



# Fatigue management for supervisors

Learning Legacy Document



## ◀ Definition

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## ◀ Fatigue

“A state of **impaired mental and/or physical performance** and **lowered alertness** arising as a result or combination of **hard physical and mental work, health and psychosocial factors** or **inadequate restorative sleep**”

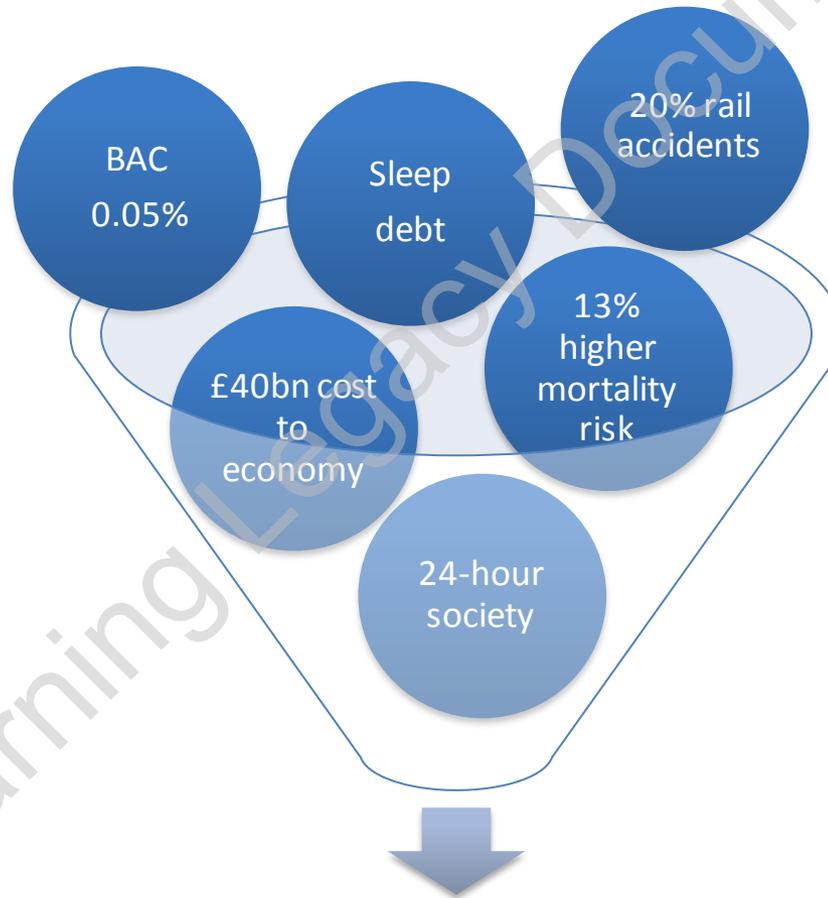




## ◀ Facts

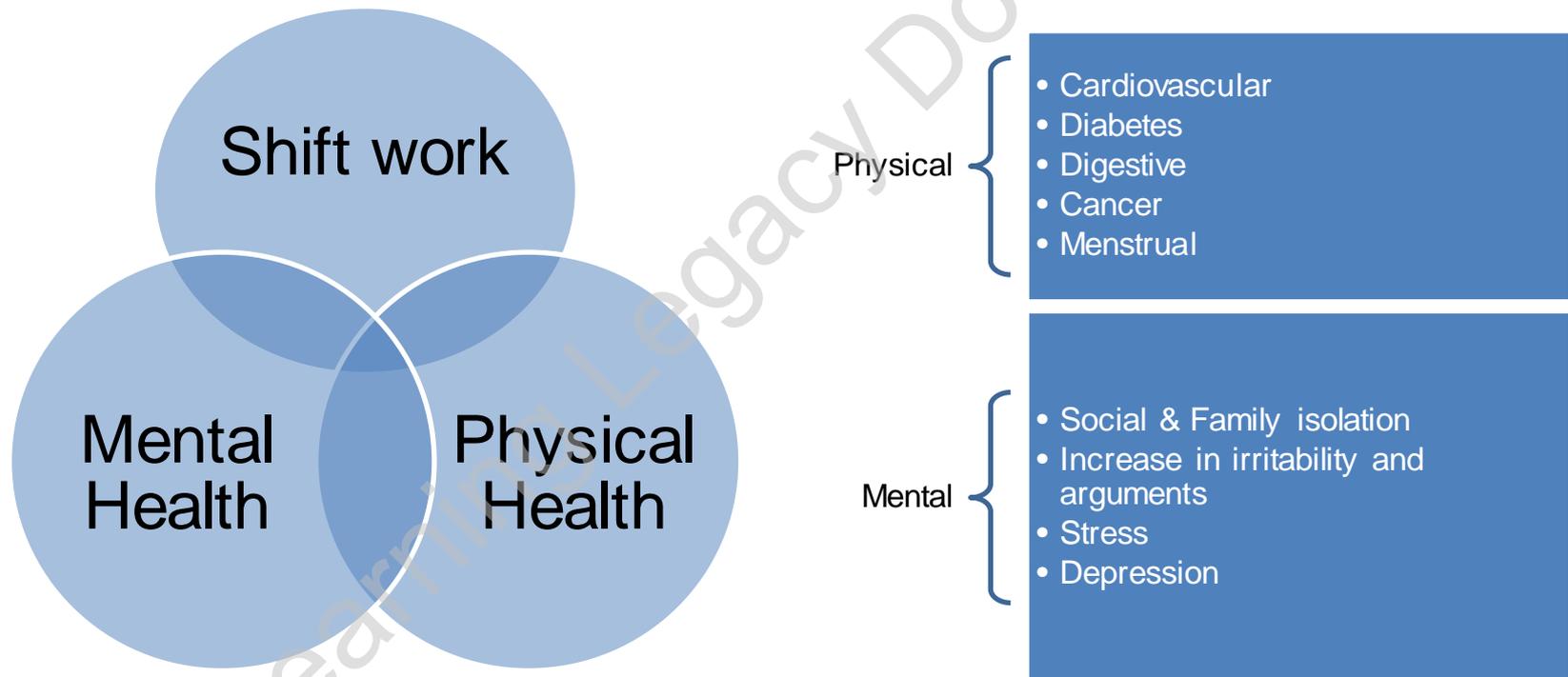
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# ◀ Evidence base

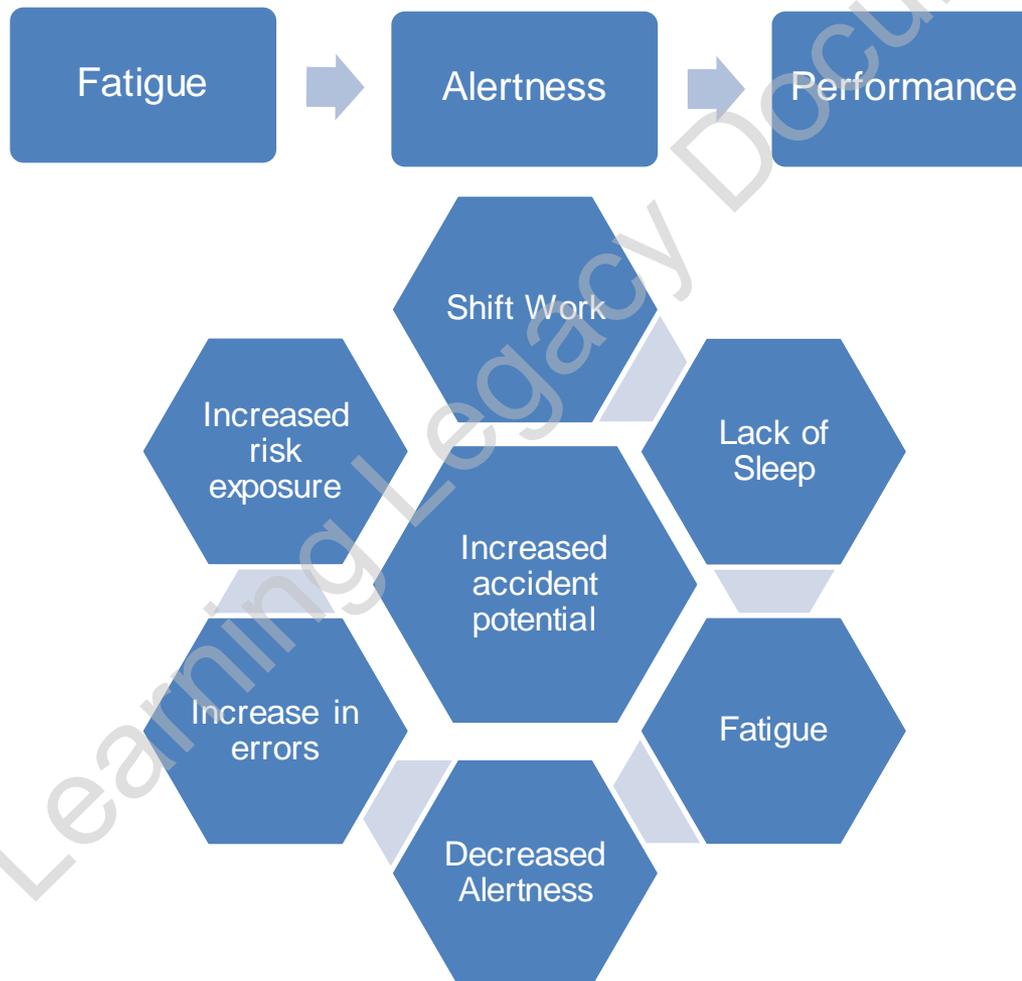


Fatigue impact

## ◀ Health Effects



## ◀ Safety Effects



## ◀ Clapham junction rail crash 1988

- ▶ A multiple train collision
- ▶ Thirty-five people died
- ▶ Five hundred people were injured.
- ▶ Faulty signalling connection
- ▶ The signalling technician responsible had worked a seven day week for the previous thirteen weeks.



## ◀ Effects of sleep deprivation

- ▶ Unwilling to try out new strategies, perseverates
- ▶ Difficulty comprehending a fast changing situation
- ▶ Unable to plan effectively, can't 'update'
- ▶ Distracted by irrelevancies
- ▶ Impaired language and communication skills



## ◀ Effects of sleep deprivation

- ▶ Unreliable memory for when events occurred
- ▶ Unable to plan effectively, can't 'update'
- ▶ Difficulty in assessing risk
- ▶ Less control of mood/"uninhibited" behaviour
- ▶ Less insight into own performance



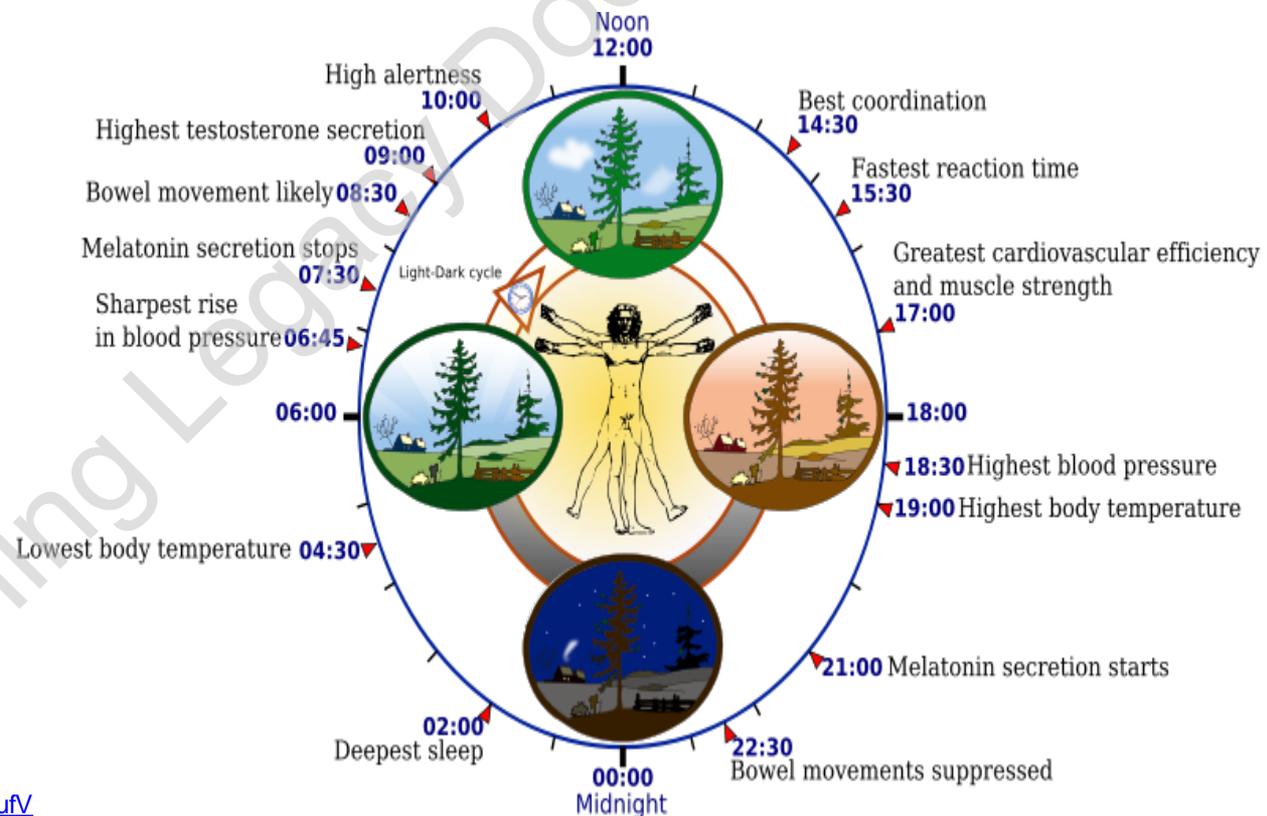


## ◀ Health effects

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# ◀ How the Body Clock Works

- ▶ Circadian rhythms
- ▶ Melatonin production
- ▶ Biological Functions
- ▶ Larks & Owls
- ▶ Sleep Debt



- ▶ Shift work sleep disorder video
- ▶ <http://www.youtube.com/watch?v=MfxYufVjBas>







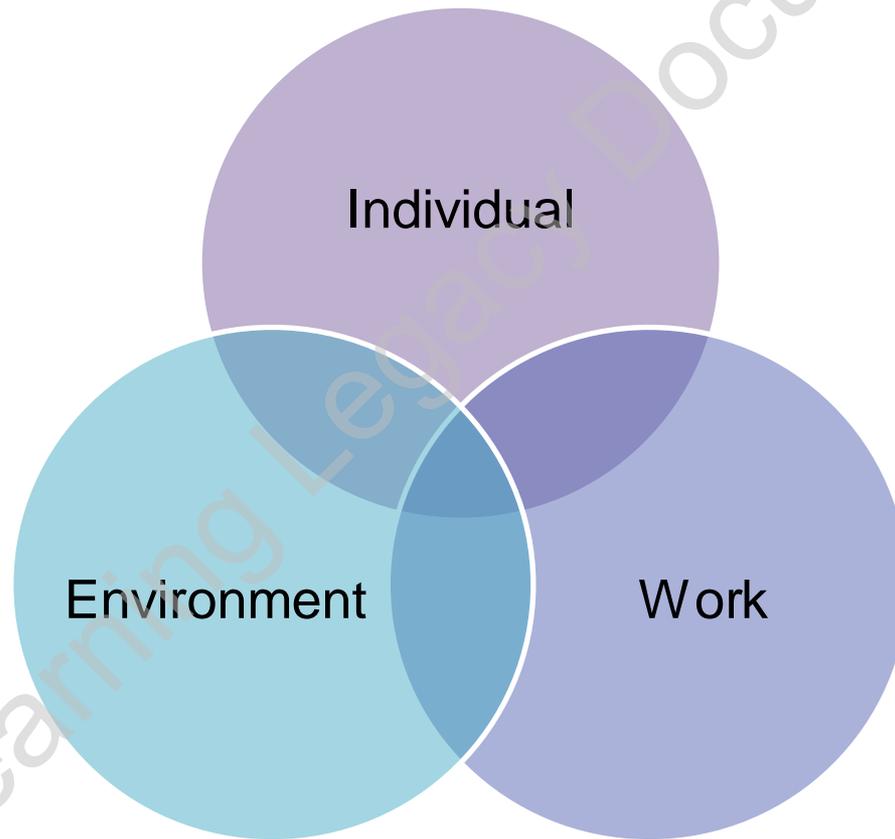




## ◀ Fatigue assessment

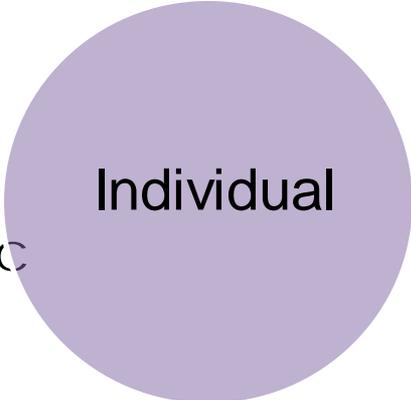
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## ◀ Causes of fatigue



## ◀ Individual causes

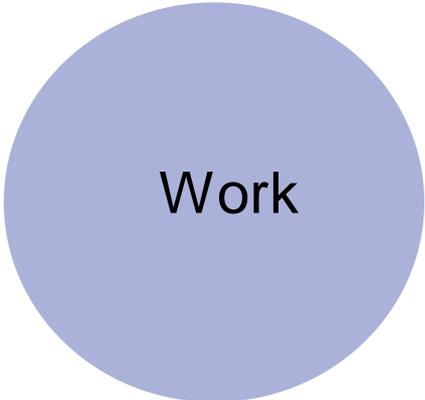
- ▶ Circadian rhythm
- ▶ Health conditions
- ▶ Sleep quality
- ▶ Lifestyle
  - ◆ Poor Diet
  - ◆ Poor Hydration
  - ◆ Excessive Alcohol
  - ◆ Excessive/ timing of caffeine
  - ◆ Lack of Exercise outside of work
  - ◆ Depressed Mood eg relationships, injury etc
- ▶ Other factors



Individual

## ◀ Work causes

- ▶ Long daily work hours
- ▶ Concentrating for extended periods
- ▶ High risk activities
- ▶ Shiftwork
- ▶ New at job or skill
- ▶ Working alone
- ▶ Being on call
- ▶ Working night shift



Work

## ◀ Work environment causes

- ▶ Insufficient breaks
- ▶ Not using breaks effectively
- ▶ Noise, vibration and heat
- ▶ Repetitive or boring tasks
- ▶ High physical and/or mental exertion



Work  
Environment

## ◀ Home environment causes

- ▶ Sleep disruptions – neighbours, family, living in multiple occupancy accommodation
- ▶ Poor sleep habits – late to bed, watching tv
- ▶ Family - illness, new baby
- ▶ Worries – financial or domestic



Home  
Environment





## ◀ Legal requirements

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## ◀ Shift Work & the Law

### Working Time Regulations 1998

- ▶ These lay down minimum legal requirements in how to organise working time. The key requirements are:-
  - a limit of an average of 48 hours a week which a worker can be required to work (though workers can choose to work more if they want to);
  - for night workers, a limit of an average of 8 hours work in each 24-hour period;
  - a right for night workers to receive free health assessments;
  - a right to 11 hours consecutive rest a day;
  - a right to a day off each week;
  - a right to a rest break if the working day is longer than six hours;
  - a right to four weeks' paid leave per year.
- ▶ There is also provision in the regulations to opt out of the 48 hours a week limit for a number of industries and roles

## ◀ Shift Work & the Law

- ▶ Health & Safety at Work Act (HSWA)
- ▶ Management of Health & Safety at Work Regulations (MHSWR' s)
- ▶ As well as the specific duties in the WTR' s, there are general duties in the above to protect the health & safety of employee' s as far as reasonably practicable. This includes conducting risk assessments and implementing control measures for all relevant risks.
- ▶ Shift working is accepted as introducing additional health and safety risk into the workplace and therefore needs to be covered.



## ◀ Fatigue plan

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# ◀ CRL Fatigue Management Plan

- ▶ Laid out in a 7 step process.

Step	Action Required
<b>Step 1</b> Identify staff who fall into the applicability of this plan.	<ul style="list-style-type: none"><li>➤ Any Line Manager who sanctions regular shift work (as defined in Section 2 and 3.1), must inform Human Resources of the names of employees who have been required to work these shifts and instigate the following steps of this process.</li></ul>
<b>Step 2</b> Define and risk assess the proposed working pattern.	<ul style="list-style-type: none"><li>➤ <a href="#">The Health and Safety Executive fatigue and risk index</a>, must be used to assess the proposed shift pattern for each individual to ensure it does not present an unacceptable risk. (note that at this stage this is a generic risk estimate which does not account for any personal factors of the individual).</li><li>➤ Provided that the score falls within the defined parameters the individual may commence the proposed shift pattern.</li><li>➤ If the score exceeds those defined then the shift pattern must be reevaluated.</li></ul>

# ◀ CRL Fatigue Management Plan

Step	Action Required
<b>Step 3</b> <b>Health Assessment</b>	<ul style="list-style-type: none"><li>➤ Any employee who commences night shift work following the above assessment is required to complete a night workers health assessment. This will be co-ordinated by Human Resources who will notify the occupational health provider to send employee out a questionnaire. This is a requirement of the <a href="#">Working Time Regulations</a>.</li></ul>
<b>Step 4</b> <b>Provision of information and training</b>	<ul style="list-style-type: none"><li>➤ Prior to commencement of shift work, employees are to be provided with information which explains the risks of shift work and what personal lifestyle factors can help to reduce fatigue and the health risks of working shifts.</li></ul>
<b>Step 5</b> <b>Monitoring of Arrangements</b>	<ul style="list-style-type: none"><li>➤ After the first month of shift working each employee should undergo a review, conducted and documented by their manager to ensure that they have no personal factors which may increase their fatigue risk from that estimated during step 2. Copies of documented records should be sent to Human Resources to file.</li><li>➤ Reviews should be undertaken at regular intervals (quarterly) thereafter.</li></ul>

# ◀ CRL Fatigue Management Plan

Step	Action Required
<b>Step 6</b> <b>Action following incident or concern raised (as applicable)</b>	<ul style="list-style-type: none"><li>➤ If there is any safety related incident during shift working the investigation must establish if fatigue was a contributory factor. If so the investigation must establish the cause and ensure mitigation measures are instigated.</li><li>➤ If the health assessment or individual questionnaire identifies any concerns, then the individuals shift pattern must be re-assessed and if necessary changed to reduce the fatigue risk. Refer to section 3.5 for details.</li></ul>
<b>Step 7</b> <b>Review of Arrangement</b>	<ul style="list-style-type: none"><li>➤ Each calendar year when the review of the company Health &amp; Safety Management system takes place, the effectiveness of this plan must be assessed.</li></ul>

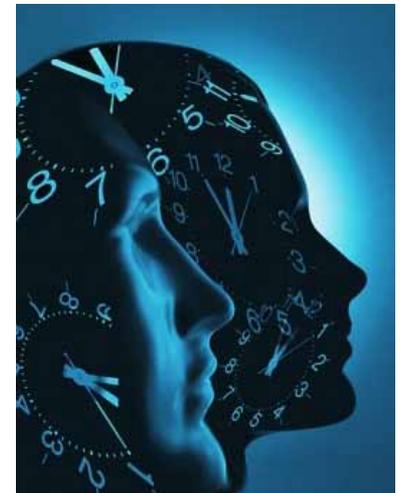


## ◀ Sleep

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# ◀ We spend a third of our lives doing it.... So why do we sleep?

- ▶ Restore bodies energy supply
- ▶ Repair work
- ▶ To combat fatigue



## ◀ Myths about sleep

- ▶ It is easy to tell when lack of sleep is starting to affect performance
- ▶ Alcohol is a good cure for sleep difficulties
- ▶ People can train themselves to get by on less sleep
- ▶ Once sleepiness is noticed, it is possible to force increased alertness

**FALSE**

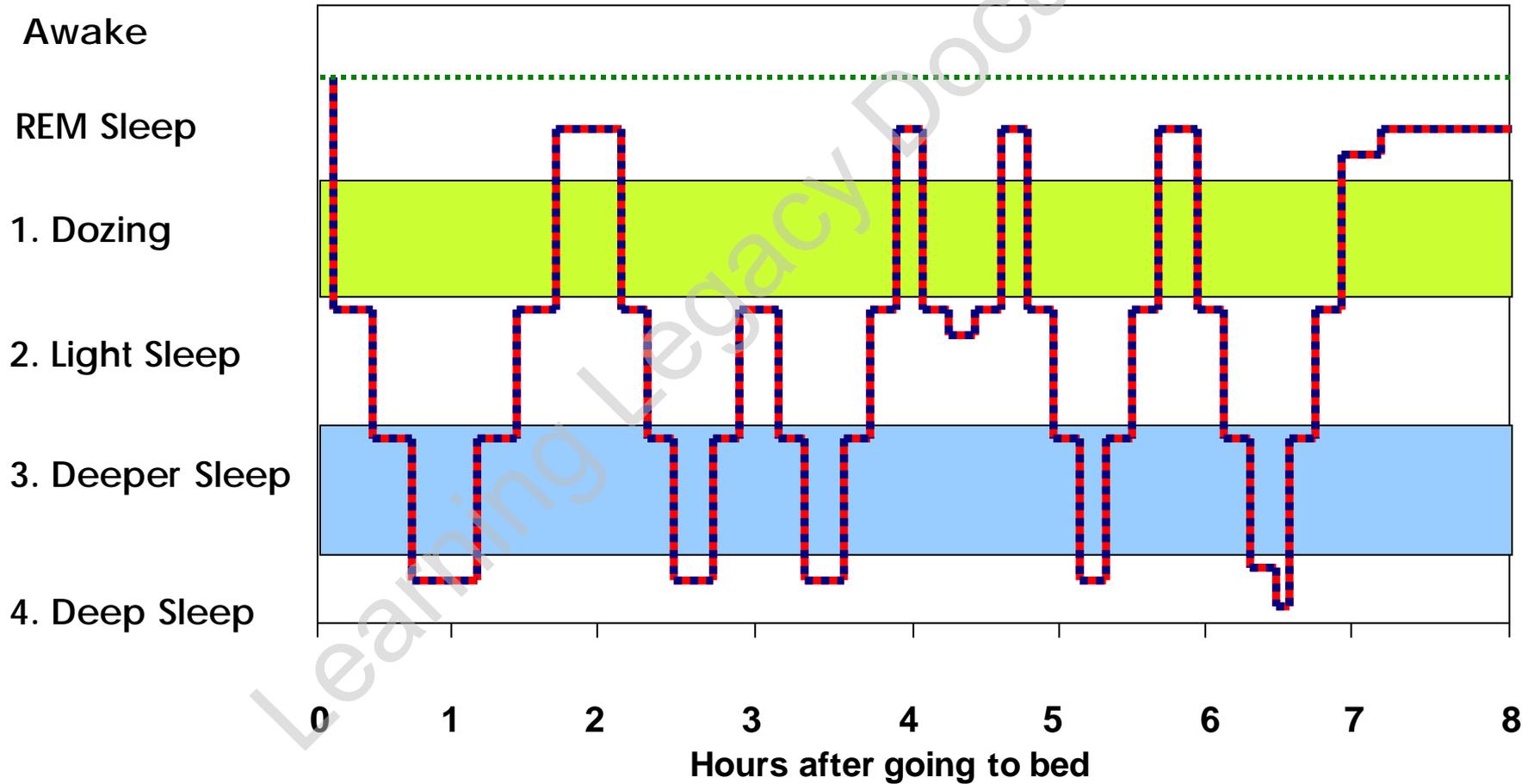
## ◀ Sleep Stages

**During an 8 hour period most people have five  
90 minute sleep cycles**

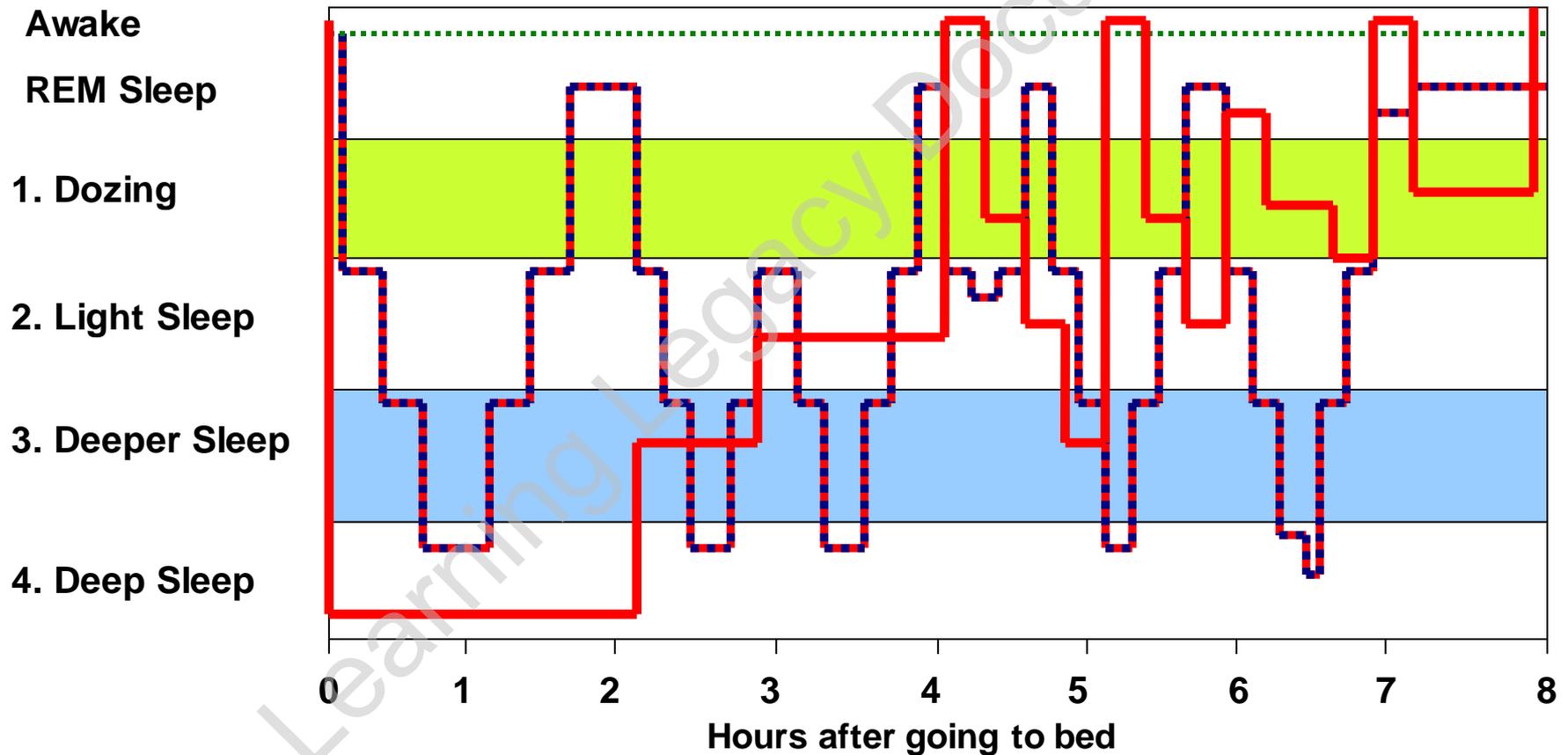
- ▶ Stage 1: Drowsiness
- ▶ Stage 2: Light sleep
- ▶ Stage 3: Deep sleep
- ▶ Stage 4: Deep sleep (more intense)
- ▶ REM: Dream sleep



## ◀ Healthy sleep

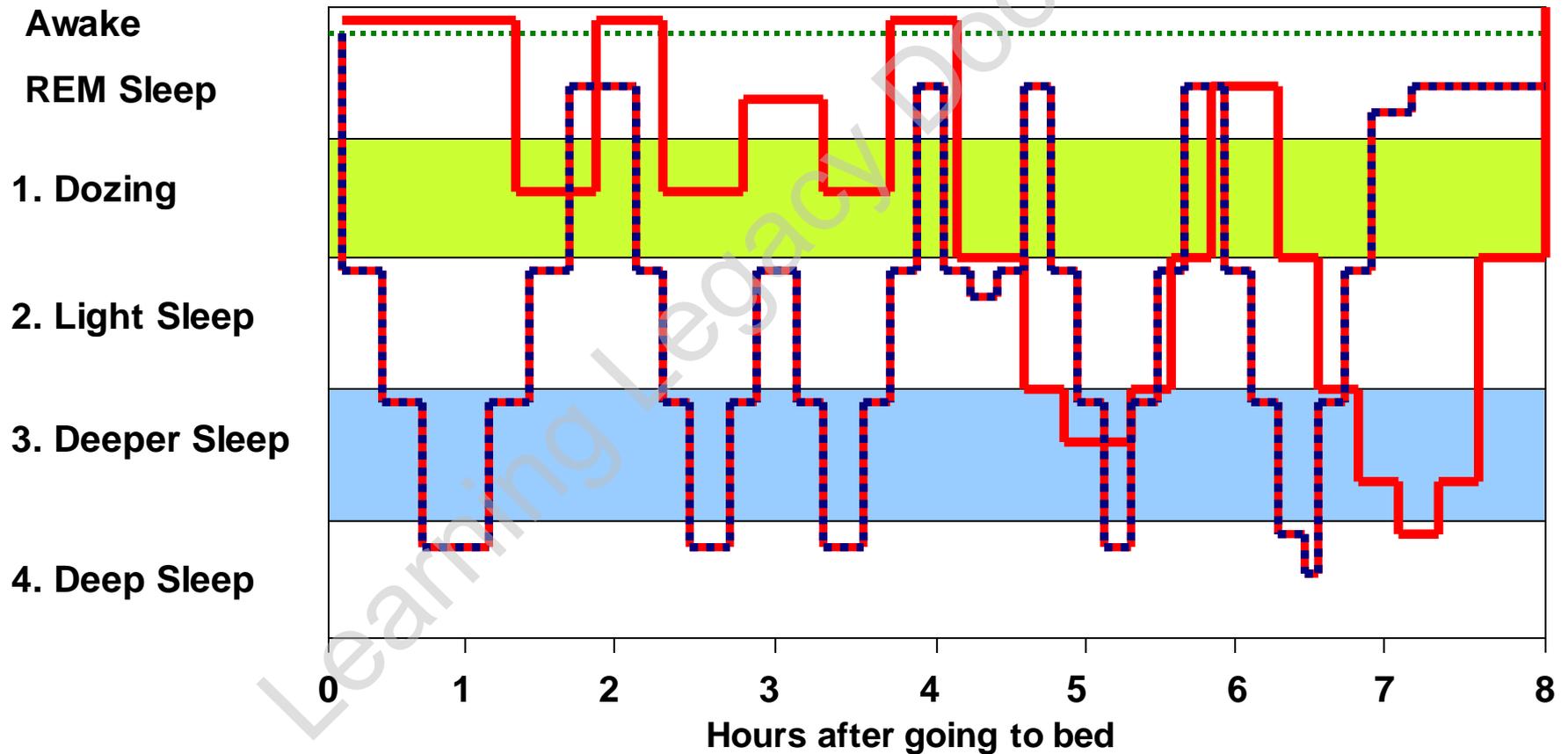


## ◀ Alcohol induced sleep



**It only takes 2 standard drinks (20g alcohol)**

## ◀ Caffeine stimulated sleep



## ◀ How much sleep?

- ▶ Sleep plays an important role in our overall health
- ▶ Ideally 7-9 hours of good sleep each night
- ▶ Alternatively 6 hours of good sleep + naps (8/24 hrs)
- ▶ Some people may need only 6 while others prefer 9
- ▶ Research shows that women who sleep only 5 hours were at 45% higher risk of heart disease.

**The irony is getting less sleep, to get more done, makes people far less productive**

## ◀ Improving fatigue

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## ◀ Sleep hygiene

- ▶ Avoid Stimulants
- ▶ Don't over-indulge
- ▶ Suitable bedroom environment
- ▶ Bedtime routine
- ▶ Relaxing routine
- ▶ Set a regular bedtime and wake-time schedule
- ▶ Plan your sleep sensibly
- ▶ Don't lie in bed worrying about getting to sleep
- ▶ Deal with worries by making a list
- ▶ Don't watch the clock by the bed
- ▶ Try to get up at the same time every morning
- ▶ Avoid exercising too close to bedtime



## ◀ **Managing Fatigue – Your Checklist !**

- ▶ Talk with your supervisor re: your work tasks
- ▶ Use your breaks effectively
- ▶ Drink Plenty of water during the day e.g. minimum 2 litres
- ▶ Diet – 5 small meals throughout the day
- ▶ Exercise outside of work e.g. Minimum 2x /week
- ▶ Sleep – 8hrs of good quality sleep
- ▶ Alcohol – more than 2 x standard drinks affects your sleep
- ▶ Caffeine – not less than 10hrs before you sleep
- ▶ Outside work Interests – Do something outside of work you love

**BE PROACTIVE – IF IT IS TO BE, IT'S UP TO ME .....**

## ONE YOU

HOW ARE YOU? QUIZ

CHECKING SMOKING DRINKING EATING MOVING **SLEEP** STRESS MORE TOPICS OFFERS APPS FOLLOW ONE YOU



# SLEEP

### HOW MUCH SLEEP DO YOU NEED?

Most of us need around eight hours of good-quality sleep a night to function properly – but some need more and some less. What matters is that you find out how much sleep you need and then try to achieve it.

Good-quality sleep is more important than the amount of sleep that you get and it helps to keep you feeling healthy.

### SLEEP AND YOU

The odd bad night's sleep can make you feel tired and irritable the next day, but it won't harm your health. However, regular poor-quality sleep can have a huge effect on your health, putting you at risk of developing serious medical conditions and can affect your body, thoughts, emotions and behaviour.



### HOW ARE YOU?

Our lifestyles can be more unhealthy than we think. Start the fight back to a healthier you. Take the One You quiz and see how you score.

START QUIZ

### DID YOU KNOW?

Sleeping well can help boost your immune system and help you fight off illness.

Sleepio YOUR SLEEP SCORE

How would you like to improve your sleep?  
Select all that apply

- Get to sleep more easily
- Sleep right through the night without waking up
- Stop waking up too early
- Wake up feeling refreshed
- None of the above

SELECT 1 TO CONTINUE

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## ◀ Fatigue management

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## Toolkit

- Baseline risk assessment
- Targeted risk assessment
- Incident investigation checklist

Risk  
assessment



- Toolbox talk – fatigue awareness and work life integration
- Supervisor training
- Work scheduling

Environment



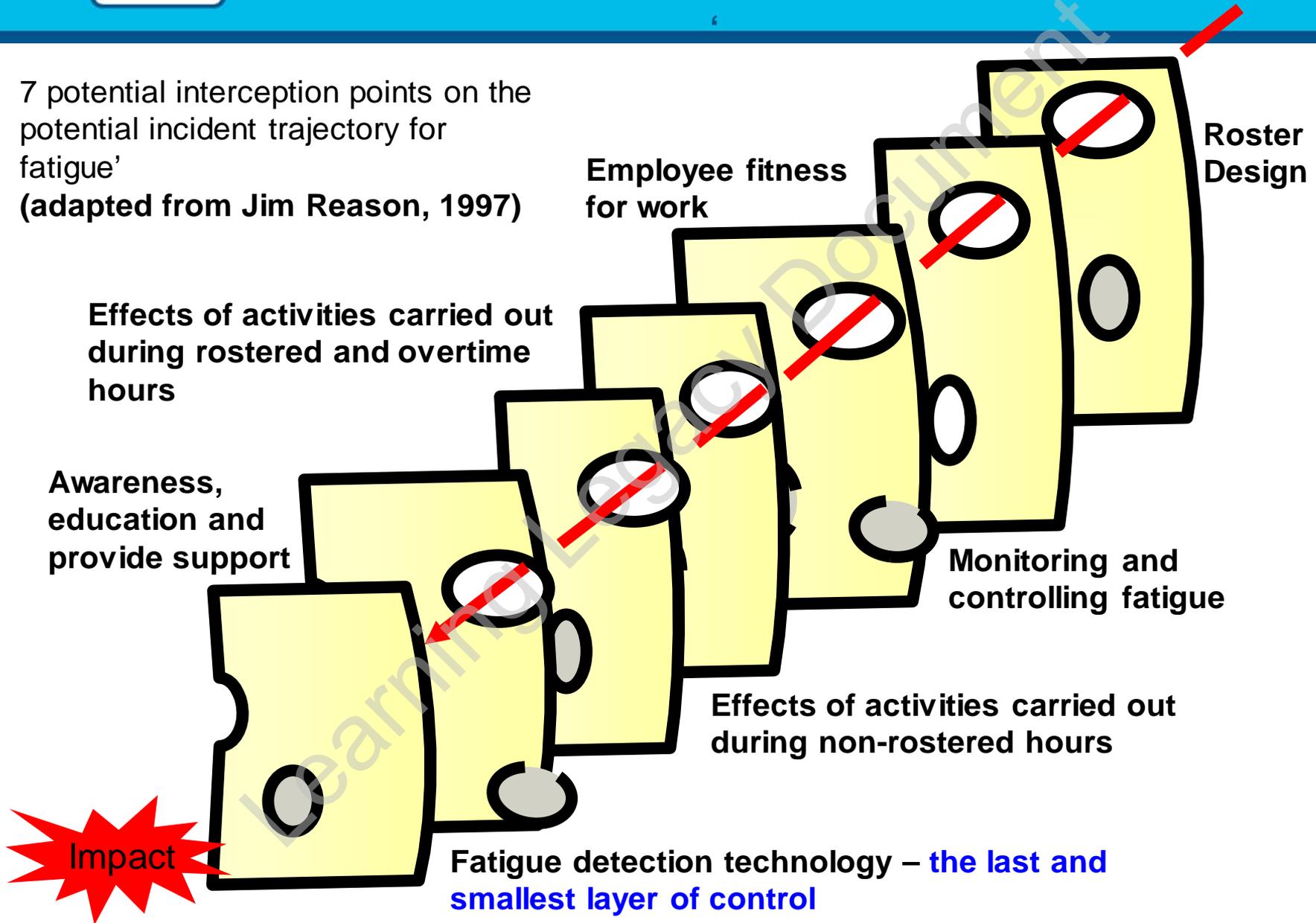
- Health assessment
- Health monitoring checklist
- OH referral

Fitness for  
work



## Learning legacy micro-report

7 potential interception points on the potential incident trajectory for fatigue'  
(adapted from Jim Reason, 1997)













## ◀ Control of Working Hours Policy

- ▶ An uninterrupted break of 1 day in 7 days or 2 days in 14 day period
- ▶ A minimum rest break of 20 minutes when working more than 6 hours and 2 breaks if working 12 hours
- ▶ No more than 12 hours per day shift, 14 hours door to door
- ▶ No more than 10 hours per night shift or early shift
- ▶ First night shift no more than 8 hours
- ▶ Have a minimum of 12 hours rest between shifts or 14 hours for consecutive nights
- ▶ Not work more than 60 hours in any 7 day period
- ▶ An uninterrupted break of 1 day in 7 days or 2 days in 14 day period
- ▶ Overtime not to exceed 2 hours past usual shift



## ◀ Fatigue Management

Report any fatigue to your supervisor, they will assess the situation and put in place any controls as required.

Controls may be;

- Additional breaks
- Additional monitoring
- Task rotation (job may be boring)
- Assistance in getting home



All of these solutions have been employed on this project with no negative outcomes to the individual.

## ◀ Fatigue monitoring

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## ◀ SYMPTOMS

- ▶ Chronic tiredness or sleepiness
- ▶ Headache
- ▶ Dizziness
- ▶ Sore, aching or muscle weakness
- ▶ Heavy eyes
- ▶ Slowed reflexes and responses
- ▶ Impaired decision making and judgement
- ▶ Hallucinations
- ▶ Appetite loss
- ▶ Low motivation



## ◀ Effects of Fatigue

The main effects of fatigue

▶ Finding it hard to:

- ◆ Concentrate
- ◆ Make clear decisions
- ◆ Take in and act on information

▶ More frequent lapses of attention or memory

▶ React more slowly

▶ Make more errors

### Signs and Symptoms

▶ Tiredness

▶ Sleepiness, including falling asleep against your will (“micro sleeps”)

▶ Irritability

▶ Depression

▶ Loss of appetite

▶ Digestive problems and Increased susceptibility to illness

