Course Learning Outcomes for Unit V

Upon completion of this unit, students should be able to:

5. Evaluate common workplace hazards.
   5.1 Construct an inspection guide for hazard assessment inclusive of ergonomic hazards, which includes lifting and vision hazards.
   5.2 Examine areas in the workplace where musculoskeletal and cumulative trauma disorders may occur.
   5.3 Analyze the hazards and necessary resources associated with temperature extremes.

Reading Assignment

Chapter 10:
Ergonomic Hazards: Musculoskeletal Disorders (MSDs) and Cumulative Trauma Disorders (CTDs)

Chapter 11:
Stress and Safety

Chapter 15:
Falling, Impact, Acceleration, Lifting, and Vision Hazards with Appropriate PPE

Chapter 16:
Hazards of Temperature Extremes

Unit Lesson

Chapter 10: Ergonomic Hazards: Musculoskeletal Disorders (MSDs) and Cumulative Trauma Disorders (CTDs)

Just because OSHA does not have an ergonomic standard does not mean that you do not have some form of an ergonomic program. Simply by the general duty clause, there is a requirement to provide a safe and healthy work environment. You also need to understand that ergonomics is not just something related back to computer work. Ergonomics covers a wide variety of situations not simply related to the use of a computer. Depending upon your industry, you may have issues dealing with workers left to stand outside all day, which may lead to lower back, knee, or hip issues. Some of you may even deal with individuals who work on construction sites and use shovels. These are ergonomic issues, too.

However, and depending upon your industry, a good number of these injuries or situations are going to be more related to computer use than anything else. Imagine working partially with individuals at a call center for a local electric utility for over 20 years. Most of the ergonomic issues that you may have encountered only require a few minor adjustments to either the chair or the computer monitor itself. The few things you have learned are that a good number of these problems or situations can be related back to the chair, illumination, or glare. If the chair that the individual is using is more than eight years old (fewer years if the chair is used by multiple individuals—especially in a 24 hour operation), consider it for replacement. Standard office chairs generally have a life expectancy. Get with the manufacturer for your particular chair, and find out what this life expectancy is. Once you have the individual in the proper chair, now the individual can be properly assessed for any further adjustments. Part of these adjustments need to take into consideration the illumination level of the work area. This can be accomplished by purchasing a very inexpensive, light meter. Once you have this light meter, you can monitor the illumination level. Next, do a web search for proper illumination levels to get an idea if there are any issues in this regard. Lastly, carry a very small mirror with you. Use this mirror to
detect any glare spots on the computer monitor itself. Simply hold up the mirror to the monitor and whatever light source is reflected in the mirror is your culprit!

Chapter 11: Stress and Safety

Chapter 11 discusses a term that most of us have heard before but quite possibly have not given much consideration to. Stress relates directly back to the workplace or safety in general. All of us can think of what we do for our own stress relief, but what can we do in the workplace to reduce stress? Just with this question alone, you can begin to think of many different ways to reduce workplace stress. However, does that depend on what type of stress is present in the workplace?

After all, some jobs are inherently stressful, such as those in the law enforcement or fire service fields. Aside from those jobs, what other types of stress can occur? Imagine having work crews in central Alaska during the wintertime and providing the same for work crews in central Florida during the summertime. The first two stressors that come to mind are heat and cold stress, but we will look into these forms of stress in Chapter 16. Also, imagine having to provide safety services for utility workers following a hurricane in Florida and encountering an even more sinister form of stress. This was the stress caused by lack of sleep and extended work schedules.

Another type of stress, one that we often do not think much about, might be referred to as the stress brought on by a stigma or preconceived notion of a person, place, or thing. If you think an individual is lazy, how do you treat this person? How does that treatment affect the individual in question? If you think that a particular product or a particular location is undesirable, just the anticipation of using that product or going to that particular location can cause so much internal stress and anxiety that it can render some individuals totally useless.

Stress is situation dependent, and everyone has a different way of coping. Envision a rubber band. A rubber band can only stretch so far until it breaks. Even two or more similar rubber bands will snap differently.

Chapter 15: Falling, Impact, Acceleration, Lifting, and Vision Hazards with Appropriate PPE

This chapter begins with the discussion on falls and reviews the OSHA standard. Interestingly enough, the OSHA standard does not address falls of the type that most of us are involved with. These are more falls that occur on walking and working surfaces. As such, it is strongly recommend that safety professionals become familiar with what is commonly referred to as the Coefficient of Friction (CoF). To learn more about this particular subject, simply do a web search for coefficient of friction, and you will glean a wealth of information to include how to purchase testing devices. It is very important—particularly if you deal with the public (e.g., retail trade, hospitals, grocery stores, or any other public setting).

Depending on how much you deal with the public, you may even want to invest in a testing meter. Once you have a testing meter, it is recommended that you establish a periodic testing program, in which case you would actually test various areas of the walking surfaces that your organization owns or is responsible for maintaining. You will be amazed at what you learn about the walking surfaces in your organization. You will also come to understand the value of a good waxing and how this can actually increase the CoF and thereby reduce the likelihood of a slip/fall incident. This is also valuable for outside surfaces that may be subject to the collection of mold or mildew. By having such a record, your organization is also in a much better position in the event that there is a slip/fall incident and legal matters are necessary for resolution.

The textbook also discusses ladder safety and the importance of the same. Ladders are quite common in the workplace—especially if you have janitorial personnel who will have a ladder. Sometimes these ladders can be very old and rickety or unmaintained over the years. An even worse scenario would be if you have outside personnel doing services for your organization (such as janitorial work) and you allow them to use your organization’s ladder. This can be a recipe for disaster!

Often, individuals overlook the use of ladders because they are so commonplace that training is not considered necessary. This cannot be farther from the truth! Everyone who uses ladders should be trained, at least initially, and refresher training is recommended at least every three to four years. Imagine being involved in an accident investigation in which an individual fell off a ladder and broke his leg (compound fracture and cracked heel). All this individual did was set up a standard 8-foot stepladder, climb up to the third rung (approximately 30 inches off the floor), and stick his head up beyond the ceiling tiles to use a flashlight to
inspect the condition of the drop ceiling. As he went to descend the ladder, he fell, breaking his leg in the process. The workers’ compensation bill was well over $500,000, and the gentleman was out of work for almost 9 months! Through the investigation, it was revealed that the ladder was in excess of 20 years old, and one leg was approximately a quarter of an inch shorter than the other three. Periodic inspection of ladders could have possibly prevented this.

This particular chapter also covers the lifting standard. Regardless of your industry, there is going to be some type of lifting—possibly even repetitive lifting that takes place in your organization. Back belts may help because they remind the wearer of the proper lifting technique. Check your organization and look at the repetitive lifting tasks, and actually evaluate them and/or consider them for modification. Individuals with back problems did not incur the problem overnight. Often, it can be related back to overwork and poor lifting posture and technique. This is where the understanding of back compressive forces and the application of the National Institute of Occupational Safety and Health (NIOSH) lifting standard comes into play.

**Chapter 16: Hazards of Temperature Extremes**

Whether or not you are a proponent of global warming, it should be intuitively obvious even to the most casual observer that the past several summers have been incredibly hot even in our northern cities. Regardless of your industry, temperature extremes may affect you—even if they are not process related. Often, the problems that arise out of the heat (at least from what I have observed) appear to rise more from the fact that most people do not think that they can do anything about it, and, therefore, they are more inclined to endure the heat rather than learn ways to reduce the impact of temperature extremes.

One of the other problems encountered with regards to heat stress is that individual employees may not fully understand the necessity of proper hydration. One of the little tricks that can be used to help employees understand their own level of hydration is to hand out urine color charts on an annual basis. In order to learn more about what this is, just do a simple web search for **urine color chart**. By doing so, you can provide your employees with actual tools that they can use to help gauge their own hydration levels. It would also be strongly recommended that they monitor this hydration level—even during their personal time.

Diet is also very important when addressing the issue of temperature extremes. The recommendation here is to get with a dietitian who can recommend the proper foods for your employees to eat if they are faced with temperature extremes. Dietitian services may be arranged for through workers’ compensation or possibly if your organization has an employee assistance program (EAP).

**Suggested Reading**

The following webpages provide invaluable information that can be used to supplement the information in the reading assignments:

