

## **M9-EN.8 – ERGONOMIC HAZARDS**

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### **Short description of the chapter**

The chapter analyzes the definition of ergonomics, ergonomic occupational risk factors that employees working in hotel and restaurant sector are exposed to and the effect of these factors on human health. (M9.8.jpg)

### **Goals of this chapter:**

- Analyze the notion of ergonomic risk factors
- Analyze in detail critical ergonomic risk factors experienced by restaurant employees: **kitchen staff and waiting staff** (i.e. employees most often exposed to ergonomic risk factors), and **administrative personnel**
- Discuss the effect of the most critical ergonomic risk factors on human health
- Present safety measures preventing or minimizing the negative effect on human health

Information presented in this chapter will help the managers to determine ergonomic risk factors in hotel and restaurant sector, to assess each particular situation and take appropriate preventive measures to prevent or minimize the risk.

### **M9-EN.8.1. What is ergonomics?**

Work intensity has been increasing recently, therefore for at least one fourth of working time more and more employees face up with the lack of time determined by strict terms, which is directly related to health problems and accidents in the workplace. Therefore, more often the notion “ergonomics” is emphasized. (M9.8.1.jpg)

There is a short answer to the question about the notion of ergonomics. Ergonomics is the science about how to make work environment and work tools more comfortable to use.

The main ergonomic occupational risk factors include:

- Load lifting
- Repetitive movements
- Static work load

- Working posture
- Body inclination
- Movement distance in work environment
- Tensions of attention
- Monotony, etc

Considering the data of the Third European Study about work conditions of the employees carried out in 2000, the most frequent health problems related to work conditions include:

- Backache (33%)
- Stress (28%)
- Pain in the neck and shoulder muscles (23%)

The following chapters will discuss the effect of the above-mentioned factors on employees working in hospitality industry: kitchen staff, waiting staff, and hotel staff (chambermaids, cleaners, porters, etc.).

### **M9-EN.8.2 Problems resulting from work in a standing position and preventive measures**

Work in a standing position is a typical body posture of chefs, waiters, barmen, washers-up, receptionists and employees of other professions. Standing is a natural posture by itself poses no particular health hazard. (M9.8.2.jpg)

However, working in a standing position on a regular basis **can have many different negative effects** on human health:

- Swelling legs and feet
- Heaviness in legs, worsened blood circulation in legs
- Varicose veins, frequent inflammatory processes in legs
- Micro traumas of hips, knees and spine bone
- Rheumatic diseases occur within a longer period of time
- Backache
- Other health problems

To avoid health problems caused by standing work, the employee should:

- Have a possibility to change position from time to time
- Have enough space to make movements in the workplace (e.g., a chef, a receptionist)
- Have necessary equipment and work means located comfortably, so that they could be reached without any bending or turning
- If the workplace is arranged on the table, have the height of the table adjusted to the type of work (##D9##)

- If work is done in a standing position during the whole shift, have an appropriate leg support in order to be able to change the position from time to time
- Organize work in such a manner that employees would be able to have a rest in the run of the whole shift

### **M9-EN.8.3 Physical work load during manual handling of materials and preventive measures**

Manual handling of materials is one of the most frequent reasons of backache or injuries at workplace. (M9.8.3.jpg)

Back muscles take part in such work as lifting, carrying, putting in or taking out. Sometimes when the load is taken improperly, when it is too heavy, or when inclination or turning is too intensive, the following serious hazards are possible:

- Laceration of inter-vertebral tendons or ligaments;
- Overlapping or vertebrae, etc

Load characteristics, such as weight, shape, surface, grasping and lifting conditions, posture before and after the lifting process, as the number of repetitive motions, are also of great importance.

According to the type of work, this risk factor is often experienced by **kitchen staff (chefs, washers-up) and waiting staff (waiters, barmen)**.

In order to reduce the risk factors during manual handling of materials, intensive hand work should be reduced as much as possible:

- Heavy loads should be carried by two or more people
- If possible, loads should be pushed, pulled or rolled (e.g., beer barrels)
- If possible, trolleys should be used for carrying dishes or food stuff
- Heavy loads should be held at the waist height
- Full pots should not be lifted
- Heavy things should be kept on lower shelves so that it would be more comfortable to put or take them
- Light things should be kept on upper shelves
- Breaks must be done during the work
- Intense work should be interchanged with less intense work
- When selecting the staff, it is necessary to consider whether the work load does not exceed employee's capabilities
- Employees should be taught to lift loads correctly and safely (straight back, using leg muscles and holding the load as close to the body as possible)

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### **M9-EN.8.4 Dynamic work load and preventive measures (M9.8.4.jpg)**

Work done in an awkward posture requires more energy:

- **Washers-up** usually work in bent down posture and their work involves repetitive movements of hands, wrists and shoulders
- **Waiters** usually carry trays with food in uncomfortable posture
- **Chefs** prepare meals using repetitive movements of hands, wrists and shoulders

As a result of this, fatigue, pain in muscles, discomfort occurs, and the risk of injuries and accidents increases.

One of the ways to reduce those risk factors includes:

- Reorganization of work so that monotonous work would be done by using appropriate equipment, e.g. dishwashers, dough whipping machines, cutting equipment, etc
- If this is not possible, sharp cutting tools should be used in the process of food preparation, in order to employ as little force as possible
- Tools with comfortable ergonomic handles must be used
- Kitchen equipment must be re-located so that it would be possible to reduce the amount of lifting, strain, turning, bending and stooping: large bowls should be carried on wheeled platforms

If there is no possibility to use a dishwasher, in order to reduce the risk of washing up by hands:

- Use double-bottom sinks to reduce unnecessary waist bending
- Use leg supports so that it would be possible to change the standing posture periodically by raising one or another foot on the support and in such way avoiding prolonged back load during long-lasting standing process
- Use water sprinkler when washing huge and heavy pots so that not to hold them under the water flow
- Use washing brushes with long handles so that bottoms of big pots could be reached easily without any bending
- Use brushes with hard bristles for washing up dirty surfaces. This might make the washing up process less difficult and reduce the strain of muscles
- Use chemical substances that may make the washing up process easier
- Use gloves with rough surface so that the washing up process would require less energy

### **M9-EN.8.5. Work with computers. Hazards and safety measures**

These days it is difficult to imagine administrative worker's work place without a PC workstation, which is a rather big occupational risk factor affecting human health. Research data reveal that computer may be the reason of visual system and musculoskeletal disorders and increased fatigue.

Working with computer is related with various inappropriate postures caused by different reasons:

- Palms are turned too much outwards during data entering

- The neck is bent too much because of a too low desk
- Static stress of backbone because of inconvenient chair
- Wrong elbow angle because of inappropriate desk height

Key factors, the change and modeling of which may positively affect the quality of work and reduce the risk of health disorders are presented in the table below:

<b>Working posture</b>	<b>Chair and desk</b>	<b>Movements</b>	<b>Computer accessories</b>
<ul style="list-style-type: none"> <li>- Absence of hand supports</li> <li>- Inconvenient position of hands</li> </ul>	<ul style="list-style-type: none"> <li>- Limited space for feet</li> <li>- Too small working area of the desk</li> <li>- Inconvenient chair</li> <li>- Too wide working zone</li> <li>- Not adjustable height of the desk</li> </ul>	<ul style="list-style-type: none"> <li>- Monotonous movements of hands and arms</li> </ul>	<ul style="list-style-type: none"> <li>- High position of keyboard</li> <li>- Too big angle of vision</li> <li>- Foreign reflections on the screen</li> </ul>

**Basic principles of prevention:**

- Ergonomic work place
- Variety of job tasks
- Possibility to change the working position
- Short-term breaks

**M9-EN.8.6 Self-assessment test**

Having analysed the aforementioned ergonomic risk factors, try to list hazards that you that you are exposed to in your workplace and appropriate prevention measures. Fill in the form given below using the template. You can check your knowledge: **##D10##**.

<b>Ergonomic risk factors</b>	<b>Employee</b>	<b>Harm</b>	<b>Essential safety measures</b>
<b>Activity/source</b>	<b>Hazard description</b>		