night shifts. Where a fixed-shift rotation is worked (i.e., alternating day-shift and night-shift tours), and workers do not need to adapt to a changing shift timing during the work period, studies in oil and gas worksites and at remote construction sites have found that there is no clear evidence of cumulative fatigue over the course of a 2 week offshore work period — when this consists of only day shifts. When working a full work block of night shifts, the 14-day period allows for a much greater degree of adaptation, and improvements in subjective alertness, sleep quality and end of shift reaction time are all noted after 5-6 days offshore compared to the first day. When working swing-shifts (i.e., nights-to-days, or days-to-nights), the shift-change within the middle of the block, and the associated requirement to adapt, leads to elevated levels of cumulative fatigue, particularly during the second week. This is greater when night shifts are worked first.

Extended breaks also provide an opportunity to spend time with family. Breaks should be regular, predictable, and proportional to the amount of work. For example, in the Norwegian offshore industry, worktime regulations require the off-duty time between two blocks of work to be at least as long as 1/3 of the time spent at work. The longer the work sequence, the more workers will benefit from even-time rosters (e.g., 14 days on/14 days off), as the extended break permits recovery time from cumulative fatigue, time to be spent with family, and preparation for the next work period. In remote Fly-In, Fly-Out/Drive-In, Drive-Out (FIFO/DIDO) operations, due to the isolated nature of these sites, the time taken to get to/from the site can potentially take 1-2 days. These breaks should therefore also take account of the time required to commute to/from the work site, as well as the duration of the block of work.
Extended Hours

A series of studies supported by the UK Health and Safety Executive identified that cumulative fatigue is increased when work blocks exceed 14 days. Additionally, the ratios of fatalities and severe injuries, compared to more minor injuries, increases sharply when work blocks exceed 14 days (however, it was not possible to determine fully from the data whether this was due to cumulative fatigue).

A study of 80 expatriate workers in a desert based oil field, carried out by the Institute of Occupational Health at Birmingham University, who were working extended roster periods (21 – 56 days) found that such long durations were associated with increased fatigue levels, confusion, and anger across the duration of the roster period, with the time away from home and missing family life having a significant impact. Particularly challenging are roster periods that are extended unexpectedly, for example due to bad weather preventing transport arriving, or staff-shortage meaning no back-to-back replacement worker arrives. It seems that workers adapt the pace and effort of their work to match the duration of the roster period, and if this is suddenly extended, then fatigue is elevated and mood is decreased.

Key references


Harma M et al. “Risk factors and risk reduction strategies associated with night work with the focus on extended work periods and work time arrangement within the petroleum industry in Norway”. Presentation by Finnish Institute of Occupational Health. 2007.


BACKGROUND: CIRCADIAN RHYTHMS

Our bodies have a natural fatigue cycle, a roughly 24 hour pattern known as the circadian rhythm, which is regulated by our bodies' internal clock. The circadian rhythm influences our being awake and active during the day, and asleep at night. This cycle is maintained by a balance between internal (e.g., production of the sleep hormone melatonin) and external (mainly light) stimuli but is also affected by activity and meal and sleep times. The circadian rhythm adjusts when we travel across time zones. However, the body clock is unable to adjust quickly to a new time zone. This means our body clock becomes out-of-sync with the environment in new locations, and will only gradually synchronise to the local time, adjusting by approximately 1h per day following travel to the east and 1.5h following travel to the west. During this period, individuals may experience a condition known as jet lag.

WHAT IS JET LAG?

Jet lag is the unpleasant experience of not adjusting quickly to a 'local' sleep cycle — this occurs when the circadian rhythms are out of alignment, both with the local pattern of day and night, and with each other, as different body rhythms adjust at different rates. We know from research that the 'master' body clock, located in the brain, responds most to light, while other parts of our bodies are more influenced by meal times. Jet lag might be made worse if the clocks in different parts of our bodies are out-of-sync with each other and with the local time.

Subjective symptoms of jet lag may include sleep loss, fatigue, loss of mental efficiency, increased irritability, elevated daytime sleepiness, and gastrointestinal disturbance. The duration and severity of jet lag, and the recovery time required, depends largely on how many time zones have been crossed. Recovery is easier when travelling westwards (it is easier to delay sleep and wake up later) than travelling eastwards (when we have to fall asleep earlier and wake up earlier), but always more difficult when more time zones are crossed. Evidence also suggests that individuals who prefer later sleep times cope better with jet lag compared to morning types.

JET LAG VS ‘TRAVEL FATIGUE’

Jet lag differs from simple ‘travel fatigue’. When we are jet lagged, our body clocks are out-of-sync, while ‘travel fatigue’ is purely linked to the journey, and usually resolves after a good night’s sleep.

Long flights, or long road journeys, can leave us feeling very tired — usually due to time spent in a cramped environment, with limited movement and poor sleep. In addition, when flying, we often don’t drink enough water which can make things feel worse. This ‘travel fatigue’ will usually resolve once you have settled into your destination and had a good night’s sleep. But can leave you at risk straight after the journey — for example the sleep deprivation can lead us to make poor decisions, and leave us more at risk of road accidents when driving. If you have less than five hours sleep, the data shows that the risk of being involved in a sleep related vehicle accident is three times higher. After long travel, exercise caution when deciding if you are able to go straight to work, or drive — in many cases, it is likely to be safer to check in to a hotel and start work or drive after a night of sleep.

As with any time when we have not had enough sleep, have been awake for a long time (e.g., longer than 16 hours), or are driving...
Jet lag

during the dip in alertness that occurs between 0200-0600 body clock time, there may be a higher risk of being involved in a road accident when driving. The risk increases with a longer drive, or a journey on roads that are monotonous — e.g., major highways.

Elevated levels of sleepiness, for any reason — but potentially more likely after a long haul flight — can affect our driving performance. The exact impact may be different for each of us, depending on our individual circumstances, for example how much ‘sleep debt’ has been accumulated in the prior few days. Research shows we are good at assessing our levels of sleepiness in the short term, but employees need to be aware of the early signs that their performance might be degraded and that they maybe should not drive.

If you are experiencing early signs of sleepiness (yawning, postural changes/fidgeting, and frequent eye blinks), setting off for a long drive is not recommended. Before setting out for any drive, consider if you also have any of the risk factors outlined above (such as being awake for longer than 16 hours, or are driving during a dip in alertness). If you have any concerns about your sleepiness levels, it is better not to drive — alternatives are outlined below. If you are experiencing difficulty keeping your eyes open, long blinks, head nodding or a ‘dreamlike state of consciousness’ you are exhibiting signs of being extremely sleepy. These symptoms are strongly associated with sleep-related near misses, incidents, and accidents. If you are experiencing any of these signs, you should not drive at all. Instead, use company-approved transport, or stay at a hotel and rest overnight, before restarting your journey the next morning.

HOW DO I BEST ADAPT TO A NEW TIME ZONE?

**Behaviour**

If you are crossing multiple time zones and you will be in your new location for more than a few days, adapting to local time is the best policy. Everyone varies, but you may find it easier to adapt if you use one or more of the following strategies:

- Select your flight timing carefully — flights associated with the least amount of time between sleep opportunities (i.e., between time waking at home to time going to bed, in the evening, at destination) seem to help with quicker adaptation
- If possible, try to begin adjusting a couple of days before departure, e.g., by delaying sleep onset times before travelling west, or waking earlier and going to sleep earlier before travelling east
- When crossing up to 5 time zones, matching your behaviour to the new time zone (e.g., bedtimes, mealtimes, exercise etc. on local time), may help speed up adaptation and the synchronising of the different body clocks throughout your body
- Bright light is very powerful in helping our body clock adjust — but we must time it correctly. See the next section on light exposure for potential strategies
- Power naps (up to 20 minutes) can help if you are experiencing sleep disruption as a result of jet lag. However, avoid longer naps during the daytime at the new location as much as possible, since this will counteract your body’s effort to adjust to new time zone. If you have travelled multiple time zones to the west, taking an afternoon power nap may help you extend your day, and delay your bedtime until local evening.

**Light exposure**

Light can help you adapt — but you have to time it right. This timing depends on the number of time zones you have crossed and the direction of travel:

**Eastbound travel**: Aim to get light exposure (either natural light or bright artificial light) between mid-morning and mid-afternoon in the new time zone. The more time zones that you cross will move the best time to seek light later (e.g., when crossing four time zones east, the best time to seek light is between 0900hr-1500hr local time, while when crossing eight time zones, the best time to seek light is between 1300hr-1900hr local time). For every extra time zone that you cross, move the start and end times of this window later by one hour.

You should also avoid light at specific times of day, to help adjustment. When travelling east, avoid light in a ‘band’ six hours wide that ends two hours before the ‘light seeking’ window begins — e.g., for travel four time zones east, the ‘light seeking’ window is between 0900hr-1500hr local time, so the light avoidance window is between 0100hr-0700hr local time.

**Westbound travel**: When travelling westbound, the same principles apply — but the local timing of the light exposure is different. If traveling four time zones west, the best time to seek light is between 1700hr-2300hr local time, while when crossing eight time zones west, the best time to seek light is between 1300hr-1900hr local time. For every extra time zone that you cross, move the start and end times of this window earlier by one hour.

When travelling west, avoid light in a ‘band’ too — also six hours wide — although this window begins two hours after the ‘light seeking’ window ends — e.g., for travel four time zones west, the ‘light seeking’ window is between 1700hr-2300hr local time, so the light avoidance window is between 0100hr-0700hr local time.

**Electronic devices**: Phones, tablets and computers also emit the same blue light that we find in daylight, and so disrupt your adaptation — avoid looking at them close to bedtime, or if you wake up in the night. You can further reduce the impact of these digital devices by installing blue-light reduction apps or using night mode.
WHAT ABOUT MELATONIN?

Melatonin is the hormone released by the body in darkness that prepares our body for sleep, and is one of the two main ‘time-givers’ for our body clock (the other being the light-dark cycle). It is also possible to buy artificial melatonin in tablet form, which some people use to speed up adaption of the body clock to a new time zone. As with light exposure, when taking melatonin, getting the timing right is critical in order to help adaptation. The exact timing is very dependent on your own body clock’s position, which can only be reliably assessed by a doctor specialised in circadian physiology. In addition, because melatonin can make you fall asleep (like hypnotics such as benzodiazepines), taking it before work may be banned under the Company Drug and Alcohol policy. Buying melatonin is illegal in some countries. Because of this, it is essential that you consult a doctor if you are considering taking melatonin.

WHAT CAN THE COMPANY DO?

Manage sleep loss and jet lag associated with company travel

- The Company Fatigue Management Plan should consider the impact of travelling
- The company should provide employees with the information to allow them to make an informed decision about whether they are safe to drive home following a long flight, and – if the employee is too tired to drive home safely – help employees to manage this decision. Examples include provision for discounted hotel rates near the airport, company provided hotel rooms, or the ability to reclaim the costs of taxis or taking public transport.
- Rather than fly workers in only for a meeting, or to go straight on-site, fly the day before, to allow for a night of sleep before work/meetings the next day. This will help reduce the effect of ‘travel fatigue’. However, keep in mind that jet lag can affect performance for a few days in the new destination, so supervisors should be aware of potentially increased sleepiness levels among team members who have recently travelled, especially in high risk conditions
- Where a trip must involve stopping in multiple different destinations – particularly if they are in different time zones – try and schedule the trip to aid adaptation, i.e., always moving in the same direction, and getting further away from home. Ensure that adequate rest is planned into the trip, as stopping in multiple destinations may exacerbate jet lag symptoms, particularly if the destinations are in different directions – which should ideally be avoided.
- Develop a ‘Recovery’ policy for individuals returning home after long-haul travel – jet lag and sleep loss will impact people after trips too; recovery time before returning to work will reduce the chances of performance decrements and errors – this may be allowing workers an additional rest day after returning home, or by providing an option of an additional rest day for those who do not feel well rested enough to come in to work

Open culture

- In order for the company to collect information on elevated fatigue, and know where mitigations could be applied, the company should have a policy that encourages self-reporting of all fatigue issues. Issues may be related to shift work, jet lag, or could be due to personal reasons. An ‘incident’ does not necessarily have to have taken place, it may just be that the employee has need to take extra mitigations for their fatigue, for example changing tasks within their team, or drinking more coffee. Reporting can be as simple as informing the company of elevated fatigue where it interacts with work. The policy should be documented, for example within the company Fatigue Management Plan, and made available to the workforce – along with voluntary fatigue report forms for workers to complete, for example on the company intranet.
- Where workers are impacted by jet lag, in terms of being sleep deprived and feeling fatigued and therefore not fit to carry out their work safely, they should feel able – supported by the policy, and the company culture – to report that they are not fit to work, and the company should allow them the necessary recovery time before undertaking self-drive road journeys or any work

Key references

Watling CN, Armstrong KA, and Radun I. “Examining signs of driver sleepiness, usage of sleepiness countermeasures and the associations with sleepy driving behaviours and individual factors.” Accident Analysis & Prevention 85. 2015. p22-29.
WHAT IS THE BENEFIT OF NAPPING?
While a short nap at work cannot reverse severe sleep debt, it can reduce sleepiness and improve performance. As well as the immediate benefits for alertness and performance, napping has long term benefits – people who nap at least twice a week have a 12% lower incidence of coronary heart disease.

HOW LONG?
A 20-minute nap boosts productivity by improving alertness, focus, ability to retain information, mood and job satisfaction, and speeds up long term memory consolidation. Keeping the nap to 20 minutes means you are less likely to fall into deep sleep, so you don’t wake up feeling groggy.

Where a longer break is available, a 90-minute nap should enable you to obtain a full sleep cycle, meaning you benefit from light, deep, and dreaming sleep, and will make it more likely that you will awake from light sleep, thus minimising the grogginess experienced on waking (sleep inertia). This grogginess occurs at its worst when we wake from deep sleep – completing a full sleep cycle means that you come back in to light sleep before waking.

For a double-performance boost, take a ‘caff-nap’: drink 150mg of caffeine (approx. 2 coffees), set an alarm for 20 minutes, and lie-down to nap. Walk around for around 10 minutes after waking to dissipate any sleep inertia (the groggy feeling you experience when waking, linked with reduced performance). Washing your face and light exercise may also help you wake up fully.

WHEN?
It is easiest to nap during the deep night (0200-0600hrs) and the mid-afternoon (1300-1500hrs), when sleepiness is naturally elevated. Avoid napping within three hours of bedtime, as this may make it difficult to fall asleep at night.

WHERE?
The napping environment should be cool, quiet, dark and comfortable, with lie-flat surfaces (it takes 50% longer to fall asleep when sitting upright). Make sure you won’t be disturbed, silence your phone and use a ‘do not disturb’ sign. Make sure that your colleagues know that you are napping, and where you are, so that they don’t accidentally disturb you, but can also find you in case of an emergency. If you are a driver, try to take a nap away from your vehicle (e.g., in a break area), but if this is not possible, lock the doors, and recline your seat as much as possible.

CAN I NAP TOO MUCH?
If you feel the need to nap regularly to get through the day, especially if you are working during the day and sleeping at night, this might be an indicator that you are experiencing sleep disruption at night. If this goes on for an extended period, then you may benefit from discussing your sleep patterns with a doctor. Remember however, that there are cultural differences regarding the practice of napping (e.g., in Spain, afternoon naps are commonplace) and that some research has shown the positive effects of napping for dealing with the post-lunch dip in the alertness rhythm.
Napping

WHAT CAN THE COMPANY DO?

Encourage a napping culture

- Napping improves performance, productivity, wellbeing and reduces sleep debt, so should be encouraged across the organisation wherever practical
- Introduce a napping policy, through the company Fatigue Management Plan, particularly for night-work, or shifts that are likely to reduce sleep (e.g., early shifts, extended hours, long shifts, long driving). The policy should:
  - State who can nap, when, and where – and who needs to be informed that an employee is napping
  - State maximum duration of naps, and time for recovery from sleep inertia
- Ensure that the facilities for napping are suitable
- Encourage napping outside of work, particularly before night shifts
- Encourage pre-emptive napping; workers should not wait until they are experiencing performance decrements before considering a nap.

When naps are not enough...

- If a worker is experiencing severe fatigue – for example, due to very limited sleep the night before (less than five or six hours) or is experiencing microsleeps and is making mistakes due to their fatigue – a nap might not be enough to ensure that their performance levels are safe for work. The napping policy should allow for rotation of workers to non-safety critical tasks. If the worker is so fatigued that they cannot complete their work safely, the policy should allow the supervisor to stop the worker’s work/cut the workday short so that the employee can have a longer recovery break.

Key references

EFFECTS OF SLEEP LOSS

Sleep loss results in significant performance impairment. Some aspects of our performance are affected more than others, as are our abilities to understand and react to the world around us. When we have had less sleep than we need, we struggle with problem solving, concentration, focusing our attention, performing simple calculations, processing and remembering information. Sleep-deprived people are also poor communicators, irritable and find it more difficult to control their emotions. If the situation continues, sleep-deprivation can lead to reduced morale, increased sickness rates and lower job satisfaction. All of us differ slightly in the time of day at which we will perform best in demanding mental or physical tasks, a large faction of this depends on whether we are a ‘morning’ or ‘evening’ type (also known as ‘larks’ and ‘owls’). Morning types have been demonstrated to be less suited to the nightshift than evening types, but they perform better on a morning shift. For most people, we perform best in the middle of the day, and least well in the early morning or late evening.

WHAT IMPACT DOES THIS HAVE ON MY WORK?

While the most serious consequences of this reduced performance are increased error and injury rates (workplace accidents are 17% more common by the fourth day shift), fatigue also has pervasive ‘low level’ effects that really add up, for example, reduced efficiency, lower productivity, more mistakes, and more variable performance. This ‘presenteeism’ can impair our ability to meet targets on time, and reduce our ability to meet physical job demands. When we make decisions, we do so based on evidence accumulated from our senses. If we make a decision quickly, we must do so on less evidence, and are more likely to make an error — the ‘speed-accuracy trade-off’. When we are fatigued, our judgement is further impaired, making these errors more likely, particularly if it is not a task that we are well practiced at. Where work is machine-paced, and workers are unable to take their time to reduce errors, a fatigued individual will find it difficult to keep up, and make more errors. In oil workers, a study has found that higher levels of stress and fatigue are associated with lower levels of ‘work situation awareness’ (WSA, a scale specifically developed to measure awareness of the work environment on drilling rigs). Lower levels of WSA are associated with increased participation in unsafe work behaviours, and higher accident risk.

WHAT CAN I DO?

Sleep: Try to make sure that you are sleeping between 7-9 hours per night – the average sleep need for most people. When working nightshifts, it may be difficult to get this much sleep in one block, so consider napping, for example in the early afternoon siesta window, to top up your sleep. A 20-minute power nap provides an immediate boost in alertness. This should be followed by 10 minutes to recover from sleep inertia. A 90-minute sleep in the afternoon has been shown to improve performance on the night shift by about 30%. In offshore workers, sleep disruption was found to impair situational awareness, with loss of situational awareness being linked to unsafe work behaviours such as taking short-cuts, or not following procedures (as opposed to these being due to deliberate violations).

At work: Natural light can help improve alertness – try to get out into the daylight, particularly in the early morning and mid-afternoon, to raise alertness levels and help reset the body clock, which will benefit your night-time sleep.

Use caffeine strategically to reduce the impact of fatigue on performance, but avoid drinking it too close to bedtime. Caffeine also improves memory (but not in those who drink a lot of it), and can improve focus.
Performance

If you have a break of at least 30 minutes, and your section of the business allows, take a ‘caff-nap’, drink 150mg of caffeine (approximately 1-2 coffees), set an alarm for 20 minutes, and lie-down to nap. After waking, walk around for 10 minutes before returning to work to ensure that you are not experiencing sleep inertia, which can affect your performance. You will get the duel benefit of the caffeine and the nap. This will be particularly helpful during the night shift.

Brief your work colleagues and / or supervisor that your performance may be impaired due to sleepiness. Where possible, rotate to a task that is more forgiving of potential errors, and ask a colleague to check your work.

Make sure that you eat and keep hydrated – performance decrements linked to fatigue can be made significantly worse if you also have low blood sugar or are dehydrated.

If you can, undertake the most mentally demanding tasks during a time of peak performance and alertness – for example mid-to-late morning.

WHAT CAN THE COMPANY DO?

Reduce the likelihood of sleepy people performing safety critical tasks or making mistakes

- Use the Company Fatigue Management Plan to help mitigate against performance decrements
- Schedule task rotation and regular mandated breaks to reduce time on task
- ‘Buddy system’ to check work and detect performance impairment early
- Check-in with all workers at the beginning of the shift
- Where possible, match working schedules with individual physiology (morning vs evening types) by allowing for flexible starting / finishing times which may help to increase sleep, and enhance performance
- In countries with very hot summer months, implement ‘seasonal’ flexibility in work schedules by reducing working hours to cope with the heat, particularly where workers are outside. If safe to do so, working hours could be increased during the winter months to make up for the summer reduction – however, companies should be aware that alertness decreases in the workforce as a whole when shift duration is increased from 8 hours to 12 hours

Encourage an open culture

- Emphasise that it is ok to report reduced alertness, and that managers should rotate tasks for those reporting as such
- Implement a napping policy, particularly for those on night shifts who would most benefit from naps, and encourage workers to use it. The policy should consider:
  - Facilities for napping (cool, quiet, dark, comfortable, flat surfaces to lie on)
  - Minimum duration – 20 minute nap plus 10 minute recovery from sleep inertia
  - Contact with the napping worker – aiming to avoid unnecessary disturbance, but maintaining the ability to contact in an emergency
  - Use alarms to prevent oversleeping

Increase awareness of the risks of sleepiness

- Understand that performance impairment begins long before the point that we feel really sleepy (e.g., eyes closing, head nodding etc.)
- Awareness of the early signs of sleepiness and impairment, in self and colleagues, and what to do about it
- Strategies when fatigue is identified include task rotation, closer checking and cross-checking of performed tasks, and being even more careful to follow procedures
- Provide opportunities for breaks, ensure that workers take and use them effectively
  - Breaks in a different environment have been shown to boost performance
  - Where possible, especially at night, napping is incredibly beneficial
  - If napping is not possible, change activity levels (for example resting for those involved in physical tasks, light exercise / stretching for sedentary workers)
- Promote safe, strategic caffeine use at areas where workers obtain coffee
  - Tea and high-caffeine energy drinks also contain sufficient caffeine to have an alerting effect, but should also be used strategically. High-caffeine energy drinks can also be very high in sugar, so should not be used too often.

Key references

National Safety Council (2017) Fatigue in the Workplace: Causes and Consequences of Employee Fatigue
SLEEP AND PERFORMANCE DURING RAMADAN

An estimated 22% of the world’s population (approximately 1.6 billion people) fast during the Muslim holy month of Ramadan. In all countries, fasting individuals do not eat, drink, or smoke from sunrise to sunset. However, due to different geography and the movement of Ramadan (11 days earlier each year), the number of hours fasting can be very different for workers distributed across wide areas. For example, when Ramadan falls in the Northern Hemisphere summer months, those in Northern latitudes will be fasting for much longer than those in Southern latitudes, and those in equatorial regions.

WHAT IS THE IMPACT OF RAMADAN ON THE FASTING WORKERS?

While it is difficult to generalise, as different countries have differing cultural traditions and lifestyle changes during Ramadan, there are several key characteristics that seem to be common in all studies conducted.

FASTING, NON-FASTING, AND LATE BEDTIMES

The primary reason for sleep starting later during Ramadan is the breaking of the fast after sunset — in two studies a higher proportion of people went to sleep after midnight during Ramadan. There are also cultural changes during Ramadan — for example in Saudi Arabia shops are open later, and popular TV programmes are shown late at night, which means that non-fasting individuals and expatriates also go to bed later.

SLEEP LOSS DEPENDS ON COMPANY CULTURE AND NATIONAL CUSTOMS

Going to bed later does not always result in sleep loss — in Saudi Arabia, locals who fast obtain the same total sleep duration because their work start time, and therefore their wake time in the morning, is delayed. However, where work start times are not delayed, substantial levels of sleep loss can occur. In two studies, 68% of fasting individuals obtained on average less than six hours sleep per night (compared with 37% getting less than six hours sleep on average before Ramadan).

LATE MEALS AND BEDTIMES ALTER THE CIRCADIAN RHYTHM, AND AFFECT SLEEP QUALITY

In studies that have measured the timing of the body’s 24h cycle in alertness (the circadian rhythm), subjects tend to become more ‘evening-types’ during the month of Ramadan as the circadian rhythm is delayed due to later bedtimes and eating later. This means that people are more alert in the evening, and more sleepy in the morning. This change in the daily cycle of alertness — very similar to jetlag — has a knock-on impact on sleep quality. Fasting individuals obtain less deep sleep and dreaming sleep. Deep sleep is important for memory consolidation, and to allow the brain to recover from its daily activities. Lack of dreaming sleep can result in anxiety, irritability, and difficulty in concentrating.
THERE ARE MORE TRAFFIC ACCIDENTS DURING RAMADAN

In Saudi Arabia, the UAE and the UK, hospitals report an increase in road-accident related attendances among Muslims during Ramadan, compared to non-Muslims or Muslims at different times of year. This is thought to be due to lower alertness during Ramadan due to sleep loss, reduced deep sleep and dreaming sleep, dehydration, and increased irritability — particularly amongst habitual caffeine drinkers or smokers.

WHAT CAN I DO?

If you are fasting during Ramadan, you will be aware that you are less alert during the daytime. If possible, try rotating tasks with non-fasting colleagues to reduce risk. If all your colleagues are fasting, work closely together, increasing cross-checking, and follow procedures and check-lists closely, where available.

Daytime napping can help alleviate some of the decreased alertness during Ramadan – due to the change in your circadian rhythm it is likely to be easiest to nap at 0900hrs and 1600hrs. If you are permitted to nap at work, set an alarm for 20 minutes and go to sleep. When the alarm goes off, walk around for ten minutes to allow any grogginess to disappear.

If you are not fasting, consider that your fasting colleagues are potentially less alert than normal – offer to drive them to work (or arrange car pooling), and switch tasks so that they perform lower risk activities, particularly in the heat as they are more likely to be dehydrated.

WHAT CAN THE COMPANY DO?

• Consider Ramadan in the Company Fatigue Management Plan.
• Run fatigue- and performance-awareness programmes before and during Ramadan, so that workers (fasting and non-fasting) are aware of the elevated risks associated with fasting.
• Delay work start times. When fasting workers can delay the start of their work day, they are better able to maintain their total sleep duration during Ramadan - a ‘flexible’ work day, where work starts and ends later is likely to benefit fasting employees.
• Rotate tasks. During Ramadan, fasting workers will be less alert, more likely to be dehydrated, and may be sleep deprived. Where possible, give these workers lower risk tasks — ideally out of the sun.
• If rotating tasks is not possible, or all workers are fasting, try to shorten the shift, or increase the proportion of the shift spent on breaks from tasks, particularly for fasting workers in hot conditions or working on high risk tasks.
• Where shifts are shortened during Ramadan, this could be part of a ‘seasonal’ flexibility, where workers work shorter days during Ramadan, and ‘make up’ the time elsewhere in the year. However, risk assessments should be undertaken before lengthening shifts, as alertness can decrease in the workforce as a whole when shift duration is increased from 8 to 12 hours.
• Reduce driving. Fasting workers are more at risk of traffic accidents during Ramadan — initiate car pooling, provide taxis or a company mini-bus.
• Encourage napping. Daytime sleep can be used to increase total sleep duration, and reduce some of the performance decrements felt due to reduced or disturbed sleep during Ramadan.
• Be aware that non-fasting workers may also lose sleep. Cultural changes, e.g., shops being open later or change in timing of popular TV programmes in Islamic countries, may result in non-fasting workers going to bed later, but not benefitting from a later work start.
• Consider geography. In a distributed global workforce, fasting workers’ experience of Ramadan will be different, depending on location and national customs.

Key references
WHY IS SLEEP IMPORTANT?

Sleep is a biological necessity and yet many of us get less than we need. Getting adequate sleep has a vital role in alertness, attention, judgement and decision making, affects how well we perform at our jobs, and lack of sleep may ultimately compromise both our own safety, and the safety of those around us. Research has found an association between circadian and sleep disturbances and disruption to the immune, inflammatory and cardiovascular system. Thus, regularly getting less sleep than we need has been linked to increased risk of a range of health disorders, including Type 2 diabetes, gastrointestinal disorders, and some cancers.

Our sleep occurs in different stages:
- Light sleep (about 55% of total sleep time)
- Deep sleep (about 20% of total sleep time)
- Dreaming sleep (about 20-25% of total sleep time)

When we are asleep, we cycle between these phases, moving from light sleep, to deep sleep, back to light sleep, and then into dreaming sleep, before finishing in light sleep. This cycle takes about 90 minutes (although can be up to 110 minutes), and occurs four or five times during the night. All phases of sleep are important – light and deep sleep play a role in our memory, while dreaming sleep helps with processing of emotions and deleting unwanted information. For a ‘restorative sleep’, a full sleep cycle should be completed. If you are woken from deep sleep, which can happen if you nap for between approximately 20 and 90 minutes, this can leave you feeling groggy (known as sleep inertia), and your work performance after waking could be affected.

HOW MUCH SLEEP DO I NEED?

Most people need between seven and nine hours sleep per day, but everyone is different. You can work out your personal sleep need when you next have a block of days off from work. Don’t set an alarm, just sleep and wake up naturally. After a few nights to recover from existing sleep loss, make a note of your daily sleep over three or four days: the average is a good indication of your personal sleep need.

HOW CAN I IMPROVE MY SLEEP?

Have a routine

Keep to a consistent wake-up time and get up when your alarm goes off; the snooze button is not your friend! Try to get lots of light exposure during the day to help improve daytime alertness and regulate the production of melatonin – the ‘sleep hormone’ – making it easier to fall asleep at night.

Keep a consistent bedtime; try setting an alarm for 30 minutes before your bedtime, to remind you to wind down and start preparing for bed. Set your bedtime to make sure that you can obtain your sleep need – if you know you need seven hours of sleep a night, aim for at least seven hours and 30 minutes in bed to minimise the chances of sleep loss. We find it more difficult to sleep in a single block as we get older, and having a set routine may help reduce this difficulty.

A routine also helps when it comes to meal times. Eating well-balanced meals at regular times is best – from both a wider health point of view, and to avoid either too much food, or lack of food, disrupting your sleep.
To see how well you are sticking to your routine, and get an indication of the amount of sleep you get each night, you could try one of the wide-range of wearable devices that are available. These devices use your movement during the night to give an indication of the amount and quality of sleep we get each night.

Avoid caffeine, nicotine and alcohol
Avoid caffeine within four hours of bedtime, ideally longer, as it remains in the body for four to six hours, and can reduce sleep quality significantly. Alcohol before bedtime affects the natural sleep cycle, resulting in disturbed sleep, more awakenings and leaving you unrefreshed, so should also be avoided. Avoid nicotine before bed too – it is a stimulant and will disturb your sleep.

Get the environment right
No matter where you are sleeping, the ideal sleep environment is cool, quiet, dark and comfortable. Blackout blinds / eyeshades can prevent light disturbing your sleep, while suitable earplugs (e.g., those that filter rather than block out noise, so you can still hear important sounds like the fire alarm) or a source of white noise (e.g., a fan) can help attenuate noise. Technology (phones, tablets, computers, TVs) should ideally be kept out of the place you are sleeping; as well as being potential sources of stress, they emit blue-light that is particularly alerting, and phone calls / messages in the night will disturb your sleep. Most mobile devices (phones and tablets) now come with a blue light filtering option, or ‘night mode’ – this reduces the blue light exposure in the evening, which can help with sleep. If your phone does not have this feature, there are several applications you can install which will add this feature. Keep the temperature cool and comfortable – the ideal temperature is different for everyone, but we struggle to sleep if we are too warm.

If you are sleeping in an environment that does not reach this level (for example in a truck, or in temporary company-provided accommodation), do what you can – for example carry your own eye-shade and ear plugs with you so that you can always create a cool, quiet, dark and comfortable environment to sleep in. However, please be aware that your sleep may not be optimal, so you may be at elevated risk of fatigue the next day.

What if I still can’t sleep?
If you are following all the above advice, but still can’t sleep, or wake-up feeling as if you aren’t rested enough, then you may be experiencing symptoms of a sleep disorder. Sleep disorders are varied, from insomnia to obstructive sleep apnoea and restless leg syndrome. If you have on-going difficulty sleeping, or your partner says you snore loudly, or stop breathing in your sleep, it is best to seek advice from a medical professional. They can recommend varied investigations, and treatments, for example by referring you to a sleep clinic.

As well as speaking to a medical professional, you should discuss your lack of sleep with your supervisor, who may be able to rotate you to lower risk tasks until your sleep improves.

Will sleeping tablets help me?
Taking sleeping tablets is not recommended, unless they have been prescribed and monitored by a doctor. Sleeping tablets containing benzodiazepines can be helpful for treating insomnia in the short term, but tend to worsen sleep in the long term. They also disrupt the make up of your sleep – you have less deep sleep, and it takes longer to reach dreaming sleep. Stopping taking these drugs is also difficult, you can experience re-bound insomnia, anxiety and agitation – if you currently take sleeping tablets, speak to your doctor about whether you need them. Work with your doctor to see if there is anything you can do to reduce the dose or if you can stop taking them in a safe manner. If you are taking, or are considering taking, any sleeping tablets, please also refer to the Company Drug and Alcohol policy.

HOW CAN I KEEP ALERT DURING A NIGHT SHIFT?
Increasing alertness at night all starts with the preparation – try and make sure you get enough sleep during off-work periods to minimise the impact of any sleep debt. If you can’t sleep for 7 to 9 hours in one block, then a nap in the afternoon (it is easiest to nap in the ‘after lunch dip’ in alertness between 13:30-15:30) may well help you. To increase the chances of getting as much sleep as possible, make sure you are following the environment advice above, day time sleep is much more likely to be disturbed by light and noise, so your ear plugs and eye shade are important. If you are returning home between night shifts, try to educate your family about your need to sleep during the day. If your shift timing allows, having a family meal either straight after work, before going to bed, or before leaving to go to work, can help reduce the isolation of working nights, but make sure that you are not sacrificing your sleep time.

During the shift, try to work in bright light – this improves alertness as light reduces the production of melatonin (the ‘sleep hormone’). Caffeine can also help you, particularly during the dip in alertness that occurs between 02:00-06:00. Those who drink the most caffeine (from tea, coffee, energy drinks, etc.) may not benefit as much, as we build up a tolerance to caffeine over time. Finally, teams should aim to take regular breaks and to rotate tasks in order to reduce the impact of fatigue that can be caused by spending a long time on a task.
WHAT CAN THE COMPANY DO?

Provide adequate sleep breaks
- Ensure breaks between work periods are long enough to enable workers to obtain sufficient sleep, particularly between night shifts, as daytime sleep is usually shorter, of poorer quality and more difficult to achieve
- Longer breaks are also important, as they give the opportunity to recover from cumulative sleep loss between working weeks

Promote sleep and alertness across the workforce
- Use the Company Fatigue Management Plan to mitigate against the elevated risks if employees are not able to obtain sufficient sleep
- Survey the workforce to find out how much sleep people typically obtain before and after different types of shift
- Provide education about the importance of sleep and tips on how to get good sleep between different shift types, and to promote alertness during shifts, especially night shifts
- ‘No contact’ out of hours, turn off work emails for office workers / managers to prevent work interrupting sleep
- Where possible, match work schedules with individual physiology (‘morning types’ will cope better with early starts, while ‘late types’ perform better on shifts that start in the afternoon or evening)

Create a healthy sleep environment
- Encourage employees to seek light during their waking hours, particularly for those working in offices with minimal windows, or working at night.
- In company-managed sleep environments, for example on camps or platforms, develop a company standard for the sleep rooms, for example the provision of blackout blinds, particularly where employees work regular night shifts, making rooms as quiet as possible (e.g., location isolated from operations, as far as practical), and providing comfortable beds and bedding
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Key references