Shift Working
And
Fatigue
Shift Working

London Underground is a 24hr business, to support this most operational staff work rotating shift patterns. If shift working isn’t managed properly it can have an effect on your physical and mental well being. This can affect every aspect of your life including diet, exercise, sleeping patterns, family, friends and social life.

There are many positive advantages to working shifts, however, if you want to avoid problems it is important to recognise the pros and cons.

**Advantages of shift work:**
- Places are less crowded off peak so you get things done more quickly
- You can work hours to suit your lifestyle, for example to accommodate childcare or other responsibilities
- More flexibility than standard 9-5 hours
- Off peak discounts at cinemas, restaurants, gyms and other recreational places
- You can avoid travelling at peak time
- It’s easier to arrange personal appointments without interfering with work, e.g. doctors, dentist or deliveries

**Disadvantages of shift work**
- It can affect social activities or hobbies that are at the same regular time
- You might work irregular patterns or odd hours
- Potential difficulties sleeping
- Possible health problems
- Eating at regular times can be a challenge

Working shifts can make it difficult to eat a healthy diet, exercise regularly, spend time with your family and socialise with friends. To minimise the negative side effects of working shifts it’s important that you look after yourself, following the tips below will help.

**Get in to a routine**
As obvious as it seems, establishing regular routines to fit your working patterns helps you adapt to shifts. Whenever possible try to eat at regular times, do some exercise and go to bed/get up at the same time. Look at your shift patterns in advance and do some planning to establish routines.

**Eat well**
Shift work often means eating late at night when your digestive processes have slowed down, this can leave you feeling full and sluggish. You will start to gain weight if you eat your usual daytime meals and continue to snack at night.

Try to get in to good eating habits; fresh fruit, vegetables, poultry, fish and whole grains are good choices. Don’t rely on snack bars, sugary foods and fizzy drinks for a quick fix—instead take healthy snacks to work to help keep your energy levels balanced.
Exercise
Introducing regular exercise can have a number of positive benefits, of course we all know that but when you finish work it can be the last thing you want to do. Try to incorporate some exercise in to your daily routine and aim for 20-30 minutes a day to feel the many positive effects:

- Improved quality of sleep
- Improved self esteem
- Increased energy levels and stamina
- Improved ability to cope with everyday pressures
- Improved cardio-vascular fitness

Family and friends
Communicate with your family and friends as their co-operation is important for you to get regular, uninterrupted sleep. Try to spend quality time with them to help improve your mood- make plans to socialise that fit in with your shifts and stick to the plans as much as you can.

Stay hydrated
Drink plenty of water and other non-caffeine fluids. A regular intake of fluids during your shift will help prevent mild hydration.

You can find more information about Healthy Eating, Keeping Active and Wellbeing on the Health and Wellbeing intranet pages.

Go to Source> Doing My Job> Health and Safety> Health and Wellbeing Matters.
Fatigue

There is no single agreed definition of fatigue, however it is considered a state of perceived weariness that can result from prolonged working, heavy workload, insufficient rest and inadequate sleep. Fatigue can be thought of as a loss of alertness, which can only be remedied by sleep.

Causes of fatigue
There are many potential causes of fatigue, some - but not all - are related to work.

- workload
- the nature and duration of any time spent travelling
- insufficient rest breaks both between shifts and within a shift
- sleep debt
- inadequate nutrition
- poor fitness/ lack of movement
- environment (poor light, increased noise & vibration, extreme temperatures)
- time of day

It is important that you recognise the signs of tiredness and fatigue in yourself and colleagues so that you remain fit for work. Some signs to look out for are;

Likely level of Fatigue

Early warning signs
These should prompt you too look for other, conclusive evidence of fatigue.

Signs of moderate fatigue
These suggest performance is being affected and should be taken seriously.

Signs of severe fatigue
These suggest the person is liable to uncontrollable ‘micro sleeps’ with a high risk of errors.

<table>
<thead>
<tr>
<th>Signs/ Symptoms</th>
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<tr>
<td>* not feeling refreshed after sleep</td>
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<tr>
<td>* extended sleep on days off</td>
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<tr>
<td>* feeling irritable, restless and impatient</td>
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<tr>
<td>* fidgeting</td>
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<tr>
<td>* rubbing your eyes</td>
</tr>
<tr>
<td>* more frequent naps in leisure time</td>
</tr>
<tr>
<td>* Frequent yawning</td>
</tr>
<tr>
<td>* Staring blankly</td>
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<tr>
<td>* Frequent blinking</td>
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<tr>
<td>* Lack of energy</td>
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<tr>
<td>* Eye strain, sore or ‘heavy’ eyes, dim or blurred vision</td>
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<tr>
<td>* Vacant stare with sunken, bloodshot eyes</td>
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<tr>
<td>* Unstable posture/ swaying, dropping chin, nodding head</td>
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<tr>
<td>* Difficulty keeping eyes open and focused</td>
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<tr>
<td>* Long blinks</td>
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<tr>
<td>* Slurred speech</td>
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<tr>
<td>* Drowsiness</td>
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<td>* Droning or humming in the ears</td>
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Avoiding fatigue

Napping
You may wish to take naps to help reduce fatigue. Try to limit naps to 30-45 minutes, including the time it takes to fall asleep. There isn’t a minimum period for effective napping however naps of 15-20 minutes are the most restorative.

Sleep and Body Rhythms
Essentially we are programmed to sleep during hours of darkness and be awake and active during hours of light. For peak performance, our body rhythms must be co-ordinated with each other and the environment.

Shift-work means we have to adjust our natural cycles to suit our hours of work. Our rhythms do not adjust instantaneously and change at different rates. These rhythms tell our body when to be active, when to rest and when to eat- they also control: body temperature, kidney function, hormone secretions, blood pressure and digestion. Disruption of these rhythms can make concentration and digestion difficult. This can leave people feeling rundown and lacking in energy.

The internal processes of sleep and our biological clock have a major impact upon our health and overall well being. Understanding these processes can help you adjust to shift work. Sleep is not as simple as ‘switching off’ the brain, it’s a complex process involving stages of deep and light sleep over a cycle. If you are disturbed during the deep sleep phase then you can not pick up where you left off, you have to start all over again. An interrupted or shortened sleep can mean little effective rest. Sleep is divided into two independent states: non-rapid eye movement (NREM) sleep (light sleep) and rapid eye movement (REM) sleep (deep sleep)

- Each sleep cycle takes about 90 minutes to complete
- Subsequent sleep cycles vary in the quantity of REM and NREM (see graph)
Deep (REM) sleep is important for physical recuperation, psychological well-being and personal sense of refreshment. If sleep is cut short, i.e. disturbed within a cycle, the body doesn’t have time to complete all of the phases needed for muscle repair, memory consolidation and release of hormones regulating growth and appetite.

Working shifts can sometimes disrupt your sleep patterns, to reduce this prepare for sleep by following some of these tips;

- Read
- Listen to music
- Get dressed for bed
- Go to bed only when you are tired
- Create a good sleep environment
- Go to bed in a dark, cool room that is quiet and free from interruptions
- Sleep in a comfortable bed that is associated with sleep
- Where possible have fresh air in the room

### Factors Affecting Sleep

#### Age
- Sleep needs remain the same throughout adulthood
- Older people wake more frequently through the night
- Ability to cope with 'early starts' may improve with age

#### Need
7 - 8 hours is recognised as an average need for sleep, you may not need as much as this or you may need slightly more. Get to know your own sleep pattern. Sleep compromises several stages which must follow a certain pattern if you are to feel fully rested and alert (see graph on p 8).

#### Frequency
Sleep is not like money - you cannot save it up and you cannot borrow it. While napping is an effective means of managing alertness, it is not a substitute for regular sleep.

#### Biological characteristics
We have our own internal body clock. It controls a number of internal rhythms, e.g. sleep/wake cycle, body temperature. Our body clock makes us feel sleepier and less alert when we try to work at times normally reserved for sleep.

#### Nightshifts
Our body clock programmes us to feel sleepy when it’s dark. Eating meals at times normally reserved for sleep means they are not well digested. It’s important to adopt a healthy diet and good sleeping habits.
Very Early Start

- Associated with a reduction in duration of sleep
- Sleep periods prior to an early start are on average 3 hours shorter
- Can be difficult to compensate with an earlier bedtime because of social pressures, fear of not waking up early and personal circumstances

Sleep Disorders

Significant periods of fatigue, without an obvious explanation could indicate a sleep disorder such as sleep apnoea, insomnia, restless leg syndrome or narcolepsy. These are medical conditions and should be diagnosed by a professional.

If you have any concerns you should visit your GP. If your GP diagnoses a disorder you must inform your manager.

If you are having sleep problems that are not related to a medical disorder you should also consider discussing the situation with your manager. It may be possible to make a short term adjustment to your shift patterns that will assist you.
General Coping Strategies

- Reduce alcohol intake
- Limit caffeine and nicotine intake
- Avoid alcohol and nicotine just before going to bed
- Avoid caffeine 4-6 hrs before sleep
- Maintain a well balanced diet
- Take vitamins
- Take regular exercise, aim for 20-30 minutes per day
- Communicate with those around you
- Clear your mind of anxious thoughts
- Keep pen and paper next to the bed to write them down
- Do things for fun/enjoyment regularly
- Make time for yourself

What can cause fatigue?

The main factors are:

- Loss of sleep – ‘acute’, for example, having 5 hours sleep instead of the usual 8; or ‘cumulative’ having 7 hours sleep instead of the usual 8 over each of several days
- Poor quality sleep – lots of interruptions
- Having to work at a ‘low point’ in the day e.g. early hours of the morning; mid to late afternoon and after a meal
- Long working hours, particularly if these are as long as 14 to 16 hours
- Inadequate breaks during the working day
What are the main effects of fatigue?

Compared with their normal state, a fatigued person will:

- Find it hard to: concentrate, make clear decisions or take in and act on information
- Have more frequent lapses of attention or memory
- React more slowly
- Make more errors
- Occasionally fall asleep at work – momentarily or for several minutes
- Have little motivation or interest in their work
- Be irritable

How can we avoid or reduce fatigue?

- Make sure employees have the opportunity to sleep for at least 8 hours between shifts
- Encourage employees to develop good sleeping habits
- Avoid long shifts and too much overtime: aim for less than 50 hours work per week (i.e. comply with the EU Working Hours Directive)
- Arrange for quality breaks during the working day
- Consider personal preferences – some people are ‘morning people’ some are ‘night people’ (larks/owls)
- Consider allowing some ‘napping’ at work to restore performance but beware of a person
- Arrange for more interesting and varied work to be done at night and at other low points but make sure these are not too demanding or too monotonous/repetitive

Additional points to note

- Individuals are not good at assessing how fatigued they are
- They can be skilled at coping with fatigue, but this can increase stress or the risk of gastric disorders or other health problems
- Shorter and more shifts may not solve the problem – errors rise early on, diminish, then peak later