


Subject: Tourism & Hospitality

Production of Courseware

 -Content for Post Graduate Courses



Paper 06: Hotel Housekeeping

Module 35: Ergonomics in Housekeeping



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ITEMS	DESCRIPTION OF MODULE
Subject Name	Tourism & Hospitality
Paper Name	Hotel Housekeeping
Module Title	Ergonomics in Housekeeping
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Pre- Requisites	Concept of Ergonomics
Objectives	To understand the significance of ergonomics in hotel housekeeping operations
Keywords	Ergonomics, Housekeeping, Principles

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QUADRANT-1

Ergonomics in Housekeeping

1. Learning Outcomes

After completing this module, students you will be able to:

- Understand the meaning and Concept of aviation
- Understand the difference between Civil and Military Aviation
- Know the Global and Indian Scenario of Civil Aviation Industry
- Know about Various Initiatives taken by Govt. Investors and Investments in

- Indian aviation, and
- Aware about various Opportunities and Challenges among Indian Aviation Industry

ERGONOMICS IN HOUSEKEEPING

Introduction

Housekeeping is a labor-intensive job that requires bending, lifting, carrying, pushing, and pulling throughout the day and involves awkward postures. As per time and motion studies, a guest room attendant (GRA) changes his/her body posture in every three seconds while cleaning a room. If we assume the average cleaning time per guest room is 25 minutes and a GRA cleans up to 16 rooms in a shift, it can be estimated that the guest room attendant undertakes 8000 different body postures during the course of his/her shift. This includes bed-making, lifting and shifting heavy mattresses, bathroom cleaning, changing linen, replenishing amenities and so on. However, the same housekeeping staff is also responsible for loading heavy cleaning supplies and amenities onto carts and pushes them through carpeted floors. Such a work profile is enormously challenging physically, leading to fatigue and prone to musculo-skeletal disorders (MSDs) and musculo-skeletal injuries (MSIs).

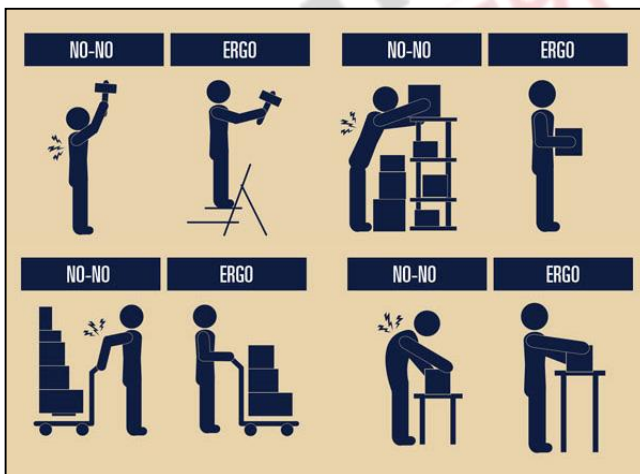
Several studies have highlighted an increasing number of housekeepers suffering from work related physical pain due to the strenuous work they are subjected to. This is a great cause of worry among the employers and the employees, who find it problematic to cope with the pressures of their job. This is where ergonomics steps in. By the application of the principles of ergonomics, various injuries and disorders can be reduced to a great extent. It has a crucial role in improving the overall productivity of an organization and keeping the employees safe at the same time.

Ergonomics

Ergonomics is basically a study of applied science. It is concerned with the designing and arrangements of working conditions and all other things people interact with to improve safety and efficiency. Ergonomists design tasks, jobs, environments and systems in a way that suits the human capabilities. This is necessary as improperly designed equipment, furniture, tasks, jobs or procedures can cause physical strain and fatigue in employees. Such strains can lead to long term injuries and

(Image Source: <https://staff.studentlife.umich.edu/studentlife/article/recognize-your-area-reducing-ergonomic-risk>)

dis-abilities known as musculo-skeletal disorders (MSDs). MSDs are common in people repetitively performing certain tasks over long periods of time and are thus sometimes also referred to as Repetitive Stress Injuries (RSIs). Static work and force are known to be the main causes of MSDs. As per American ergonomist Holly A. Sweeny, “Static



work” is a musculo-skeletal effort that requires to hold a particular position or posture, even a comfortable one.

Common example is sitting in front of a computer with an upright back requires a great amount of static work.

“Force” is the amount of muscle tension our body generates. For example, tilting one’s head forward or

backward from a normal vertical

position will increase the amount of force on one’s neck.

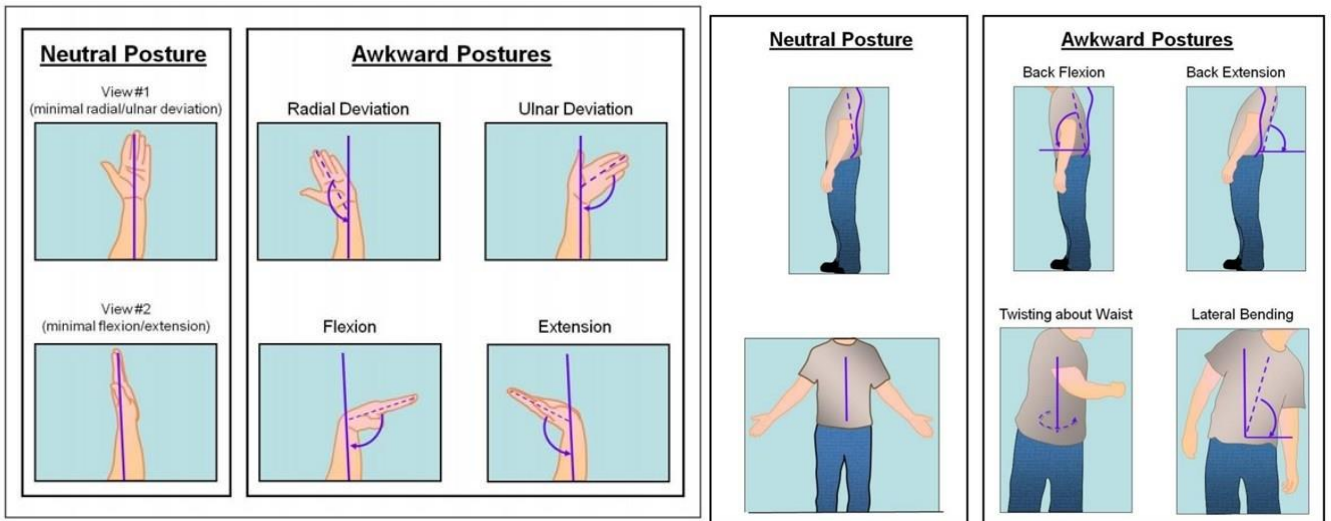
Proper ergonomic design aids in preventing injuries caused by such repetitive motions. Many of the occupational risk factors (like high force, awkward postures etc.) can be mitigated by the application of ergonomic principles and practices.

Principles of Ergonomics

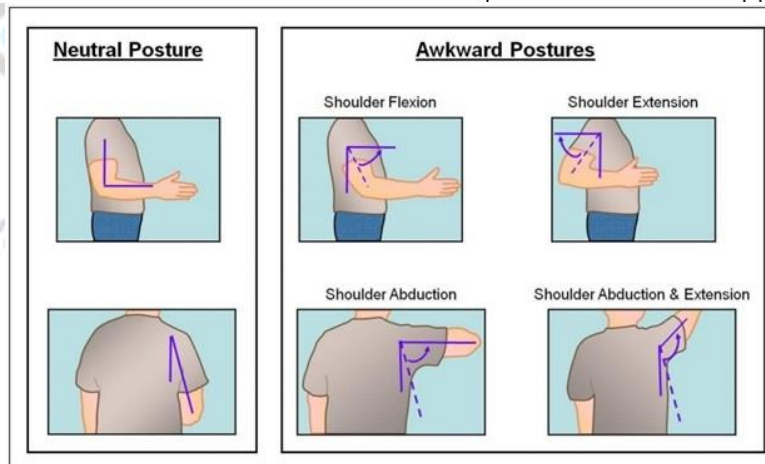
The following principles help in ensuring a safe work place for the hotel staff:

1. Maintain Neutral Posture

- Neutral posture is achieved when the body is aligned and balanced while either sitting or standing, placing negligible stress on the body and keeping joints aligned.



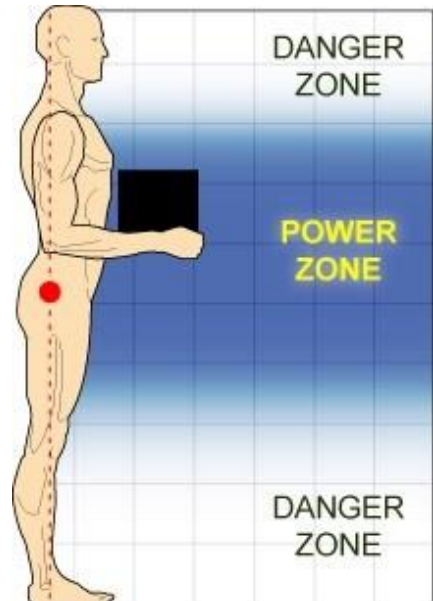
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mize the

stress application to body muscles, ligaments, nerves and bones and permit maximum stability and force production.

- The reverse of a neutral posture is an “awkward posture.” Awkward postures adopt extreme range of motions. They put more stress on the employee’s musculoskeletal system and leads to Musculoskeletal Disorders (MSDs) and thus, should be avoided.



Source: Neutral and awkward wrist postures
 (<https://www.cdc.gov/niosh/mining/UserFiles/works/pdfs/2011-191.pdf>)

2. Work in Power / Comfort Zone

- The power zone refers to lifting close to the body, between mid-thigh and mid-chest height. In this zone, the arms and back are better positioned to lift the most with the least amount of effort.
- This is also called “hand shake zone” or “comfort zone.” The principle used here is that if you can “shake hands with your work”, you are minimalizing excessive reach and maintaining a neutral posture.
- Working in this zone ensures that you work from proper heights and stretches, reduces MSD risk factors and perform efficiently and pain-free.

(Image Source:

<https://www.osha.gov/SLTC/etools/electricalcontractors/supplemental/principles.html>)

3. Permit Movement and Stretching

- Working for extended periods of time in a static position causes fatigue to our body. This is known as static load. For example: Keep your hands raised over your head for the next 20 minutes; Keep standing in the same position for an hour and so on.
- Undertaking the above activities will lead to static load. The first few seconds or minutes will not seem too difficult however, the cumulative effect of holding these superficially stress-free positions for longer time durations will cause fatigue and discomfort.
- What will be the first thing you will naturally do after you have finished the above mentioned these tasks? You will stretch. You may stretch your shoulders out and back or you may stretch out your legs and perform some squats. You could also stretch your fingers and wrist. Stretching reduces fatigue, improves posture, balance and muscle coordination. It is advisable to prepare your body for physical work by warming up to improve efficiency and lower risk of injury. A warm-up stretching routine is an ideal way to prepare your body for work.
- It is also valuable to take periodic stretch breaks over the course of your shift to relax the muscles, get blood moving and restore energy.

(Image Source: <https://www.hygiensupply.nl/blog/ergonomische-voorschriften-in-de-schoonmaakbranche/>)

4. Reduce Excessive Force

- Excessive force is a main ergonomic risk factors. Many tasks involve high force loads on the



body. Muscle effort increases with high force loads leading to increase in fatigue and risk of an MSD.

- There are several conditions that affect force, but it is important to recognize when or where exactly does a job or task requires excessive force and then, find ways to reduce that force.
- Eliminating excessive force requirements will reduce worker fatigue and the risk of MSD formation in most workers. Using mechanical assists, counter balance systems, adjustable height lift tables and workstations, powered equipment and ergonomic tools will reduce work effort and muscle exertions.

5. *Reduce Excessive Motion*

- Repetitive motion is other major ergonomic risk factors. Various work tasks and cycles are repetitive in nature, and are often controlled by hourly or daily production targets and work processes. Repetitive tasks, when combined with other risks factors (like high force and/or awkward postures) can result in a MSD. Generally, a job or task is considered highly repetitive if the cycle time is 30 seconds or less.
- Excessive or unnecessary motions should always be avoided or reduced if at all possible. In cases where avoidance is not an option, it is imperative to eradicate excessive force requirements and awkward postures.
- Other control methods to reduce excessive motion can be job rotation and remedial stretch breaks.

6. *Minimize Contact Stress*

- According to Occupational Safety & Health Administration (USA), contact stress occurs from constant contact or rubbing between hard or sharp objects/surfaces and sensitive body tissues, such as the soft tissues of the fingers, palms, thighs and feet. This contact can create localized

pressure for a small area of the body, which can hamper blood flow, nerve function, or movement of muscles and tendons.

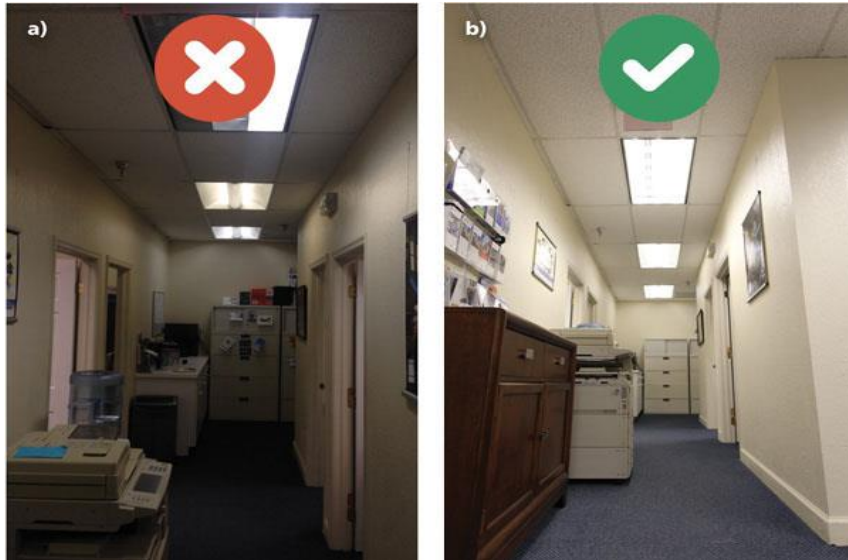
- Examples of contact stress: resting wrists on sharp edges of a desk or workstation while performing tasks, pressing of tool handles into the palms, especially when they cannot be put down, sitting without adequate space for the knees and so on.

7. Reduce Excessive Vibration

- Various studies highlight that regular and frequent exposure to vibration can result in permanent adverse health effects, which occur when contact with a vibrating equipment/tool or work process is a regular part of a worker's job.
- Hand-arm vibration can lead to a range of disorders collectively known as hand-arm vibration syndrome (HAVS). Vibration syndrome has adverse vascular and neural effects in the fingers. Some of the signs and symptoms include numbness, pain, and blanching (turning pale and ashen).

8. Provide Adequate Lighting

- Poor lighting in the workplace can influence a worker's comfort level and performance. Abundance and dearth of lighting - both make work difficult – imagine trying to do your job without sight!
- Working areas need to be lit brightly otherwise dimly lit workplace can cause eye fatigue and headaches and also puts workers at greater risk for all types of injuries.
- Providing workers with adjustable task lighting or portable lighting devices can be a simple solution to lighting problems. At a computer workstations, measures should be taken to control screen glare, monitor should never be placed in front of a window or a bright background.



(Image Source: <http://metroforensics.blogspot.in/2016/07/low-lighting-liability-poor-lighting.html>)

Risk Factors associated with Housekeeping

Prevention is always better than cure. To prevent injuries it is imperative to be aware of the risk factors associated with various housekeeping tasks carried out on a routine basis. Following are some of the main risk factors among housekeeping personnel which may lead to injuries:

- *Forceful Exertions*: it includes lifting of heavy objects like mattresses, pushing/pulling fully loaded carts, maneuvering vacuum cleaners and so on.



Image Source: (OSHA Publication *Practices to Improve Health & Safety using Ergonomics*)

<https://ergonomics.osu.edu/sites/ergonomics.osu.edu/files/uploads/Housekeeper%20Management%20Ergonomics%20Training%20Handout.pdf>

- *Awkward postures:* Awkward postures refer to postures beyond neutral. Examples include cleaning bathroom floors and bathtubs, stocking lower shelves of carts with linen and so on.



Image Source: (<https://s-media-cache-ak0.pinimg.com/236x/10/5c/7b/105c7b83f98a62d172bd7a898f2344eb.jpg>;
<http://www.ilocis.org/documents/images/hcf09fe.gif>)

- *Repetitive Activities:* In repetitive work, same set of muscles are used over and over again. Examples are putting on pillow cases, vacuuming, cleaning mirrors and so on.



Image Source: (OSHA Publication Practices to Improve Health & Safety using Ergonomics)

<https://ergonomics.osu.edu/sites/ergonomics.osu.edu/files/uploads/Housekeeper%20Management%20Ergonomics%20Training%20Handout.pdf>

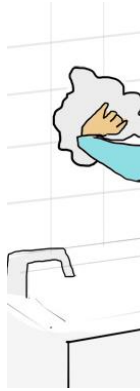
- *Similar work postures for long durations:* Staying at a particular posture for extended periods of time is another risk factor. Kneeling, standing, etc., for long periods of time can cause fatigue and strain in muscles.



(Image Source: OSHA Publication: Practices to Improve Health & Safety using Ergonomics)

- *No Muscle Rest while working:* Example, doing multiple tasks using the same muscle, arm or hand.





(Image Source:
Publication:
Improve Health
using



OSHA
Practices to
& Safety
(Ergonomics)



Alternate Working Methodology for Housekeeping Tasks

The application of basic principles of ergonomics to housekeeping jobs/tasks not only makes the staff perform better but also puts them in better work settings. The following points suggest some alternate working methods to the routine tasks of housekeeping staff.

- *Bed Making Procedures:* It is imperative to use less awkward postures when lifting mattresses or tucking the sheets. The following figure compares the usual posture with a better positioned alternate posture while laying the bed.

*Twisted Back

*Forward Bending

*Closer to bed

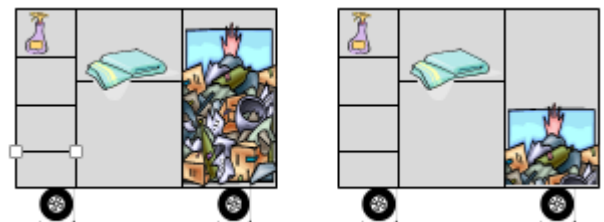
*No bending

(Image Source: OSHA Publication: Practices to Improve Health & Safety using Ergonomics)

- **Vacuuming:** It is essential to ensure the following points need to be followed while vacuuming.
 - *Align with body*
 - *Alternate hands*
 - *Proper height setting*
 - *Empty bag setting*

(Image Source: <http://www.vermop.nl/professional/wetenswaardigheden/ergonomisch-werken.html>)

- **Supply Carts:** Points to be followed when maneuvering housekeeping carts
 - Place majority of items between hips and chest
 - Always use both hands to move the cart
 - Ensure proper wheel alignment before movement
 - Empty garbage bags frequently to keep the cart light
 - Replenish carts frequently to maintain cart balance
 - Address cart problems immediately or report to relevant authority



HEAVY ❌

LIGHT ✓

(Image Source: OSHA Publication: Practices to Improve Health & Safety using Ergonomics)

- **Bathroom Cleaning:** Keep the following points in mind while cleaning bathrooms
 - Always stand inside the bathtub, if possible
 - Never keep dirty towels on the floor
 - Work at waist level for majority of the time
 - Make more trips rather than carrying heavy material in one trip
 - Distribute work among both the arms i.e., use both the arms



**Use of Alternate Arms while Cleaning*

(Image Source: OSHA Publication: Practices to Improve Health & Safety using Ergonomics)

Housekeeping Products to Consider (Promoting Ergonomics)

- **BEDS:**
 - Using fitted bed sheets instead of flat sheets
 - Adoption of Bed-Making tools



(Image Sources:

<https://www.juliancharles.co.uk/julian-charles-percale-white-luxury-180-thread-count-fitted-bed-sheet>;

<http://www.qvc.com/Bed-Made-EZ%28TM%29-Mattress-Lifter-with-Easy-Grip-Rubber-Handle.product.H191792.html>; <http://bedzine.com/blog/bed-diy/bed-activities/scheduling-the-change-of-bed-sheets/>)

- **MAID'S CART:**
 - Carts need to have larger and harder wheels
 - Worn out wheels should be replaced timely
 - Viability of motorized carts in the hotel can be tested



- **VACUUM CLEANERS:**
 - Light weight should be preferred over heavier ones
 - They should have ergonomic design like an ergonomic handles



- Vacuum cleaners that promote upright posture should be used. (E.g. Backpacks, Canisters)

(Image

Sources:http://www.healthgoods.com/SEBO_K2_Midnight_Blue_Canister_Vacuum_Cleaner_p/sb-9679am.htm

<http://trendsupdates.com/ergonomic-vacuum-cleaner-easens-burden/>)



- **BATHROOM CLEANING:**

- Use long-handled brushes and scrubbers
- Use Brushes and sprayers which have more-comfortable grips

- **DUSTING:**

- Usage of microfiber products
- Cleaning equipment should have extended handles

Micro-Fiber Cleaning Kit

(Image Source: <https://www.microfiberwholesale.com/Microfiber-Cleaning-System.html>)

Improving Housekeepers' Health

Housekeeping staff should be made aware of all the potential risks associated with their respective tasks. The health of the housekeepers can be encouraged by educating them on their personal habits, improving the work environment and better planned jobs. The following section provides certain tips in each of these areas which are essential for improving the housekeepers' overall health while performing various housekeeping tasks:

IMPROVE PERSONAL HABITS

- Housekeepers need to be aware of their postures while working.
- Staff should always wear comfortable shoes when working.
- Before starting any activity, proper warm up should be done. It improves blood circulation and prepares the body for the strenuous work that lies ahead.
- Avoid bending and twisting activities that exert excessive stress on the spine.
- Keeping changing body position frequently to avoid muscle strain
- Always avoid sudden, jerky movements that could overload your muscles during some activity.
- Switch arms when carrying heavy objects or equipment.
- Where ever possible, always use the whole hand and all fingers to grip, grasp or lift.
- Repetitive tasks should be done with a slow pace and low force.
- Any unusual pains or aches immediately. Never work with pains.
- Communicate ways of how to make a job easier to other staff members especially the new employees.

- Improve well-being by undertaking balanced diet, regular exercise, plenty of sleep and so on.

MAKE A BETTER WORK ENVIRONMENT

- The housekeeping staff needs to be trained, time and again, on the proper work methodology to be followed for various tasks. Until and unless they are aware of the potential threats related to their work, they will never follow proper procedures.
- Tasks should never be performed where there is a restriction of bending, reaching etc. hence there has to be sufficient amount of space.
- The work place has to be well-lit. Inadequate lighting leads to strain in the eyes
- All equipment, carts, trolleys should be in proper condition. Using a faulty equipment is never advisable and can lead to accidents.

BETTER WORK PRACTICES

- Tasks need to be rotated or distributed among different employees such that there is a postural change in the employees.
- Stretch breaks can be introduced in work routines especially for physically difficult tasks.
- Work load planning should be such that the jobs involving heavier tasks occur at the beginning of the shift, when there is no fatigue. A reverse situation can lead to injuries due to tiring of muscles at the end of the shift.

SUMMARY:

Meetings and exceeding the expectations of its guests round the clock make hotels a challenging work place. Mostly, hotels are designed keeping in mind the comfort of its guests rather than its employees. Keeping the hotel in a condition that personifies perfection is the task of the housekeeping department. In order to always keep attracting

guests to the hotel, the management aims to clean everything such that it sparkles. This makes the housekeepers' task challenging and demanding. The housekeeping tasks require the staff to spend hours cleaning by kneeling, leaning, squatting, crouching, stretching, slouching and so on. These postures over a period of time lead to musculo-skeletal injuries.

Several studies have highlighted an increasing number of housekeepers suffering from work related physical pain due to the strenuous work they are subjected to. This is a great cause of worry among the employers and the employees, who find it problematic to cope with the pressures of their job. This is where ergonomics steps in. By the application of the principles of ergonomics, various injuries and disorders can be reduced to a great extent. It has a crucial role in improving the overall productivity of an organization and keeping the employees safe at the same time.

Ergonomics is basically a study of applied science. It is concerned with the designing and arrangements of working conditions and all other things people interact with to improve safety and efficiency. Ergonomists design tasks, jobs, environments and systems in a way that suits the human capabilities. This is necessary as improperly designed equipment, furniture, tasks, jobs or procedures can cause physical strain and fatigue in employees. Such strains can lead to long term injuries and dis-abilities known as musculo-skeletal disorders (MSDs). MSDs are common in people repetitively performing certain tasks over long periods of time and are thus sometimes also referred to as Repetitive Stress Injuries (RSIs). Proper ergonomic design aids in preventing injuries caused by such repetitive motions. Many of the occupational risk factors (like high force, awkward postures etc.) can be mitigated by the application of ergonomic principles and practices.

We study in this chapter about the potential risks associated with various housekeeping tasks and also the alternated methodology that needs to be followed to avoid injuries and fatalities. The tasks explained here are the most basic housekeeping tasks followed in not just hotels but even at our homes