
UNIT 4 CORPORATE AND OFFICE HAZARDS

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4.0 INTRODUCTION

Offices of today are swanky places. They are air-conditioned, clean, well-ventilated and look soothing to eyes. It is very hard to imagine any health hazards in a well-constructed office campus. Engineering marvels have created

some of the best offices. It is true that immediate fatality is rare in office workers while working in his or her chair. But the nature of work in the office has many long-term health hazards. These may be physical, mental or both. Most of us spend a better part of our day in offices working for our employers. The working hours are steadily increasing. Thus, it is prudent to imagine that the work culture and infrastructure at working place will have definite effect in our health status. Many of the companies mostly multi-national companies have recognised the hazards associated with working long hours in offices. They have designed the office space and working in such a way that the employees get sufficient rest as well as able to do some exercises while in office. Offices of small companies do not have these safety nets. It is now said that 'sitting is new tobacco'. Many studies have shown that prolonged sitting increases the chances of many disease. Office workers constantly work with computers which has become a necessary evil. We will learn about the various health hazards of office workers while working in the office in this unit.

There are a number of ways to prevent these health hazards. Although we cannot afford not to work for the fear of avoiding office health hazards, we can prevent most of them by following some rules. We will learn about these do's and don'ts of employees while working in office.

4.1 OBJECTIVES

After studying this unit, you should be able to:

- classify the health hazards faced by someone working in offices;
- describe the concept of ergonomics;
- explain the importance of work-home balance;
- appreciate the changing infrastructure in today's offices; and
- discuss the prevention of health hazards in office setting.

4.2 COMPUTERS – A NECESSARY EVIL

In today's time anyone sitting in a desk will have a computer in front of him. Although computers make a lot of jobs easier, they also contribute towards a hazardous environment. This can be avoided by adopting simple measures

Many office workers are familiar with computers and using them properly is important for keeping healthy. The positioning of a computer and its related hardware can drastically influence posture. The computer monitor should be positioned directly in front of the user, about an arm's length away, with the top of the screen just below eye level.

4.2.1 Hazards of Working Long Hours in Front of Computers

Prolonged use of a computer can wear down other parts of the body that are directly using it, namely the eyes and the wrists. Here are few physical hazards associated with working long hours in front of computers.

Eye strain: Staring at a computer screen for long can lead to blurry and overly sensitive eyes, too-watery or too-dry eyes, headaches or a sore neck. In extreme

cases it can cause dizziness, fatigue or vomiting and is often attributed to learning and attention problems. If the font size of text being read on a computer is too small the worker may be inclined to hunch forward to read text more closely, thus increasing the eye strain and adopting a poor posture. The user should also rest his eyes frequently by looking away from the computer screen. Changing the text on the screen to white, while changing the background to black is a method to reduce eye strain. To avoid eye strain, both the computer monitor, and the office lighting need to be addressed. The screen should be adjusted so that its brightness and contrast levels suit the lighting conditions in the room, which should not be too bright. Modern desktop computers are smart enough to detect the ambient light and can itself adjust the screen resolution so that eye strain is minimized. Screen glare is a major cause of eyestrain and can be reduced by ensuring that monitors are not positioned opposite windows where possible. If situated close to a window, shades and blinds should be used to reduce the amount of light that falls on the monitor.

Hand Pain: Typing is a repetitive action that puts the hands and wrists under pressure. If performed forcefully enough and for long enough periods of time, it can lead to disabling pain. In office workers, it can lead to repetitive strain injuries, whereby the tissue surrounding the joints becomes inflamed or stress fractures develop. These fractures are known as hairline fractures and can be diagnosed only by x-ray. Wrist injuries through typing can be prevented or at least reduced by maintaining a good typing posture. wrists should be kept in a relaxed, natural position. Foam or gel wrist supports can provide extra protection. Mouse pads with gel are available. They should be used as much as possible.

Harmful Radiations: Exposure to Extremely Low Frequency (ELF) Electric and Magnetic Fields (EMF) from computer and cell phone has the potential to be hazardous. It is believed by some that high-level EMF exposure can cause leukemia, cancers, reproductive and development problems, as well as depression. It is possible to minimize the contact with EMFs by keeping distance from objects that put off emissions, including keeping the cell phone, tablet and other electronic devices in a faraway desk drawer. The computer hard drive should also be placed far away from the body as possible.

4.2.2 Prevention of Computer Hazards

Working without break in front of computer is harmful. The worker should take regular breaks and short walks. The US Occupational Safety and Health Administration (OSHA) recommend that workers take a 10-minute break for every hour spent on a computer, allowing the body to recover and reducing the risk of strain. These breaks can include working on other tasks that do not involve using a computer. They also represent an opportunity for employees to get out of the sitting position.

Task variation ensures that a variety of working postures are assumed. Regular breaks will assist to relieve muscle fatigue, eyestrain and to restore the level of concentration. A number of computer applications are available for installation which provide users with tailored reminders to take rest breaks.

Check Your Progress 1

- Note:** a) Use the space below for your answer.
b) Compare your answers with those given at the end of the unit.

Fill in the banks with the most appropriate word.

1. The US Occupational Safety and Health Administration (OSHA) recommend that workers take a ____ minute break for every hour spent on a computer.
2. The computer user should rest his eyes frequently by looking _____ from the computer screen.
3. The top of the computer screen should be just _____ the eye level.
4. Constant typing on computers can cause _____ fracture of the hand.

4.3 PHYSICAL HAZARDS

Space is at premium in cities. Commercial office space is too costly to be afforded by small companies. Offices need renovation and periodic maintenance work. To save money many office campuses do not adhere to safety standards. Lax implementation of regulations allows these small offices to function for many years till some accident happens. There are many accidents possible in ill-maintained offices.

4.3.1 Causes of Physical Hazards

Main physical hazards include:

- **Fires:** Getting fire safety certificate is the most difficult job for an office. A well-constructed office following all norms for fire safety has less chance of catching fire on any day. But we keep on reading the fire in modern offices. The main reasons for fire in an office are electrical short circuit and strategically placed cigarette stub. If the exit signs are not properly displayed or the emergency exit is unnecessarily crowded with things results may be disastrous.
- **Electrical hazards:** Ill maintained electrical wires and switch boards may cause electrocution and fire in the office. Concealed wiring should be inspected often and repaired at the first instant.
- **Slips and falls:** Slip and fall hazards can occur at any office. Common causes of employees tripping in offices are: wet floors, including floors contaminated with water, grease or food; cords and tubing, lying unattended, bad lighting, floor mats that are improperly used or maintained. The worker should wear proper shoes where risk of slipping is minimal.

4.3.2 Air Quality

Many buildings have severe indoor air pollution problems, and this is an occupational safety and health issue that office workers complain about. Poor ventilation design and hazardous gases released by building materials such as radon as well as the chemical substances emitted by office equipment can

accumulate over a long period to create indoor air pollution. In addition, microorganisms such as mould fungus and bacteria can breed in air-conditioning systems and refrigeration towers that have not been properly maintained. The growth of mould fungus and bacteria suspended in the air can increase the risk of respiratory tract infection and cause allergy. It can further lead to “sick building syndrome”.

Tobacco smoke is one of the air pollutants found in office. The smoke and particulates given off by the burning end of a cigarette are irritating and carcinogenic. Therefore, the concentration of respirable suspended particulates in a smoking office is 5 times greater than that in a smoke-free office. Smoking not only endangers the health of smokers but also affects the health of their non-smoking colleagues. Apart from eyes, nose and throat irritation, second-hand smoke notably increases non-smokers' chances of suffering from coughs, asthma, excessive phlegm, decreased lung function and lung cancer.

4.3.3 Noise Stress

Phones ringing, loud printers, annoying coworkers and other office noises can, in fact, be a health risk. Researcher while conducting a study in offices concluded that office noise in open-style offices can lead to ‘higher levels of stress and lower task motivation’. Scientists believe that while some low-level noise can lead to workers becoming more focused on their tasks, the long-term effects of noise stress affect decision making, as well as concentration, keeping workers from realizing that they need to take a break or change their posture, which as we already know can lead to detrimental health. Quiet, enclosed rooms can alleviate the effects of low-level office noise. In lieu of private offices, noise-reducing headphones can help. If the worker is unable to wear headphones in the office, a brief walk to the park or another quiet area throughout the day can help to reduce the stress level. The worker should be considerate to their colleagues, and refrain from listening to music without earphone.

4.3.4 Prevention of Physical Hazards

Office workers can save themselves from physical hazards during their working hours if following things are kept in mind:

- Wearing the right shoes
- Properly cleaning and maintaining the floors
- Reporting leaks and spills
- Storing flammables in approved, closed containers
- Maintaining electrical equipment according to manufacturer and company standards
- Regularly inspecting tools, cords, grounds and accessories
- Locking and tagging out power sources and switches when servicing or repairing mechanical equipment
- Sufficient access and working space should be provided and maintained

around all electric equipment to permit ready and safe operation and maintenance of such equipment

- Ensuring that all electrical service near sources of water is properly grounded
- Ensuring that employees are trained not to plug or unplug electric equipment when their hands are wet
- Keep hazardous agents labeled properly
- Dispose hazardous agents in proper containers

4.4 CHEMICAL HAZARDS

Correction fluid, toners for photocopiers and faxes and liquid detergents are chemicals commonly used in office environment. These chemicals contain hazardous substances that can cause skin allergies or dermatitis.

Check Your Progress 2

Note: a) Use the space below for your answer.

b) Compare your answers with those given at the end of the unit.

1. What are the main physical hazards present in a typical office?

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.....
.....

2. What are the harmful effects of air conditioning on our body?

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.....
.....

4.5 ERGONOMIC HAZARDS

The prevalent use of computers in offices has created many new health problems. Prolonged viewing of a monitor may cause visual discomfort. There is also increased risk of developing muscle discomfort in upper limbs when performing prolonged keyboard operation in extended forearm position. Discomfort can also arise from the contact stress against the edges of the work surface. Workstation and chair with poor ergonomic design or prolonged seating without a stretch may develop low back pain and muscle pain in lower limbs. Severe consequence may result in carpal tunnel syndrome, tendonitis and tenosynovitis.

4.5.1 Office Ergonomics

A comfortable work space can help the worker feel their best. Proper office ergonomics including correct chair height, adequate equipment spacing, and good desk posture can help the body and joints stay comfortable at work. The

worker should pay attention to the sitting work area and follow the following rules:

Chair: Choose a chair that supports your spinal curves. Adjust the height of your chair so that your feet rest flat on the floor or on a footrest and your thighs are parallel to the floor. Adjust armrests so your arms gently rest on them with your shoulders relaxed.

Key Objects: Keep key objects like telephone, stapler or printed materials close to your body to minimize reaching. Stand up to reach anything that can't be comfortably reached while sitting.

Keyboard and Mouse: Place your mouse within easy reach and on the same surface as your keyboard. While typing or using your mouse, keep your wrists straight, your upper arms close to your body, and your hands at or slightly below the level of your elbows. Use keyboard shortcuts to reduce extended mouse use. If possible, adjust the sensitivity of the mouse so you can use a light touch to operate it. Alternate the hand you use to operate the mouse by moving the mouse to the other side of your keyboard.

Telephone: If you frequently talk on the phone and type or write at the same time, place your phone on speaker or use a headset rather than keeping the phone between your head and neck.

Footrest: If your chair is too high for you to rest your feet flat on the floor or the height of your desk requires you to raise the height of your chair, use a footrest. If a footrest is not available, try using a small stool instead.

Desk: Under the desk, make sure there's clearance for your knees, thighs and feet. If the desk is too low and can't be adjusted, place sturdy boards or blocks under the desk legs. If the desk is too high and can't be adjusted, raise your chair. Use a footrest to support your feet as needed. If your desk has a hard edge, pad the edge or use a wrist rest. Don't store items under your desk.

Monitor: Place the monitor directly in front of you, about an arm's length away. The top of the screen should be at or slightly below eye level. The monitor should be directly behind your keyboard.

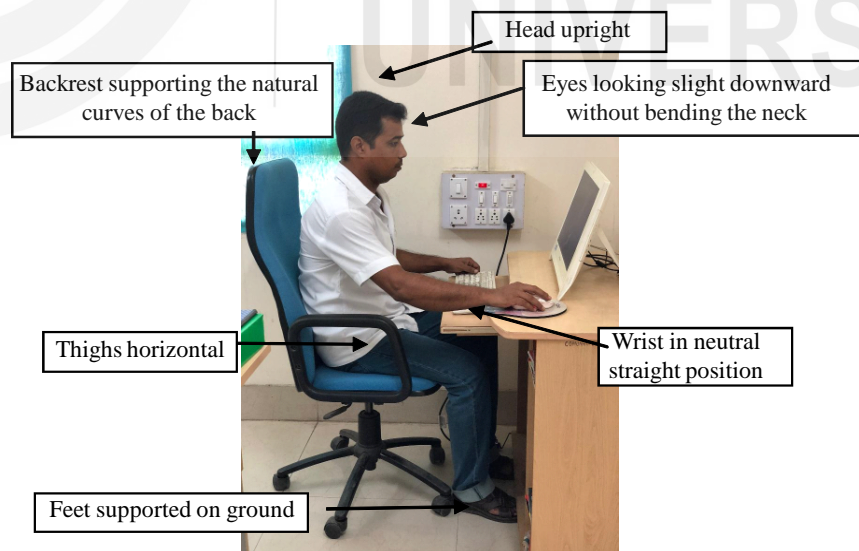


Fig. 4.1 : Proper position of computer and posture in front of it

4.5.2 Sick Building Syndrome

Sick building syndrome (SBS) is the acute health condition of the occupants of the building due to the architecture and installations in the building. The symptoms may be non-specific and thus difficult to diagnose. This may lead to sickness absenteeism and loss of efficiency of the workers. It arises mainly due to the building of the office. The cause of SBS present in the office are chemicals present, biological contaminant, inadequate ventilation and electromagnetic radiation released by electronic gadgets. Noise, poor light, absence of sunlight, humidity and poor ergonomics present in the building may also contribute to the SBS.

The sick building syndrome can be prevented and controlled if the guidelines are followed during the construction of the building itself. There should be adequate ventilation and good air flow in the office premises. The place where there may be strong pollutants like washrooms the air should be vented out immediately. Terrace garden, frosted glass and indoor plants make the inside of the office more pleasant. The smoking should be restricted only to specified zone inside the building. Natural, unadulterated and non-toxic materials should be used in the construction of the building.

4.5.3 Exercise in Office

Stretching and exercising helps prevent injuries by increasing blood flow and allowing individuals to change posture. The worker can do pause exercises while taking a break. To prevent back pain, the worker should combine aerobic exercise, such as swimming or walking, with exercises that strengthen and stretch his back muscles and abdomen. Exercises that increase the balance and strength can also decrease the risk of falling and injuring the back. Yoga and weight-bearing exercises challenge the balance.

For most healthy adults, the World Health Organization (WHO) recommends at least 150 minutes a week of moderate aerobic activity or 75 minutes a week of vigorous aerobic activity, preferably spread throughout the week and strength training exercises at least twice a week. It is important to remember that if anyone has a medical condition or an existing injury, he should discuss the exercises with his treatment provider and follow any specific advice or guidelines given by them.

4.6 PSYCHOLOGICAL HAZARDS

People who work under stress may develop some unhealthy reactions such as headaches, stomach and intestinal disorders, sleeping disorders, anxiety and depression. It can even lead to high blood pressure and other cardiovascular diseases etc.

4.6.1 Healthy Job

The pressure on employees is inevitable in any office of today. According to the World Health Organization, a healthy job is one where the pressures on employees are appropriate in relation to their abilities and resources, to the amount of control they have over their work, and to the support they receive from people who matter to them. This means that a healthy job does not only provide a conducive atmosphere to work stress free but also have ample

opportunities to promote good health among the workers. These may include continuous assessment of risks to health, the provision of appropriate information and training on health issues and the availability of health promoting organizational support practices and structures. A healthy work environment is one in which staff have made health and health promotion a priority and part of their working lives.

4.6.2 Work-Related Stress

Work-related stress is the response people may have when presented with work demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope. Stress occurs in a wide range of work circumstances but is often made worse when employees feel they have little support from supervisors and colleagues, as well as little control over work processes.

Pressure at the workplace is unavoidable due to the demands of the contemporary work environment. Pressure perceived as acceptable by an individual, may even keep workers alert, motivated, able to work and learn, depending on the available resources and personal characteristics. However, when that pressure becomes excessive or otherwise unmanageable it leads to stress. Stress can damage an employees' health.

Work-related stress can be caused by poor work organization, by poor work design, poor management, unsatisfactory working conditions, and lack of support from colleagues and supervisors.

4.6.3 Stress-Related Hazards at Work

According to the WHO Stress related hazards at work can be divided into work content and work context.

1. Work contents includes job content (monotony, under-stimulation, meaningless tasks, lack of variety); work load and work pace (too much or too little to do, work under time pressure); working hours (strict or inflexible, long and unsocial, unpredictable, badly designed shift systems); participation and control (lack of participation in decision-making, lack of control over work processes, pace, hours, methods, and the work environment)
2. Work context includes career development, status and pay (job insecurity, lack of promotion opportunities, under- or over-promotion, work of 'low social value', piece rate payment schemes, unclear or unfair performance evaluation systems, being over- or under-skilled for a job), role in the organization (unclear role, conflicting roles), interpersonal relationships (inadequate, inconsiderate or unsupportive supervision, poor relationships with colleagues, bullying/harassment and violence, isolated or solitary work), organizational culture (poor communication, poor leadership, lack of behavioral rule, lack of clarity about organizational objectives, structures and strategies), work-life balance (conflicting demands of work and home, lack of support for domestic problems at work, lack of support for work problems at home, lack of organizational rules and policies to support work-life balance)

4.6.4 Taking Steps to Manage Stress

American Psychological Association (APA) has outlined some steps which may be taken by employees to get relief from stress at work place.

1. **Track your stressors:** Not everything in office causes stress. Recording for few days the circumstances, people or the work which causes stress may help in addressing each of them separately.
2. **Develop healthy responses:** Coffee, alcohol or cold drinks are not stress relievers. Though however tempting these may be when we are stressed, we should avoid these. Yoga or any form of physical exercise is best when we are stressed. It releases hormones which makes us happy and contented. Good sleep is also very important.
3. **Establish boundaries:** We cannot be available 24X7 for our work. The worker should check when to check mail or answer mobile phones. Try to avoid bringing the office work home.
4. **Take time to recharge:** The worker should utilize the vacation or holidays to its fullest extent. The work should not be in the mind when the worker is on vacation. Following a hobby or doing some charity work is great way to re-energize oneself.
5. **Learn how to relax:** Techniques such as meditation, deep breathing exercises and mindfulness can help keep away stress. Start by taking a few minutes each day to focus on a simple activity like breathing, walking or enjoying a meal. The skill of being able to focus purposefully on a single activity without distraction will get stronger with practice and you'll find that you can apply it to many different aspects of your life.
6. **Talk to your supervisor:** The employee should have an open conversation with the supervisor. Talking is just not complaining, it is finding out the best situations in which employees can work in most efficient way which is productive to both employer and employee.
7. **Get some support:** Accepting help from trusted friends and family members can improve your ability to manage stress. Professional help should be sought if required.

4.7 HEALTH HAZARDS OF OFFICE WORKERS

There are some conditions which develops more commonly in persons working in corporate houses or offices. Their main work station comprises of a chair and table with a personal computer on the table. Below you will find the most common medical conditions from which an office worker may suffer during his lifetime due to their work environment.

4.7.1 Carpal Tunnel Syndrome (CTS)

CTS is becoming a very common issue with today's modern office worker. Till the advent of computers in the offices, CTS was not taken seriously. Up to that point it was thought to be just another excuse used by lazy office workers to miss a day on the job. In today's world where every desk has a desktop computer, CTS has become an increasingly serious issue. Medically CTS occurs

due to a pressure on the median nerve – the nerve in the wrist that supplies feeling and movement to parts of the hand. It can lead to numbness, tingling, weakness, or muscle damage in the hand and fingers. Carpal Tunnel Syndrome is caused by performing a motion repeatedly. Although other factors can play a part in CTS, in the workplace it is the endless hours spent in front of computers and handling keypad and mouse that have led to the explosion of the condition in the last 20 years. There are many ways to treat a CTS. The first and foremost treatment is stretching and other exercises which may help release tension in the wrist. It can be managed by acupuncture, drugs or surgery.

4.7.2 Back Pain

While we may think that lower-back pain affects only elderly population due to age, it has become an increasing problem for office workers of all ages. There are a number of causes of back pain as an outcome of the occupational factors.

- a. This is due to the increase in sedentary positions; namely, sitting inappropriately for more than a few hours of the day. Adopting a bad posture, over time can be devastating to the body.
- b. Exerting too much force on the back, such as by lifting or moving heavy objects can cause injury to spine. Repeating certain movements, especially those that involve twisting or rotating the spine, can injure the back. B
- c. Having large items in the back pocket such as a wallet, or smart phone, while sitting, increases back pain as it puts pressure on the sciatic nerve.
- d. Aging, obesity and poor physical condition also can contribute to back pain.

The back pain may be dull and achy or sharp and stabbing. It makes the worker difficult to concentrate on his job. However simple measures can help prevent the occurrence of back pain. These are

- a. Anyone complaining of low back pain (LBP) should not do exercise without consulting a medical professional. Some exercises which may seem useful may be contraindicated in low back pain (LBP) patients. Some exercises, including abdominal strengthening activities relieves pressure on the lower back. The worker should stand often; the simple act of standing improves blood flow and engages the muscles from feet to trunk.
- b. Posture should be corrected while sitting and standing.
- c. The chair that the worker sit in is also very important; it should help support good posture and not reinforce bad ones.
- d. Worker should maintain ideal weight. He should all eat a healthy diet. The diet should have enough of calcium and vitamin D. These nutrients can help prevent osteoporosis, a condition that causes bones to become weak and brittle and is responsible for many of the bone fractures that lead to back pain.

Box: Preventing back pain at work

We can take following steps to avoid and prevent back pain and injuries at work:

Pay attention to posture: When standing, balance the weight evenly on the feet. Don't slouch. To promote good posture when sitting, choose a chair that supports your spinal curves. Adjust the height of your chair so that your feet rest flat on the floor or on a footrest and your thighs are parallel to the floor. Remove your wallet from your back pocket when sitting to prevent putting extra pressure on your buttocks or lower back.

Lift properly: When lifting and carrying a heavy object, lift with your legs and tighten your core muscles. Hold the object close to your body. Maintain the natural curve of your back. Don't twist when lifting. If an object is too heavy to lift safely, ask someone to help you.

Modify repetitive tasks: Use lifting devices, when available, to help you lift loads. Try to alternate physically demanding tasks with less demanding ones. If you work at a computer, make sure that your monitor, keyboard, mouse and chair are positioned properly. If you frequently talk on the phone and type or write at the same time, place your phone on speaker or use a headset. Avoid unnecessary bending, twisting and reaching. Limit the time you spend carrying heavy bags.

Listen to your body: If you must sit for a prolonged period, change your position often. Periodically walk around and gently stretch your muscles to relieve tension.

Look carefully at the weighing scale: Obesity is associated with back pain. The weight should corroborate the height. The body mass index (BMI) which is calculated by dividing height in meter square from the weight in kilogram should ideally be less than 23 for Indians.

4.7.3 Obesity

Although not a new issue, the problem is becoming worse as lack of physical activities, increased levels of stress, and the growing prevalence of junk food contribute to an increase in obesity in workplaces around the world. Obesity is now considered a disease and not merely a risk factor for other diseases. Obesity is the leading cause of diabetes in India. Metabolic syndrome is the disease condition in which obesity is associated with diabetes and dyslipidemia. The worker should watch what they eat at the office and do not have a big meal at lunch.

4.7.4 Colon Cancer

While experts still debate on whether an office jobs can have a definitive link to colon cancer, it is certain that sitting for hours on end is a leading factor in the increase in colon cancer across the globe. According to the American Journal of Epidemiology, scientists have found that people who work in the office for more than 10 years and spend most of the time in sedentary work at a desk, have up to a 44 per cent increase in a risk of colon cancer. Getting up and moving around during the day, as well as a healthy diet can help to reduce this risk. Consumption of green leafy vegetables is beneficial.

4.7.5 Heart Diseases

According to British scientists, those who work for 10-11 hours in the office have up to 67 per cent higher risks to develop heart disease. Main reasons of increased incidence of heart diseases in white collared office workers are working long hours, having less time for exercise and unhealthy eating. Working in an office can also expose workers to more stress, less sleep and engage in other behaviors which contribute to cardiovascular risk, particularly smoking. Getting up from the desk every 30 minutes can decrease the risk of having a heart attack. The worker should take time during lunch break to go for a stroll at a brisk pace and drink more water.

Check Your Progress 3

- Note:** a) Use the space below for your answer.
b) Compare your answers with those given at the end of the unit.

1. What is carpal tunnel syndrome? What are its risk factors?

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.....
.....

2. How can back pain be prevented?

.....
.....
.....

3. What is BMI? How is it calculated? What is the cut off for adults?

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.....
.....

4.7.6 Biological Hazards

While we may not expect modern offices to harbor microbes, 'the office' in terms of bacteria and other germs, is 400 times dirtier than the toilet. While generally the office environment is not a breeding ground for the deadly viruses, desks are rampant with germs, partly due to eating on the desk which can turn it into a bacteria hub. Microbes are attracted to the left-over foods on the desk. The office desks are seldom cleaned after taking a meal on it. Food remnants can get into hard-to-reach areas of the desk and can attract insects, rodents and microbes when the lights go out. According to studies, the phone is the dirtiest item sitting on the desk, keyboard is next, and the mouse and the computer follow. At the end of the day, the office is a bacterial battleground, and the workers are the most tempting target. To prevent infection, the worker after eating lunch on the desk should use antibacterial wipes to wipe down the work surface daily. If the worker brings his own lunch, the raw and cooked foods need to remain refrigerated; leaving them out for two hours or more is bad food safety.

4.7.7 Nutrition and Office

The workers stay most of the waking hours in office. It is natural that to remain healthy he should give special importance to whatever he consumes inside the office. Here are some tips to have healthy food while in office.

Eat Breakfast: This is a cornerstone of a healthy lifestyle. A wholesome breakfast can provide the worker with the energy he need to get through the first half of the day, and it will help prevent him from consuming junk food.

Cut Out Sugary Snacks And Chocolates: They are present everywhere in offices. No doubt they can be tasty, but they don't satisfy the true hunger and are digested quickly, leading to a cycle of sugar highs and lows. Instead of visiting the vending machine, the worker should bring nutritious snacks from home.

Bring Own Lunch: Canteen food often include large portions and high-calorie choices. The workers can eat healthier and spend much less money if they bring their own lunch.

Stay Away From Sodas And Sugary Drinks: They can help the worker stay awake while working and are tasty. But they really do not do anything for the body and are full of empty calories in the form of sugar. If the worker needs the caffeine, he should consider coffee or green tea.

Drink Lots Of Water: Water is extremely good for the body. It is filling and will keep the worker off cold drinks or coffee. Sleepiness is often caused by dehydration, water keep oneself well hydrated. The worker can have flavored water by adding lemon to it.

Burn Calories: The worker should stand and walk as much as possible in between the prolonged hours of siting. Stairs should be used instead of lift.

Get Enough Sleep: Waking up refreshed and strong in the morning will help prevent binging and caffeine cravings later in the day.

Check Your Progress 4

- Note:** a) Use the space below for your answer.
b) Compare your answers with those given at the end of the unit.

Choose the most appropriate answer

- How many times greater is the concentration of respirable suspended particulates in a smoking office than a smoke-free office?
 - 5 times
 - 50 times
 - 500 times
 - No obvious difference
- Which of these is considered as new tobacco?
 - Exercise
 - Sugar
 - Sitting
 - Alcohol

4.8 KEY WORDS

Carcinogenic	: Having the potential to cause cancer
Carpal Tunnel Syndrome	: A health condition which occurs due to repetitive movement of wrists and causes pain in the wrist and hand
Ergonomics	: Study of people's efficiency in their working environment
Mould	: Fungi that grow in the form of multicellular thread-like structures

4.9 LET US SUM UP

Working in office is safer than working in let's say factory, hospital or coal mine. Acute injury or accidents rarely occurs in a corporate office. The company tries to provide the best experience to its employees in the office. The working environment in the office is directly proportional to the profitability of the company. The employers know it and wants their company to be in the list of 'best companies to work with'. But offices have its share of drawbacks. The health hazards of working long hours in air-conditioned offices are chronic in nature. Sitting in front of computer for endless hours causes back and wrist pain. Constant pressure of meeting targets causes stress. Stress leads to physical problems like heart diseases or diabetes. The worker cannot isolate his work life from the personal life. The stress factor spills over to his personal life and results in broken family or constant conflict in family. Balancing between work and family is very important to have a healthy and prosperous life. There are many ways to prevent the health hazards associated with working in an office. To keep the body fit the worker should have ideal body weight, take short breaks and walk around and watch for the good posture always. Physical exercise like brisk walk, swimming or muscle strengthening goes a long way in keeping our body healthy. Though stress cannot be totally avoided its harmful effects can be minimized by doing yoga and meditation. The employers should also treat human resources as the most important asset in an organization and should give the best possible environment to its employees so that they can work happily and which ultimately reflects in the balance sheet of the company.

4.10 REFERENCES AND SUGGESTED FURTHER READINGS

1. Work organisation and stress. Systematic problem approaches for employers, managers and trade union representatives. World health organization 2003.
2. Alli, B. O. Fundamental principles of occupational health and safety / Benjamin O. Alli; International Labour Office – Geneva: ILO, 2008
3. Michie S. Causes and management of stress at work. Occupational and Environmental Medicine 2002;59:67-72.
4. Bambra C, Egan M, Thomas S, et al. The psychosocial and health effects of workplace reorganisation. 2. A systematic review of task restructuring

Useful websites

1. <http://safety.unsw.edu.au/office-safety-toolkit>
2. <https://www.mayoclinic.org/healthy-lifestyle/adult-health/in-depth/office-exercise/art-20047394?pg=1>
3. http://www.who.int/occupational_health/topics/stressatwp/en/
4. <http://www.apa.org/helpcenter/work-stress.aspx>

4.11 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

Your answers should include the following points:

1. 10
2. away
3. below
4. Hairline

Check Your Progress 2

1. A physical hazard is defined as “a factor within the environment that can harm the body without necessarily touching it. Vibration and noise are examples of physical hazards”. Physical hazards present in the modern offices include electrical equipment, radiation, pressure, noise, heights and vibration. Slips and falls due to wet floors or improper construction also cause injury to workers.
2. Professionally installed air conditioning systems have many benefits in the workplace. It increases efficiency of the workers. It reduces humidity, provides fresh air and gives comfortable environment to the persons present in the air-conditioned room. Many office workers typically spend nine hours in AC cabins in their office and often sleep in the air-conditioned bedroom in the night. This prolonged exposure to AC is harmful to our body. Our lungs are the first hit, which is why respiratory infections like common cold, itchy throat, headaches are frequent complaints of those who spend most of the times in AC rooms.

Check Your Progress 3

1. Carpal tunnel syndrome is a condition that causes pain, numbness, and tingling in the hand and arm. It occurs when one of the major nerves of the hand, median nerve is squeezed or compressed as it passes through the wrist. Most cases of carpal tunnel syndrome are caused by a combination of factors. Major risk factors for carpal tunnel syndrome are: heredity, repetitive hand use, position of hand and wrist, pregnancy and some health conditions like diabetes, rheumatoid arthritis, and thyroid gland imbalance.

Occupational Hazards

2. Sitting for long periods in front of a computer is the main cause of back pain in office workers. No matter how good the sitting positioning is, it's important to get up every so often. Doctors recommend breaking up sedentary time every 30 minutes for at least one to two minutes. Workstation factors that can affect the back include: seating posture, computer screen position, chair height, keyboard position, mouse position and desk equipment layout. These should be in suitable position to minimize the risk of low back pain in office workers.
3. The body mass index (BMI) is a measure of tissue mass (muscle, fat, and bone) in an individual. It categorizes the person as underweight, normal weight, overweight, or obese based on that value. It is a value derived from the weight and height of an individual. The BMI is calculated as the body mass (weight) divided by the square of the body height and is universally expressed in units of kg/m^2 , resulting from weight in kilograms and height in meters. According to the World Health Organization, the BMI ranges are underweight: under 18.5 kg/m^2 , normal weight: 18.5 to 24.9 kg/m^2 , overweight: 25 to 29.9 kg/m^2 , obese: more than or equal to 30 kg/m^2 .

Check Your Progress 4

1. A
2. C



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