Manufacturing Ergonomics Quizzes

# Introduction

**Multiple Choice Questions**

1. **What is the primary goal of ergonomics in manufacturing?**
	* A) Increase production speed
	* B) Enhance human performance by aligning tasks with human capabilities
	* C) Reduce the number of workers required
	* D) Increase the complexity of tasks
	* **Correct Answer:** B) Enhance human performance by aligning tasks with human capabilities
2. **Which of the following is NOT a common element in all manufacturing settings?**
	* A) Use of tools and equipment
	* B) Presence of workstations
	* C) Uniformity in all work environments
	* D) Application of ergonomic principles
	* **Correct Answer:** C) Uniformity in all work environments
3. **Why are repetitive tasks a concern in manufacturing ergonomics?**
	* A) They are challenging to perform accurately
	* B) They can lead to health issues like musculoskeletal disorders
	* C) They require expensive tools
	* D) They reduce the need for worker movement
	* **Correct Answer:** B) They can lead to health issues like musculoskeletal disorders
4. **What is one strategy to address the need for physical movement in manufacturing tasks?**
	* A) Eliminate breaks
	* B) Increase task precision
	* C) Encourage regular physical movement
	* D) Extend working hours
	* **Correct Answer:** C) Encourage regular physical movement
5. **What is one challenge commonly faced when implementing ergonomic changes in the workplace?**
	* A) Performing ergonomics assessments
	* B) Lack of tools and equipment
	* C) Resistance to change
	* D) Lack of worker training
	* **Correct Answer:** C) Resistance to change

**True/False Questions**

1. **Collaborative ergonomics involves input from all stakeholders including workers, management, and engineers.**
	* True
	* False
	* **Correct Answer:** True
2. **Manufacturing ergonomics typically follows the same standard as office ergonomics.**
	* True
	* False
	* **Correct Answer:** False
3. **Repetitive tasks in manufacturing can lead to both physical and mental health issues.**
	* True
	* False
	* **Correct Answer:** True
4. **Most manufacturing tasks do not require any physical movement.**
	* True
	* False
	* **Correct Answer:** False
5. **The bottom line of manufacturing ergonomics is to make positive changes to workstations, tools, and work processes.**
	* True
	* False
	* **Correct Answer:** True

**🌐 Sources**

1. [ergosystemsconsulting.com - ERGOD 2024 Manufacturing Ergonomics Track 8-12-24 INTRO](https://www.ergosystemsconsulting.com/)

Here are some more:

**Multiple Choice Questions**

1. **What is the primary goal of ergonomics in manufacturing?**
	* A. To reduce production costs.
	* B. To improve product quality.
	* C. To enhance human performance and minimize injury risk.
	* D. To speed up the manufacturing process.
	* **Correct Answer: C**
2. **Which of the following is a key element of a 'typical' manufacturing workstation?**
	* A. Adjustable office chair.
	* B. Desktop computer.
	* C. Tools and equipment specific to the task.
	* D. Automated robotics.
	* **Correct Answer: C**
3. **What is 'collaborative ergonomics' in the context of manufacturing?**
	* A. Ergonomics applied by a single expert.
	* B. Ergonomics that involve collaboration among stakeholders.
	* C. Ergonomics designed solely for office settings.
	* D. Ergonomics that ignore worker input.
	* **Correct Answer: B**
4. **Which factor is crucial for maintaining worker productivity and health in repetitive tasks?**
	* A. Continuous work without breaks.
	* B. Promotion of regular physical movement.
	* C. Increasing the pace of work.
	* D. Reducing worker interaction.
	* **Correct Answer: B**
5. **Why is change often difficult to implement in ergonomic practices?**
	* A. Lack of proper equipment.
	* B. Resistance to change due to established habits.
	* C. Inadequate training.
	* D. Insufficient data.
	* **Correct Answer: B**

**True/False Questions**

1. **Ergonomics in manufacturing focuses solely on the physical design of tools and equipment.**
	* True
	* False
	* **Correct Answer: False**
2. **Highly repetitive tasks can lead to musculoskeletal disorders.**
	* True
	* False
	* **Correct Answer: True**
3. **In manufacturing ergonomics, promoting regular physical movement is not necessary if tasks are highly repetitive.**
	* True
	* False
	* **Correct Answer: False**
4. **The concept of 'collaborative ergonomics' includes input from various stakeholders, including workers and management.**
	* True
	* False
	* **Correct Answer: True**
5. **A stable platform for feet, hips, thighs, spine, and arms is essential for precise repetitive tasks.**
	* True
	* False
	* **Correct Answer: True**

# Components

## Part 1

**Multiple Choice Questions**

1. **What is a key ergonomic principle for designing a manufacturing workstation?**
	* A. Reducing the number of breaks
	* B. Optimizing safety, quality, and productivity
	* C. Increasing task complexity
	* D. Minimizing worker movement
2. **What should be prioritized when designing a workbench?**
	* A. The color of the workbench
	* B. The worker's preference
	* C. The type of task being performed
	* D. The number of tools available
3. **Why are anti-fatigue mats used in manufacturing?**
	* A. To reduce joint wear and tear from prolonged standing
	* B. To prevent spills
	* C. To increase work speed
	* D. To improve lighting conditions
4. **Which factor is most important when setting the height of a standing workstation?**
	* A. The worker’s age
	* B. The resting elbow height
	* C. The floor material
	* D. The tool color
5. **What is the benefit of job rotation in manufacturing?**
	* A. It reduces the need for training
	* B. It minimizes repetitive strain injuries
	* C. It increases production time
	* D. It simplifies complex tasks
6. **Which of the following is a correct ergonomic practice for seated workstations?**
	* A. The chair should be non-adjustable
	* B. Items should be placed on the floor for easy access
	* C. Footrests should be provided
	* D. The work surface should be out of arm’s reach
7. **What is the correct use of a checklist in ergonomics design?**
	* A. To replace professional judgment
	* B. To ignore potential risks
	* C. To help identify and address potential issues
	* D. To finalize the design without further review
8. **When should micro-breaks be incorporated into the work routine?**
	* A. Every 30 minutes
	* B. Only at the end of the shift
	* C. Once every hour
	* D. Only when requested by workers
9. **What is the role of anthropometry in workstation design?**
	* A. It determines the cost of tools
	* B. It assesses the size and shape of workers to optimize the design
	* C. It measures the speed of work
	* D. It defines the color scheme of the workstation
10. **Why are adjustable workstations beneficial?**
	* A. They accommodate workers of different sizes and tasks
	* B. They reduce the need for training
	* C. They are cheaper to produce
	* D. They limit worker movement

**True or False Questions**

1. **Ergonomics in manufacturing focuses solely on increasing productivity.**
	* True
	* False
2. **Anti-fatigue mats should be used on soft surfaces to maximize comfort.**
	* True
	* False
3. **Job rotation helps in reducing the risk of repetitive strain injuries.**
	* True
	* False
4. **The height of a workbench should be fixed and non-adjustable.**
	* True
	* False
5. **Anthropometric data is essential for designing workstations that accommodate a range of worker sizes.**
	* True
	* False
6. **Checklist use in ergonomics is primarily to document that potential issues were considered and addressed.**
	* True
	* False
7. **Micro-breaks should be implemented every hour in a manufacturing environment.**
	* True
	* False
8. **The design of foot controls in a workstation should consider the operator's ability to use them comfortably.**
	* True
	* False
9. **Seated workstations are ideal when the work requires frequent movement outside of the reach zone.**
	* True
	* False
10. **Providing an adjustable chair is an important aspect of ergonomics in seated workstations.**
	* True
	* False

## Part 2

**Multiple Choice Questions**

1. **What is the primary purpose of ergonomic design in manufacturing?**
	* A) Increase productivity
	* B) Improve worker safety
	* C) Enhance product quality
	* D) All of the above
	* **Correct Answer:** D) All of the above
2. **Which tool is typically used for reducing torque reaction forces?**
	* A) Wrench
	* B) Screwdriver
	* C) Torque reaction bar
	* D) Hammer
	* **Correct Answer:** C) Torque reaction bar
3. **What is the main advantage of battery-powered hand tools over traditional tools?**
	* A) Lower cost
	* B) Reduced manual effort
	* C) Higher precision
	* D) Easier maintenance
	* **Correct Answer:** B) Reduced manual effort
4. **Which of the following materials were first used in hand tools?**
	* A) Bronze
	* B) Steel
	* C) Stone
	* D) Plastic
	* **Correct Answer:** C) Stone
5. **What does segmental (hand/arm) vibration commonly cause?**
	* A) Improved grip strength
	* B) Decreased sensitivity in the hand
	* C) Enhanced tool control
	* D) Better muscle relaxation
	* **Correct Answer:** B) Decreased sensitivity in the hand
6. **What is a primary ergonomic concern when using tools with poor handle design?**
	* A) Increased productivity
	* B) Reduced safety risks
	* C) Increased musculoskeletal disorders
	* D) Enhanced precision
	* **Correct Answer:** C) Increased musculoskeletal disorders
7. **Which ergonomic principle is most important for tool design?**
	* A) Durability
	* B) Ease of use
	* C) Aesthetics
	* D) Weight reduction
	* **Correct Answer:** B) Ease of use
8. **What should be done to control vibration at its source?**
	* A) Use heavier tools
	* B) Increase RPM of tools
	* C) Replace vehicle seats
	* D) Use anti-vibration gloves
	* **Correct Answer:** B) Increase RPM of tools
9. **What should be evaluated to avoid non-neutral spinal positions?**
	* A) Tool weight
	* B) Tool handle size
	* C) Workbench height
	* D) Task duration
	* **Correct Answer:** C) Workbench height
10. **Which fastener type drives faster and with less effort?**
	* A) Phillips screws
	* B) Slotted screws
	* C) Hex head screws
	* D) Rivets
	* **Correct Answer:** C) Hex head screws

**True and False Questions**

1. **Segmental vibration only affects the fingers and does not impact the rest of the hand.**
	* True
	* False
	* **Correct Answer:** False
2. **Battery-powered hand tools have reduced the manual effort required in many tasks.**
	* True
	* False
	* **Correct Answer:** True
3. **Whole body vibration is commonly experienced by forklift drivers.**
	* True
	* False
	* **Correct Answer:** True
4. **Torque reaction forces occur when a fastener reaches the end of its travel.**
	* True
	* False
	* **Correct Answer:** True
5. **Tool handle size is irrelevant to ergonomics and user safety.**
	* True
	* False
	* **Correct Answer:** False
6. **In-line power tools should be used for horizontal surfaces at waist height.**
	* True
	* False
	* **Correct Answer:** False
7. **The Industrial Revolution had no significant impact on the evolution of hand tools.**
	* True
	* False
	* **Correct Answer:** False
8. **Preventive maintenance is not important for ensuring proper tool operation.**
	* True
	* False
	* **Correct Answer:** False
9. **Ergonomically designed tools focus on reducing user fatigue and strain.**
	* True
	* False
	* **Correct Answer:** True
10. **Proper footwear can help reduce the impact of hard surface contact stress.**
	* True
	* False
	* **Correct Answer:** True

## Part 3

**Multiple Choice Questions (MCQs)**

1. **What is the primary benefit of using a seated work position for light assembly tasks?**
	* A) Easier access to tools
	* B) Greater core stability for precision work
	* C) Reduces the need for frequent movement
	* D) Increases workspace area
	**Correct Answer:** B
2. **What is the recommended action if the task requires frequent or heavy lifting?**
	* A) Use a seated work position
	* B) Use a sit/stand workstation
	* C) Stand at the workbench
	* D) Use a turntable
	**Correct Answer:** C
3. **What is the purpose of turntables in manufacturing workplaces?**
	* A) To increase the pace of assembly tasks
	* B) To reduce sustained forward reaching
	* C) To provide more storage space
	* D) To automate the lifting process
	**Correct Answer:** B
4. **Which of the following is a key feature of adjustable height workstations?**
	* A) Only supports standing positions
	* B) Provides postural variety
	* C) Requires manual adjustment
	* D) Only accommodates seated work
	**Correct Answer:** B
5. **Which ergonomic principle is applied when adding lean platforms to workstations?**
	* A) Reducing the size of the workspace
	* B) Increasing the height of workstations
	* C) Providing weight-bearing relief
	* D) Decreasing the frequency of breaks
	**Correct Answer:** C
6. **What is a critical consideration when using microscopes in a multi-user environment?**
	* A) Fixed height setup
	* B) Consistent light levels
	* C) User-specific setup adjustments
	* D) Centralized user location
	**Correct Answer:** C
7. **What is an appropriate height for a fixed workbench in a standing position?**
	* A) 20 inches
	* B) 40 inches
	* C) 30 inches
	* D) 50 inches
	**Correct Answer:** C
8. **Why should cart handles be positioned away from the body?**
	* A) To prevent injury during sudden stops
	* B) To allow for a normal stride when pushing
	* C) To increase the force applied during movement
	* D) To reduce the cart's load capacity
	**Correct Answer:** B
9. **What is a key advantage of video display microscopy in ergonomic design?**
	* A) Eliminates the need for a microscope entirely
	* B) Reduces the need for eye strain management
	* C) Allows for adjustable viewing angles
	* D) Increases the speed of task completion
	**Correct Answer:** C
10. **What factor is essential for proper ergonomic setup in environments with noise exposure?**
	* A) Frequency of breaks
	* B) Use of noise-canceling headphones
	* C) Control of noise at the source
	* D) Use of high-pitched alarms
	**Correct Answer:** C

**True or False Questions**

1. **Standing positions are more appropriate than sitting positions when frequent lifting is required.**
	* True
	* False
	**Correct Answer:** True
2. **Adjustable height workstations can only be used in seated positions.**
	* True
	* False
	**Correct Answer:** False
3. **Turntables help in reducing the need for sustained or extreme forward reaching.**
	* True
	* False
	**Correct Answer:** True
4. **Lean platforms at workstations are primarily used to increase workspace.**
	* True
	* False
	**Correct Answer:** False
5. **Microscopes should be adjusted to match the neutral head and neck position of each user.**
	* True
	* False
	**Correct Answer:** True
6. **Pushing carts generally allows for better body mechanics compared to pulling.**
	* True
	* False
	**Correct Answer:** True
7. **It is unnecessary to consider anthropometric constraints when designing equipment clearance.**
	* True
	* False
	**Correct Answer:** False
8. **Noise abatement strategies include controlling the noise at its source.**
	* True
	* False
	**Correct Answer:** True
9. **Proper lighting is not crucial for reducing strain during microscopy tasks.**
	* True
	* False
	**Correct Answer:** False
10. **The use of personal protective equipment (PPE) is optional in most manufacturing environments.**
	* True
	* False
	**Correct Answer:** False

# Ergonomics Risk Screen

**Multiple Choice Questions (MCQs):**

1. **What is the primary purpose of the Ergonomics Risk Screen (ERS)?**
	* To improve product quality.
	* To reduce material costs.
	* To assess the relative risk of ergonomics-related factors.
	* To improve lighting conditions.
	* **Correct Answer:** To assess the relative risk of ergonomics-related factors.
2. **Which of the following is considered a Low Relative Risk score in the ERS?**
	* 0 to <2
	* >2 to <4
	* 4 to 6
	* 6 to 8
	* **Correct Answer:** 0 to <2
3. **What is used to calculate the Weighted Time Multiplier in ERS?**
	* Frequency of task
	* Duration of task
	* Exposure hours per day
	* Force exerted
	* **Correct Answer:** Exposure hours per day
4. **Which tool is recommended for capturing video during an ergonomics assessment?**
	* Handheld camera without stabilization
	* Mobile phone camera
	* Camera with flip-out viewfinder and tripod
	* Fixed security camera
	* **Correct Answer:** Camera with flip-out viewfinder and tripod
5. **Which factor is NOT considered when scoring the ERS?**
	* Force
	* Frequency
	* Duration
	* Company profitability
	* **Correct Answer:** Company profitability
6. **What is the typical scoring range that indicates a Medium Relative Risk in the ERS?**
	* 0 to <2
	* >2 to <4
	* 4 to 6
	* 6 to 8
	* **Correct Answer:** >2 to <4
7. **What does a score of 4 or higher in the ERS indicate?**
	* No risk of musculoskeletal disorder.
	* Low risk of musculoskeletal disorder.
	* High risk of musculoskeletal disorder.
	* Medium risk of musculoskeletal disorder.
	* **Correct Answer:** High risk of musculoskeletal disorder.
8. **Which posture is considered out-of-neutral in the ERS?**
	* Head balanced over shoulders
	* Shoulders over hips
	* Hips over knees
	* Flexed forward back more than 20 degrees
	* **Correct Answer:** Flexed forward back more than 20 degrees
9. **What should be done if a score in the ERS falls into the Yellow or Red ranges?**
	* No further action is needed.
	* Additional assessment and intervention are recommended.
	* Increase task duration.
	* Decrease the number of repetitions.
	* **Correct Answer:** Additional assessment and intervention are recommended.
10. **What type of grip is typically stronger and used for moving or manipulating objects?**
	* Pinch grip
	* Power grip
	* Loose grip
	* Two-finger grip
	* **Correct Answer:** Power grip

**True and False Questions:**

1. **The ERS is designed to evaluate the financial health of a company.**
	* True
	* False
	* **Correct Answer:** False
2. **The Weighted Time Multiplier in ERS is influenced by the number of hours of exposure per day.**
	* True
	* False
	* **Correct Answer:** True
3. **In the ERS, a score of 0 indicates no relative risk.**
	* True
	* False
	* **Correct Answer:** True
4. **The ERS process can be used both before and after ergonomic interventions to measure success.**
	* True
	* False
	* **Correct Answer:** True
5. **A flexed forward posture of the back more than 20 degrees is considered neutral.**
	* True
	* False
	* **Correct Answer:** False
6. **The ERS is only applicable for jobs that involve physical labor.**
	* True
	* False
	* **Correct Answer:** False
7. **Using a camera with a flip-out viewfinder and tripod is recommended for ergonomic video assessments.**
	* True
	* False
	* **Correct Answer:** True
8. **Exposure is the only factor that influences the ERS score.**
	* True
	* False
	* **Correct Answer:** False
9. **Corrective actions in the ERS are optional if a task falls into the Yellow risk category.**
	* True
	* False
	* **Correct Answer:** False
10. **A higher ERS score indicates a lower risk of musculoskeletal disorder.**
	* True
	* False
	* **Correct Answer:** False

# Manual Material Handling

1. **What is the most common cause of workplace injuries related to manual material handling?**
	* Slips and falls
	* Back injuries
	* Cuts and bruises
	* Exposure to hazardous materials
	* **Correct Answer:** Back injuries
2. **Which of the following factors increases the risk of back injury during lifting?**
	* Lifting objects close to the body
	* Twisting the spine while lifting
	* Using a lifting aid
	* Wearing a back brace
	* **Correct Answer:** Twisting the spine while lifting
3. **Which guideline is used for assessing manual lifting tasks?**
	* OSHA Guidelines for Chemical Safety
	* NIOSH Work Practices Guide for Manual Lifting
	* CDC Guidelines for Infectious Diseases
	* ANSI Standards for Electrical Safety
	* **Correct Answer:** NIOSH Work Practices Guide for Manual Lifting
4. **What is the ideal lifting zone according to ergonomic principles?**
	* Above the head
	* Below the knees
	* Waist to mid-chest level
	* At arm’s length
	* **Correct Answer:** Waist to mid-chest level
5. **What is the recommended action if an object is too heavy to lift manually?**
	* Ask for assistance from another worker
	* Lift with your back instead of your legs
	* Ignore the weight and lift it quickly
	* Use mechanical lifting equipment
	* **Correct Answer:** Use mechanical lifting equipment
6. **Which factor does the LNI Lifting Calculator NOT consider?**
	* Horizontal distance
	* Gender of the individual
	* Vertical position
	* Frequency of lifting
	* **Correct Answer:** Gender of the individual
7. **What is the impact of spine rotation during lifting?**
	* It increases lifting capacity
	* It decreases the risk of injury
	* It results in significant shear and compression force into the spine
	* It has no impact on lifting
	* **Correct Answer:** It results in significant shear and compression force into the spine
8. **What is the key consideration in determining the lifting limit using the LNI Lifting Calculator?**
	* The worker's age
	* The worker's gender
	* The object's weight and position
	* The object's color
	* **Correct Answer:** The object's weight and position
9. **Which of the following is NOT a recommended intervention for manual material handling?**
	* Two-person lift policy
	* Mechanical lifting device
	* Increase in lifting frequency
	* Worker body mechanics training
	* **Correct Answer:** Increase in lifting frequency
10. **What should be done to reduce the horizontal distance in manual handling tasks?**
	* Use larger objects
	* Store heavier items at higher locations
	* Bring objects closer to the body before lifting
	* Avoid using any lifting aids
	* **Correct Answer:** Bring objects closer to the body before lifting

**🗒️ True/False Questions**

1. **Twisting the spine during lifting reduces the risk of injury.**
	* True
	* False
	* **Correct Answer:** False
2. **The LNI Lifting Calculator considers gender as a factor in its calculations.**
	* True
	* False
	* **Correct Answer:** False
3. **Using a mechanical lifting device is recommended when the weight exceeds safe lifting limits.**
	* True
	* False
	* **Correct Answer:** True
4. **The safest lift is the one that does not occur.**
	* True
	* False
	* **Correct Answer:** True
5. **Frequency and duration of lifting do not influence the lifting limit.**
	* True
	* False
	* **Correct Answer:** False
6. **Lifting over great vertical distances increases the risk of injury.**
	* True
	* False
	* **Correct Answer:** True
7. **A two-person lift policy is a recommended intervention for manual material handling.**
	* True
	* False
	* **Correct Answer:** True
8. **The use of proper body mechanics can help reduce the risk of injury during manual handling.**
	* True
	* False
	* **Correct Answer:** True
9. **Manual material handling tasks should always involve the use of lifting aids.**
	* True
	* False
	* **Correct Answer:** True
10. **Storing heavy objects at shoulder height is recommended for reducing lifting strain.**
	* True
	* False
	* **Correct Answer:** False