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CONTROLLING WORKPLACE HEALTH ISSUES IN THE UK

A course book for Unit DN2 of the NEBOSH Level 6 National Diploma for Occupational Health and Safety Management Professionals

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Unit DN2

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GUIDE TO USING THIS BOOK

Controlling workplace health issues in the UK is split into chapters that are based on the syllabus topics in Unit DN2 of the NEBOSH Level 6 National Diploma for Occupational Health and Safety Management Professionals. Some syllabus topics are split across more than one chapter.

The syllabus topics covered by Units DN1 and DN3 are covered in separate texts and these books are designed to be used together across your studies to provide complete coverage of the syllabus.

This book includes practical tips, case studies and applications designed to aid you in your studies and beyond. Each of these is presented so that they are easily identified. Examples and explanations follow.

DEFINITIONS

Sorbent: a material (solid or liquid) which can absorb or adsorb a gas or vapour.

Absorb: a material being drawn into another material and held throughout, for example, water being soaked into a cloth. No chemical reaction takes place.

Adsorb: the material being attracted by and adhering to the surface of the 'sorbent'.

Desorb: the material is released from the surface onto which it was adsorbed.

Definitions of key terms

TIP

The Equality Act 2010 is the framework of protection for employees against direct and indirect discrimination, harassment and victimisation at work.

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR) requires employers to report cases of accidents, occupational diseases or dangerous occurrences that are of a type which are reportable. These Regulations apply to England, Scotland and Wales.

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (Northern Ireland) 1997 (RIDDOR) place a legal requirement on employers to report work-related deaths, injuries, diseases and dangerous occurrences which are reportable. These Regulations apply to Northern Ireland.

Practical tips and advice. Where there is legislation or HSE guidance relevant to the specific topic, this will be listed in a Tip box in the introduction at the start of a chapter.

CASE STUDY

A Manchester construction company was fined £30,000 plus costs and its director sentenced to 200 hours' unpaid work following a project involving the refurbishment of student accommodation where workers disturbed asbestos.

The HSE investigation identified that the asbestos removal work was carried out by the construction company rather than a licensed asbestos removal company, which resulted in asbestos pipe lagging and debris being spread across the site.

The company and its director were prosecuted under ss2(1) and 3(1) of the Health and Safety at Work etc Act 1974.[10]

Real-life examples that illustrate the points being discussed. Includes both case law and practical case studies.

APPLICATION 1

An organisation has employed an individual to join their sales administration team. The individual is a competent user of word processing packages. However, they have problems with their sight; they do not have good peripheral vision and find it difficult to cope in low light conditions.

What would you consider when carrying out a DSE assessment of this individual?

Exercises and worked examples designed to show how the principles discussed can be applied in real workplace scenarios. Some applications will include a suggested answer.

ADDITIONAL INFORMATION

The Risk Assessment for Pushing and Pulling (RAPP tool) has been developed to help those with responsibility for health and safety in the workplace (such as employers, managers and safety representatives) to assess pushing and pulling tasks. Pushing and pulling are commonly involved in manual handling activities.

Useful resources and information that is beyond the scope of the syllabus, but which allows learners to explore a topic in more detail.

KEY POINTS

- Radiation is divided into two types: ionising and non-ionising radiation.
- Ionising radiation has sufficient energy to ionise atoms in matter with which it interacts.
- Radiation comes in two physical forms: electromagnetic waves and particles.
- The electromagnetic spectrum includes gamma rays, X-rays, ultraviolet rays, visible light, infrared light, microwaves and radio waves. Each type of wave has a frequency and wavelength which determines the amount of energy it can carry. High frequencies can carry a large amount of energy, low frequencies can only carry a low amount of energy. The energy levels of the radiation determine how far into the body it can penetrate and how much harm can be done.

These are included at the end of each chapter and highlight the key takeaways from the chapter, based on the syllabus.

4.11 Legal implication of drugs/ alcohol testing

Employers cannot legally compel an employee to undergo a drug test unless there is a clause in their contract specifying this. If the contract does not have a clause of this nature and an employer forces a worker to undergo a test, this could constitute a criminal offence and could also result in claims for damages against the employer.

4.11.1 Human Rights Act 1998

Schedule 1, Article 8 of the Human Rights Act 1998 provides all individuals with the right to respect for private and family life. Therefore, inadequately scheduled or unreasonable requests by the employer to require an employee to complete drug testing could be a violation of these human rights.

4.11.2 General Data Protection Regulation (EU) 2016/679

The General Data Protection Regulation (EU) 2016/679 requires a worker's personal information to be managed properly. Information arising from drug and alcohol testing is likely to be special category personal data, which needs more protection. Following the United Kingdom's withdrawal from the EU, this Regulation has been retained in domestic law as UK GDPR.

ADDITIONAL INFORMATION

The UK GDPR defines special category data as:

- personal data revealing racial or ethnic origin;
- personal data revealing political opinions;
- personal data revealing religious or philosophical beliefs;
- personal data revealing trade union membership;
- genetic data;
- biometric data (where used for identification purposes);
- data concerning health;
- data concerning a person's sex life; and
- data concerning a person's sexual orientation.

To lawfully process special category data, employers must identify both:

1. a lawful basis for processing the data (Article 6). In the case of alcohol and drugs, this is usually for the health and safety of fellow workers or members of the public or in light of the fact that using the substance breaches the employee's contract of employment; and
2. a reason for processing the data (Article 9). This comes from having the employee's explicit consent or because there is substantial public interest to justify processing the data (such as preventing or detecting illegal acts or protecting other employees or the public).

The employer must ensure their drug and alcohol testing policy clearly identifies how they will comply with the principles of data protection, such as retaining and erasing of special category personal data.

Employees can object to the use of their personal data, so the employer must be able to show why its legitimate interests override the employee's right to privacy.

4.12 The benefits of pre-employment health screening for alcohol/drugs

Pre-employment health screening for alcohol or drug use benefits employers as it enables them to make an informed decision before employing somebody. They can assess if the candidate is suitable for a specific role where alcohol or drug misuse could have a detrimental effect.

This reduces the likelihood of recruiting a person who misuses alcohol or drugs and the potential future issues and financial impact they may cause through absenteeism, accidents or legal action and claims.

Pre-employment health screening sends a clear message to other employees that the organisation has a strong position on alcohol and drug misuse. In high-risk occupations, this provides reassurance for all employees that workplace safety is important and that fellow employees' performance will not be impaired and lead them to take risks or to put themselves or others at risk. This can help attract employees who will want to work for the organisation, knowing it has a good reputation as a safe work environment.

4.13 When testing for alcohol/drugs should be carried out

Testing should be targeted towards roles where substance misuse can have a clear detrimental impact on the health and safety of other workers or members of the public.

In safety-critical roles, the use of substances can have a serious outcome and cause injury or damage. These include roles where employees are:

- using machinery;
- using electrical equipment;
- working at height;
- working in confined spaces;
- driving or operating heavy lifting equipment; or
- using hazardous substances, such as chemicals or radioactive sources.

Some industries have strict policies on alcohol and drug testing, such as the aerospace and railway industries. For example, Network Rail has zero-tolerance to individuals attending work under the influence of drugs or alcohol.[33]

Testing should follow the organisation's policy, but can include:

- pre-employment health screening to advise on suitability for employment in certain roles;
- random testing of employees or employees in safety-critical roles;
- testing when there are reasons to suspect an employee or contractor is unfit for their role due to drugs or alcohol; and
- following an accident or serious incident.

4.14 The disadvantages of alcohol/drugs testing

While testing for drugs and alcohol can help to manage workplace safety, it also has various disadvantages. These include:

- **Expense:** it is an additional burden on finances that has to be accounted for and, in a large workforce, this can be significant.
- **Consent:** employees' consent is needed for testing for practical and legal reasons and organisations must ensure this is managed correctly or face potential legal action. The policy must be clear on what action may be taken should the person refuse to be tested.
- **Effectiveness:** testing by itself will not prevent misuse and, where testing is used, this should be part of an organisation's overall health and safety policy. This means that employees who disclose they have a problem with drug or alcohol misuse can be supported to improve their health and wellbeing, rather than being disciplined.
- **Accuracy:** testing must be carried out correctly so that samples are not contaminated or tampered with and so the testing and analysis processes are accurate.

KEY POINTS

- General health assessment is a medical assessment of the general state of health or fitness of an individual.
- Health surveillance is an assessment of an employee's health, focusing on a specific area, related to a specified hazard, and is only required where there is a clear statutory duty under health and safety legislation, such as the Control of Substances Hazardous to Health Regulations 2002.
- Health surveillance can also be used for people working in safety-critical roles, including working at height or driving, to make sure they are medically fit to carry out the role safely.
- Medical surveillance differs from health surveillance as it is a specific type of health surveillance, carried out by a 'relevant doctor'. It may include clinical examination and is specified in legislation, such as the Control of Asbestos at Work Regulations 2012.
- Health surveillance and medical records must be kept securely as they include confidential personal information and need to be stored securely for the periods specified in legislation.
- Medical records should only be retained by a doctor, not the employer.
- Biological monitoring can be used to measure the uptake of hazardous chemicals by measuring their levels or their metabolites in the body and is advantageous where uptake can be by skin or ingestion, rather than just inhalation.
- Employees working nights must be offered a health assessment, as night-time working can have a detrimental impact on health.
- Fatigue is a decline in mental and/or physical performance caused by excessive continuous exertion, sleep loss and/or disruption of the internal body clock.
- Health surveillance is appropriate to help manage employees' mental health at work, including those with known conditions which could be exacerbated through work demands.
- Offering health surveillance where there is no legal requirement is one way of satisfying the employer's general duty of care to employees under s2 of the Health and Safety at Work etc Act 1974. Examples of when this might be appropriate include working at height and driving occupations.

2.6 The meaning of work-related stress and its relationship to mental health conditions

DEFINITION

Work-related stress

"The adverse reaction people have to excessive pressures or other types of demand placed on them".[23]

Pressure is not the same as stress; people do need some degree of pressure to help motivate them and facilitate good performance. Stress can occur when everything becomes too much, and someone feels unable to cope. Often stress can have more than one cause and can arise because of things happening in both a person's personal and working life. For example, a person with a busy and demanding job may ordinarily thrive on this challenge, but if new demands in their personal life are added to that, such as suddenly needing to care for an elderly relative, the combination of these things could lead to them suffering from stress.

Work-related stress can arise for a number of reasons specifically to do with a person's job and the way it is organised, the culture of the working environment and how well they are supported by managers and colleagues. Acas suggest that stress in the workplace is often as a result of poor employment relations. Other factors that can contribute to work-related stress include poor working conditions, bullying, organisational change and not having the right skills or training.[24]

Stress in a worker's personal life can often be triggered by life events such as bereavement, divorce, menopause or ill-health.

Managing stress in the workplace can be complex because the causes vary from one worker to another. Individuals have varying levels of tolerance to stress and stress may result from a combination of different factors in different workers.

The term mental ill-health is sometimes incorrectly used interchangeably with the term stress. Drawing a clear separation between these terms can sometimes be difficult particularly in a workplace setting. According to the Health and Safety Executive: "Work-related stress and mental health problems often go together and the symptoms can be very similar".[25] Employers should understand that stress at work can aggravate or trigger existing mental health conditions an individual worker may have.

Work-related stress can have an extremely negative impact on health and it can put people at risk of developing mental health conditions such as anxiety and depression.

According to HSE, the signs of stress in a worker can include:[26]

- mood swings;
- increased absence from work or arriving at work later;
- feeling nervous or 'twitchy';
- being withdrawn;
- lack of motivation, commitment or confidence;
- increased emotional reactions.

Workplace stress has an adverse effect on worker's mental wellbeing. It increases the risk of anxiety, depression, burnout and substance abuse. Workers who are stressed at work are more likely to make unhealthy choices, including smoking, drinking alcohol or drug abuse. They may also make poor dietary choices.

However, it is also important to recognise that stress and mental health problems can be independent of each other.

ADDITIONAL INFORMATION

There is no specific legislation that places particular duties on an employer to manage work-related stress, but employers do have a legal duty to carry out a risk assessment and implement identified control measures.

Employers have a general 'duty of care' towards employees and, over time, case law has helped to define the extent of this duty of care in relation to stress and the mental health of employees.

The following cases are relevant examples:

- *Walker v Northumberland County Council.*[27]
- *Barbour v Somerset County Council.*[28]
- *Hartman v South Essex Mental Health Community Care Trust.*[29]
- *Herry v Dudley Metropolitan Borough Council.*[30]

2.7 The causes of work-related mental ill-health relating to organisation, job and individual

The organisation has the potential to affect the mental health of workers, and this can be because of the patterns of work, the culture of the organisation and the physical working environment.

2.7.1 Organisation of work: working hours, long hours, shift work, unpredictable hours, changes in working hours

Different organisations will have different patterns of work, often determined by the industry sector, the needs of the clients and the norms that have been established over time. For example, in the construction sector working hours can be determined to some degree by availability of daylight and may vary from summer to winter. Many hospitality workers will probably be employed in the late afternoon and evening. Street cleaning workers may need to work in the very early hours of the morning. These working hours are part of the job. Some workers will adapt to these working patterns, especially if they stay in similar jobs for many years. However, for some these working hours can be detrimental as they affect their sleep patterns or can cause difficulties in maintaining a work-life balance. Some working hours can be detrimental to family life, for example if a parent is never able to be there at a child's bedtime or to do the 'school run'. Workers who are parents can grow to resent this and feel they are missing out. Over time this may adversely affect their mental health, especially if they are aware that their children are missing their presence.

It is evident that long working hours can adversely affect a worker's mental health. In some organisations long hours are the norm and workers feel the need to be present in the workplace for long periods of time, even if that time is not particularly productive or if they are unwell. This is often called presenteeism.[31] For example, in some professions long hours can be

seen as the normal and workers, particularly those just starting out in their career, may feel the need to keep these working hours as they see their peers and immediate managers doing so.

In other organisations, the amount of work that has to be done necessitates long working hours. Those managing their own business are often driven and ambitious to succeed and so work long hours because they want to. Over time, this can have an adverse effect on their physical and mental health. In small companies there is often no one else to do the work and no one monitoring and mentoring those in charge and encouraging them to take a break.

Shift work (typically work that takes place outside the standard daytime hours of 7am to 7pm) can have a negative impact on family life. Maintaining relationships with friends and family can be challenging if shift workers' waking hours are different to those of the family and friends. Outside of work, leisure activities are not always available for shift workers, or they may be simply too tired to maintain an interest in hobbies. In a survey of 5,000 shift workers in the UK, 68% of them said their physical and mental health was affected by their shift pattern.[32]

Shift working, and especially night shift working, can disrupt worker's sleep schedules. Sleep disruption can lead to the social isolation and some people experience frequent mood changes and become easily irritated. Night shift working turns the sleep cycle upside down, disrupting the circadian rhythm. This can affect mental health and may lead to the development of mental health disorders. In addition, the risk of errors, accidents and injuries can be higher on night shifts.

Workers that have unpredictable working hours struggle with planning their home life and financial planning can be very difficult. This uncertainty and constantly feeling the need to respond to the requirements of the job can affect their mental health. In the survey referred to earlier:

- 74% said they worked the shift hours required by the job, not because it fit their lifestyle.
- 50% said they had no input into their shifts.
- 56% thought their shifts were poorly planned and did not take their needs into account.

The potential mental health impact of zero-hours contracts was discussed in detail earlier. If a worker has too few working hours available to them, this can affect their mental health because of financial concerns and perhaps because of boredom or a lack of self-worth.

Those working full time will typically spend 50% of their waking hours at work, so often, many life decisions that people make are built around considerations such as their working hours, shift patterns, working location and childcare availability. If the organisation decides to make changes to working hours, this can have a significant impact on workers and their ability to manage their work-life balance. If there is no scope for flexibility, this can create many problems for individual workers perhaps even to the point of them having to give up their current employment. Changes on this scale could adversely affect the mental health of a worker.

2.7.2 Workplace culture: communication, organisational structure, resources, support

Workplace culture can significantly impact the mental health of its workers, especially if the culture is poor or negative. The behaviours and style of the directors and senior management can define an organisation's culture. It can also be influenced by the cultural norms within the sector where the organisation operates.

An organisation with a poor culture may not recognise, discuss openly or respond to the mental health issues affecting their workers. An organisation must be alert to how its culture and working arrangements could result in stress that could create or worsen mental ill-health conditions.

When communication in an organisation is poor, the culture is often poor. Workers that are not kept informed about changes and developments that affect them may worry about their job security and/or not feel part of a team. In the absence of good communication,

CHAPTER 15: RADIATION

15.1 Introduction

Every day in the UK, types of radiation are used in a diverse range of industrial, medical, research and communications applications. Although these applications bring real benefits to people, some can create harmful exposure risks that must be effectively controlled.

Radiation is energy which is emitted by a source and travels through free space or materials as waves or particles. It can be divided into two main types: ionising and non-ionising radiation. Ionising radiation carries enough energy to be able to break the chemical bonds in a material. Non-ionising radiation emits less energy but is still able to cause damage by breaking down molecules.

TIP

The main regulations relevant to radiation are:

- Control of Artificial Optical Radiation at Work Regulations 2010.
- Control of Artificial Optical Radiation at Work Regulations (Northern Ireland) 2010.
- Control of Electromagnetic Fields at Work Regulations 2016.
- Control of Electromagnetic Fields at Work Regulations (Northern Ireland) 2016.
- Ionising Radiations Regulations 2017.
- Ionising Radiations Regulations (Northern Ireland) 2017.

The legislation is supported by the following HSE guidance documents:

- *Work with ionising radiation. Ionising Radiations Regulations 2017. Approved Code of Practice and guidance* (L121).[1]
- *Electromagnetic fields at work. A guide to the Control of Electromagnetic Fields at Work Regulations 2016* (HSG281).[2]

HSENI have approved L121 for use in Northern Ireland. HSG281 is also listed as a useful reference by HSENI.

15.2 The distinction between ionising and non-ionising radiation

Radiation can be divided into two main types, based on the effect it has on matter through which the radiation travels or strikes:

- ionising radiation (such as gamma rays, neutrons and alpha particles); and
- non-ionising radiation (such as visible light, radiofrequency and infrared).

Ionising radiation carries more energy than non-ionising radiation and has sufficient energy to cause **ionisation** in materials (that is, knocking electrons from atoms or molecules). This has implications for human health because ionising radiation can directly damage DNA as it interacts with body tissues, whereas non-ionising radiation does not.

To understand ionisation, the structure of atoms must be explored.

All matter is made up of atoms. Each atom is made up of a dense core (called a nucleus). The nucleus contains one or more particles (called protons) which carry a positive electrical charge. The nucleus may also contain one or more neutrons (a particle which is electrically neutral). Orbiting in 'shells' around the nucleus are one or more negatively charged particles (called electrons). Atoms are overall electrically neutral, so the number of protons is balanced by the number of electrons.

The simplest atom is that of hydrogen (see Figure 1). Its atom is made up of a single proton orbited by a single electron in a shell around the nucleus. It has no neutrons.

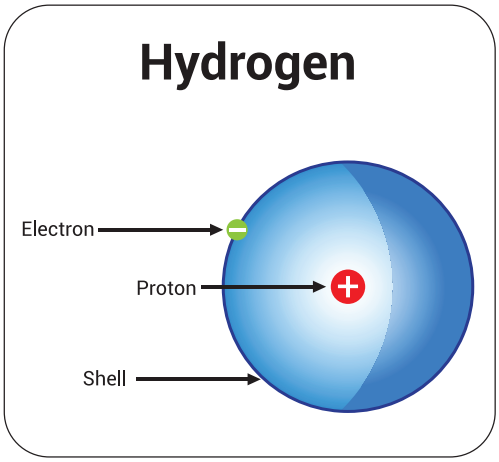

Figure 1: A hydrogen atom with one proton and one electron

Credit: zizou7/Shutterstock.com

The quantity of protons in the nucleus is called the 'atomic number' and is unique to each chemical element (a chemical element is the simplest form of a substance). For example, hydrogen has one proton, whereas oxygen has eight. Although atoms of the same element have the same number of protons, they can have different numbers of neutrons in their nucleus. These differing forms are called **isotopes**.

If the atom loses an electron, the balance is no longer neutral and it becomes positively charged. A positively charged atom is known as an **ion**. The process of losing the electron to form an ion is called **ionisation**. Hence, radiation that can cause ionisation like this is called **ionising radiation**. Molecules (groups of atoms that are chemically bonded) can also form ions in this way. If this happens in human bodies, it can cause serious damage to cells which can cause illness or death.

15.3 Electromagnetic versus particulate radiation

As well as being distinguished by its effect on matter (ionising versus non-ionising), radiation can also be described in terms of the way in which it travels. Radiation can travel either as electromagnetic waves or particles (or at least can be described in these terms).

15.3.1 The electromagnetic spectrum

Electromagnetic (EM) radiation is the energy that is transmitted through free space or through a medium (such as air) in the form of EM waves.

15.3.1.1 Electromagnetic wave properties

Unlike many other types of wave (such as sound waves), EM waves do not need a medium; they can even travel through a vacuum. EM radiation travels in straight lines, making its path a known characteristic. EM waves have wavelength, frequency and energy. The EM spectrum is the range of all possible frequencies or wavelengths of EM radiation, regions of which have been given special names, such as radio waves and gamma rays (see Figure 2).